



AGRIFIN

Agriculture Logistics in Kenya

Landscape and Solutions Case Studies

Public

September 2020

Dalberg

Agenda



I. Background

II. Context

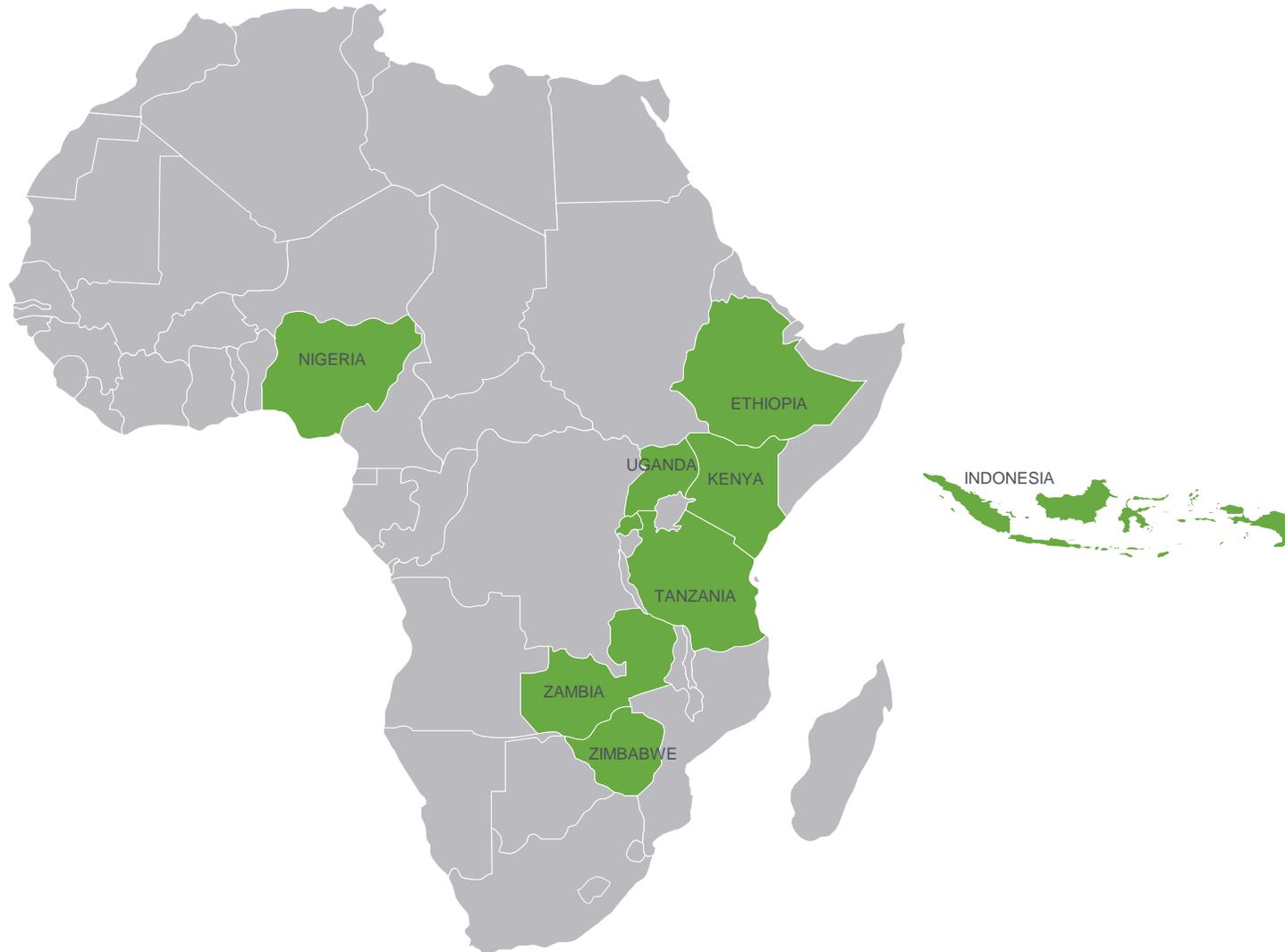
III. Approach

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V. Conclusion

AgriFin Program Introduction



- 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 to more than **3 million smallholders by 2021**
- Our objective is to develop sustainable services that **increase farmer income and productivity by 50%**, with **50% outreach to women and youth**
- 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, prototype 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 2012, we have completed more than **150 engagements with over 70 partners**
- **Currently, our work reaches more than 5 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

This short report was created by Mercy Corps AgriFin and Dalberg and in consultation with FtMA



CONTEXT

- Smallholder farmers face a myriad of challenges across key components of value chains, especially in logistics
- The **COVID-19** pandemic has created large-scale disruptions of rural supply chains. **Digitally enabled tools** can be part of the solution for some aspects of challenges experienced in logistics, but not all
- Current attempts to tackle logistics problems remain **patchwork and small-scale**, with little understanding of how to scale effectively.



RESEARCH OVERVIEW

Over five weeks, Mercy Corps AgriFin and Dalberg used a combination of research methods:

- We conducted desk-based research and analyzed available data
- We conducted virtual interviews with 8 companies
- We spoke to 3 logistics experts virtually, including FtMA

As a relatively short research piece, it is important to note limitations:

- The savings model was built on assumptions in order to provide an indication of the opportunity
- We spoke to only a small number of stakeholders, whose views may not be representative of the whole ecosystem



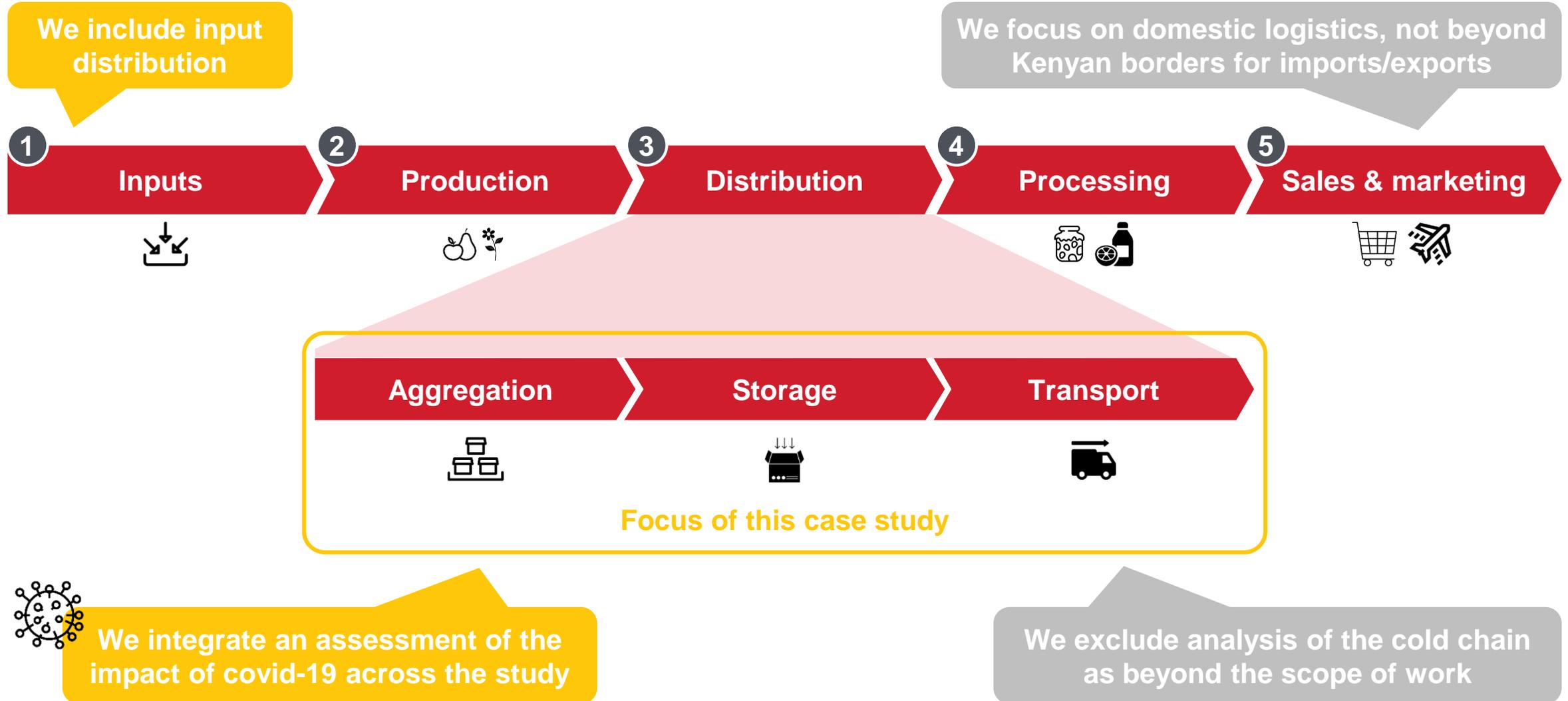
OBJECTIVES AND APPROACH

- We spoke to companies across the industry to understand **challenges** and **solutions**, aiming to support agriculture companies with **best practice recommendations** in agriculture logistics.
- We particularly focused on the implications from **COVID-19**, the role of **digitization**, the impact on **climate and environment** issues, and **gender equality**
- This study synthesizes findings from key **stakeholder interviews** and **desk research** to offer solutions to companies working in agricultural logistics

Interviewed Companies



The case study aims to provide an overview of logistics challenges and solutions in the Kenyan agriculture market



Executive Summary

Background

- This short report was created by **Dalberg** in partnership with **Mercy Corps AgriFin** and in consultation with **FtMA**, aiming to provide an overview of logistics challenges and solutions in the Kenyan agriculture market
- We spoke to companies across the industry building **best practice recommendations** in logistics to support agriculture companies
- This study synthesizes findings from key **stakeholder interviews** and **desk research** to offer solutions to companies working in agricultural logistics

Context

- Logistics from first to last mile is **core for rural supply chains** and growing **smallholder farmer** livelihoods
- The last mile accounts for the majority of logistics costs (e.g. 71% in the onion value chain), in part due to **inefficient transport modes**. **Logistics accounts for 28% of the final market price** in Kenya, versus 13% in some Asian countries
- **Logistics remains unsolved and underfunded**, with potential **savings of US\$1.6 bn** from improved logistics efficiencies
- Challenges exist in **aggregation, storage and transport** across the value chain, but are focused in the last mile, whilst **COVID-19 has brought curfew and border closures**, with high transmission risks largely at main highway points

Approach

- Company drivers for logistics decision making include **cost, quality of service, tracking ability and flexibility**
- Companies make different strategic choices when distributing to smallholder farmers. This array of options gives rise to **five 'typologies' of companies** involved in agriculture logistics: In-House, Hybrid, Outsourcer, Rental Provider and Gig Matcher

