

# Digitization of Agribusiness Payments in Africa

Building a Ramp for Farmers' Financial Inclusion  
and Participation in a Digital Economy

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1818 H Street NW  
Washington DC 20433  
Telephone: 202-473-1000  
Internet: [www.worldbank.org](http://www.worldbank.org)

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## ABBREVIATIONS AND ACRONYMS

AAPS	Africa Agribusiness Payments Survey
CICO	cash in, cash out
DFS	digital financial services
KTDA	Kenya Tea Development Agency
NBFI	non-bank financial institution
PSP	payment service provider
SACCO	savings and credit cooperative organization
SSA	Sub-Saharan Africa

All dollar amounts are U.S. dollars unless otherwise indicated.

## EXECUTIVE SUMMARY

This report presents the rationale for digitization of agribusiness payments in Sub-Saharan Africa (SSA), assesses the current status of digitization, and identifies key actions that governments, agribusinesses, and development partners can take to help accelerate digitization.

Agriculture employs over half the population in SSA, yet most farmers in the region do not have access to formal financial services. The 2017 Global Findex survey finds that among individuals in SSA who report receiving payments for sale of agricultural goods, fewer than one in six reports receiving the payment through an account, and among those who report saving and borrowing, only one in four saves at a formal financial institution, and only one in five borrows from a formal financial institution.

Farmers, agribusinesses, and the rural economy stand to gain from increased digitization of agribusiness payments. Digitization can advance financial inclusion of farmers and thereby help them smooth consumption, make productivity-enhancing investments, and better manage their vulnerability to shocks through improved access to savings, credit, and insurance products. For agribusiness firms, digital payments can help improve not only efficiency but also transparency by bringing better visibility to how and when farmers are paid, thereby enabling them to comply better with their commitments to sustainability. Lastly, regular digital payments from agribusinesses can benefit the rural economy more broadly by strengthening the rural digital financial services (DFS) ecosystem through improving the business viability of DFS agents, encouraging merchants to accept digital payments, and enabling more e-money usage for local payments.

Our analysis of Global Findex 2017 data shows that while average levels of digitization in SSA is lower than in other regions of the world, variation is wide between countries. Over 30 percent of recipients of agricultural payments

reported receiving such payments into an account in Ghana, Kenya, Uganda, and Zambia. In contrast, in Ethiopia and Madagascar, two countries with the largest share of individuals who report receiving agricultural payments, virtually all recipients indicated receiving such payments in cash.

Our analysis suggests that access to mobile money accounts is a key driver of digitization of agricultural payments. In Kenya and Ghana, 37 percent of agricultural-payment recipients receive payments into a mobile money account; in Uganda and Zambia, this share is 28 percent and 27 percent, respectively. These countries are among those with the highest uptake of mobile money: the share of adults with a mobile money account is 73 percent in Kenya, 51 percent in Uganda, 39 percent in Ghana, and 28 percent in Zambia.

Our survey of select agribusinesses active in SSA suggests that while most agribusinesses are making efforts to digitize their payments to farmers, the levels of digitization are still relatively low. The survey included responses from 29 global, regional, and national agribusinesses operating in more than 17 countries in SSA. While nearly four-fifths of the firms reported making at least some digital payments to farmers, only one-fifth reported that most of the farmers in their supply chains are paid



**Digitization potential:**  
**\$6 billion**



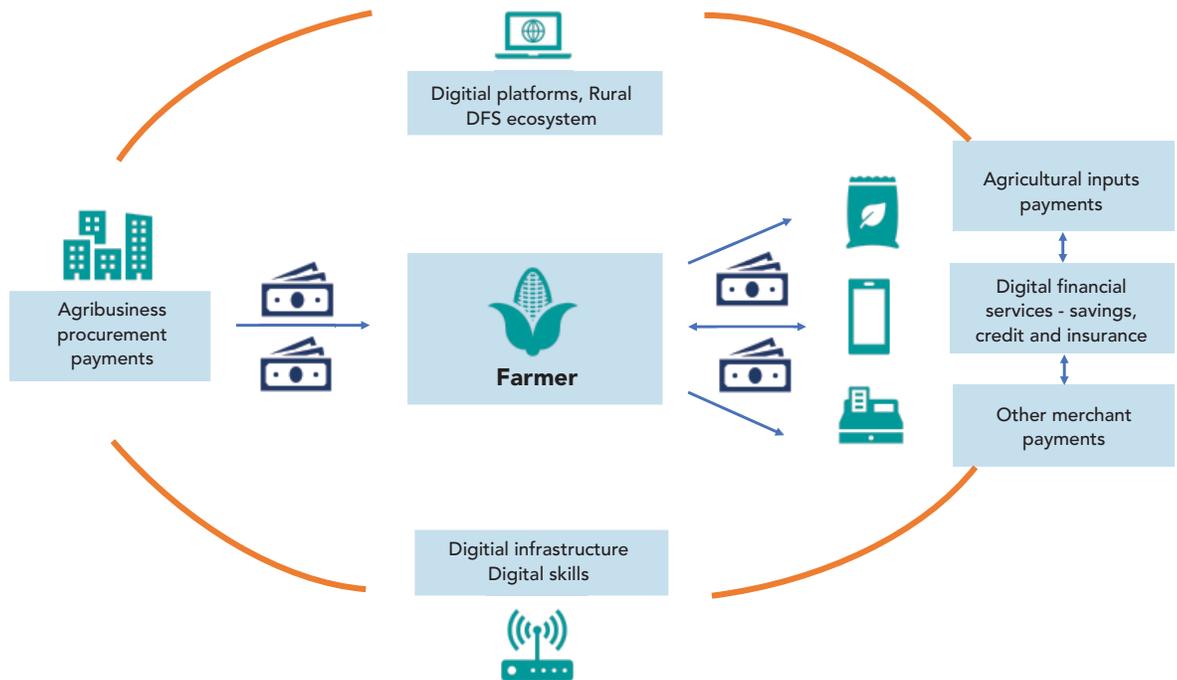
**Potential # of farmers to benefit:**  
**17.8 million farmers**

digitally. Most of the surveyed agribusinesses recognize the opportunity and report having initiatives to increase digital payments to farmers. We estimate the digitization potential among the firms responding to the survey at over \$6 billion and potentially benefitting nearly 18 million farmers.

Lastly, our analysis also shows that digitization of agricultural payments can be a driver to expand financial inclusion of farmers. The 2017 Global Findex survey finds that among agricultural-payment recipients in SSA receiving payments into an account, 20 percent report opening their first account to receive an agricultural payment. Vegpro, one of the AAPS respondents who only pay farmers digitally, reports that it has also facilitated access to credit at preferred interest rates for around a quarter of their clients (Box 2). And Inbev, another AAPS respondent which partners with BanQu, a blockchain-based platform, reports that one of its subsidiaries in Uganda is piloting

the delivery of weather-based crop insurance through the platform (Box 5).

There are, however, several challenges to accelerating digitization of agribusiness payments to farmers. In many countries, these include foundational challenges, such as limited connectivity, poor digital literacy, and a weak regulatory environment for digital payments, and proximate challenges, such as limited availability of cash-in, cash-out points and opportunities to use e-money. Thus, a rapid expansion of digitization of agricultural payments would require strengthening the foundational drivers of the national digital economy and the ecosystem for rural DFS as well as actions targeted at agricultural payments — both agribusiness procurement payments as well as agricultural inputs payments. The figure below presents a schematic representation of the multipronged effort needed to accelerate digitization of agricultural payments and the benefits that could flow from these efforts.



We make the following recommendations to support efforts to digitize agricultural payments in SSA:

- **Governments should strengthen the foundations of their national digital economy and the enabling environments for agritech, fintech, and e-commerce:** These actions are critical since improvements in these areas make it more feasible for agribusinesses to digitize their payments to farmers and increase farmers' ability to use digital payments.
- **Governments should also take targeted actions to strengthen the rural DFS ecosystem:** Targeted actions are needed to strengthen the rural DFS ecosystem since rural areas face specific challenges related to their geography. These include actions to increase the density of CICO (cash-in-cash-out) agents in rural areas and increase the opportunity for rural residents to use e-money. The former would make it easier and less costly for farmers and others residing in rural areas to convert e-money to cash and vice versa and the latter would reduce the need to make these conversions.
- **Agribusinesses need to build an industry consensus on the value of digital payments to farmers as a key driver of achieving their sustainability goals:** While there is consensus on the need to advance sustainability, there is limited attention so far on the strong linkage between sustainability goals and the value of digital payments to farmers.
- **Agribusinesses should strengthen partnerships with payment service providers (PSPs) and better leverage the opportunity presented by the fintech revolution:** Partnerships can be a win-win opportunity for PSPs, fintechs, and agribusinesses. Digitization of agribusiness payments presents a large revenue opportunity for PSPs, agribusinesses can negotiate better pricing structures for bulk payments, and fintechs can play a key role in building a bridge between the two.
- **Development finance partners should support targeted initiatives on agricultural-payments digitization:** Development partners can play an impactful role in facilitating scaled-up support for agricultural payments digitization. The report highlights two projects supported by the World Bank with components on digitization of agriculture payments.

The COVID-19 pandemic has reinforced the urgency of digitizing payments to avoid disruptions to the supply chain and maintain economic activity. The ongoing crisis provides additional impetus to accelerate the pace of

digitization of agribusiness payments to allow firms and farmers to stay resilient, maintain the supply of food and other agricultural commodities, and combat the negative shocks to income caused by the pandemic.

## 1. INTRODUCTION

### Background

This report aims to present the rationale for digitization of agribusiness payments in Sub-Saharan Africa (SSA), assess the current status of digitization using demand- and supply-side data, and identify key actions that can help accelerate digitization. The report draws on an analysis of financial-inclusion data from the [Global Findex](#) database, a survey administered to select agribusinesses active in SSA (henceforth referred to as the Africa Agribusiness Payments Survey, or AAPS), and case studies of select agribusinesses that responded to this survey. The Findex data analysis leverages questions in the survey that identify whether the respondent had received payment against the sale of an agricultural good; how the payment was received — in cash or through a digital means, defined to include an account at a bank or non-bank financial institution, mobile money account, or a card — and, if an account holder, whether the account was opened to receive an agricultural payment. The AAPS was administered to purposefully selected agribusinesses active in SSA, with either a regional or national scope. Some firms were added to the survey since they were known to have an active digitization program, but this was not a requirement for inclusion in the survey.

The broad coverage of the Global Findex survey and AAPS allows a regional and cross-country assessment of the status of agricultural-payment digitization in SSA. The Global Findex survey data covers 27 countries in SSA, spanning different income levels. (See section 2 for full list of countries.) The AAPS reflects responses from 29 agribusinesses operating in more than 17 countries in SSA and includes firms with a global, regional, and national footprint. (See appendix B for the full list of firms.)

