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FOREWORD



The Ethical Tea Partnership (ETP) is dedicated to supporting our members enhance transparency and accountability across the tea supply chain. Responsible digital payments are one way in which to achieve this, whilst at the same time, proactively safeguarding and enabling users, particularly women who make up most of the tea workers and farmers, to reap the benefits of digital financial inclusion.

For this reason, we joined the UN-based <u>Better Than Cash</u>
<u>Alliance</u> to build on ETP's existing initiatives to digitize various parts of the tea supply chain to increase uptake of digital financial tools and services within the tea communities.

We are delighted that our first joint publication presents clear evidence that <u>responsible digital payments</u> help promote industry growth, boost productivity, and have the potential to improve the livelihoods for 100,000 tea farmers and workers in Rwanda.

This report provides a dual function of sharing knowledge on how digitizing payments can benefit both companies and tea workers, but more importantly how to deliver this responsibly and at scale for the tea industry.

Beyond receiving their payments and wages digitally, we would like to see tea workers and their wider communities benefit from using digital financial tools and services, so they are not exposed to the continual risks that come with 'cash in hand' payments. This requires investing in solutions that promote transparency, accountability and interoperability to boost confidence and economic stability.

We are committed to working closely with all stakeholders in the Rwandan tea sector to address the gaps that remain for scaling responsible digital initiatives. The ETP and the Alliance are supporting the Government of Rwanda's goal to become a cashless economy by 2024. In particular we see our engagement with the National Agricultural Export Development Board (NAEB) as critical for exploring sustainable and scalable solutions for the tea sector.

JENNY COSTELLOE

Executive Director
Ethical Tea Partnership

EXECUTIVE SUMMARY

/4

1. DIGITAL PAYMENTS
PROGRESS IN THE
RWANDAN TEA SECTOR
/18

2. CREATING VALUE FOR ALL STAKEHOLDERS THROUGH RESPONSIBLE SCALING UP OF DIGITAL PAYMENTS /24

3. RECOMMENDATIONS FOR SCALING UP RESPONSIBLE DIGITAL PAYMENTS
/56

References /58

Acknowledgements /60

Abbreviations

AFR	Access to Finance Rwanda
AMIR	Association of Microfinance Institutions in Rwanda
BNR	National Bank of Rwanda
COVID-19	Coronavirus disease 2019
FSP	Financial service provider
FGD	Focus group discussion
GDP	Gross domestic product
GSM	Global System for Mobile Communications
ІСТ	Information and communications technology
ICT4RAg	ICT for Rwanda Agriculture
ID	Identity
ммо	Mobile money operator
МоМо	Mobile money
NAEB	National Agricultural Export Development Board
P2P	Person to person
RNDPS	Rwanda National Digital Payment System
RSwitch	National e-payment switch of Rwanda
RWF	Rwandan Franc
SACCO	Saving and Credit Cooperative Organisation
SDG	Sustainable Development Goal
SKS	Smart Kungahara System
USSD	Unstructured supplementary service data
VSLA	Village Savings and Loans Association

EXECUTIVE SUMMARY





This study lays the foundation for incorporating United Nations Principles for Responsible Digital Payments in the Rwandan tea sector, with the goal of increasing efficiency and improving farmers' living incomes.

The Government of Rwanda views the **tea sector as central to the country's economic development** across several key dimensions in support of the Sustainable Development Goals (SDGs), including its potential to raise smallholder farmer incomes (SDG 10), advance toward zero hunger (SDG 2) and thereby reduce poverty (SDG 1), promote gender equality (SDG 5), and provide good returns and investment opportunities for private investors (SDG 8).

The tea sector is the third-largest employer in Rwanda,

behind coffee and the public sector, directly contributing to the livelihoods of around 1 million Rwandans. The sector employs over 100,000 people, including 50,000 farmers and 50,000 workers in various roles in the value chain. In the fiscal year 2020/2021, revenue from tea exports was valued at \$90 million,¹ up from \$52 million in 2014 - a growth of over 73 percent in six years.² Based on the Rwandan tea pricing mechanism that requires 50 percent of total sales to be paid to farmers, it is estimated that farmers were paid \$45 million in the fiscal year 2020/2021.