Executive Summary

Key Findings

- **Emerging trends** in company decision making include:
 - **Managing transport through digital platforms** whilst outsourcing vehicle assets via Gig Matchers
 - **Outsourcing inputs distribution to partners** across the value chain in Distant Outsourcer models
 - **Controlling produce off-take through agent networks** at the last mile through Hybrid or In-House models
- Different typologies have varying presence across the value chain. **Off-takers are more likely to bring operations in-house** to control produce from farmers, whilst **input companies focus on core business and outsource distribution** management. Companies that bridge the last mile tend to **manage agent networks to reach farmers** in a hybrid model
- In terms of logistics companies, informal trucks are on main highways, but **those dealing in agriculture have a local presence at the last mile**, with less of a presence outside. **Digital platforms focus on the main highway**, targeting urban customers with digital skills with little presence at the last mile
- **Hybrids, Outsourcers and Gig Models lease assets**, whilst **In-House and Rental Providers maintain ownership**. In-House off-takers directly own and operate their assets downstream, whilst **Distant Outsourcers and Hybrid Connectors lease assets** including trucks and storage facilities
- **Rental Providers own their assets** across the value chain and hire drivers to operate trucks. **Gig Matchers lease their trucks and vehicles** from Rental Providers and rarely own their assets

Recommendations

- Agriculture companies should **converge to hybrid models**; logistics companies should leverage existing **digital platforms**
- Convergence to platform models involves a **shift in behaviour for each typology** but could yield savings through **reduced time and distance at the last mile**, whilst **raising vehicle utilization**
- Achieving \$1.6bn of savings requires **reducing manual transport to 24% of trips, time by 75% and cost by 53%**
- **Cost** | Working with Gig Matchers and diversifying inventory can help improve vehicle utilization and reduce costs
- **Quality Service** | Agent presence can enable non-digital interactions with farmers and recruit new customers
- **Tracking** | Digitisation enables improved traceability and tracking for both companies and logistics providers
- **Flexibility** | Localised aggregation points with regular collections will help to reduce farmer distances travelled

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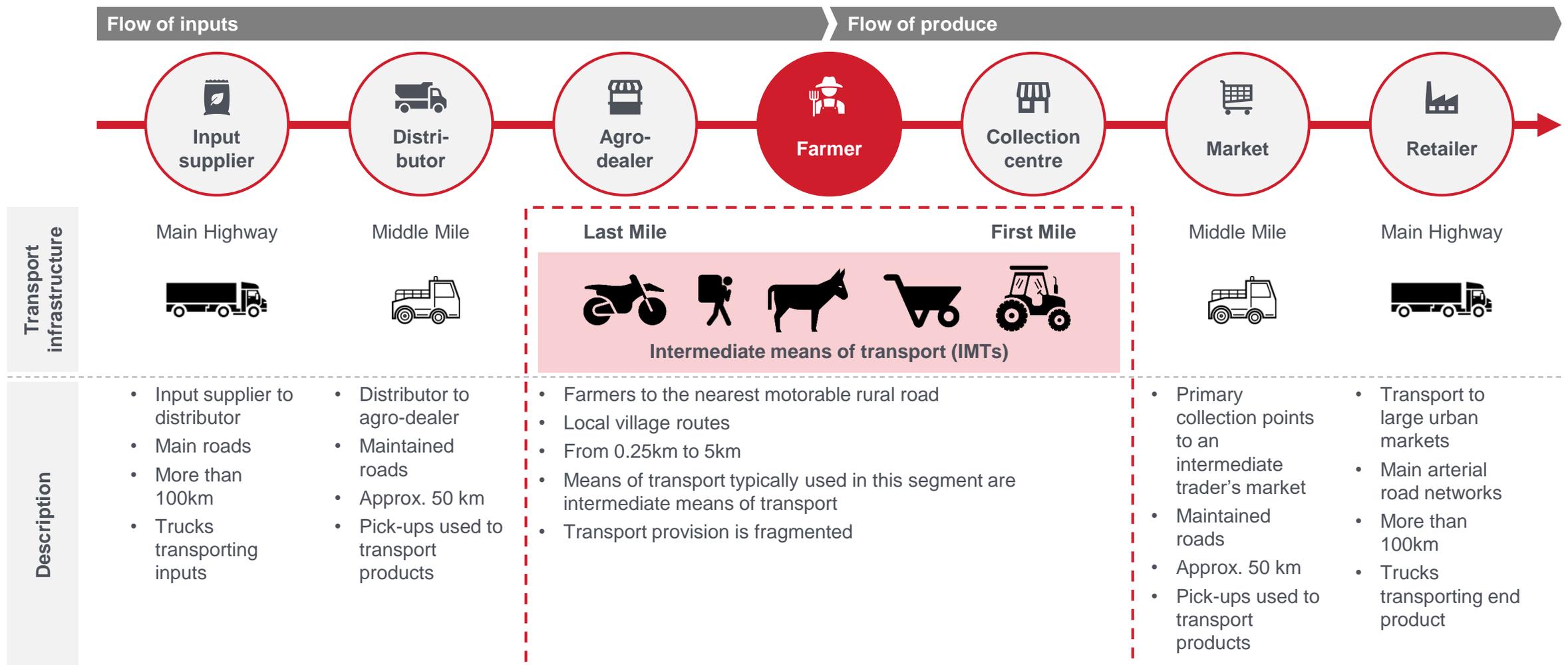
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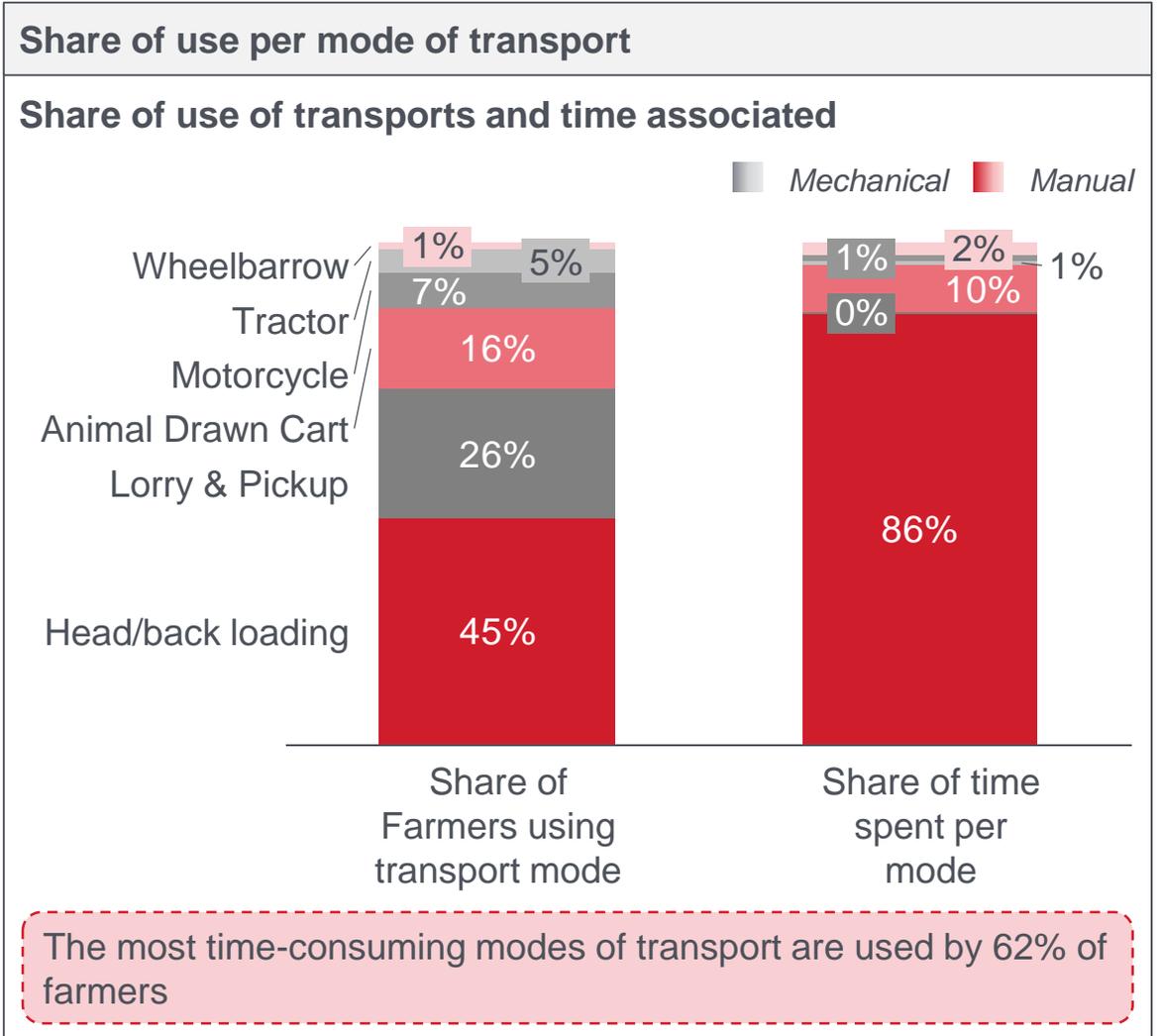
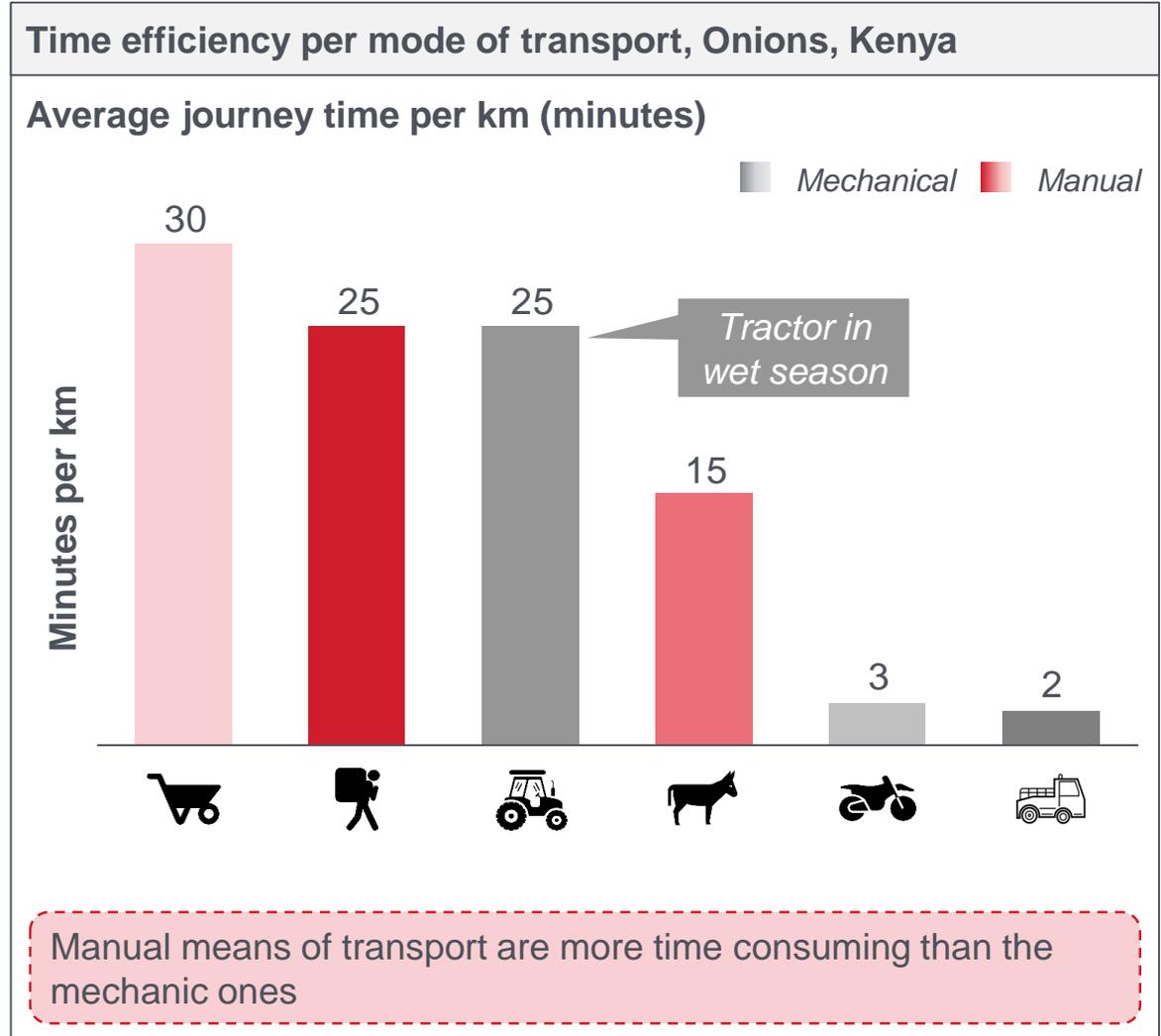
Logistics from first to last mile is core for rural supply chains and growing smallholder farmer livelihoods