While the Global Findex and AAPS permit a data-driven assessment of agricultural-payment digitization in SSA, they have some key limitations. The analysis of Global Findex data focuses on respondents who report receiving payments, in cash or digitally, against the sale of agricultural goods. While these respondents are a good proxy for farmers who market at least some portion of their produce and represent a significant share of the farming population, they are not representative of all farmers in the region. Further, since the survey is not focused on these respondents, it results in a limited sample of agricultural-payment recipients and does not allow disaggregated analysis for gender or specific value chains. Similarly,

while the AAPS has a broad coverage, it is not representative of all agribusinesses in SSA, and hence the findings presented are also not representative of all agribusinesses active in SSA. Finally, payments received by farmers for local sales, government payments to farmers, and payments by farmers for purchase of agricultural inputs and farm workers are beyond the scope of this report.

The report is organized in five sections. The rest of this section presents the rationale for digitization of agribusiness payments in SSA. The next section provides demand-side data and insights based on Global Findex data, while section 3 provides supply-side data and insights from a survey of 29 major global, regional, and national agribusinesses. Section 4 highlights the digitization opportunity in agribusiness payments in SSA, discusses the challenges to digitization, and identifies key actions that stakeholders can take to help accelerate agricultural-payments digitization. Finally, section 5 summarizes the report's key findings and proposes additional research and other actions that can help operationalize the recommended actions.

### Why Digitize Agribusiness Payments to Farmers?

Financial inclusion is key to inclusive growth, and access to a transaction account is the critical first step. There is now global consensus that financial inclusion of individuals and enterprises is critical to inclusive growth and poverty reduction.<sup>1</sup> Transaction accounts are defined as accounts (including e-money or prepaid accounts) held with banks or other authorized or regulated payment service providers (PSPs) that can be used to make and receive payments and to store value (CPMI and World Bank Group 2016). Financial inclusion allows individuals and enterprises to transact, save, borrow, and insure — all of which are factors that contribute to inclusive growth and poverty reduction.

In SSA, agriculture plays a significant role in income generation, growth, and poverty reduction. Agriculture contributes 15.6 percent of the gross domestic product, and approximately 54.6 percent of the population in the region is employed in the agriculture sector.<sup>2</sup> The food market in the region was valued at \$300 billion in 2017 and may be worth nearly \$1 trillion by 2030 (AGRA 2017).

1. <https://www.worldbank.org/en/topic/financialinclusion/brief/achieving-universal-financial-access-by-2020>

2. Agriculture sector consists of activities in agriculture, hunting, forestry and fishing. 2018 World Development Indicators, World Bank, <https://databank.worldbank.org/source/2?series=SL.AGR.EMPL.ZS&country=>

However, while evidence is strong regarding the impact of agriculture growth on poverty reduction, agriculture-sector growth remains low, and levels of poverty remain high in many countries in the region.<sup>3</sup> These factors, together with emerging consensus on the linkages between financial inclusion, inclusive growth, and poverty reduction, suggests that financial inclusion of farmers is critical for agriculture-sector growth and thereby for accelerating poverty reduction in the region.

**Yet most farmers in the region do not have access to formal financial services.** The 2017 Global Findex survey finds that among individuals in SSA who report receiving agricultural payments, a good proxy for farmers who are selling at least some portion of their produce in the market, fewer than one in six reports receiving an agricultural payment through an account.<sup>4</sup> And among those in this population segment who report saving and borrowing, only one in four farmers saves at a formal financial institution, and only one in five farmers borrows from a formal financial institution. Most rely on saving in kind or cash at home or depending on family and friends or informal service providers such as savings groups, savings collectors, and money lenders. The access and usage levels are likely to be much lower if all farmers and farm workers are included.<sup>5</sup> This lack of access to formal financial services has severe financial implications. When faced with a bad harvest or significant livestock loss, farmers bear the entire financial risk of such a loss since they lack access to financial tools that could help them manage these risks (Klapper et al. 2019). Reliance on informal providers can be quite costly and risky, not only putting the safety of savings at risk but also limiting access to credit and insurance.

**Agricultural output value chains present an untapped opportunity to drive financial inclusion of farmers.** Eighty percent of Africa's food consumption is through purchases

by urban and rural consumers (AGRA 2019). These include large enterprises as well as micro, small, and medium-scale enterprises that play a significant role in the post-farmgate supply chain, from logistics and processing to distribution and retail. These businesses already provide a significant share of the credit needs of the farming sector, but since this financing is primarily aimed at meeting agricultural needs, the non-agricultural financial-service needs of the farmers remain unaddressed. Furthermore, since the data on financing provided by these agribusinesses often remains proprietary and is not reported to credit bureaus, it limits the ability of other providers to use this data to provide financial services to farmers.<sup>6</sup>

**Digitization of payments by agribusinesses to farmers can act as the ramp to broader financial inclusion and better use of these accounts.** Digitization of payments refers to a payment being made electronically into a "transaction account."<sup>7</sup> Digitization of agribusiness payments can be a driver of expanding access to transaction accounts for farmers. According to 2017 Global Findex, 13 percent of account owners globally reported having opened their first account to receive private-sector wages, government payments, or payments for the sale of agricultural goods. And among agricultural-payment recipients in SSA receiving payments into an account, 20 percent report opening their first account to receive an agricultural payment (Demirgüç-Kunt et al. 2018). For those already having an account, receiving payments for sale of their produce into these accounts offers the opportunity to use these accounts better (Better Than Cash Alliance 2018).

**For farmers, digitization of agricultural procurement payments has numerous benefits.** It can ensure timely and safe payments, increase savings, and contribute to increasing agricultural productivity. In Rwanda, the digitization of payments from tea factories to small-holder tea producers reduced the time from delivery of tea leaves to payment from 5 to 15 days to a maximum of three days (Nair, Ono, and Mapfumo 2018). In Malawi, farmers who were offered

3. GDP growth originating in agriculture is estimated to induce income growth among the poorest 40 percent at levels three times larger than growth originating in the rest of the economy (de Janvry and Sadoulet 2009). Average poverty in the region was 41.4 percent, according to the latest data available for 2015. World Bank, Poverty and Equity Data Portal, <http://povertydata.worldbank.org/poverty/region/SSF>.

4. The term *farmers* is used to include all agriculture-sector producers, including individuals producing livestock and involved in marine fishing and aquaculture.

5. National surveys of smallholder households in Mozambique, Uganda, Tanzania, Côte d'Ivoire, Nigeria, and Bangladesh by the Consultative Group to Assist the Poor (CGAP) find that the proportion receiving payment into an account is less than 2 percent (Anderson and Sobol 2018).

6. ISF Advisors and the Rural and Agricultural Finance Learning Lab estimate that that value-chain actors, typically agribusinesses, supply approximately \$30 billion of farmers' financing needs out of a total estimated demand of \$240 billion in agricultural and non-agricultural finance (ISF Advisors and Mastercard Foundation 2019).

7. As previously defined, a transaction account refers to any account that allows the user to transact and to store value. These include bank accounts and accounts of other authorized PSPs, such as mobile money providers and specialized providers, such as B-Kash in Bangladesh or Zoono in Zambia.

direct deposit into savings accounts for crop-sale proceeds and took this option saved more in the months immediately before the next agricultural planting season and increased both spending on agricultural inputs and crop values in that season (Brune et al. 2016).<sup>8</sup> Receiving digital payments empowers farmers to have better control over their income. It reduces travel time and transaction costs to collect their payments, and having a transaction account allows farmers to make other transactions such as utility payments, school fees, and person-to-business payments through digital channels. The transaction history that farmers accumulate can provide a basis for formal financial service providers to assess creditworthiness, opening an avenue to formal credit, insurance, and savings products that equip them to deal with income shocks and smooth consumption, thus improving overall well-being.

**For agribusinesses, digitizing procurement payments can improve efficiency, transparency, and traceability.** Cash payments can be risky and costly, and manual reconciliation of payments is a lengthy process that is prone to errors. The Better Than Cash Alliance estimates that making cocoa payments to farmers in cash costs Ghana's licensed buying companies nearly 3.6 percent of their revenues, and that the cost for their agents is nearly 15 percent of their revenues (BTCA and World Cocoa Foundation 2020a).<sup>9</sup> Digital payments not only support operational efficiencies by reducing the cost of payments but also allow agribusinesses to make more transparent transactions. It allows agribusinesses to trace procurement downstream to the farmer, allowing them to gain trust among

consumers and ensure implementation of ethical procurement practices, thus bolstering their reputation and reducing reputational risk. Further, registration of farmers for digitization of payments can also be an opportunity to assess the demand for value-added services such as agriculture-advisory services and to provide such services if there is a business case to do so.

**Lastly, digitization of agribusiness payments can play a key role in supporting the rural digital financial services (DFS) ecosystem.** A key obstacle to financial inclusion in rural areas is insufficient demand for DFS agents and limited digital payments to merchants, making the rural agent and merchant business unprofitable. By increasing the transaction volumes necessary to support rural DFS expansion, digitization of agribusiness payments can generate business for both rural DFS agents who offer cash-in, cash-out (CICO) services and DFS merchants who accept digital payments, thus expanding the CICO network and opportunities to use e-money, respectively (GSMA 2018a).

**Notwithstanding the multiple benefits discussed above, current levels of digitization of agricultural payments are low, reflecting the many challenges that digitization initiatives need to address.** These challenges relate to basic infrastructural constraints, such as limited outreach of formal financial institutions in rural areas and inadequate mobile connectivity necessary for delivery of mobile money services, as well as constraints associated with the overall ecosystem for rural DFS. These challenges are discussed in more detail in section 4.

8. In addition, Duflo, Kremer, and Robinson 2011 found substantially increased fertilizer consumption in Kenya (over 50 percent) when farmers are offered the opportunity during harvest time to buy fertilizer vouchers for a subsequent season. This mechanism can be seen as equivalent to a commitment savings mechanism.

9. The bulk of the costs to licensed buying companies is interest costs incurred on cash advances received from the Cocoa Board, but the costs also include salaries for additional staff needed to manage cash payments. The primary cost for the agents is the loss of cash due to theft and cost of transport.

## 2. FINDINGS AND INSIGHTS FROM THE GLOBAL FINDEX SURVEYS

The [Global Findex database](#) enables cross-regional and cross-country comparison of financial inclusion of individuals who report receiving agricultural payments. In addition to asking respondents about financial inclusion, the 2014 and 2017 Global Findex surveys also asked whether they had received any payments for the sale of agricultural products in the past 12 months and whether they received payments in cash or through one of the four identified digital channels.<sup>10</sup> Taken together with financial-inclusion indicators, the response to this question allows an estimation of the scale of current digitization and an indicative estimation of potential opportunity for digitization of agricultural payments among this segment of the population. Individuals who report receiving payments for sale of agricultural products are a good proxy for farmers who sell at least some portion of their produce in the market and,

hence, a natural target for digitization initiatives. While this population segment is much smaller than the proportion of the population employed in agriculture, it represents a natural target for digitization since respondents receive at least some payments on sale of agricultural commodities.<sup>11</sup> This section discusses some salient findings.