The 2020 agricultural household survey by the National Institute of Statistics of Rwanda indicates that **women**, **at 57 percent**, **constitute the majority of farmers across Rwanda's agricultural sectors**. Tea, like many agricultural industries, relies on a female workforce. Yet women are often underrepresented at senior managerial levels. There are no employment data disaggregated by gender for the tea sector in Rwanda, making it hard to track progress against gender goals such as digital financial inclusion.

FIGURE 1

Potential gains from responsibly digitizing payments for farmers in the Rwandan tea sector



Farmers

FINANCIAL SECURITY

87% reduction in payment timelines

(from 4 weeks to 3 days)

Biweekly payments is an incentive with potential for stronger cash-flow management

Approx. **30% increase in productivity** and/or quality of harvest, enabling increased incomes

Increased visibility of deductions, building trust and retention

FINANCIAL INCLUSION

Lower interest rates on digital loans (potential 42% reduction)



Companies

Around **\$8 million savings*** over 10 years that could be spent on addressing climate change issues

At least 10% reduction in plantation wages due to the eradication of ghost workers

Approx. **30% increase in productivity** and/or potential to improve quality



Financial service providers

Access to **new agribusiness customers**, whose farmer base
collectively make up the largest
private-sector customer segment

Digitizing SACCOs led to approx.:

- 34% increase in savers
- 40% increase in value saved
- Increased profitability

Governmentbodies



Supporting the drive for a

cashless economy

Inward investment from companies seeking traceable supply chains, having clear visibility of the farmers and the farms they procure from

In 2021, seven of the 18 tea factories were paying their farmers using digital systems, using a mix of mobile money solutions, automated savings and credit cooperative organizations (SACCOs), and online/mobile banking. These seven companies serve about 22,000 smallholder tea farmers (48 percent of the total). They say that using digital payments has resulted in a minimum 10 percent reduction in plantation worker costs due to the eradication of "ghost workers" and a 30 percent increase in productivity, with the potential to improve product quality. In Figure 1, we further explore the benefits that could be achieved by scaling up responsible digital payments in the tea sector, including that an estimated \$8 million could be saved over 10 years by paying farmers digitally – funds that could be reallocated to address the critical issues affecting the sector, such as climate change.

These benefits could bring much wider impact if **responsible digital payments** were embedded across the whole agricultural sector in Rwanda, with the potential to reach 3.8 million farmers, including 2.1 million women.³

Globally, advances in digital technology and telecommunications have presented new financial-inclusion opportunities for smallholder farmers in rural areas and for value-chain efficiencies. In Rwanda, there is a strong **drive within government toward achieving a cashless economy** through digitization. All the necessary policy and regulatory reforms are in place to support the digitization of agricultural value chains. Examples that illustrate these commitments include (i) the appointments of chief digital officers in all ministries, (ii) the initiation of public-private partnerships to introduce innovative digital solutions for the agricultural sector (e.g., the Smart Nkunganire System and the Smart Kungahara System, SKS), and (iii) the automation of the Umurenge SACCOs by the National Bank of Rwanda (BNR).

A core theme of the strategic plan of the National Agricultural Export Development Board (NAEB) is to develop its capacity on the strategic analytics that will facilitate data-driven decisions. **SKS forms a part of this strategy and there are plans to introduce it in the tea sector**. Introducing this payments system, already being used in the coffee sector, presents an opportunity to digitize the remaining supply chains operating manual systems, with longer-term goals to migrate all supply chains to this system. In addition, the Information and Communications Technology for Rwanda Agriculture (ICT4RAg)



Information and communications systems in place or being developed

The Smart Kungahara System is a digital solution developed for farmers by BK Techouse in partnership with the National Agricultural Export Development Board. It enables and standardizes the real-time reporting of cash-crop produce data across entire value chains, enabling data-driven decision-making. It is currently used in the coffee value chain.

The online export services system is used to provide certificates of quality and origin for tea and coffee. All tea and coffee exporters are registered in this system.

E-soko is an online marketplace being developed for agricultural commodities, to link buyers and sellers of Rwandan tea, coffee, and horticultural and emerging commodities.