Farmers need to receive inputs ...

... final consumers need to receive produce

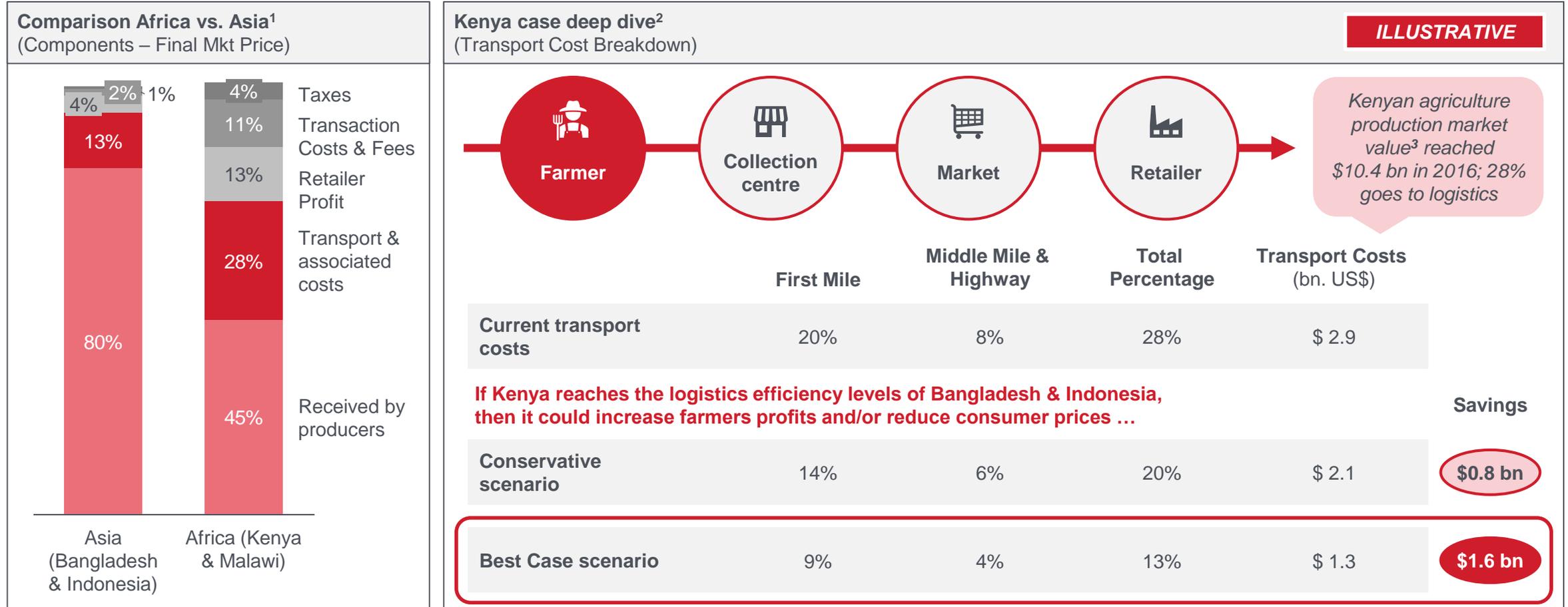


Last mile accounts for the majority of logistics costs (71% in onion VC), in part due to inefficient transport modes



The proportion of last mile costs varies across crops and may be particularly high in unstructured value chains.
 Source: AFCAP, "Pilot study on first mile transport challenges in onion small holder sector"; 2014; Dalberg analysis, 2020

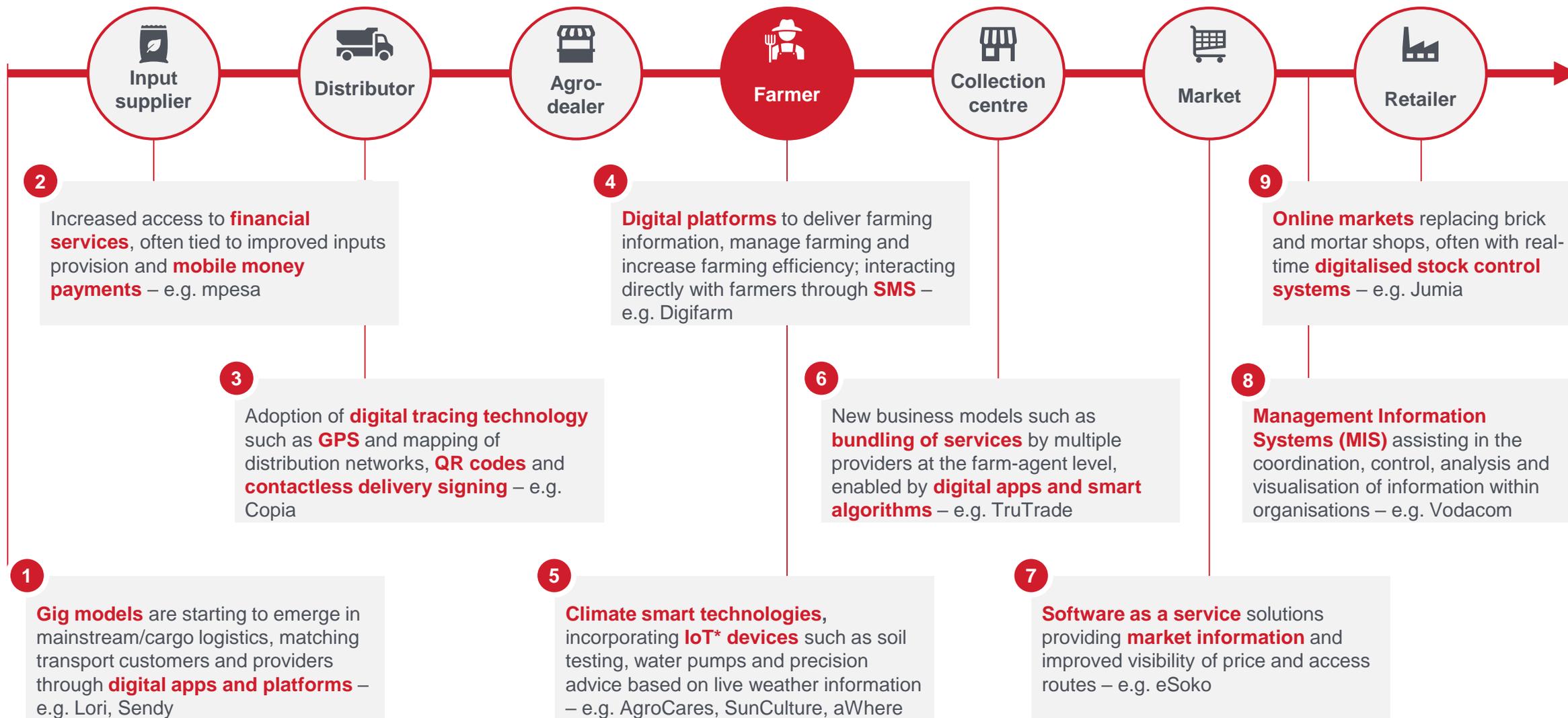
Savings of US\$1.6 bn could result from improved logistics efficiencies across the value chain



(1) Data based on maize, rice, sorghum and wheat. (2) 28% of the final market value of agriculture products (10.4 bn) is current transport costs (\$2.9 bn). In the best-case scenario, 13% of final market value (10.4bn.) is transport costs (1.3 bn). Savings are the difference between current transport costs (\$2.9 bn.) and best-case scenario transport costs (\$1.6 bn.) (3) Includes main agriculture products – Largest volumes in maize, beans, potato, banana, sweet potato, tomato, cabbage, honey, cassava and peas. Excludes main export products, meat, milk and eggs

Sources: IFRTD, [“Agricultural Logistics Management and Related Infrastructure”](#), 2015 ; AFCAP, [“Pilot study on first mile transport challenges”](#), 2014 ; ReCAP, [“Rural Transport and Agriculture Factsheet”](#), 2015; FAO, [“FAOSTAT: Value of agricultural production”](#), 2016

New innovations hold the potential to create efficiencies across the value chain; many blend digital and non-digital aspects due the physical aspects of logistics



*The IoT or Internet of Things is a network of physical objects capable of gathering and sharing electronic information

Yet challenges persist in aggregation, storage and transport, mainly in the last mile – meaning that logistics remains unsolved and underfunded



	Main Highway	Middle Mile	First & Last Mile
AGGREGATION		<ul style="list-style-type: none"> • Empty trucks due to low volumes raises unit costs • Lack of quality control in aggregated volumes 	<ul style="list-style-type: none"> • Lack of visibility/coordination between farmer and agro-dealer • Low production volumes • Long distance between farmers
STORAGE	<ul style="list-style-type: none"> • Large storage centres have high overhead costs 	<ul style="list-style-type: none"> • Poor storage infrastructure • Lack of packaging options, leading to produce loss 	<ul style="list-style-type: none"> • Lack of micro storage • Lack of packaging available to farmers • Risk of pests and crops damage or loss in storage
TRANSPORT	<ul style="list-style-type: none"> • Traffic & poor freight queuing system • Poor quality of vehicles 	<ul style="list-style-type: none"> • Limited security during transit and storage • Theft of goods • Highly fragmented market 	<ul style="list-style-type: none"> • Complicated routes in remote locations • Lack of trust & communication between farmers and transport providers • Poor road infrastructure unsuited to large vehicles • Highly fragmented with few affordable options
PRICE	<ul style="list-style-type: none"> • High prices due to lack of visibility of other options 	<ul style="list-style-type: none"> • No transparency on costs and delivery timelines 	<ul style="list-style-type: none"> • Lack of access to information • Limited digital skills and access to smart phones to obtain information