In 2017, nearly one-third of adults in SSA reported having received agricultural payments, and most receive these payments in cash only. As can be seen in figure 2.1., SSA has the largest proportion of adults who report receiving agricultural payments (30 percent), which is about twice the average for developing economies and equivalent to around 140 million adults.<sup>12</sup> As figure 2.2 shows, less than 15 percent reported receiving an agricultural payment through an account. The majority of the agricultural-payment recipients in all four regions report receiving their payments in cash only, but this proportion is highest in SSA.

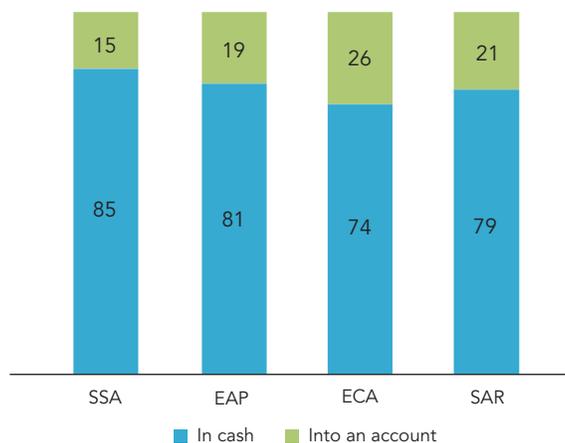
**FIGURE 2.1: Individuals Receiving Payments for Sale of Agricultural Products in the Past Year (%)**



All regional aggregates exclude high income countries. SSA - Sub Saharan Africa, EAP - East Asia and Pacific, ECA - Europe and Central Asia, SAR - South Asia Region

10. 2017 Findex defines persons who received agriculture payments as “respondents who report personally receiving money from any source for the sale of agricultural products, crops, produce, or livestock in the past 12 months.” Although, as defined, the category could also include respondents who trade in agricultural products, the proportion of such respondents is estimated to be marginal. The digital channels identified were accounts at a bank, a non-bank financial institution, mobile money account, and card.

**FIGURE 2.2: Agricultural-Payment Channels (% among Agricultural-Payment Recipients)**



All regional aggregates exclude high income countries. SSA - Sub Saharan Africa, EAP - East Asia and Pacific, ECA - Europe and Central Asia, SAR - South Asia Region

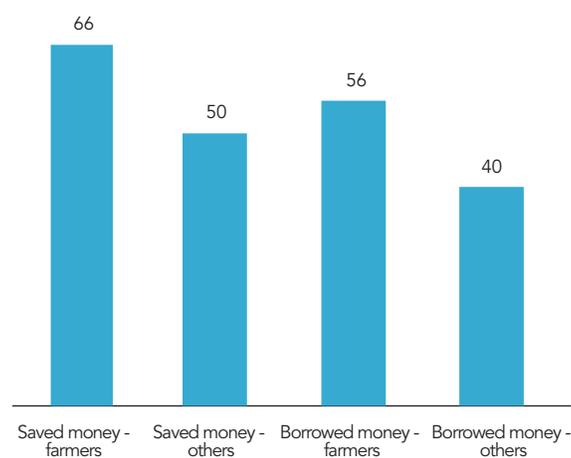
11. As previously mentioned, over half of the total population (54.6 percent) in SSA is estimated to be employed in the agriculture sector. This includes all farmers, including subsistence farmers who are not selling any production to the market, and those who are working for farmers but do not themselves farm.

12. The proportion of respondents who report receiving agriculture payments is much lower in the Latin America and the Caribbean Region and the Middle East and North Africa Region — 5 and 6 percent, respectively — and hence not included in this analysis.

Agricultural-payment recipients also report very low usage of formal financial institutions for saving and borrowing, although they save and borrow more than the rest of the population. As figure 2.3 shows, individuals receiving agricultural payments report having saved and borrowed more in the past year than other adults. On average, 66 percent of individuals in SSA receiving agricultural payments reported having saved money in the past 12 months, compared to 50 percent of adults in the region who do not receive such payments. Similarly,

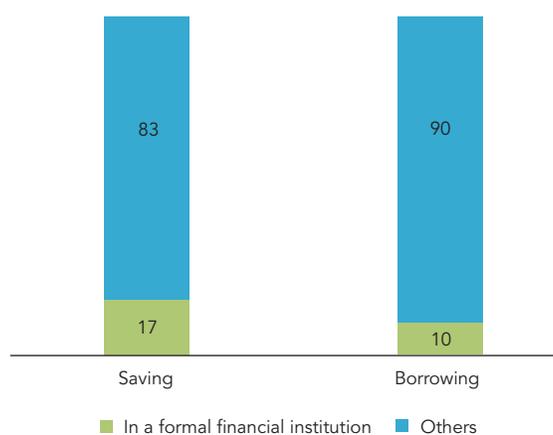
56 percent of adults receiving agricultural payments reported having borrowed money in the past 12 months, compared to 40 percent of adult who do not receive such payments. These differentials are not surprising since income from agriculture is often lumpy and highly vulnerable to shocks, but as figure 2.4 shows, only a small proportion rely on formal financial institutions to save or borrow: only 17 percent saved and 10 percent borrowed from formal financial institution.

**FIGURE 2.3: Saving and Borrowing (%)**



Source: Global Findex (2017).

**FIGURE 2.4: Use of Formal Financial Institutions among Agricultural-Payment Recipients (%)**

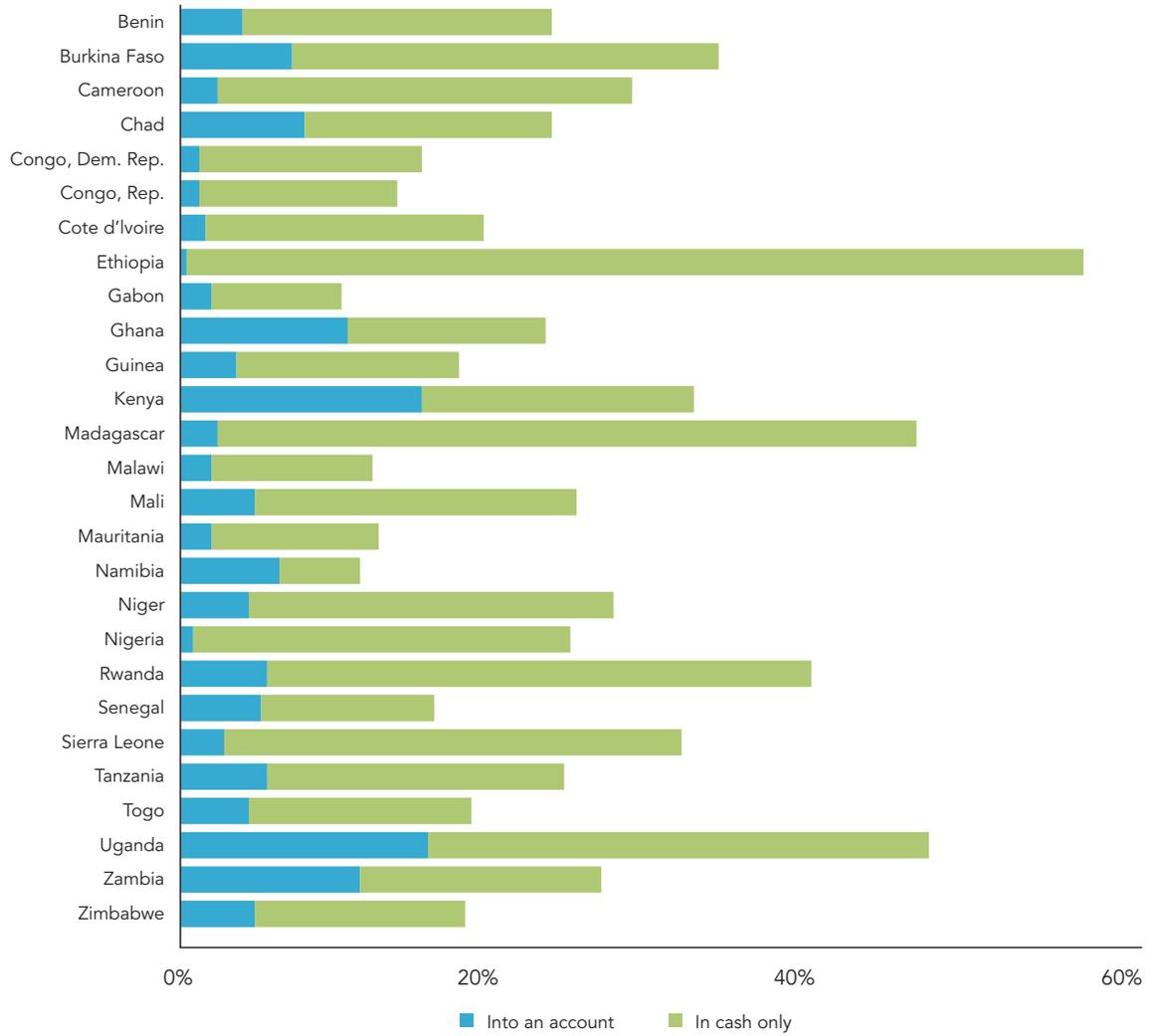


While the proportion of the population receiving agricultural payments and those receiving payments in cash only is higher in SSA than in other regions, there are significant differences between countries (figure 2.5). Over 50 percent of adults in Ethiopia, Madagascar, and Uganda reported receiving agricultural payments, while less than 10 percent in South Africa and Botswana reported doing so.<sup>13</sup> Among recipients of agricultural

payments, over 30 percent reported receiving such payments into an account in Ghana, Kenya, Uganda, and Zambia. In contrast, virtually all recipients in Ethiopia and Madagascar, two of the countries with the largest share of adults who report receiving agricultural payments, indicated receiving such payments in cash. These differences are likely to be driven by the differences in the national and rural ecosystems for DFS.

13. The percentage of respondents reporting receiving agricultural payments in Botswana and South Africa is 8 percent and 3 percent, respectively. Given the low share, Findex does not disaggregate this data by payments received into an account or in cash.