Strategy (2016-2020) aimed to promote the use of digital technologies in agricultural lending, input supplies, subsidies, and advisory services. It had a clear objective to "Expand access to and the uptake of rural and agricultural financial services." To build on the progress to date, the Ministry of Agriculture and Animal Resources is drafting a follow-on digital strategy, due for publication in 2022.

The COVID-19 crisis has further illustrated the importance of digital financial services and platforms. One of the pandemic's most visible impacts worldwide, but in Rwanda in particular, has been the dramatic acceleration toward digital solutions and digital payments. In Rwanda, government data show that the growth in person-to-person (P2P) transfers has been phenomenal, in both value and volume. In the first week of January 2020, the total value of funds sent via P2P transfers was RWF7.2 billion (around \$7.6 million). In the last week of April 2020, the value sent reached RWF40 billion (over \$42 million) - an increase of over 450 percent. The number of unique subscribers making P2P transfers doubled from 600,000 in the week before lockdown to 1.2 million in the week after it. In the final week of April 2020, some 1.8 million individuals made P2P transfers.

In many parts of the world, including Rwanda, the acceleration of digitization may, though, continue to deepen the rural and gender digital divides. These divides exclude farmers, rural merchants, and women from growth and resilience. Responsible payment principles thus need to be applied in the ongoing digitization initiatives in the tea sector.

The value of funds sent via P2P transfer increased over 450% from January to April 2020





The framework of the United Nations Principles for Responsible Digital Payments provides a focused approach to scaling up digital business-to-person payments in a way that benefits tea farmers and rural communities, especially women, as well as tea value-chain actors and financial service providers (FSPs), while also contributing to sustainable national economic growth.⁴ These principles advocate responsible practices in the digitization of payments: what it means to be responsible, who needs to be responsible, and how to be responsible. The proposed approach for the Rwandan tea sector builds on the evolving payments ecosystem and identifies six key areas of action, requiring a multi-stakeholder approach, to ensure farmers are at the center of a responsible and sustainable scale-up of digital payments.



To ensure farmers benefit from digitization, factories must lead the transition.

The Government of Rwanda can facilitate accountability at each step of the digitized value chain, especially as the technology evolves.

As businesses look to gain the efficiencies of digital payments over cash transactions, the complexity of the platforms and relationships that enable these can create challenges. In the Rwandan tea sector, there are several areas of the value chain that have been digitized and/or are supportive of the existing digital payments systems. While all expert components of the value chain have implemented digital solutions, including payments, there has been limited digitization at the level of smallholder tea farmers and their workers.

Where digital payments have been implemented in the tea value chain, they have provided benefits for tea farmers – namely, time savings (reported by 30 percent of farmers interviewed) and a reduction in transport costs (reported by 23 percent). But more effort is needed by FSPs to improve user experience and to address the issues of fraud, fees transparency, and access to money.

Rwanda has implemented legislation and regulation to ensure that digital payments systems and providers treat users fairly. In light of the experiences of tea farmers and the emerging ethical implications of payments technologies, there is increasing urgency to hold service providers accountable for generating and responding to data on user experience and satisfaction. Collaboration between FSPs, mobile money operators (MMOs), cooperatives, SACCOs and tea factories can also help to improve oversight and to identify challenges in farmer payment journeys.



As the tea sector is relignt on a workforce that has a majority share of women, it is essential to increase their access to and use of digital payments and other digital financial services. FSPs, in partnership with the factories, should tailor their services to the financial needs of women farmers. In addition, further development of the SKS system by NAEB could enable reporting of disaggregated employment data as soon as 2024.

The lack of employment data disaggregated by gender for the tea sector in Rwanda makes it hard to track progress against gender goals such as digital financial inclusion. This gap needs to be addressed.

All farmers value the importance of mobile payments and the role that SACCOs continue to play in providing access to finance for rural farming communities. Most farmers registered in the tea SACCOs are men, however, even though most of the work is done by women. Full access, transparency, and control over payments are therefore not always possible for women. Facilitating the opening of payment accounts for women is important to enable equal access to and usage of digital accounts. This would be in line with the gender mainstreaming approach under the government's financial inclusion strategy.