Further, Covid-19 has brought curfew and border closures, with high transmission risks largely at main highway points



	Main Highway	Middle Mile	First & Last Mile
CHALLENGES	<ul style="list-style-type: none"> Implemented curfews and social distancing rules have shifted demand to online platforms and home delivery Closed borders have reduced the ease and volume of inputs transported into Kenya Police and security prioritizing Covid-19 leads to limited available security during transit and storage Lower demand and disruption of conventional routes due to market closure Lockdowns in countries of input manufacturing has slowed input production, causing import delays for customers in Kenya Input manufacturers are prioritizing richer nations 	<ul style="list-style-type: none"> Reduced movement of people has incentivized some PSV providers to offer cargo shipments, potentially increasing transport options for farmers – But they lack visibility of these options 	<ul style="list-style-type: none"> Increased demand for locally produced products have reduced the need for storage facilities
RISKS	<ul style="list-style-type: none"> Social interaction at markets and retail outlets raises transmission risk for shoppers Transport routes especially borders lead to transmission hotspots, raising disease risk for truck drivers 	<ul style="list-style-type: none"> Handling goods at warehouses could lead to transmission between workers 	<ul style="list-style-type: none"> Handling produce at collection centres could lead to transmission between farmers

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Company drivers for logistics decision making include cost, quality of service, tracking ability and flexibility



Cost

- **Lowering the per tonne cost** is critical in rural distribution, as logistics can heavily cut into margins
- **Maximising efficiency** as a key driver of cost, through space allocation and time management
- **Achieving economies of scale** through aggregating small harvest tonnage into larger volumes, especially from smallholder farmers



Quality Service

- **Time management** in both collection of goods and delivery at the final destination
- **Proper handling of goods** to minimise damage to goods and therefore reduce wastage or loss
- **Accurate accounting** to ensure that goods on arrival equal goods at collection



Tracking

- **Price transparency** to ensure awareness of options available to the logistics customer, whether agriculture company or end-consumer
- **Tracking produce in transit** to increase the visibility of stock and vehicle locations and timelines
- **Traceability of final produce** to know the origin of goods being purchased – Increasingly a demand from consumers as well as the Kenya Revenue Authority



Flexibility

- **Ability to cope with poor infrastructure**, including poor roads and connectivity in rural areas that may change delivery timelines and plans
- **Managing the unforeseen** such as unpredictable schedule changes and variable goods loads, especially in rural areas

Companies make different strategic choices when distributing to smallholder farmers

Drivers



Cost



Quality Service



Tracking



Flexibility

Company Approach

How do I manage logistics in order to move goods to and/or from smallholder farmers?

In-house Operators

Invest in management of field force and infrastructure

Hybrid Connectors

Invest in some, but not all aspects of distribution

Distant Outsourcers

Responsibility finishes before distribution starts

Outsourcing Approach

Some In-House Operators may effectively run logistics for their partners and suppliers, who may be 'distant outsourcers'. We do not explore these partnerships in detail.

Who do I work with to manage my outsourced operations?

Gig Matchers

Connect to providers through another service or platform

Rental Providers

Work directly with asset owners

This array of options gives rise to five ‘typologies’ of companies involved in agriculture logistics

Company Typologies



In-house Operators

Typically vertically integrated **agriculture offtake companies**, who decide to **own the end-to-end process** across the value chain to retain full management and control over operations

e.g. Twiga, Kuwme



Hybrid Connectors

Typically companies who provide services to farmers, such as inputs. They often **pursue a hybrid model**, holding some distribution management in-house, but **often renting or using other providers** to supply goods and services

e.g. Copia, TruTrade, iProcure



Distant Outsourcers

Typically companies who pursue a **B2B model, supplying products and services** to farmers through other agriculture partners, with little to no interaction with their end-users

e.g. Syngenta, Futurepump

Outsourcing Typologies

Some In-House Operators may effectively run logistics for their partners and suppliers, who may be ‘distant outsourcers’. We do not explore these partnerships in detail.



Rental Providers

Logistics companies who **focus on distribution as their core business**; they mostly own and operate their vehicles and/or storage solutions

e.g. informal trucks, DHL, Wells Fargo



Gig Matchers

Logistics companies who **employ digital platforms to match and connect customers** holding agricultural inputs and produce in need of storage and transport with **available suppliers**

e.g. Amitruck, GetBoda, Kobo 360

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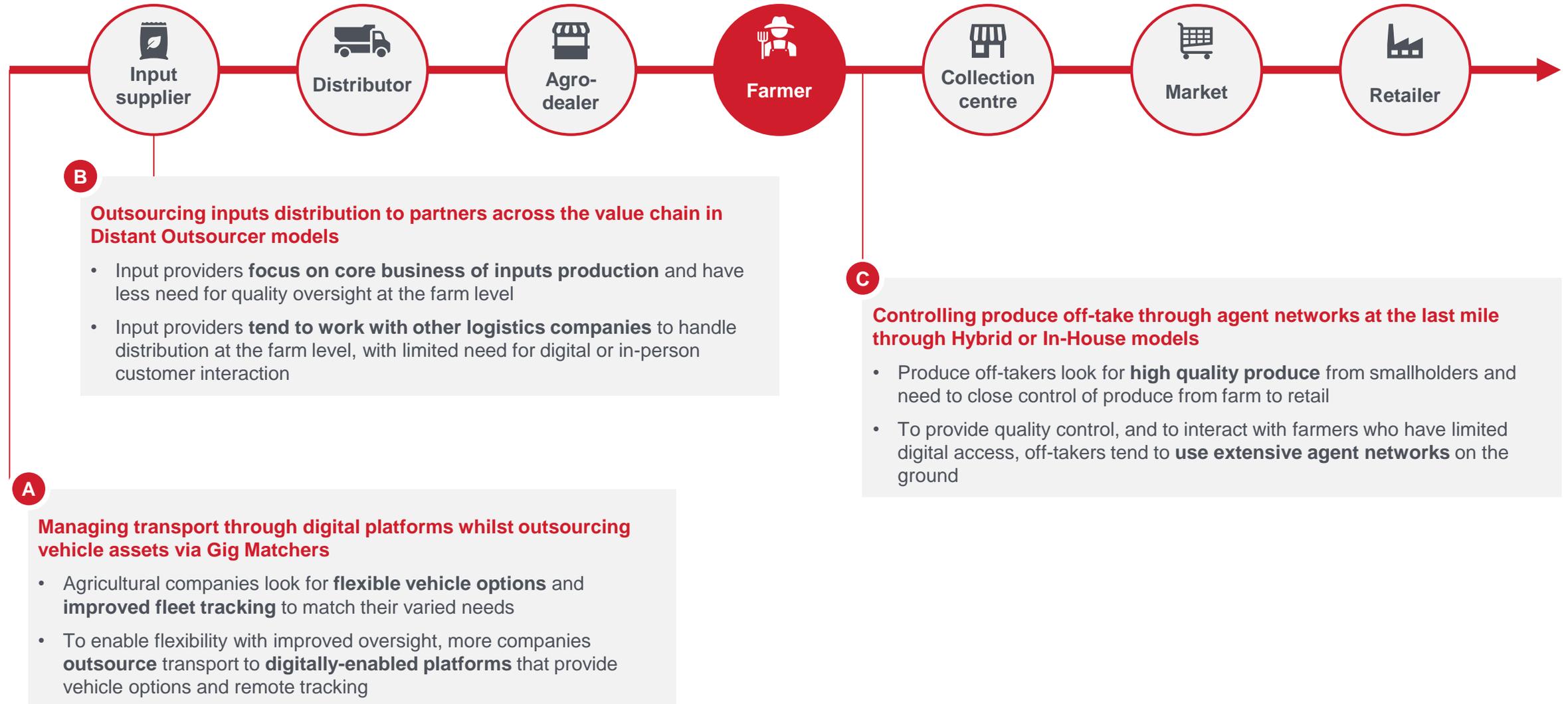
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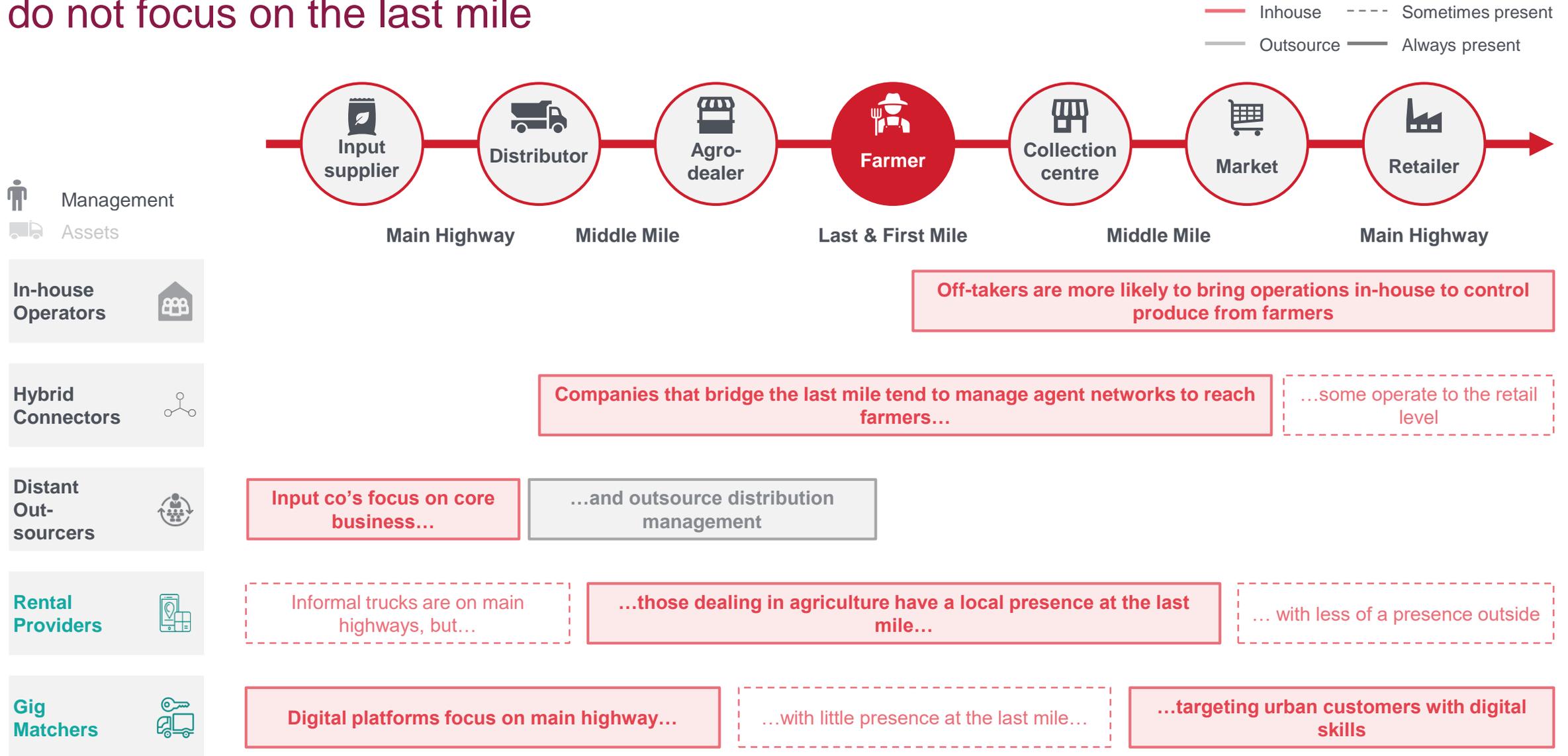
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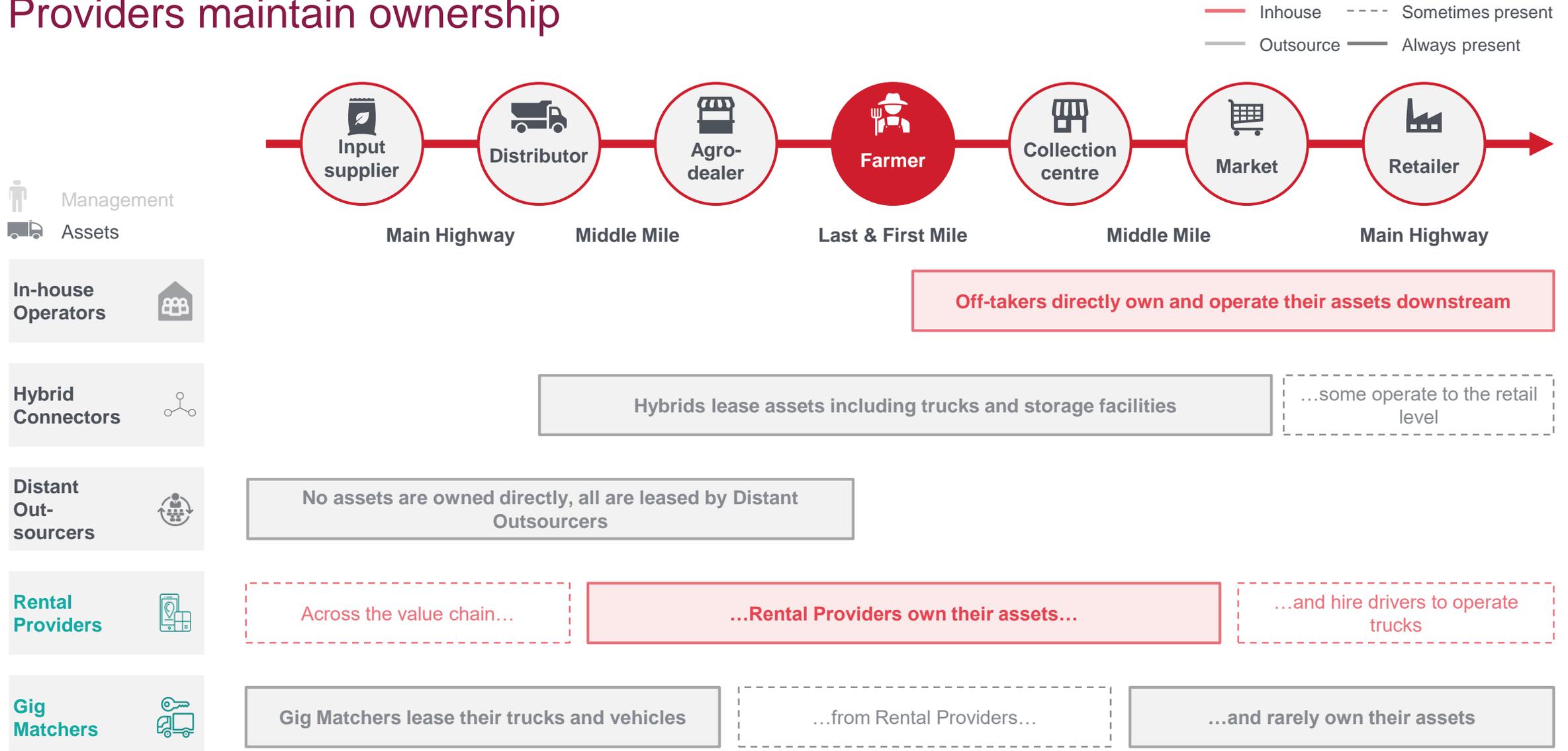
Emerging trends include transport digitisation, the use of agent networks, and outsourcing of inputs distribution