**FIGURE 2.5: Agricultural Payments Channels, by countries in SSA (%)**

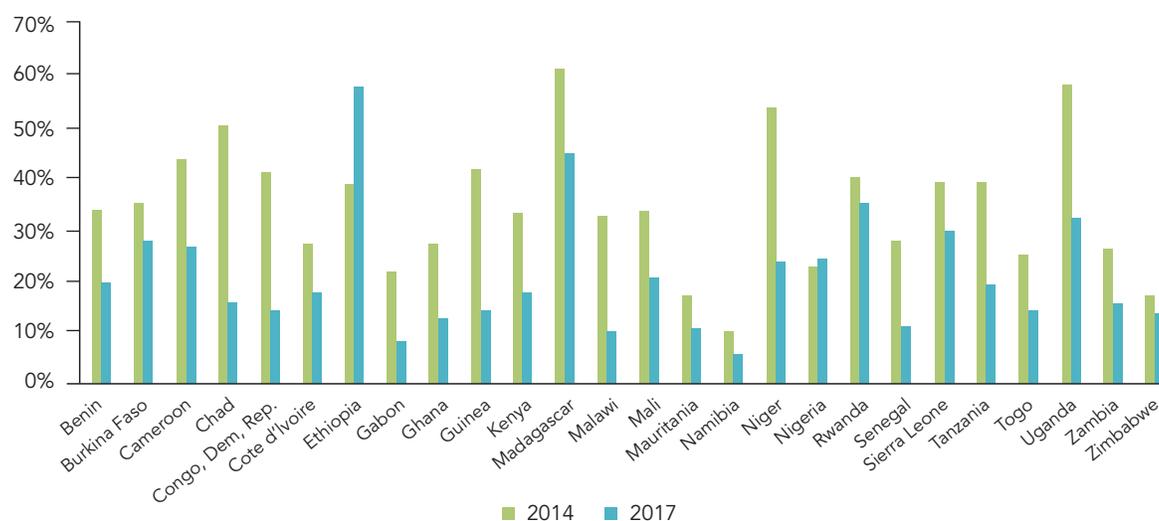


Source: Global Findex (2017).

Access to mobile money accounts seems to be a key driver of the levels of digitization of agricultural payments. Among the countries with the largest share of adults receiving agricultural payments into an account, most receive the payment into a mobile money account. In Kenya and Ghana, 37 percent of agricultural-payment recipients receive payments into a mobile money account. In Uganda and Zambia, 28 percent and 27 percent, respectively, receive such payments into a mobile money account.<sup>14</sup> These countries are also among those with the highest uptake of mobile money: the share of adults with a mobile money account is 73 percent in Kenya, 51 percent in Uganda, 39 percent in Ghana, and 28 percent in Zambia.

While still high, the proportion of individuals in SSA receiving agricultural payments through cash only has decreased regionwide and in most countries. Among those receiving agricultural payments, the regional average for those who received payments only in cash decreased to 81 percent in 2017 compared to 85 percent in 2014. The scale of change has varied across countries; some countries show a much larger magnitude of change compared to others. For example, among agricultural-payment recipients in Ghana and Uganda, those receiving their payment in cash decreased from 90 to 49 percent and from 85 to 65 percent, respectively.<sup>15</sup>

**FIGURE 2.6: Decrease in Agricultural Payments through Cash Only across SSA Countries between 2014 and 2017**



Source: Global Findex (2017).

14. The share receiving payments into an account at a financial institution is 15 percent, 18 percent, 7 percent, and 22 percent, respectively. Respondents can report receiving agricultural payments in multiple ways, and receiving payments into an account at a financial institution and receiving payments through a mobile phone are not mutually exclusive categories.

15. Additional country-level work is necessary to explain or confirm the magnitude of these changes and the increase in those reporting receiving payments in cash only in Ethiopia (by a large margin) and in Nigeria.

### 3. FINDINGS AND INSIGHTS FROM THE AFRICA AGRIBUSINESS PAYMENTS SURVEY

To complement the demand-side findings from Findex with supply-side data and insights, the AAPS was administered to select global, regional, and national agribusinesses active in SSA. The survey focused on agribusiness payments since such payments are estimated to be more widespread than other formal payment flows to farmers in SSA.<sup>16</sup> While agribusiness payments are a relatively small proportion of all agricultural payments received by farmers, they are the most feasible entry point for digitizing payment flows. Agribusiness payments through formal value chains are a first point of digitization because they can provide the transactional volumes to support a sustainable network of CICO agents, have predictable payment streams, and involve fewer players (GSMA 2020a).

The AAPS aimed to collect information from agribusinesses on their agri-commodity procurement in SSA, existing levels and channels of digital payments, and current and planned efforts to digitize payments. The survey was administered to 45 firms, and 29 agribusiness responded to the survey. These included 16 firms that operate globally or regionally and have operations in several African countries and 13 firms that operate at a national level (figure 3.1). The respondents included firms that are primarily supply-chain companies and those that are primarily processors.<sup>17</sup> The survey was a first of its kind and, as a result, should be seen as a pilot that can be expanded upon in potential future rounds. This section discusses the key findings and insights from the survey.

Agribusinesses procure a wide range of commodities in SSA, and several million farmers are involved in their commodity supply chains. Figure 3.2 shows the range of

FIGURE 3.1: Firms Behind the Data



16. A few countries in SSA have government programs for procuring agricultural commodities to maintain food-security reserves, but they are generally small in terms of the number of farmers from whom the procurement is made. Some countries have agricultural input-subsidy programs, but most of these subsidies are in-kind subsidies, where farmers receive inputs rather than cash. Even in the case of input-subsidy programs where digitization has been attempted, farmers receive e-vouchers that can be used to redeem inputs from input dealers, and the payment for the inputs are made by the government to the input dealers.

17. Supply-chain companies typically procure produce either directly or indirectly from farmers or intermediaries. The produce is then sold to processors and other firms. Processors are those firms that are engaged in processing the produce and preparing it for the consumer market. Some processors also procure from directly from farmers.

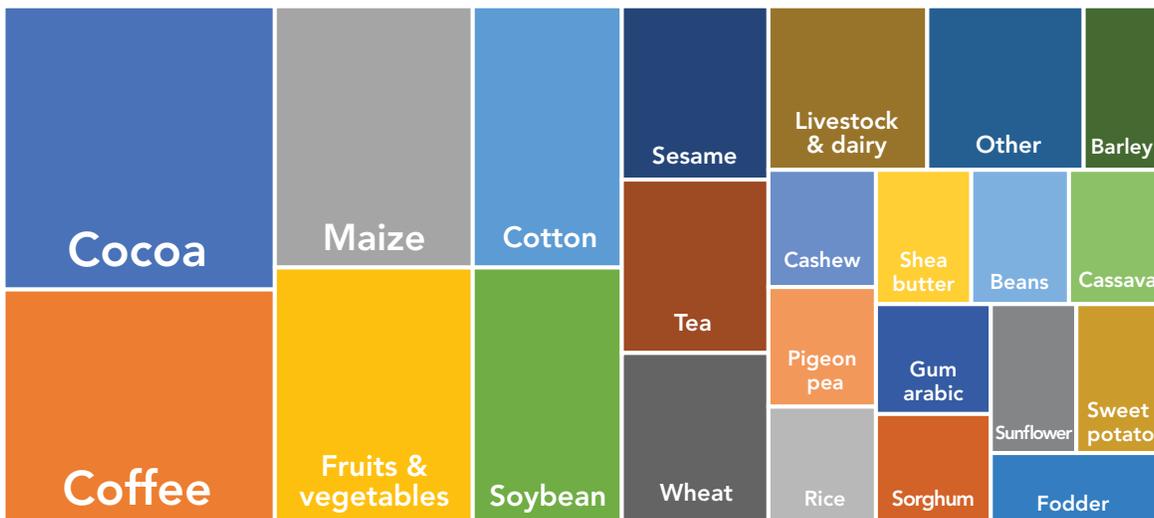
commodities procured by the surveyed firms: six firms reported procuring cocoa, five reported procuring coffee, and four firms each reported procuring maize and fruits and vegetables; the rest of the commodities are procured by three or fewer firms. They procure commodities produced by an estimated 19.4 million farmers; this is approximately 14 percent of the estimated 140 million individuals reporting receiving payments for sale of agricultural products as per Global Findex 2017. The combined value of commodities procured is approximately \$7 billion. The bulk of the value of commodities procured is reported by a few firms; the median reported value of procurement over the past fiscal year is \$30 million. The firms use multiple models of procurement, but a surprisingly large proportion (62 percent) report procuring at least some portion of their procurement directly from farmers. Just over half (52 percent) report procuring through buying agents, and 41 percent report procuring through producer organizations. Most firms procure commodities from farmers through a combination of procurement channels.

A majority of the firms make at least some farmer payments digitally, but the proportion of digital payments remains low for most firms (figure 3.3). While nearly four-fifth of the firms (79 percent) reported making at least some digital payments to farmers, nearly half (45 percent) pay only a small share (less than 10 percent) of their farmers digitally. However, over 20 percent of the firms

reported that a majority of the farmers in their supply chains are paid digitally, and three firms reported that all farmers in their supply chains are paid digitally. In response to the question on key constraints to digitization, one-third of firms reported the lack of digital channels, particularly limited network coverage, as a top reason for not having digitized payments or for having done so only partially.

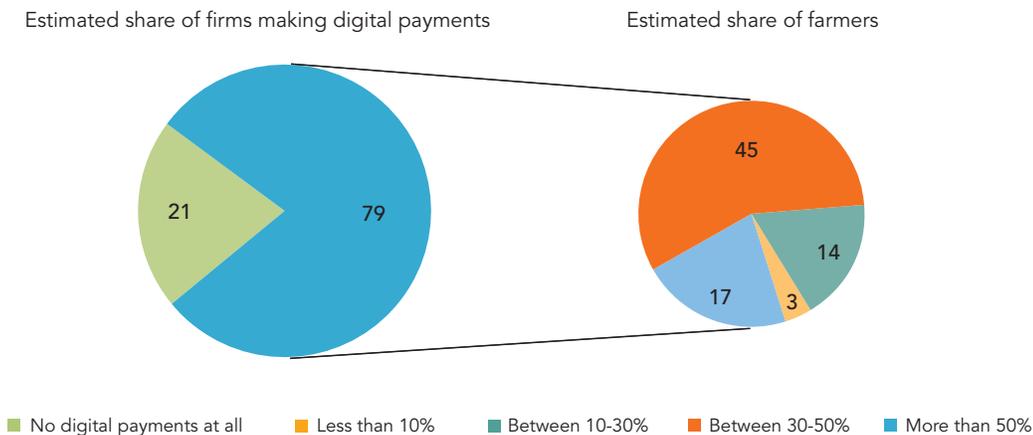
Three firms reported having fully or nearly fully digitized their payments to farmers. These include the Kenya Tea Development Agency (KTDA) and VegPro, which operate only in Kenya, and TruTrade, which operates in Kenya and Uganda. Among the respondents, KTDA reports the largest number of farmers that are being paid digitally, while VegPro and TruTrade pay all farmers in their supply chain digitally. Box 1 presents the case of KTDA, and box 2 presents the VegPro and TruTrade cases. KTDA's digitization success seems to be driven by multiple factors: the well-organized sector, the wide savings and credit cooperative organization (SACCO) network in Kenya and its indirect access to the national payments system (through the Cooperative Bank of Kenya), and KTDA's partnership with Citi Bank. VegPro and TruTrade, relatively new organizations that have much smaller numbers of farmers in their supply chains, report having opted to go for full digitization since benefits outweighed costs right from the beginning.

