

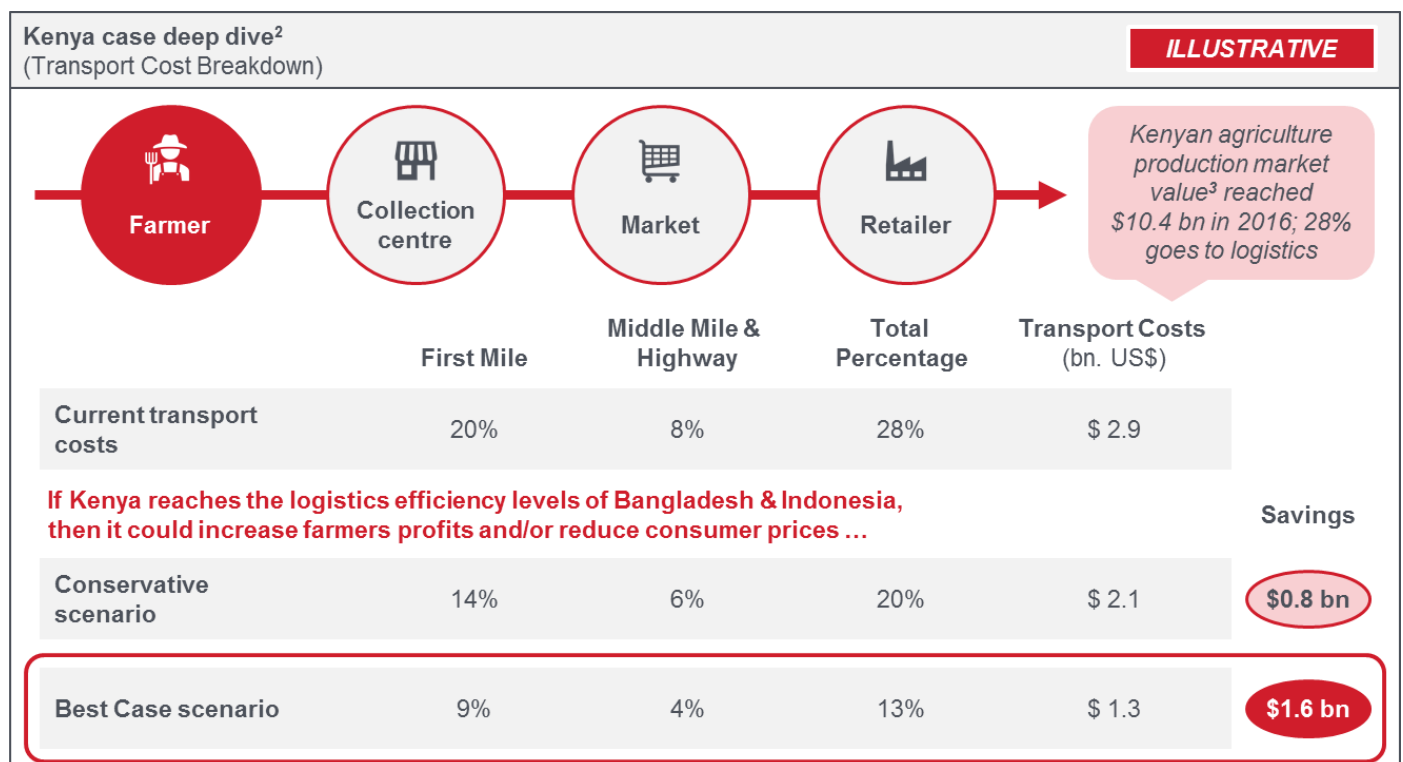
# AGRICULTURE LOGISTICS IN KENYA

## LANDSCAPE AND SOLUTIONS CASE STUDY

AUGUST 2020

This short report was created by Dalberg in partnership with MercyCorps AgriFin and in consultation with FTMA. We spoke to companies across the industry to understand challenges and solutions, aiming to support agriculture companies with best practice recommendations in agriculture logistics. This study synthesizes findings from key stakeholder interviews and desk research to offer potential solutions.

## WHY AGRICULTURE LOGISTICS?



**First and last mile logistics are core for rural supply chains and vital for growing smallholder farmer livelihoods, yet they remain expensive and inefficient.** An estimated 62% of farmers use manual over mechanical modes of transport<sup>1</sup>, that are more time-consuming. Additionally, 71% of logistics costs are in the first/last mile<sup>2</sup>.

**Improved logistics efficiency could save up to US\$1.6 billion, increasing farmers' profits and/or reducing consumer prices.** In Kenya, transportation costs currently make up 28% of final market prices<sup>3</sup>. Reducing this to 13%,<sup>4</sup> as in some Asian countries, would lead to significant savings across the value chain. However, whilst innovations such as FinTech and digital learning tools have disrupted some aspects of smallholder agriculture, logistics remains underfunded and unsolved.