Access to gender-disaggregated data and a detailed understanding of women farmers' financial needs are limited in the tea sector. Tea factories can work with FSPs to collect and share data that can determine specific financial use cases and solutions for women farmers, such as savings and credit.

FSPs, especially mobile money providers, must also pay attention to designing payments solutions that are user-friendly and accessible for women to grow and sustain account usage. Over half of the farmers interviewed were not comfortable using their current digital payments services, and two thirds of women farmers needed guidance to use these solutions, indicating a significant gap in user experience.



All farmers and factory workers have the right to their funds as soon as they are disbursed digitally by the factories. To ensure digital payments are "better than cash" it is recommended that factories and FSPs coordinate to ensure funds are immediately available.

For most tea factory workers and farmers, the introduction of digital payments has helped to improve the predictability of access to funds. In addition, there are cost and time savings from using these types of payment platforms. Nevertheless, the limited network of mobile agents, coupled with a lack of sufficient float, undermines the ability of tea farmers to access their money when they need it, especially where the payments ecosystem does not yet allow for end-to-end digital transactions. A quarter of farmers also experienced challenges in accessing the mobile network, which again meant they did not have access to their funds when needed. As a result, many farmers and other users simply resort to cash transactions. This is not unique to the tea sector, therefore improving agents' liquidity management and FSPs providing more support across rural areas, will bring more confidence to users, which in turn will increase adoption and usage across rural landscapes.



FSPs, through the government's leadership, must accelerate progress to full interoperability, as per the Rwanda National Digital Payment System, to increase efficiencies and scale, and to reduce farmers' costs.

Although it is currently not possible to transact seamlessly across different mobile money platforms, the Government of Rwanda is implementing the Rwanda National Digital Payment System (RNDPS), which is expected to deliver interoperability across MMOs. Barriers still exist in transacting across platforms, exacerbated by higher costs in transacting across platforms, resulting in the limited uptake of digital payments systems. It is anticipated that the RNDPS will be fully operational in 2023, which will allow users to transact seamlessly across mobile money platforms at a nominal cost, resulting in a higher uptake of digital payments.

Interoperability is dependent on the digitization of value chains downstream from the farm level. For some farmers, the costs associated with using mobile money to pay for goods and services is too high. Micro-merchants opt to use P2P transfer, which passes the cost to the consumer, rather than incur a 0.5 percent merchant fee on mobile money payments. Farmers therefore choose to cash out. To ensure interoperability benefits the farmers, the first point of call is the automation of the SACCO. To date, the project to digitize all 416 Umurenge SACCOs has been rolled out in all three districts of Kigali City, with implementation ongoing in Gicumbi and Rubavu districts. The automation of all the SACCOs is expected to be completed during the second half of 2023.

Developing solutions that are fully integrated, covering all aspects of value-chain activities, would provide benefits for all value-chain actors. There are several digital innovations that have been implemented in the tea sector, such as digital farmer registries and the use of digital weighing scales. These have delivered some efficiency savings and greater transparency for farmers, increasing their interest in digital technology. Nevertheless, some of the gains have been restricted, and the potential for reaping greater economies of scale has been undermined by the lack of digitization in other parts of the tea value chain.



To urgently address the lack of trust in digital payments, it is recommended that the factories, cooperatives, and FSPs, under the leadership of NAEB, cooperate to deploy digital solutions and set up working groups - to improve transparency in pricing, payments, and deductions, and agent operations.

Among farmers, there was an underlying distrust of digital payments systems. In the areas where digital payments systems have been implemented, a third of famers were concerned about fraud on digital platforms. Farmers encounter issues of transparency at two levels: on pricing and deductions made by cooperatives, and on charges by FSPs. They consider digital systems as opaque with limited or no transparency on deductions. Farmers in non-automated tea SACCOs face lengthy delays in getting payments and a lack of transparency on account reconciliation.

Instances of additional, unauthorized fees being applied by mobile money agents have also been encountered by farmers (outside the traditional pricing published by the MMOs). Farmers are also not able to obtain statements of accounts easily.