FIGURE 3.2: Commodities Procured



Source: AAPS 2019.

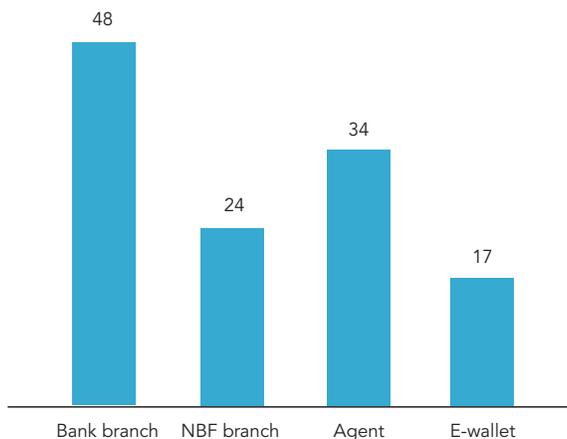
**FIGURE 3.3: Digital Farmer Payments by Agribusinesses (%)**



While bank branches, surprisingly, remain the main point of withdrawal, several firms also report the use of agents and e-wallets by farmers. As figure 3.4 shows, nearly half of the firms report that farmers use bank branches to withdraw their payments, and just over one-third of firms report that farmers use agents. About a quarter report that farmers use non-bank financial institutions (NBFs), and 17 percent report that farmers use e-wallets to withdraw payments made to them. Discussions with a subset

of the firms, however, suggest that most firms do not have clear visibility on the withdrawal channel used by farmers since one payment channel can allow multiple withdrawal channels. For example, payment into a bank account could be withdrawn through a bank branch or a bank agent, or it could be used for making an electronic payment using an e-wallet, or, in cases where mobile and bank accounts are linked, payments can be withdrawn from a mobile money agent.

**FIGURE 3.4: Digital Payment Withdrawal Channels (%)**



Source: AAPS 2019.

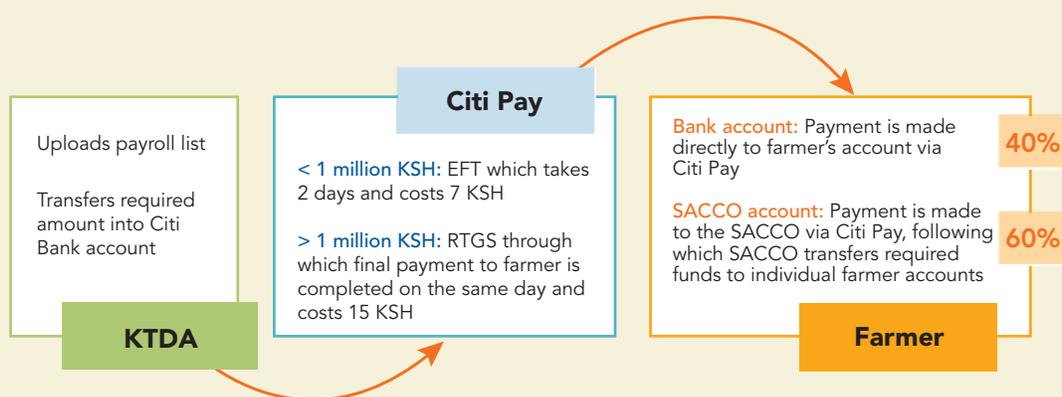
## BOX 1

**KTDA: A Producer Organization-Driven Model of Digitization**

The Kenya Tea Development Agency (KTDA) is a holding company owned by 54 tea factory companies, which are in turn owned by 600,000 tea producers in Kenya. Over 90 percent of them are small-scale farmers operating farms less than one acre. Nonetheless, Kenya is a major player in the global tea value chain, providing 13 percent of global tea exports. KTDA Management Services, a subsidiary of KTDA, manages all payments to the farmers. Farmers are paid an initial payment every month and a final payment annually, after closing of accounts. Over the past five years, total producer payments have ranged between \$609 million and \$459 million. Almost all farmers are paid electronically; approximately 40 percent of the payments are made through individual bank accounts, and 60 percent of payments go through accounts in SACCOs. A small proportion of farmers who are unbanked (approximately 2.4 percent) are paid in cash by the local SACCOs, as per payment information provided by the factory company affiliated with those farmers.

KTDA started digitizing its payments following its privatization in 2000. The process accelerated rapidly in 2007, when KTDA engaged the services of Citi Bank to manage its producer payments. The extent of digitization has increased rapidly over the past five years. During this period, KTDA reduced the number of producers being paid in cash from 100,000 to about 12,000. KTDA expects to digitize its producer payments fully by the end of 2020. The figure below shows the process flow used by Citi Bank's Mass Pay platform to process KTDA's payments.

Payments made by electronic funds transfer (EFT) are processed within one day, while payments made by real-time gross settlement (RTGS) are processed on the same day. This means that all farmers paid through bank accounts receive their payments within one or two working days at the latest. It takes an additional day for producers paid through SACCO accounts to receive their payments since the payment platform does not pay farmer accounts directly; rather, it makes a payment into the SACCO account, and the SACCO makes the transfer to each farmer's account (based on payroll information sent by KTDA).



While KTDA does not have definitive information on the relative proportions of withdrawal channels used by the producers, it reports that all channels are likely being used since nearly all banks and SACCOs are linked to e-money accounts — provided by either banks or mobile money providers — and funds in most SACCO accounts can be withdrawn from any automated-teller machine in the country. KTDA is also piloting direct payments to farmer's mobile money accounts but identifies the daily limit on payments into an e-money account as a limitation.

Source: Alfred Njagi, Operations Director, KTDA, and Simeon Rugutt, Financial Controller, KTDA, personal communication.

**BOX 2****VegPro and TruTrade: The Full Converts**

TruTrade is a market intermediary that operates in Kenya and Uganda and works with around 3,700 small-holder farmers and 25 buyers. It aims to formalize value-chain transactions and improve efficiency through a bespoke online and mobile-enabled trading and payment platform providing Market Connect Service to farmers and Source Connect Service to buyers. The platform enables efficient supply-chain management, price discovery, the tracking of produce from collection to delivery, and digital payments from buyers to farmers. TruTrade pays 100 percent of its farmers digitally.

TruTrade uses an agent-based model whereby agents recruited by TruTrade are its primary mode of interaction with farmers. Farmers bring their produce to collection points managed by a growing network of agents. The produce is checked for quality and, if of acceptable quality, weighed using calibrated scales. Then a purchase offer is made by the agents. If the offer is accepted, the agent triggers a payment directly from TruTrade to the farmer's mobile money account or bank account. Agents also register the supplier-farmers on the TruTrade app. As a market intermediary, TruTrade then manages the aggregation from different agents, transaction logistics, and delivery to the final buyer. After buyer payment is received and all figures are finalized, TruTrade takes a commission fee for service provided.

Over 90 percent of payments to farmers are made using mobile money; the rest go through bank accounts. For farmers that are unbanked but willing to sell through TruTrade, the company provides support opening a bank or mobile money account. To reduce the cost of mobile money payments for farmers, TruTrade covers the transaction and withdrawal fees that would otherwise be incurred by the farmer. The farmer typically receives the payment due with an additional top-up for the withdrawal fee that would be charged when the farmer withdraws payment. TruTrade pays the transaction fees directly to the mobile network operator or aggregator. The company estimates these costs are around 1.6 percent of its total payments to farmers in Kenya due to the relatively low fees and absence of taxes. In contrast, they are around 2.2 percent in Uganda due to the tax on mobile money payments (initially 2 percent but since reduced to 0.5 percent). Nonetheless, TruTrade estimates that its willingness to pay withdrawal and transaction fees has been instrumental in persuading its supplier-farmers to accept being paid digitally. Most importantly, TruTrade reports that the additional costs are offset by the reduced costs and risks associated with cash payment.

VegPro is one of the largest producers and exporters of fresh produce from Kenya. It operates using an out-grower model whereby it contracts farmers with irrigation facilities to produce vegetables for it. It currently works with around 5,000 farmers organized in six out-grower schemes. The company provides inputs on credit and agronomic advice to the farmers through their agricultural extension staff.

VegPro also enters into annual contracts with their out-growers that commit it to procuring produce from the contracted farmers at pre-agreed prices. VegPro started digitizing payments to farmers in 2016 and has since transitioned to paying all its farmers digitally. It pays primarily through banks and SACCOs and currently works with multiple banks and SACCOs. All farmers need to have a bank or SACCO account in order to begin a contract with VegPro, and it supports farmers with the account-opening process.

VegPro handles its payments by periodically instructing its primary bank to make transfers to the various financial institutions in which the out-growers have accounts along with a list of account details for the farmers who have accounts at that institution. Payments are made on either a weekly or fortnightly basis, and the average amount paid to farmers ranges from \$100 to \$200 per week during the season and cumulatively ranges between \$4,000 and \$5,000 per year per out-grower.

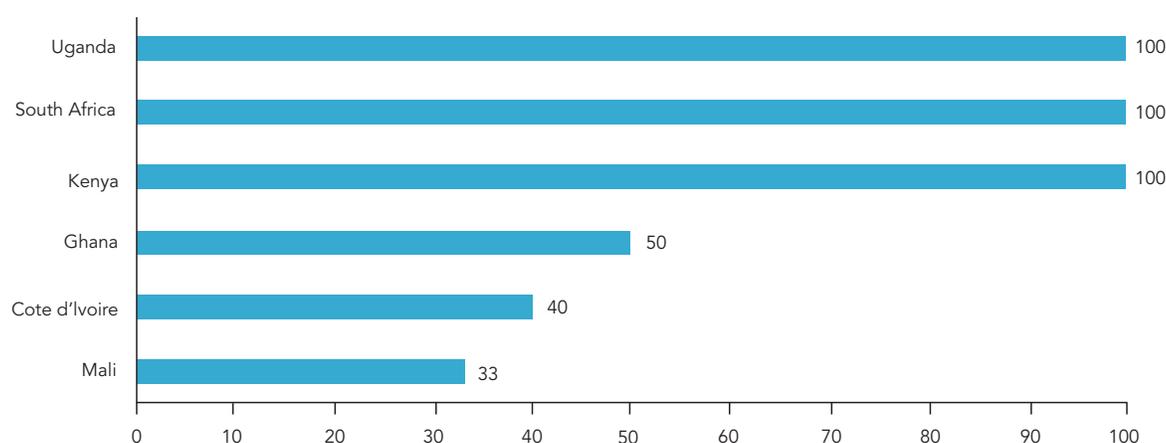
VegPro has also been successful in leveraging its relationships with financial institutions to reduce the minimum deposit requirements and withdrawal fee amounts for farmers who have a contract with them. Moreover, it has also been able to facilitate access to credit from these financial institutions for around one-fourth of their clients at preferred interest rates for purchasing equipment or other inputs.