**Logistics challenges across aggregation, storage, transport and pricing exist right across the value chain but remain especially prevalent for the last mile.** Low aggregation volumes, sparse distribution of farmers, poor infrastructure, poor-quality vehicles, traffic and poor storage options raises per unit costs at every stage of the value chain. Further, the **Covid-19 pandemic has interrupted logistics, reduced demand and increased transmission risks for actors.** Restrictions including curfews and closed county and international borders have prevented passing cargo without exemption permits, thus reducing volumes. Virus transmission risks are high at key interaction points for workers and truck drivers.

<sup>1</sup> AFCAP, "Pilot study on first mile transport challenges in onion small holder sector", 2014; Dalberg Analysis, 2020

<sup>2</sup> AFCAP, "Pilot study on first mile transport challenges in onion small holder sector", 2014

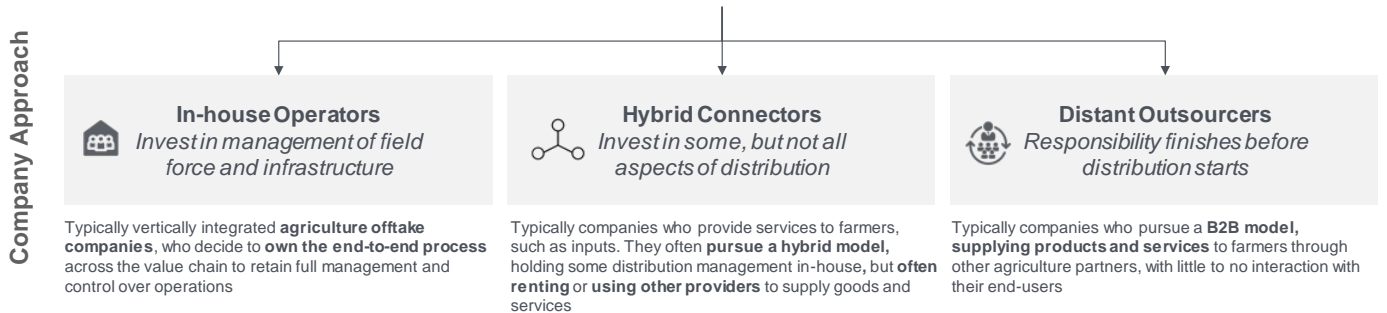
<sup>3</sup> ReCAP, Rural Transport and Agriculture Fact Sheet, 2015

<sup>4</sup> ReCAP, Rural Transport and Agriculture Fact Sheet, 2015

# WHAT APPROACHES EXIST?

Drivers for logistics decision making include cost, quality of service, tracking ability and flexibility. Companies take different strategic logistics choices according to this decision path, giving rise to five 'typologies' of companies involved in agriculture logistics.

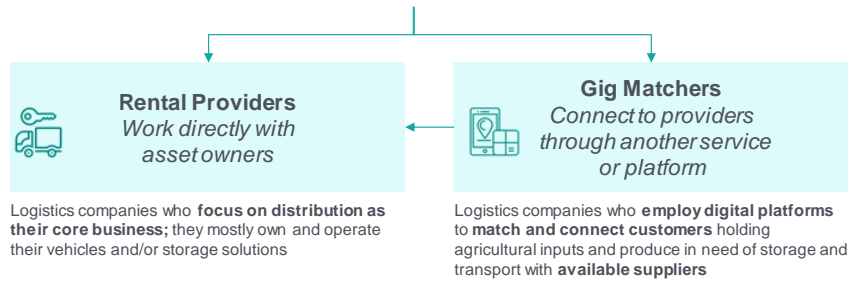
## How do I manage logistics in order to move goods to and/or from smallholder farmers?



**Outsourcing Approach**

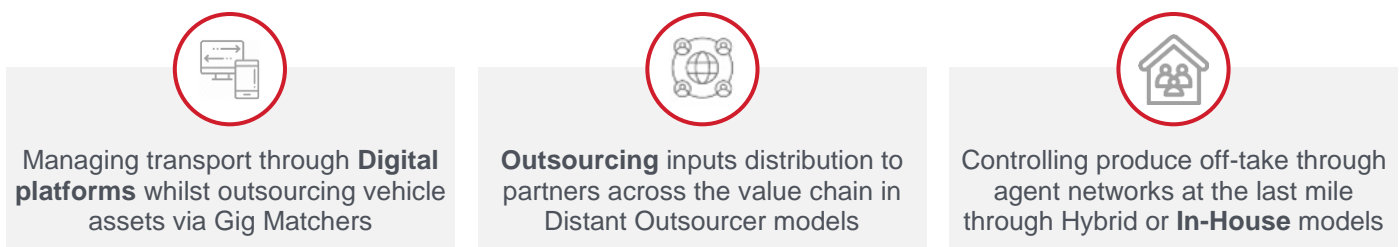
*Some In-House Operators may effectively run logistics for their partners and suppliers, who may be 'distant outsourcers'. We do not explore these partnerships in detail.*