Different typologies have varying presence across the value chain; Gig Matchers do not focus on the last mile



Hybrids, Outsourcers and Gig Models lease assets, whilst In-House and Rental Providers maintain ownership



Management control can reduce waste and increase reach to women; better vehicle oversight can improve standards

Climate
Gender

Management
Assets

— Inhouse - - - Sometimes present
— Outsource — Always present



Quality control and improved handling procedures **reduces produce waste** along the value chain

Using agent networks **increases the reach to and interaction with women**, who have more limited access to digital devices compared to male counterparts

Lack of end-customer interaction **limits the iteration of products to match customer needs**, including women

Remote oversight and fleet management leads to **improved vehicle quality and higher utilization**, leading to overall reduced emissions

- In-house Operators** (Icon: House, Person, Truck)
- Hybrid Connectors** (Icon: Network, Person, Truck)
- Distant Outsourcers** (Icon: Group, Person, Truck)
- Rental Providers** (Icon: Phone, Person, Truck)
- Gig Matchers** (Icon: Key, Person, Truck)

Examples are illustrative, for more details please see typology slides below
Source: Dalberg interviews and analysis, 2020



In-house Operators need high initial capital and seek to have control of their distribution operations

Why companies take this approach

- **To retain control over logistics operations, business model and client relationships** e.g., through controlling delivery schedules and procedures
- **To increase oversight over value chain processes** and implement efficiency measures e.g., tracking trucks for visibility and route optimization
- **To reduce long term variable costs** as most costs will go into purchasing fixed assets
- **To improve quality controls and checks** at each level of the value chain in order to guarantee better handling procedures and less damage to produce. Many In-House Operators see this quality value-add as their unique company selling point

Characteristics

- **Tend to be produce off-takers** and not input providers as they need high quality controls on the supply chain to maintain good efficiency and quality produce
- **Tend to be large vertically integrated companies** that have enough initial capital to invest in storage and transportation assets – But may still rent or lease some vehicles
- **Require large on the ground teams** to build relationships with smallholder farmers in person
- **May use digital on internal operations**, but not in their relationships with the smallholder farmers as smallholder farmers have limited access to technology and digital skills

Challenges

- **High set up costs and fixed capital requirements** to purchase or set up storage and transportation assets, and to invest in internal expertise capabilities
- **Low utilization of assets** during low production seasons may increase per unit costs
- **Lack of internal logistics expertise to ensure quality of service.** This requires hiring of appropriate staff, building capabilities and providing management resources
- **Inconsistent supply arrangements.** Sparsely distributed farmers with variable harvests struggle to deliver consistently

Spotlight on Gender



- **In person relationships are more likely to enable female participation** as fewer women have access to smart devices to access services compared to their male counterparts

Spotlight on Climate



- **Reduced emissions** as vehicles are more likely to be kept at required quality standards
- **Reduced waste** due to improved quality controls through the value chain
- **Improved truck utilization reduces emissions** per tonne



Adopting robust quality checks, standard inspections and improving aggregation models increases efficiencies

Key Learnings

- **Consistent checking and quality control** is key to maintaining good handling procedures and produce quality
- **Adopting a flexible aggregation model**, e.g., combining direct and agent sourcing, helps to reach minimum volumes and ensure consistent supplies
- **Consistently inspecting vehicles** through a daily checklist helps to maintain vehicle quality, ensures road worthiness, and decreases the chance of breakdown and delays on the road
- **Increasing the number of collection centres in rural areas** helps to collect from sparsely distributed farmers

Company Examples

KUMWE SOLUTIONS

Kumwe Solutions focuses on **(i) aggregating and transporting maize** from farmers, **(ii) offering freight services** for long distance cargo, and **(ii) recycling waste from maize**.



Twiga Foods sources produce from farmers and agents in rural areas, then **sorts and re-packages produce in fulfillment centers** before delivering to vendors in urban regions.



“A big challenge that we face is the variation of the quality of produce, as some farmers are more invested (in quality) more than others”

In-House Operator

“We do all our logistics in-house to get the lowest prices possible and to run efficient value chains”

In-House Operator



Hybrid Connectors control last mile business operations while hiring assets to store or transport for other miles

Why companies take this approach

- **To retain management control** over logistics by monitoring logistics procedures and processes of leased or rented assets
- **To increase flexibility** in the choice of leased or rented vehicles and storage solutions, therefore limiting servicing costs and liabilities
- **To minimise the upfront costs** of setting up business logistics as companies have no need to invest in expensive storage and vehicle assets

Characteristics

- Tend to be a **mix of produce off-takers and input providers**, whose models engage directly with farmers
- Off-takers tend to handle and **control last mile aggregation**, including transport. They **manage in-house agent networks** as key pathways to smallholder farmers in order to directly serve farmers with limited access to digital devices and skills
- Most **outsource** transport operations and storage provision **beyond the last mile** to other logistics providers
- Often partner with other service providers to **offer bundled products** to farmers in order to achieve economies of scale
- **Mostly use digital platforms** in management oversight up to the agent or agro-dealer level, and a combination of digital and manual channels to reach farmers

Challenges

- Sparse distribution of farmers leading to **high costs of outreach and onboarding** via agent networks
- Aggregation of low volumes from farmers, **leads to high per unit storage and transportation costs**
- **Limited control over the quality of vehicles** received which may affect the overall quality of services received
- **Limited control over transporter schedules**, who can take better contracts at short notice without an agreement in place
- **Unregulated market with drivers taking bribes** from cargo owners, therefore increasing overall costs

Spotlight on Gender



- Personal relationships with agents **increases uptake of services by women**, who may not have access to digital devices

Spotlight on Climate



- With limited control over the quality of vehicles used, companies are more likely to enlist **poor-quality vehicles with poor emissions standards**
- **Improved resource utilization** and economies of scale reduces emissions per tonne



Building customer trust and adopting agent models increases customer engagement and loyalty

Key Learnings

- **Developing strong customer relations and trust** through direct client engagement strengthens branding and creates customer loyalty
- **Using agents with smart devices** enables firms to take advantage of digital solutions while also serving rural customers who have a limited digital access. Additionally, engaging more female agents increases reach to female customers
- Taking a farm-gate aggregation approach **increases sourcing interaction with female farmers, as women** are less likely to carry produce to collection centres
- **Contacting farmers via SMS** with both transactional and agronomic information increases farmer connection and trust
- **Tracking trucks and produce** ensures buyers' trust in the safe handling of produce, especially during the COVID-19 pandemic
- Covid-19 disruptions can force **improvements to warehouse handling and flexibility of processes**, improving company performance and resilience

Company Examples



iProcure provides last mile distribution services of inputs and offers inventory management and procurement services through its application to agro-dealers.