Source: Jenny Rouquette, CEO, TruTrade, and Atul Patel, Senior Outgrowers Manager, VegPro, personal communication.

Not surprisingly, firms report high levels of digitization in countries with higher levels of overall financial inclusion. Figure 3.5 shows countries with the largest proportion of firms reporting digitization of payments to farmers.<sup>18</sup> South Africa, Kenya, Uganda, and Ghana are also among countries in SSA with the highest levels of financial inclusion. As per the 2017 Global Findex, 69 percent of individuals in South Africa have an account; in Kenya, this proportion is 82 percent, while in Uganda, it is 59 percent. The 2017 Global Findex similarly reveals that Kenya and Uganda also have the highest proportion of agricultural-payment recipients who report receiving their payment into an account: 46 percent and 32 percent, respectively.

Almost all firms report corporate initiatives to increase or implement digital payments. Over 90 percent of firms report having a corporate initiative to increase digital payments to farmers, and over half of these firms report a high level of priority for these initiatives. Among these, the cumulative investment by 24 firms is \$48 million, with a median investment of \$180,000.<sup>19</sup> The large proportion of firms reporting having digitization initiatives and the substantial volume of financial resources planned to be invested to support these initiatives suggest that most firms recognize the benefit of digital payments and are willing to make the necessary financial investments to move from cash to digital payments.

**FIGURE 3.5: Agribusiness Firms Reporting At Least Some Digitization of Payments to Farmers (%)**



Source: AAPS 2019.

18. Only countries where at least three firms responded to the survey were included for this analysis.

19. In addition, one respondent firm, which estimated 100,000 farmers in its supply chain, reported a planned investment of \$100 million over the next three years. This is not included in the cumulative planned investment reported, since the scale of investment reported is an outlier compared to the amounts reported by the other firms.

## 4. OPPORTUNITY, CHALLENGES, AND RECOMMENDATIONS

### The Opportunity

GSMA estimates the global value of cash-based business-to-person agricultural payments in 2021 to be \$392 billion and expects this to grow to \$491 billion by 2025 (GSMA 2020a). These represent estimates of the value of transactions that can potentially be digitized. GSMA arrives at this figure by using the estimated proportion of agricultural procurements that use formal procurement channels and the estimated proportion of these procurements that are being made in cash. Formal procurement is defined as purchase from farmers by agribusinesses, government, non-government organizations, cooperatives, and other farmer organizations. The bulk of formal procurement is estimated to be from farmers by agribusinesses, either directly or indirectly (through agents or farmer organizations). While the bulk of the global value of cash-based agribusiness payments is estimated to be in Asia, the share of SSA is significant; in 2016, GSMA estimated this to reach \$64 billion by 2020 (GSMA 2016). In Côte d'Ivoire, the value of agricultural payments that could be digitized was estimated to be \$3.8 billion in 2017; in Ghana, this was estimated to be \$2.2 billion for the same year (GSMA 2017, 2018b). The AAPS confirms that the digitization opportunity is indeed large even when the focus is narrowed to payments to farmers by agribusinesses.

The digitization potential among the firms responding to the survey is estimated at over \$6 billion and potentially benefitting approximately 17.8 million farmers. This estimate is based on a total estimate of procurement value of over \$7 billion by the responding firms, an average current digitization level of 10 percent, and an estimate of 19.4 million farmers involved in the supply chains of the responding firms. Given that the survey is not exhaustive, at both the firm level and the country level, the total number of farmers in agribusiness supply chains and total volume of agribusiness procurements currently not being paid digitally can reasonably be estimated to be much higher. This presents a large digitization opportunity, both in volume of payments and the number of benefitting farmers.

### Challenges

There are several challenges to accelerating digitization of agribusiness payments to farmers, however. These include both foundational challenges, such as limited connectivity, poor digital literacy, and a weak regulatory environment for digital payments, and proximate challenges, such as limited availability of CICO points and opportunities to use e-money. Limited availability of CICO points and limited acceptance of digital payments by merchants result in farmers having to incur additional costs to travel to the nearest CICO point to access or spend e-money when needed or to respond to an emergency. Furthermore, transaction and withdrawal costs combined with travel costs can be costly relative to the value of the payments received, further reiterating a preference for cash.

**FIGURE 4.1: Key Challenges with Digitizing Agribusiness Payments to Farmers**

## KEY CHALLENGES

- Poor network coverage in rural areas
- Low levels of financial inclusion at the country level
- Low digital literacy
- Regulatory limits on transaction value and account size
- High transaction and withdrawal costs
- Limited access points to formal financial institutions (bank branches, automated-teller machines, SACCO networks, etc.)
- Limited availability of agents
- Insufficient cash liquidity among agents
- Limited acceptance of digital payments by merchants

As box 3 shows in the case of Olam in Indonesia, these challenges constrain efforts of agribusinesses to digitize their farmer payments even when there is a corporate commitment from agribusinesses to do so. Notwithstanding Olam's willingness to offset withdrawal fees, few farmers were willing to accept digital payments due to limited access to agents and limited opportunities to use e-money. The Consultative Group to Assist the Poor has documented ecosystem challenges that constrained efforts to digitize agribusiness payments to smallholder coffee farmers in Uganda (M'Bale, Pillai, and Were 2018). The limited availability of CICO agents is further constrained by liquidity challenges faced by rural agents, and this is often a bigger constraint for larger buyers since they are dealing with much larger numbers of farmers who all

receive payments at the same time. Addressing this challenge requires large buyers to work proactively with account issuers to ensure that their access points have enough liquidity when payments go out and the demand for cash-out increases.

### Recommendations

This section discusses key actions that governments and the private sector can take to support the agricultural-payments digitization agenda further. It does not discuss all actions needed to address the challenges in detail since some of these are discussed in detail elsewhere, but references are made to these documents.

#### BOX 3

### Olam: Ecosystem Challenges to digitizing agribusiness farmer payments

Olam is a leading global food and agribusiness supplying food, ingredients feed, and fiber to over 25,000 customers worldwide. The company's value chains span over 60 countries, with procurement across Asia, the Americas, and Africa. The company estimates that nearly 5 million farmers globally are in its supply chains, of which an estimated 2.3 million are in SSA; most are smallholder farmers.

Digitization of its supply chain is a high priority objective for Olam, which aims to maximize digitization along its supply chain to enable the company to deliver a comprehensive suite of sustainability and traceability solutions to its customers. Olam operates multiple digital platforms to achieve this objective, including Olam Direct, which enables the company to connect directly with farmers to deliver better margins along with digitized sales information and digital payments to producers. The platform allows Olam to pay farmers through banks and can seamlessly integrate with mobile money providers.

The Olam Direct platform was tested and first rolled out in Indonesia in 2017 and has since been expanded to 11 countries, including Ghana. Olam procures produce from over 66,000 farmers through this platform, including 3,200 in Africa. Nonetheless, Olam has not been successful in transitioning a significant share of producers in this platform to digital payments. Olam reports this to be the case despite its efforts to market this platform feature in Indonesia and offering to top up fees for farmers, if they were to receive payments digitally. Olam assesses that farmers in Indonesia preferred not to receive digital payments because most producers needed cash to meet their daily household needs, and there is limited availability of mobile money or banking agents in rural areas. Furthermore, farmers also faced relatively high costs, both direct and indirect, to withdraw cash.

In the short run, Olam plans to continue its payment-digitization efforts for farmers in Indonesia. While still limited, penetration of digital payments in Indonesia's rural communities is expected to be relatively quicker in comparison to other regions, due to better access to mobile money or banks and merchant acceptance of e-money. Lessons from Indonesia will then be used to find suitable digital-payment solutions for operations in Africa and Latin America.

Source: Olam 2019 and Siddharth Sapute, Programme Director, Digital Olam, personal communication.

**4.1 Governments should strengthen their digital-economy foundations and the enabling environments for agritech, fintech and e-commerce:** There is increasing recognition of the importance of strengthening the foundations necessary for the growth of Africa's digital economy. This is demonstrated by the African Union's 2020–30 Digital Transformation Strategy and the World Bank's Digital Economy for Africa (DE4A) Initiative. The African Union's strategy identifies digital infrastructure, digital skills, digital innovation and entrepreneurship, and an enabling policy and regulatory environment as foundations, and digital agriculture and digital trade and financial services as among the critical sectors to drive the digital transformation of the economy (African Union 2020). The World Bank's DE4A initiative has already supported digital-economy diagnostics in over 20 countries and has operations in over 15 countries that support the DE4A initiative; additional diagnostics are underway in around 15 countries, and 29 investment operations are in the pipeline.<sup>20</sup> A recent World Bank publication identifies four actions that governments in SSA can take to help scale up disruptive agricultural technologies. These include investing in policies and platforms for data collection and access from public and private sources, developing an e-agriculture strategy and an agri-technology start-up policy, and

strengthening e-governance systems for all public services and resources being administered through ministries of agriculture (Kim et al. 2020). Strengthened digital-economy foundations and ecosystems for agritech, fintech, and e-commerce are critical to help advance the digitization of agribusiness payments since improvements in all these areas can help make it more feasible for agribusinesses to digitize their payments to farmers and increase farmers' ability to use digital payments.

In parallel to efforts to strengthen digital-economy foundations and key ecosystems, governments should also assess if policies are inadvertently undermining digitization efforts. A good case in point is Uganda. As discussed in the previous section, Uganda has a higher overall level of financial inclusion than most countries in Africa, and all firms that are active in Uganda and participated in the survey reported using digital means to pay at least some of the producers in their supply chains. Yet the decision by the government to tax mobile money services also made digital payments less attractive to farmers and thereby harder for agribusiness firms in Uganda to move fully to digital payments. Box 4 describes the case of Kyagalanyi Coffee, the largest coffee exporter in Uganda. While some firms such as TruTrade have persisted with digital

#### BOX 4

### Kyagalanyi Coffee, Uganda: Importance of Alignment of Government Policy to Facilitate Digital Payments

Kyagalanyi is the largest coffee exporter in Uganda and buys conventional coffee across the country. The coffee value chain in Uganda is fully liberalized, and coffee is traded through an intrinsic network of agents, middlemen, and traders. Kyagalanyi procures coffee using multiple procurement channels: (a) through purchases from dry mills in Kampala, the capital, that are typically supplied by large traders; (b) through buying agents in various parts of the country — all purchases of robusta beans and some purchases of arabica are made this way, while most arabica purchases are made from certified promoter farmers who also buy from other farmers; and (c) through washing stations and small buying centers where the company purchases from farmers directly. The firm estimates that it procures from approximately 21,000 farmers, from whom they buy directly or through promoter farmers.