## Who do I work with to manage my outsourced operations?



# WHAT ARE THE KEY FINDINGS?

Emerging trends include transport digitisation, the use of agent networks, and outsourcing of inputs distribution in company decision making



**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.

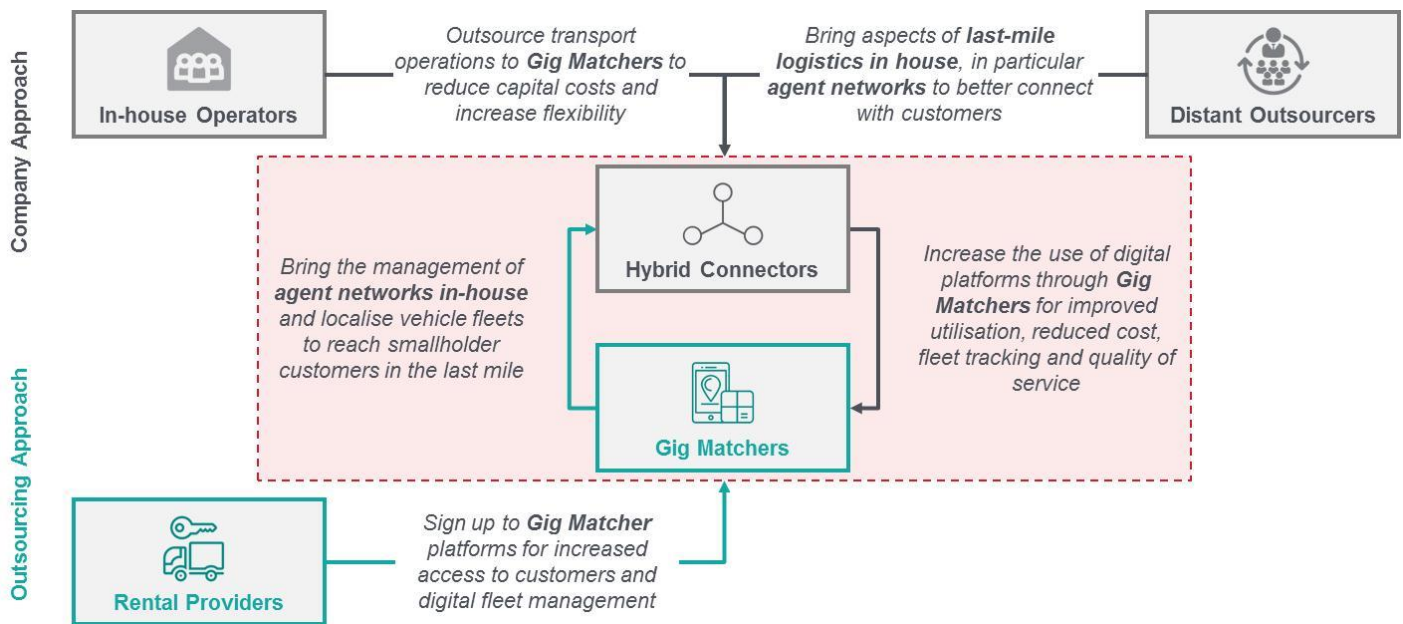
**Gender inclusive approaches to logistics include** (i) using digital transactions to enable women to disrupt businesses that have traditionally been controlled by men, (ii) using agent networks to improve customer interaction and to reach to a better understanding of customer bases, including women.



**Increased logistics oversight can reduce negative effects on the environment** by (i) improved vehicle quality and reduced emissions, (ii) better vehicle utilization and reduced number of trips, and (iii) quality control that reduces produce loss and waste.



## WHAT RECOMMENDATIONS CAN BE ADOPTED?



**Agriculture companies should look to converge to hybrid models; logistics companies should leverage existing digital platforms.** 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.

**Convergence to platform models involves a shift in behaviour for each typology.** In-House Operators shift to outsource main highway transport via Gig Matchers, whilst Hybrid Connectors use Gig Matchers over Rental Providers. Distant Outsourcers can partner with organisations who offer access to rural agent networks. For logistics companies, Rental Providers can outsource management by signing up to Gig Matcher platforms and Gig Matchers can partner with organisations who offer access to rural agent networks.

**Recommendations could yield savings through reduced time and distance at the last mile, whilst raising vehicle utilization.** Creating hubs and bringing agents closer to farmers will help to reduce the distance farmers need to 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 15% 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%.

Taken together, these interventions at the last mile could reduce the average time taken to transport 100 tonnes from 992 to 246 hours, and reduce the cost from US\$1,028 to US\$486. Such improvements at an industry level would reduce last mile costs from 20% to 9% of the final market price. When accompanied with efficiency gains at the middle and main highway level, could help to reach the estimated US\$1.6 bn savings opportunity in agriculture logistics.