Copia provides a platform for customers to purchase goods from cities and delivers orders to rural regions of the country.



FarmCrowdy offers integrated value chain solutions to farmers including finance, credit and aggregation services by working with partner service providers.



TruTrade aggregates produce from farmers, and sells to large off takers, offering better prices to farmers by taking advantage of economies of scale.



Hello Tractor connects tractor owners and farmers, by offering a software to coordinate services, and by controlling the quality of services.



“Working in shifts during the pandemic has increased the productivity of our staff.”

Hybrid Connector

“Our farmers don’t use the platform, but agents use it to register farmers and trigger payments to them”

Hybrid Connector



Distant Outsourcers engage logistics companies or other partners to handle all logistics in new locations

Why companies take this approach

- **To specialize on key competencies and core business functions** e.g., input production, without needing to set up teams and systems to handle the logistics of outputs
- **To reduce costs of setting up in new locations** as logistics can be completely outsourced to other organizations
- **To reduce business risk and increase flexibility** in the choice of logistic options, enabling rapid entry and exit strategies in new markets

Characteristics

- **Tend to be input providers** manufacturing and importing agriculture inputs or equipment. Downstream distribution is through other agricultural companies or logistics providers who fulfill all requirements on behalf of the company
- **More likely to be a foreign company** that doesn't want to set up operations in a new location. These companies prefer to work through sales & distribution agreements
- **Usually have limited or no physical presence** in a region, working through partnerships to reach farmers
- May use digital internal systems, but have **limited digital interactions** with customers beyond the logistics provider

Challenges

- **Limited control** over processes and systems used in distribution, and a lack of oversight of quality control and efficiency measures
- **Limited interaction with end customers** therefore limiting the ability to quickly adapt models to best suit customers.

Spotlight on Gender



- **Limited understanding** of distant outsourcers' end customer base, including the **gender split**, limiting product customization to better match client needs

Spotlight on Climate



- Outsourcing distribution may lead to companies **overlooking at their logistics emissions** in carbon accounting



A lack of connection with customers can lead to a disconnect; long-term planning improves resilience

Key Learnings

- **A lack of visibility and interaction** with end consumers, in part due to the outsourced approach to distribution, can lead to a **disconnect between companies and customers**
- **Long-term planning of supply chains**, especially when relying on imports, shoulders firms from shocks such as border closures during the COVID-19 pandemic

Company Examples



Futurepump designs and builds **solar irrigation pumps** for smallholder farmers. They have a **B2B model**, operating through distributors to reach the end customer and pump user



Syngenta is an **inputs manufacturer**. They use an **integrated service delivery model** to enable smallholder farmers to access all agricultural inputs, including fertilizers and seeds.



“At the moment we have no interaction with our end customer”

Distant Outsourcer

“We wanted to be efficient in what our main business was, so we outsourced all our distribution to another vendor”

Distant Outsourcer



Rental Providers dominate the logistics industry; they are unregulated with limited technology adoption

Why companies work with Rental Providers

- **To reach the last mile using local vehicles** for poor and all-weather roads whilst minimizing upfront capital expenditure
- **To increase the flexibility of options** available for transport as stakeholders can choose vehicles per needs
- **To preserve existing relationships** and terms of work with specific transport providers

Why Rental Providers take this approach

- **To retain business control** of schedules and jobs in order to maximize profits and not share revenue with matching services
- To take advantage of **existing relationships** and any side-cuts of deals with customers

Challenges

- **Limited visibility of customers** needing transport and **limited use of digital tools**, meaning Rental Providers rely on existing relationships and 'fixers' to find clients
- **Poorly maintained vehicles** increases chances of breakdown interruptions during transit
- **Highly corrupt markets** reduces the chances of acquiring clients without giving bribes, thus increasing business costs
- **Heavily fragmented markets and limited planning** during aggregation leads to insufficiently filled trucks
- **Limited business skills and** knowledge about formalization

Characteristics

- **Forms the majority of existing transport networks**, which are made up of one-man (rarely women) businesses owning one or a few vehicles, working with **both inputs and off-takers**
- **Mostly informal businesses** that acquire customers through word of mouth and pre-existing relationships
- Often **work through informal 'fixers'** or middle-men who source customers and act as linking agents
- **Limited use of digital** with either customers or in internal driver management; formal companies may digitize some internal systems

Spotlight on Gender



- **Vehicle drivers are predominantly men¹**, but female truck ownership is growing

Spotlight on Climate



- **High carbon emissions** as vehicles are poorly maintained and get through standard regulatory checks by paying bribes



Rental Providers tend to avoid legislation and established customers – But some are signing up to Gig Matchers

Key Learnings

- Companies regularly **avoid legislation, routine inspections and standard checks** to reduce upfront maintenance payments – But leads to poor vehicle quality and high risk of breakdowns
- Smaller Rental Providers tend to **stick to familiar and established customers in local areas**, with employees often taking a cut of distribution agreements
- **Many Rental Providers are signing up to Gig Matcher platforms** to increase access to client pools, especially in urban areas
- Agriculture logistics makes up a **small proportion of business for large, formal Rental Providers**, but a **large proportion of business for the small and informal Rental Providers**
- Informal Rental Providers in the form of small-scale truck owners **continue to dominate the agriculture logistics market**

Company Examples



Accepts ad-hoc requests to transport different cargo, and mostly operate in rural areas through pre-existing connections.



Offers **freight, parcel and e-commerce transport** services and supply chain solutions to customers; Focuses in **urban areas**.



Integrated security company specializing in the **delivery of security solutions** and **courier services** but less prevalently used in agriculture.



Provides **end to end security, storage warehouses** and **distribution through facilities and networks** across Kenya, through an online digital solution



“Informal brokers still command 90% of the market...despite all the technology and players in the field”

Gig Matcher on small-scale providers

“Our logistics are handled by a vendor who then outsources transport from logistics companies like G4S”

Distant Outsourcer



Gig Matchers connect tech-savvy cargo owners and transporters using robust platforms

Why companies work with Gig Matchers

- **To lower costs** in supply chain through the increased flexibility and improved efficiency offered by gig matchers
- **To increase tracking** of goods for better visibility on logistics and traceability of produce
- **To improve quality of service**, reducing risk of theft, side cuts, and better quality of vehicles through more formal agreements

Why Gig Matchers take this approach

- **To take advantage of emerging innovations** such as digital tools and models to rollout electric vehicles
- **To improve efficiency and disrupt the market**, aiming to help address challenges and earn a share of the market opportunity

Challenges

- **Limited finance** on two fronts to:
 - **Invest in innovation** – GPS tracking and electric mobility
 - Cover the **misaligned cashflow** between upfront payment to drivers and customer post-payment to the company
- **Difficulty reaching rural markets** e.g., farmers due to:
 - **Limited digital access and skills** mean potential customers cannot access the app to make orders
 - Customer **hesitance to place orders remotely**
 - **Low aggregation volumes** makes rural pickups unprofitable
- Difficulties in new customer recruitment due to **bribery**

Characteristics

- **Targets tech-savvy consumers and transporters** who are mostly urban, educated and receptive of new technology
- More likely to work with **input providers** who have stronger links to market and **digital skills**, than directly with farmers
- Mostly relatively **new start-ups** who are experimenting with new models, but are increasingly **gaining traction and users**
- Tend to **work on main highways and transport corridors** with large cargo owners; any delivery to the last mile tends to be towards rather than from farmers
- **Digital systems are key** to matching transporters with cargo owners, using online platforms and innovative pricing models
- Increasingly **recruit Rental Providers** to operate through their platforms

Spotlight on Gender



- Using digital platforms with **improved transparency enables women to disrupt market norms** and relationships that were historically held by men
- However, in rural areas, **lower female smart phone ownership** may reduce take-up by women

Spotlight on Climate



- Holding truck owners to legal minimum vehicle standards **improves compliance to regulations**
- Improved utilisation and use of appropriate vehicles **increases fuel efficiency**



Gig Matchers include many new market entrants, using disruptive technology and the ‘uberization’ of logistics...

Key Learnings (1/2)

- **Training farmers on digital skills** through agents or independently can enable farmers to order vehicles directly in future seasons
 - **Offering incentives to vehicle owners** e.g., fitting trackers to trucks, can increase sign up of transporters
 - **Creating efficient aggregation solutions** are essential for digital platform solutions to work effectively in rural areas
 - **Changing vehicles during delivery** accommodates road infrastructural differences e.g., by using trucks/vans for highway transport then switching to motorbikes for the last mile
 - **Conducting strict quality checks** before onboarding transporters ensures a high quality of vehicles on the road
- ❄️ **Disruptions to schedules due to COVID-19 were short-lived** as companies received exemptions to operate and many border controls have since been lifted

Company Examples



Amitruck connects cargo owners to a network of vehicles for transport.



Kobo360 offers aggregation of end-to-end haulage operations for transporters and cargo owners.



Lori connects transporters and cargo owners to increase the efficiency of truck transport.



MyCargo connects transporters to cargo owners through its web and application-based platforms.



“Customer trust was generally low, we couldn’t just use an option of paying in advance, so we introduced post service payments”

Gig Matcher

“The marketing element has not been done in rural areas; most of our orders are from major transport corridors”

Gig Matcher



... to improve efficiencies and provide traceability in logistics – Largely on main highway and urban routes

Key Learnings (2/2)

- **Replicating informal markets** in a digital setting can increase competition through price auctions and therefore lower prices for customers
- **Increasing vehicle options for clients increases sources of revenue.** For example, motorbikes, vans, pick-ups and trucks gives customers a greater variety of choices for their required volume of produce
- **Relying on external asset providers** reduces price control and can increase costs to consumers
- Using digital platforms **with improved transparency enables women to disrupt market norms** and relationships that have historically been held by men
- **Empowering agents with smart devices** can help to reach last mile farmers who do not have digital skills to use technology. Additionally, digital platforms **can improve urban to rural logistics** when urban customers are digitally connected

Company Examples



Virtual City delivers mobile solutions across the supply value chain. Provides digital tools for supply chain stakeholders.



Sendy is a platform that connects **e-commerce clients, enterprises, and clients needing freight services** to transporters registered on its platform.