Strengthening recourse mechanisms for smallholder farmers not only increases trust but also reduces the time spent following up on queries affecting farmers. Factories and cooperatives will need to work with FSPs to strengthen and make clear to farmers their grievance-redressal systems. NAEB, in its capacity as regulator and working with BNR, is continuing to enforce the Financial Consumer Protection Law.

The surge of digital services means that providers are increasingly engaging with first-time users of digital payments, and are therefore likely to need additional support. The recourse mechanisms on certain platforms are not clearly documented for users and there is still limited awareness of them among users. Late payments are also experienced by farmers due to delays between the factories and the SACCOs. On the regulatory front, existing digital payments laws do not provide clarity on how the ethical implications of payments technology will be handled or addressed. Given their proximity to farmers, cooperatives and tea factories are well positioned to support awareness-raising efforts on digital financial security and recourse mechanisms; but FSPs also have a responsibility to raise service standards on recourse responses, leveraging community-based structures. The new Financial Consumer Protection Law also empowers the regulator to work with FSPs to develop redressal mechanisms that bring trust and confidence to the farmers.



Methodology

The findings reported here are based on responses from over 500 people in the tea sector. These included 415 survey respondents who were smallholder farmers (34 percent women), 80 farmers (57 percent women) participating in 10 focus group discussions (FGDs), and 30 representatives of key stakeholder groups taking part in key informant interviews (see Figure 2). The study covered farmers associated with five tea factories in Northern, Western, and Southern provinces. While the research mainly focused on smallholder tea farmers, five factory workers from one tea factory were engaged in a focus group discussion to understand their experiences of digital payments (Box 1).

FIGURE 2 Methodology

RESEARCH GOAL

How do digital payments lead to improved incomes for tea farmers and increased efficiency for tea factories in Rwanda?

1. RESEARCH SCOPE

Through the lens of the United Nations Principles for Responsible Digital Payments:

Understand the payments ecosystem for tea farmers, including the use cases

Define the opportunities for and limitations to digital payment adoption by farmers

Explore digital payment initiatives that could be adapted for the tea sector and increase uptake of digital solutions in agriculture more broadly

Understand how all stakeholders can work together to achieve responsible scale up of digital payments

2. RESEARCH APPROACH Digital payment assessment

10 FGDs 30 Key Literature **Secondary Quantitative survey:** with informant 415 tea farmers review data analysis interviewed (34% women) 80 farmers interviews **PRIMARY DATA SECONDARY DATA**

> **COMPARE** INTERPRETATION

3. ANALYSIS AND RECOMMENDATIONS

A digital payment assessment of the tea sector with action-driven recommendations for key stakeholders to promote and scale responsible digital payments in the tea sector

BOX 1

Tea factory workers' experiences of digital payments

While this assignment mainly focused on smallholder tea farmers, the field team took the opportunity to interview a small number of tea factory workers in a focus group discussion – five workers from one tea factory. Feedback from these workers and an interview with the factory owner indicated that almost all workers were moved to digital payment platforms because of the pandemic. The platforms used were mainly the mobile money solutions available from MTN and Airtel Money.

The benefits and challenges identified in the use of these digital systems were similar to those experienced by the smallholder farmers who participated in this research.

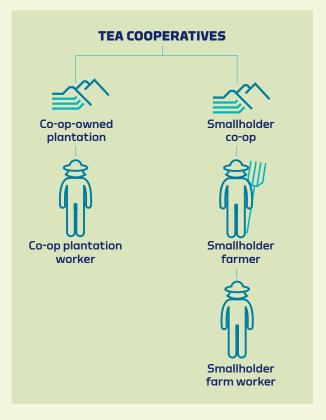
Benefits

- Being paid via mobile money saves time, and payments are received quickly.
- There are lower charges involved when paid via mobile money. Workers previously spent significant sums on transport when they had to collect their payments from their SACCO.
- They can manage their money better than when they have cash in hand.

Challenges

- It is not always possible to pay for other goods and services using mobile money, since most people use cash.
- Some women workers had experienced fraud at the hands of the agents.
- Users also complained of the system language automatically changing to English from Kinyarwanda.