Given the relatively high level of uptake of mobile money in Uganda, Kyagalanyi invested in setting up a mobile money platform to allow mobile money payments to farmers who deliver coffee directly to the washing stations. Just when the company switched to mobile money payments, however, the government introduced a new tax on mobile money. As a result, a large majority of farmers refused to receive their payments through mobile money and insisted on cash.

Source: Inputs from Anneke Fermont, Regional Sustainability Manager, Kyagalanyi Coffee Ltd., and M'Bale, Pillai, and Were 2018.

20. <https://www.worldbank.org/en/programs/all-africa-digital-transformation>.

payments notwithstanding the higher costs, partly driven by the taxes, it is likely that such taxes have dissuaded several others from moving to digital payments.

**4.2 Governments should take targeted actions to strengthen the rural DFS ecosystem:** While strengthening the national digital-economy foundations and key ecosystems is critical, targeted actions are also needed to strengthen the rural DFS ecosystem, since rural areas face specific challenges related to their geography. These actions fall into two broad categories: one relating to increasing the density of CICO points in rural areas, and another that relates to increasing the opportunity for rural residents to use e-money. While the first set of actions would make it easier and less costly for farmers and others residing in rural areas to convert e-money to cash and vice versa, the second would reduce the need to make these conversions. The Consultative Group to Assist the Poor's technical guide for strengthening the agent network recommends several steps that policy makers and regulators can take to achieve this objective (Hernandez 2019). Among others, recommendations for policy makers include (a) allowing social payments and fiscal payments to be made through CICO agent networks that are shared with other financial and non-financial providers; (b) when fiscally feasible, using direct and time-bound subsidies to reduce agent start-up costs in previously unserved rural areas; and (c) simplifying requirements to become a DFS agent. Recommendations made for regulators include (a) taking a risk-based approach to regulating CICO agent networks; (b) developing a strategy for agent interoperability to enable customers to perform DFS transactions between multiple providers using the most accessible CICO agent; and (c) avoiding dictating fees or price caps for CICO transactions to ensure that market prices reflect provider costs.

**4.3 Agribusinesses need to build an industry consensus on the value of digital payments to farmers as a key driver of achieving their sustainability goals.** There is already a consensus within the food and agribusiness industry on the need to advance sustainability in the industry. This is demonstrated by the sustainability commitments made by agribusinesses, the increasing number of firms that have "chief sustainability officers," and participation in initiatives such as the Consumer Goods Forum and the Business for Social Responsibility. However, there is limited understanding of the strong linkage between the sustainability goals and the value of digital payments to farmers. While the rural context presents larger challenges to digitization, sustainability initiatives in the agribusiness sector can learn from initiatives in other sectors, such as the garment and fast-moving consumer

goods industries, to build an industry consensus on the need to move toward digitization of agribusiness payments to farmers. The United Nations Capital Development Fund's Better Than Cash Alliance documents several successful cases of "last mile" payments digitization in private-sector supply chains and has built an alliance of companies working toward advancing digital payments (BTCA 2018). Its experience shows that, while this is a challenging endeavor, it is indeed possible to make significant gains over a relatively short period. In 2018, building on its previous efforts and achievements in this area, Gap Inc. announced a goal for all its Tier 1 suppliers (approximately 800 factories in about 30 countries) to fully transition from a cash-based system to digital payments by 2020. In 2018, 80 percent of its factories were already making digital payments.<sup>21</sup>

**4.4 Agribusinesses should strengthen partnerships with PSPs and better leverage the opportunity presented by the fintech revolution:** Several agribusinesses already partner with PSPs to deliver digital payments to farmers effectively and efficiently. The KTDA case (box 1) is an early example of a partnership between a multinational bank and a farmers organization to advance digital payments to farmers. Cargill has partnered with MTN in Ghana to ensure that MTN's mobile money agents have enough liquidity during the period when it makes the bulk of its payments to farmers (GSMA 2018a). Partnerships can be a win-win opportunity for PSPs and agribusinesses. GSMA's Agritech toolkit for digitization of agricultural value chains presents the business case for mobile money providers and agribusinesses to invest in "last mile" digitization (GSMA 2020b). Mastercard sets out a broader case for partnerships between financial service providers and firms in the real sector (Mastercard 2019).<sup>22</sup>

For PSPs, digitization of agribusiness payments presents a large revenue opportunity. GSMA estimates the revenue opportunity in SSA for mobile money providers to be \$214 million in 2021 (GSMA 2020a). For agribusinesses, partnerships can help negotiate better pricing structures for bulk payments. The ability of agribusinesses to pay full or part of the transaction fees makes such partnerships particularly attractive for PSPs. The cost of transaction fees

21. <https://www.betterthancash.org/news/media-releases/gap-inc-sets-new-goal-for-apparel-suppliers-to-pay-garment-workers-digitally-by-2020>

22. The paper highlights opportunities for partnerships between financial services providers and contract manufacturers, mass transit providers, fast-moving consumer good companies, energy providers, and agribusinesses.

is often a disincentive for farmers to accept digital payments, and the willingness of companies such as TruTrade and Inbev to pay the transaction costs can be instrumental in persuading farmers to accept digital payments. The TruTrade case (box 2) shows that the cost of such fees as a share of the total payment to the farmer can be relatively low for agribusinesses. VegPro's experience (box 2) suggests that even relatively small firms can negotiate lower fees for bulk payments. These partnerships can also help test innovations that can demonstrate to PSPs the business case for innovating on pricing models. For example, research by the Consultative Group to Assist the Poor in partnership with Olam shows that there is a business case for mobile network operators and other PSPs offering lower pricing structures for high-frequency face-to-face transactions (Hernandez, Riquet, and Sberro 2018).

Agribusinesses should also consider becoming agents for banks or mobile money providers. When allowed by

regulation, larger agribusinesses can become corporate agents, while smaller agribusinesses, such as agricultural input dealers, can become retail agents. This can potentially be attractive to agribusinesses, since it can offer a new revenue stream while also creating the opportunity to offer a broader set of additional services to the farmers in their supply chains. Agribusinesses with large national footprints could significantly advance the digitization of farmer payments. Examples of such agribusinesses include the large licensed buying companies in Ghana that are authorized to procure cocoa, the warehouses affiliated with the Ethiopian Commodity Exchange in Ethiopia, and large agricultural input dealers in many countries.

Agribusinesses that do not see a business case or find it challenging to partner with PSPs directly should explore partnerships with fintechs to foster increased digitization of agribusiness payments. Box 5 describes the partner-

#### BOX 5

### AB InBev: Blockchain-based Agribusiness Payments to Farmers

A partnership between AB InBev, the world's largest brewer, and BanQu, a blockchain-based platform, has helped AB InBev advance its agenda to digitize farmer payments as part of its 2025 sustainability goal, which is to ensure that 100 percent of farmers are properly skilled, connected, and financially empowered. AB InBev purchases from over 15,000 smallholder farmers globally, most of whom are in SSA.

In June 2018, around 2,000 cassava farmers in Zambia began selling their harvests to Zambian Breweries, an AB InBev subsidiary, through the platform. In 2019, the platform was rolled out by Nile Breweries Limited, another InBev subsidiary, to purchase barley in Uganda and aid in the distribution of seeds and other crop inputs for approximately 1,700 barley farmers. BanQu's platform creates a decentralized digital ledger of each transaction for the produce bought on the platform. Instead of cash, each farmer receives a digital payment through one of the major mobile money providers in the country. The platform also tracks the volume of goods delivered, the quality of those goods, and the price paid. Both the agribusiness and farmers benefit from increased traceability and transparency in their supply chain.

In the medium term, AB InBev expects the inclusion of inputs in the platform to better enable the provision of credit and other financial services to farmers. Nile Breweries Limited is piloting a new direct-to-farmer weather-based crop insurance through start-up partner OKO in conjunction with BanQu. In 2020, Nile Breweries plans to extend the use of the platform to its broader barley program as well as its sorghum program. Additionally, in both Zambia and Uganda, beyond tracking the purchase of crops, BanQu also will deploy smart contracts to help the breweries and farmers plan for the season. AB InBev also plans to extend the use of the platform to its sorghum program in Tanzania in 2020.

Beyond Africa, AB InBev has implemented the BanQu platform to support its barley program in India and plans to deploy the platform in a smallholder cassava program in Brazil in 2020, while continuing to explore the use case for the platform in other Latin American supply chains.

Source: <https://www.fastcompany.com/90328012/this-digital-ledger-helps-small-farmers-get-a-fair-deal> and inputs from Katie Hoard, Global Director, Agricultural Innovation and Sustainability, AB Inbev.

ship between AB InBev, the world's largest brewer, and BanQu, a fintech based in the United States with operations in Zambia and Uganda. The partnership with BanQu helps reduce AB InBev's cost of directly making many relatively small payments and provides the company with the opportunity to provide value-added services. It should be noted that the exponential growth of mobile money in Zambia in recent years is likely to have been critical in making the InBev initiative feasible (World Bank 2020). In addition to cost efficiencies, such partnerships with fintechs can facilitate the delivery of other livelihood-enhancing financial services beyond payments, such as digital credit and savings, as well as insurance. The Consultative Group to Assist the Poor documents several Fintech innovations that have the potential to scale up financial inclusion of the unbanked (Murthy et al. 2019).

**4.5 Development finance partners should support targeted initiatives on agricultural-payments digitization.** Given the benefits of agricultural-payments digitization to multiple stakeholders — farmers, agribusinesses, and rural economies in general — development partners need to scale up support to further this agenda.

The World Bank is supporting two projects in SSA with components related to digitization of agriculture payments. The \$50 million Benin Rural Transformation Project includes a component that supports the digitization of agribusiness payments to smallholders through the creation of a single digital platform linking agribusinesses, smallholders, and mobile network operators. In a second phase, the platform is also expected to enable traceability of smallholder transactions. The \$100 million Niger Smart Villages for Rural Growth and Digital Inclusion Project supports (i) the digital registration and onboarding of smallholders in multifunctional digital centers; (ii) the upgrading of agriculture suppliers' information technology systems and the creation of a digital platform that will allow farmers associations to order and purchase inputs and make direct payments to their members using a mobile phone; and (iii) use data associated with digital agricultural payments and other alternative data to generate credit scores. The project is expected to benefit around two million farmers. The International Finance Corporation is also scaling up its work in this area by building on its work with Cargill in Côte d'Ivoire from 2013 to 2018 (IFC and Mastercard Foundation 2018).