GetBoda partners with experienced and reliable motorbike couriers to **offer e-commerce, food delivery and courier services to clients** across the country



“The truck driver got to collection center, but the store was locked, so he had to pick produce from 5 farmers who couldn’t deliver to the collection center”

Gig Matcher

“A lot of our transport is on the main road, with a few tricky roads”

Gig Matcher

Agenda



I. Background

II. Context

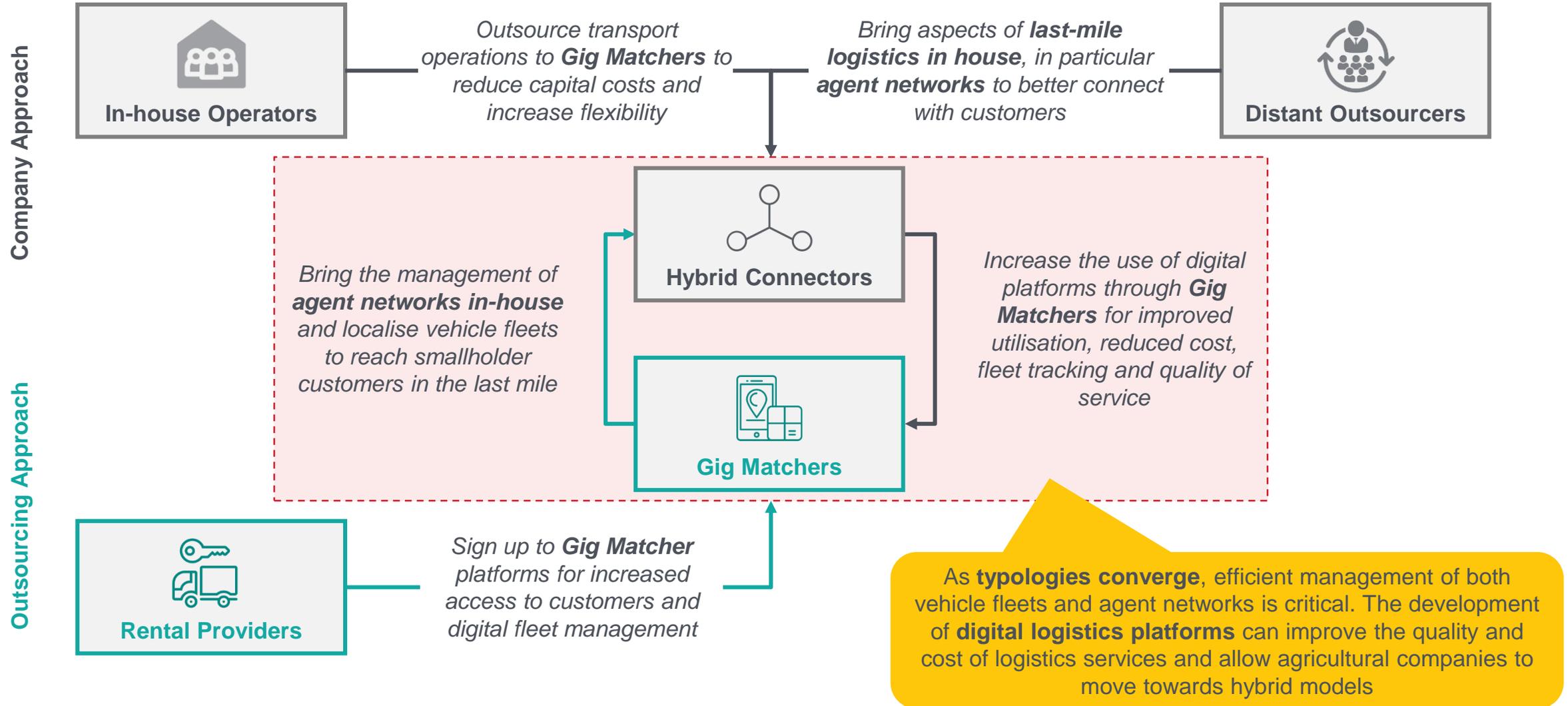
III. Approach

IV. Key Findings

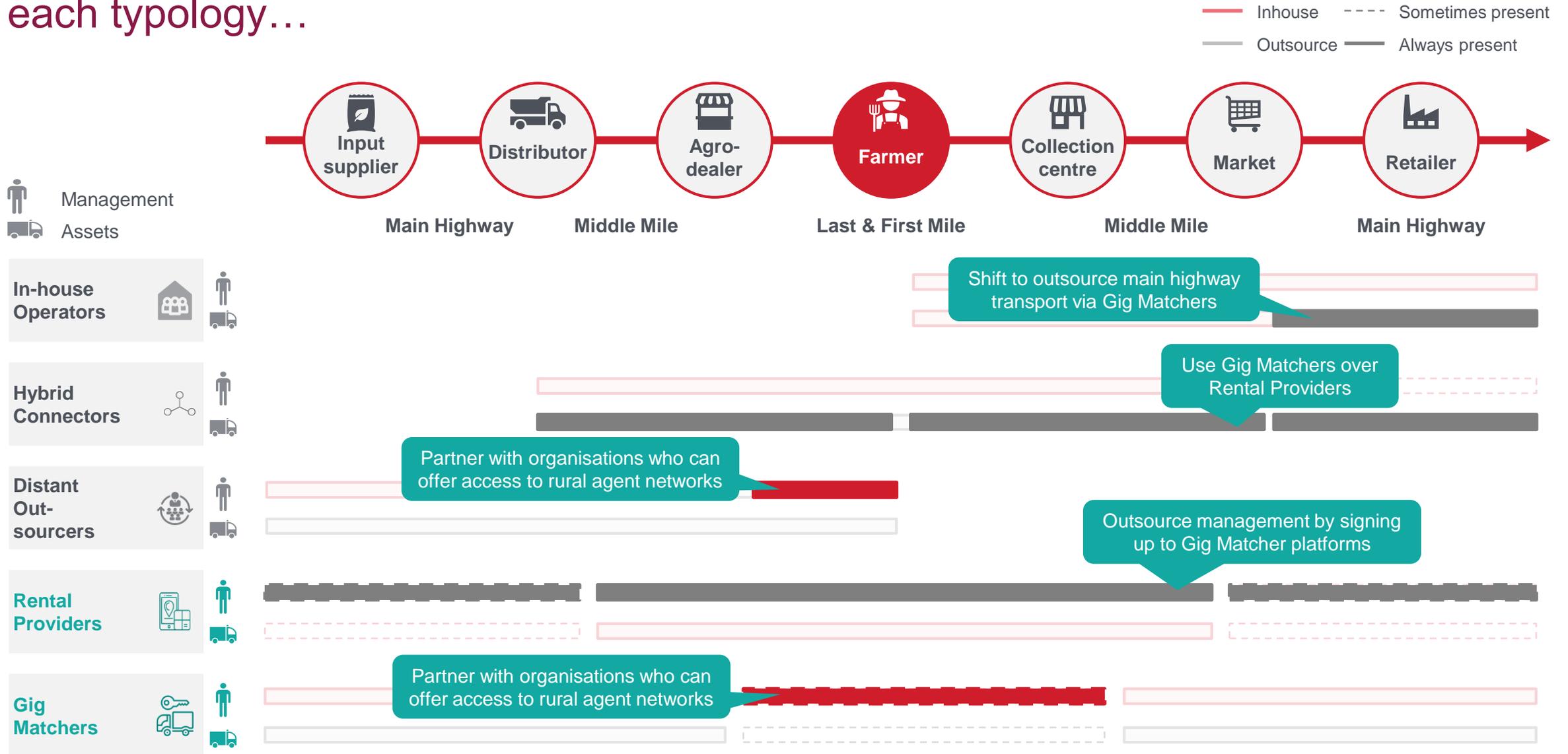
V. Recommendations

V. Conclusion

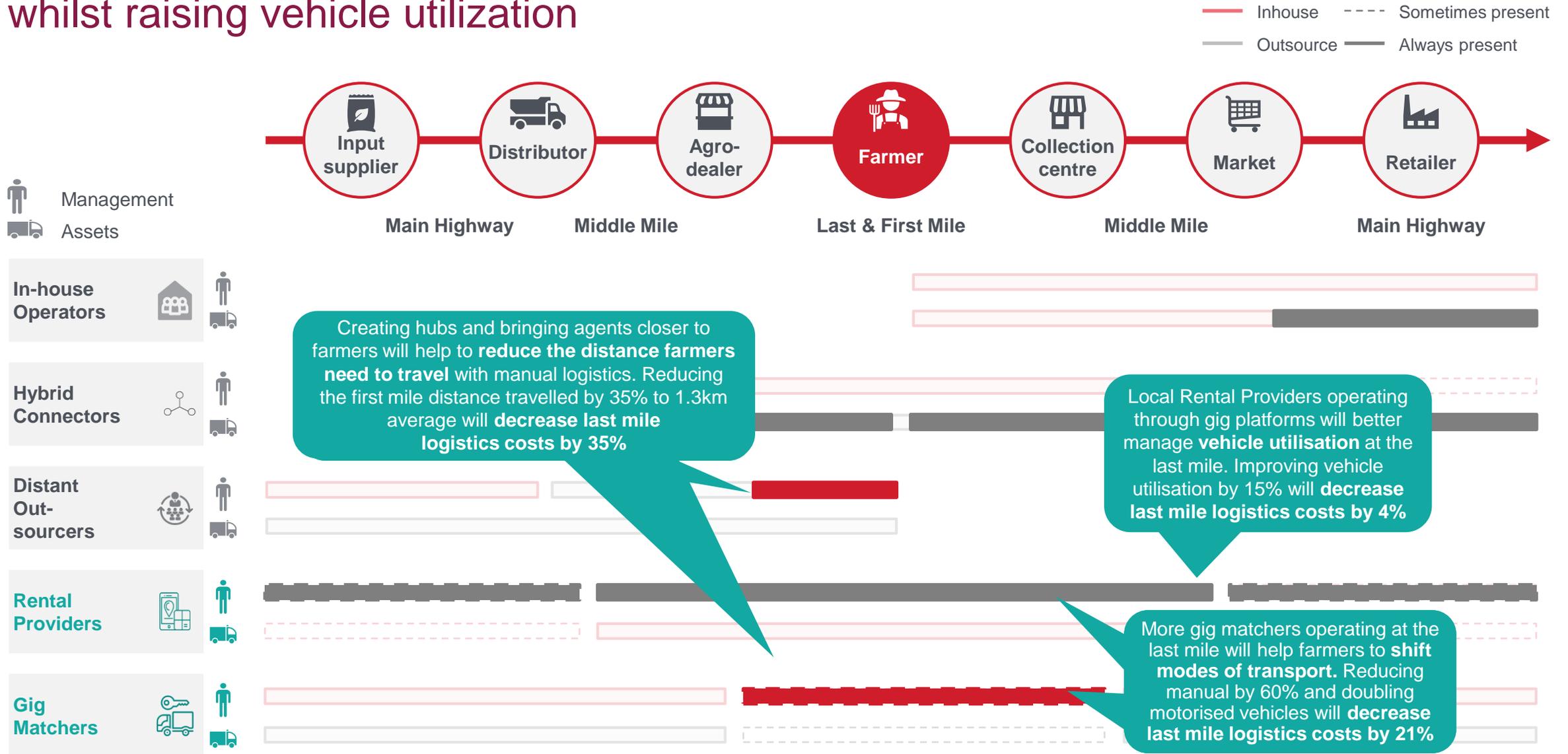
Ag companies should converge to hybrid models; logistics companies should leverage existing digital platforms



Convergence to platform models involves a shift in behaviour for each typology...