Agriculture is at the heart of the Rwandan economy. According to the Agricultural Household Survey 2020, the estimated number of agricultural households in Rwanda is 2.3 million, equivalent to 80 percent of households.⁵ In the 2019/2020 agricultural year, 3.8 million adults were engaged in agricultural activities (crops and/or livestock), including 2.1 million women (55 percent). The agriculture sector contributed 24 percent of total GDP in 2021, equivalent to about \$2.5 billion (RWF2,633 billion). Innovations in the sector therefore have the potential to be scaled up and to deliver benefits for all farmers, workers and households engaged in agriculture.

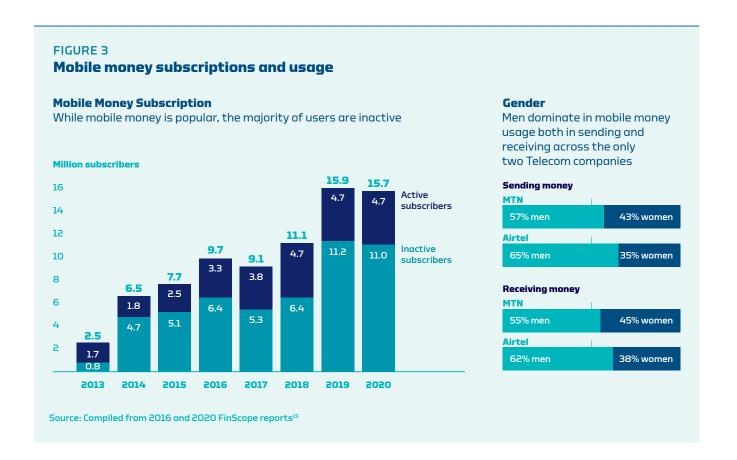
The tea sector is the third-largest employer in Rwanda (after coffee and the public sector), directly contributing to the livelihoods of around 1 million Rwandans. The sector employs over 100,000 people, including 50,000 farmers and 50,000 workers in various roles in the value chain. In the fiscal year 2020/2021, revenue from tea exports was valued at \$90 million,⁶ a growth of over 73 percent in six years, from the \$52 million in 2014.⁷ Farmers were paid an estimated \$45 million for 2020/2021.⁸

Rwanda has a clear policy drive to shift to a cashless economy,

as articulated in the country's Vision 2050° and the National Strategy for Transformation 2017–2024. ¹⁰ The shift is expected to drive financial inclusion and prosperity for all. The Rwandan payments industry, supported by the National Bank of Rwanda (BNR) and the Ministry of Finance and Economic Planning, identified the interoperability of digital retail payments as being critical to accelerating the shift. Several policy and strategic frameworks have been developed to help to shape the digital payments ecosystem in Rwanda. Examples that illustrate these commitments include (i) the appointments of chief digital officers in all ministries, (ii) the initiation of public–private partnerships to introduce innovative digital solutions for the agriculture sector (e.g., the Smart Nkunganire System and the Smart Kungahara System, SKS) and (iii) automation of the Umurenge SACCOs by BNR.

Advances in digital technology and telecommunications have been key drivers in improving access to finance. About 25 percent
of banked adults use digital payments, amounting to around 1.7 million
people and an increase from the 6 percent or 400,000 people in 2016.¹¹
Digital payments have had a direct impact on the usage of accounts:
68 percent of bank clients use their accounts monthly, up by 16 percentage
points since 2016.¹² Mobile banking has grown from 26 percent in 2016
to 40 percent in 2020 and internet banking has grown from 2 percent to
32 percent in the same period (Figure 3).¹³ It is also worth noting that the
use of banking via unstructured supplementary service data (USSD) codes
increased from 0 percent in 2016 to 24 percent in 2020.¹⁴

A core theme of the strategic plan under the National Agricultural Export Development Board (NAEB) is to develop its capacity on the strategic analytics that will facilitate data-driven decisions. **SKS forms a part of this strategy and there are plans to introduce it in the tea sector**. Introducing this payments system, already being used in the coffee sector, is an opportunity to digitize the remaining tea sector supply chains that are operating manual systems. The Rwanda Agriculture (4RAg) Strategy (2016–2020) had also aimed to promote digital technologies in agricultural lending, input supplies, subsidies and advisory services. It has a clear objective to "Expand access to and the uptake of rural and agricultural financial services." The Ministry of Agriculture and Animal Resources is due to publish a follow-on digital strategy in 2022, to build on the progress to date.