## 5. CONCLUSION

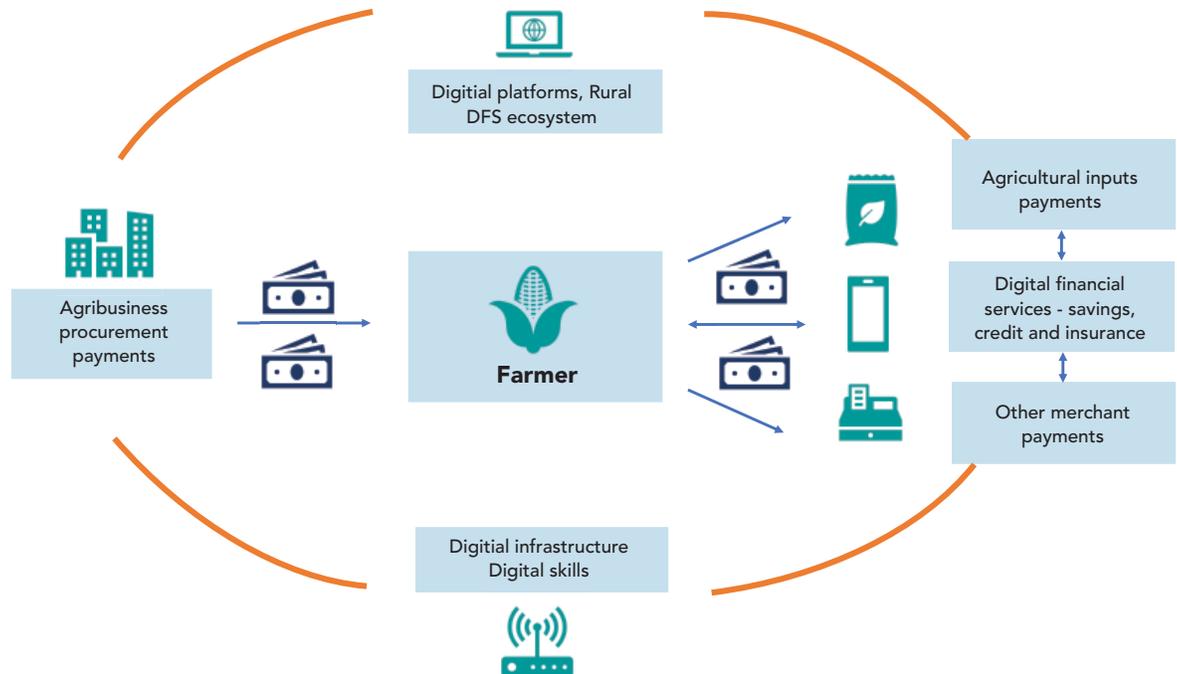
Farmers, agribusinesses, and the rural economy stand to gain from increased digitization of agribusiness payments. Digitization can advance financial inclusion of farmers and thereby help them smooth consumption, make productivity-enhancing investments, and better manage their vulnerability to shocks through improved access to savings, credit, and insurance products. For agribusiness firms, digital payments can help improve not only efficiency but also transparency by bringing better visibility to how and when farmers are paid, thereby enabling them to comply better with their commitments to sustainability. Lastly, regular digital payments from agribusinesses can benefit the rural economy more broadly by strengthening the rural DFS ecosystem by improving the business viability of DFS agents, encouraging merchant payment acceptance, and enabling more e-money usage for local payments.

Financial inclusion of farmers is critical if they are to participate fully and successfully in a digital economy of the future. Digitization of payments by agribusinesses to farmers can act as the ramp to broader financial inclusion by enabling access to transaction accounts as well as adding value by facilitating better usage of these accounts. Such transaction accounts can be used for a range of liveli-

hood-enhancing purposes that help smooth consumption and build assets through credit, saving, and insurance. When combined with solutions that enable acceptance of digital payments by agricultural input dealers and other rural businesses, digitization of agribusiness payments can help significantly increase the uptake of agricultural-payments digitization initiatives and strengthen the digital economy.

The analysis and recommendations presented in this report suggest that while levels of digitization in agricultural payments in SSA are rising (albeit from a very low base), much more needs to be done to accelerate the pace of digitization. These include actions by governments to strengthen the foundational drivers of a digital economy and the ecosystem for rural DFS, and more specific actions targeted at agricultural payments; by agribusinesses to strengthen partnerships with PSPs and fintechs; and by development partners to support targeted initiatives on agricultural-payments digitization. Figure 5.1 shows a schematic representation of the digitization opportunity presented by the agribusiness payments that are currently made in cash, the direct and indirect benefits that can flow from digitization of these payments, and the challenges that needs to be addressed to realize the opportunity.

**FIGURE 5.1: Digitization of Agribusiness Payments to Farmers: A Schematic Representation**



Source: Authors

Additional country-level analysis, such as those undertaken by the Better Than Cash Alliance and World Cocoa Foundation in Ghana (BTCA and World Cocoa Foundation 2020a, 2020b), by the International Finance Corporation and Mastercard Foundation in Côte d'Ivoire (IFC and Mastercard Foundation, undated), and by GSMA in both of these countries (GSMA 2017, 2018a), would be needed to better understand the demand- and supply-side constraints across specific country contexts and commodity value chains, farmers' preferences, and obstacles for target population segments, such as women farmers, based on which actions can be tailored to the relevant context.

The COVID-19 pandemic has only reinforced the urgency of this agenda. Digitizing payments has become even more pertinent in avoiding disruptions to the supply chain and maintaining economic activity. The ongoing crisis provides additional impetus to accelerate the pace of digitization of agribusiness payments to allow firms and farmers to stay resilient, maintain the supply of food and other agricultural commodities, and combat the negative shocks to income caused by the pandemic.

## APPENDIX A: REFERENCES

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**APPENDIX B: AGRIBUSINESSES THAT PARTICIPATED IN THE AAPS**

	<b>Name of Agribusinesses</b>
<b>1</b>	AB InBev
<b>2</b>	AFEX Commodities Exchange Limited
<b>3</b>	Barry Callebaut
<b>4</b>	BOVIMA (Bonne Viande de Madagascar)
<b>5</b>	Bunge
<b>6</b>	Cargill
<b>7</b>	Country Bird Holdings
<b>8</b>	Ecom
<b>9</b>	Export Trading Group (ETG)
<b>10</b>	FrieslandCampina
<b>11</b>	Interprofession of the maize sector of Mali
<b>12</b>	JFS (Joao Ferreira dos Santos)
<b>13</b>	Kenya Tea Development Agency Holdings Ltd. (KTDA)
<b>14</b>	Kyagalanyi Coffee Ltd / Volcafe Uganda
<b>15</b>	Louis Dreyfus Company
<b>16</b>	Mali Shi
<b>17</b>	Mars Wrigley Confectionary
<b>18</b>	McCormick and Company
<b>19</b>	Meru Central Coffee Cooperative Union Ltd
<b>20</b>	Mukwano Industries (U) Ltd
<b>21</b>	Neumann Kaffee Gruppe (NKG)
<b>22</b>	Olam International
<b>23</b>	Olivado EPZ Limited
<b>24</b>	Produits du Sud
<b>25</b>	Sucden
<b>26</b>	Telcar Cocoa Ltd.
<b>27</b>	TruTrade Ltd
<b>28</b>	Unilever
<b>29</b>	VegPro Kenya Ltd

## APPENDIX C: AFRICA AGRIBUSINESS PAYMENTS SURVEY QUESTIONNAIRE

1. Agribusiness Information						
Name of the company:						
2. Respondent Information						
Name:						
Title:						
Affiliation:						
Phone Number:						
Email:						
3. Procurement in Africa. Please provide the following information for the crops you procure in Africa.						
Total approximate value of procurements last fiscal year (in US\$ million equivalent) (enter data)	Estimated Number of farmers in the supply chain* (in 000s) (enter data)	Estimated Share of number of farmers paid digitally (%) **	Estimated Share of value of payments to farmers paid digitally (%) **			
		<ul style="list-style-type: none"> <li>• None</li> <li>• &lt;10%</li> <li>• 10%-30%</li> <li>• 30%-50%</li> <li>• &gt;50%</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> <li>• &lt;10%</li> <li>• 10%-30%</li> <li>• 30%-50%</li> <li>• &gt;50%</li> </ul>			
*Including farmers in direct procurement programs and farmers from whom procurement is done by suppliers.						
**including payments in direct procurement programs as well as procurements through intermediaries.						
4. Countries with highest levels of Digitization of Procurement Payments. Please provide the following information for the top 3 country-crop combinations with highest share of procurement payments made through digital channels. <sup>24</sup>						
Commodity	Country	Final payer to the farmer	Payment Disbursement instrument to the farmer	If other specify (enter specification)	Primary withdrawal channel by the farmer	If other specify (enter specification)
		<ul style="list-style-type: none"> <li>• Directly by the company</li> <li>• Buying agent (intermediary)</li> <li>• Farmer organization</li> </ul>	<ul style="list-style-type: none"> <li>• Electronic voucher</li> <li>• Credit transfer to a bank account</li> <li>• Credit transfer to a NBFI account</li> <li>• Credit transfer to e-money/ mobile money account</li> <li>• Other</li> </ul>		<ul style="list-style-type: none"> <li>• Branch of a bank</li> <li>• Branch of a NBFI</li> <li>• Agent of a bank</li> <li>• Agent of a NBFI</li> <li>• Agent of a nonbank payment service provider</li> <li>• E-wallet of a bank</li> <li>• E-wallet of a nonbank payment service provider</li> <li>• Other</li> </ul>	

24. This question was modified for national respondents given that they only procure from one country

5. Rank the Major Reasons for not having fully digitized payments to farmers.					
Ranking	Reason			If other specify (enter specification)	
	<ul style="list-style-type: none"> <li>• Farmers prefer cash</li> <li>• No digital channels to reach majority of farmers; limited network coverage</li> <li>• Low ownership of mobile phones</li> <li>• Limited financial literacy</li> <li>• Investment needed from company too high</li> <li>• Other</li> </ul>				
1					
2					
3					
6. Corporate Strategy on Payments Digitization					
Is there a corporate initiative to increase or implement digital payments to farmers in Africa?	Corporate Priority	If there is a corporate target toward digitizing payments to the farmers, what % of farmers in your supply chain are targeted to receive digital payments by end 2020?* (enter data)		What investments is the company planning to make in the next three years to support its digitization efforts? (in US\$ million equivalent) (enter data)	
	<ul style="list-style-type: none"> <li>• Low</li> <li>• Medium</li> <li>• High</li> </ul>				
*Including farmers in direct procurement programs and farmers from whom procurement is done by suppliers.					
7. Payments Digitization - Country Initiatives. Please provide the 3 country-crop combinations that are of highest priority to the company.					
Commodity	Country		What % of farmers in the supply chain are expected to receive payments digitally by end 2020?*		
*Including farmers in direct procurement programs and farmers from whom procurement is done by suppliers.					