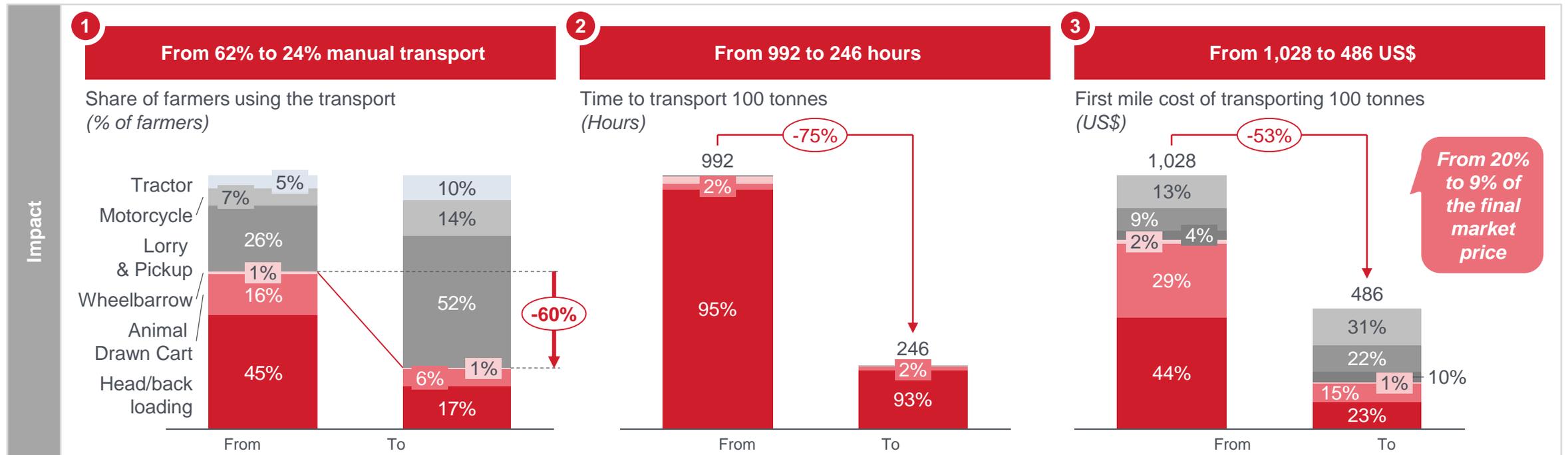
... but could yield savings through reduced time and distance at the last mile, whilst raising vehicle utilization



Achieving \$1.6bn of savings requires reducing manual transport to 24% of trips, time by 75% and cost by 53%

To achieve the 'best case' scenario of \$1.6 bn in savings outlined in the logistics opportunity, first/last mile costs need to reduce from 20% to 9% of the final market price.

Drivers	Time	The use of manual means of transport (e.g. head loading) needs to be reduced by 60% and the use motorized means of transport (e.g. lorry) needs to double
	Distance	The distance of the first/last mile needs to decrease by 35% to 1.3 km on average (instead of 2 km)
	Utilization	The utilization of vehicles needs to increase by 15% (e.g. if capacity was 76%, it must rise to 87%)





Cost | Working with Gig Matchers and diversifying inventory can help improve vehicle utilization and reduce costs



Quick wins

- Pilot working with different **Gig Matchers** to trial effectiveness of **outsourcing transport logistics**
- Use Gig Matcher services to **supplement internal transport provision** during peak seasons to reduce capital asset requirements
- In-House Operators can **lease unused vehicles** to Gig Matchers during periods of low utilization to cover short-term costs
- Distant Operators could consider **reviewing lease agreements** with logistics providers to ensure rates are competitive



Long term initiatives

- Work with Gig Matchers to **diversify vehicle options** to better service rural areas and encourage farmers to **switch modes of transport** best suited for local areas
- **Diversify inventory** to products that have smaller seasonal fluctuations in demand to **maintain utilization and efficiency** during agricultural low seasons
- Partner with rural retailers selling digital devices, home and personal products downstream to farmers to increase **two-way utilization of vehicles**

Company typologies

Outsourcing typologies

Climate benefits
Gender benefits

- Rental Providers can consider **signing up to Gig Matching Platforms** to increase revenue opportunities and **vehicle utilization**
- Gig Matchers can consider recruiting more providers in rural areas to **localise transport provision in hard-to-reach areas**, thereby driving down costs to customers
- Gig Matchers can offer a **bidding model for jobs** to drive down consumer prices

- Rental Providers can **formalise their businesses** to improve business practices and oversight, increasing efficiency and disincentivise drivers from taking side-deals
- Gig Matchers can offer **greater vehicle variety** to ensure efficient allocation according to the volume loads of customers
- Gig Matchers can **recruit local vehicle operators** to reduce costs of serving remote areas
- Gig Matchers can consider **investing in their own fleets** to exert more control over set prices



Quality Service | Agent presence can enable non-digital interactions with farmers and recruit new customers



Quick wins



Long term initiatives

Company typologies

- Send **SMS** to farmers to increase end-user interaction and to increase visibility of logistics operations
- **Provide agents with smart devices** to increase digital tracking down the value chain
- Create **checklists** and **regular checkpoints** for a) **quality produce** and b) **minimum vehicle standards**
- In-House Operators could use Gig Matcher services to supplement internal transport provision when building or growing in-house capabilities to **enable internal upskilling**
- Hybrid Connectors could shift to Gig Matchers to **improve vehicle checks** and quality of service
- Distant Outsourcers could **conduct surveys** to engage with end-customer needs

- Create and/or partner with **agent networks** to improve **on the ground presence** and **face to face interactions** with farmers, which particularly helps to **increase engagement with women**
- Develop partnerships that increase capacity on the ground to deliver quality to end users – Particularly with **organizations that have a rural agent network presence**
- Use **agents and their smart devices to act as trainers**, engaging farmers in the digital process to build digital skills and **improve digital engagement at the last mile**
- Offer **online and offline options** to streamline processes whilst still engaging the last mile

Outsourcing typologies

- **Send SMS** to customers to improve engagement with rural communities
- Rental Providers can **sign up to Gig Matchers**, who offer greater oversight of drivers, reducing the risk of side-deals or theft of produce

- Consider **partnering with rural agent networks** to increase non-digital customer recruitment and uptake in rural areas
- Gig matchers can **standardise and raise minimum vehicle quality checks** in order to minimise breakdown risk, thereby improving the quality of service and **reducing the time to market**

Climate benefits
Gender benefits

Tracking | Digitisation enables improved traceability and tracking for both companies and logistics providers

Company typologies

Outsourcing typologies

Climate benefits
Gender benefits


Quick wins

- Adopt **basic record keeping** using digital databases to track suppliers and customers
- Use simple **GPS tracking** on mobile phones to track driver movement and routes
-  **Transact using digital payments** via bank transfer and/or Mpesa instead of cash – A trend accelerated by contactless safety measure from Covid-19
- Offer simple **SMS receipts** to for both collections/purchases and sales/drop-offs to better track transactions

- Use simple **GPS tracking** on mobile phones to track driver movement and routes
- Rental Providers can **sign up to Gig Matchers**, many of whom offer GPS tracking and digital solutions as standard


Long term initiatives

- Shift to use Gig Matchers who can provide **live tracking information** on vehicles and produce
- Provide customers with digital **proof of produce origin and tracking** of vehicles
- In-House Operators can consider **adopting technology developed by Gig Matchers** to run in-house logistics, or alternatively, **develop internal digital platforms** to enable dynamic tracking of vehicle fleets

- Gig Matchers can **sell their digital platform solutions** to In-House Operators needing to optimize tracking
-  Gig Matchers can create **bar-code or unique references at collection and drop-off** to improve security and tracking of produce. Such innovations point towards **'contactless' delivery** – A trend accelerated by Covid-19
- Gig Matchers can **target female customers**, who are more likely to benefit from the improved transparency from digital platforms to **disrupt market relationships previously held by men**



Flexibility | Localised aggregation points with regular collections will help to reduce farmer distances travelled



Quick wins

- Use **existing infrastructure** such as shops and SACCO centres to **increase number of aggregation collection points** with farmers
- Commission services **directly with Gig Matchers on behalf of farmers** who may not have direct access to platforms
- In-House Operators can **use Gig Matcher services during peak seasons** to increase collection options



Long term initiatives

- Build and/or partner with organisations to **develop rural hubs and collection centres** in multiple rural locations to improve access and **reduce the distance farmers need to travel** to aggregate
 - Use **digital platforms** to remotely aggregate produce and demand for transport services using digital fulfilment algorithms
 - Adopt a **flexible aggregation model**, combining direct sourcing from smallholders with direct aggregation, to keep a flexible and regular supply chain
-
- Offer **'milk round' regular routes** of collection and drop-off to increase the regularity and reliability of services to farmers, so they can plan aggregation schedules
 - Gig Matchers can adopt **dynamic routing models** to **optimize truck allocation** per available volumes, through digitized fulfillment
 - Gig Matchers can **recruit local vehicle operators** to better serve rural areas with timely options

Company typologies

Outsourcing typologies

Climate benefits
Gender benefits

Agenda



- I. Background
- II. Context
- III. Approach
- IV. Key Findings
- V. Recommendations

V. Conclusion

Recommendations point to a shift in behaviour for each typology and convergence to platform models

Targeting recommendations across the **four drivers of agriculture logistics** points to a **shift in behaviour** for each typology and **convergence to platform models** (Hybrid Connectors and Gig Matchers)

- **Cost:** Working with Gig Matchers and diversifying inventory can help improve vehicle utilization and reduce costs
- **Quality Service:** Agent presence can enable non-digital interactions with farmers and recruit new customers
- **Tracking:** Digitisation enables improved traceability and tracking for both companies and logistics providers
- **Flexibility:** Localised aggregation points with regular collections will help to reduce farmer distances travelled

- **In-House Operators** shift to outsource main highway transport via Gig Matchers
- **Hybrid Connectors** use Gig Matchers over Rental Providers
- **Distant Outsourcers** partner with organisations who can offer access to rural agent networks
- **Rental Providers** outsource management by signing up to Gig Matcher platforms
- **Gig Matchers** partner with organisations who can offer access to rural agent networks

As **typologies converge**, efficient management of both vehicle fleets and agent networks is critical. The development of **digital logistics platforms** can improve the quality and cost of logistics services and allow agricultural companies to move towards hybrid models

The 'best case' scenario to reduce last-mile logistics means **reducing the proportion of manual transport, reducing transport time and the overall cost of transport**

- Creating hubs and bringing agents closer to farmers will help to **reduce the distance farmers travel** with manual logistics
 - Reducing the first mile distance travelled by 35% to 1.3km average will **decrease last mile logistics costs by 35%**
- Local Rental Providers operating through gig platforms will **better manage vehicle utilisation** at the last mile.
 - Improving vehicle utilisation by 50% will **decrease last mile logistics costs by 4%**
- More gig matchers operating at the last mile will help farmers to **shift modes of transport**.
 - Reducing manual by 60% and doubling motorised vehicles will **decrease last mile logistics costs by 21%**



Thank You!



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