While the use of digital financial services and products has been growing steadily, an emerging challenge is the ability of consumers to use them seamlessly across the financial platforms that enable economic transactions. In other words, interoperability remains the biggest challenge for the financial sector to address to reduce costs while expanding access for all.

The COVID-19 crisis has illustrated the importance of digital financial services and platforms. In March 2020, BNR instituted a set of rapid economic policy changes to support both businesses and individuals during the lockdown and to further the national digitization agenda. These included:

- Zero charges on all transfers between bank accounts and mobile wallets.
- Zero charges on all mobile money transfers.
- · Zero merchant fees on payments for all contactless point-of-sale transactions via mobile.
- An increase in the limit for individual transfers using mobile money wallets, from RWF500,000 to RWF1.5 million.



BOX 2

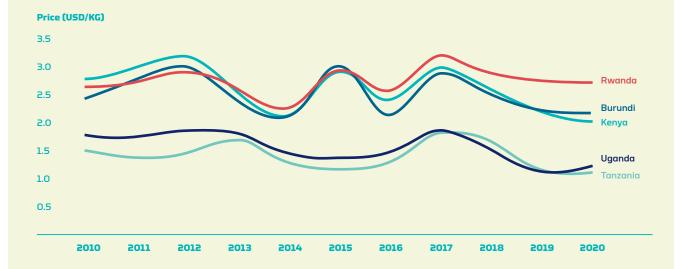
Impact of COVID-19 on the Tea Sector

The impact of COVID-19 on tea production has been minimal compared with that on other sectors because farming activities were exempt from lockdowns. Production during the fiscal year 2020/2021 showed a slight uptick, which continued during the second half of 2021. This could be attributed to the higher availability of labor – resulting from people moving back to their rural homes due to lockdown restrictions affecting employment in non-farming activities. Tea prices in general, though, were negatively affected, due to uncertainties in international markets, leading to a lower average price for Rwandan tea (down by 6.4 percent) during 2020/2021 compared with the previous fiscal year (Figure 4). The tea market is now seeing a correction, and this has already resulted in increased prices for green leaf at the beginning of 2022. 16

FIGURE 4 **Performance of Rwandan tea - auction prices**

Tea Prices

Rwanda's tea gets higher prices at the Mombasa Auction compared to other teas for East African countries



Source: Compiled from tea auction data (2010-2020) from the National Agricultural Export Development Board

The net effect of this drive to increase the use of digital financial services was significant. Using data from the Rwanda Utilities Regulatory Authority, insight2impact analyzed mobile money transfer data and found that, since the implementation of the lockdown, the growth in P2P transfers, in both value and volume, has been phenomenal. In the first week of January 2020, the total value of P2P transfers was RWF7.2 billion (about \$7.6 million). By comparison, in the last week of April 2020, it reached RWF40 billion (over \$42 million) – an increase of more than 450 percent. Using national ID numbers, the analysts were able to identify the number of unique subscribers making P2P transfers, finding that it doubled from 600,000 in the week before lockdown to 1.2 million in the week after. In the final week of April 2020, 1.8 million individuals made a P2P transfer. Figure 5 and Box 2 illustrate the impact of the COVID-19 policy changes on digital payments systems.

In spite of the progress in accelerated digitization, it has the potential in many parts of the world, including Rwanda, to deepen the rural and gender digital divides. It risks excluding farmers, rural merchants and women from growth and resilience. To counter this, applying the framework of the United Nations Principles for Responsible Digital Payments¹⁹ (Figure 6) provides a focused approach to scaling up digital business-to-person payments fairly – in a way that benefits tea farmers and rural communities, especially women, as well as tea value chain actors and FSPs, while also contributing to sustainable national economic growth.²⁰ The proposed approach for the Rwanda tea sector builds on the evolving payments ecosystem and identifies six key areas of action, requiring a multi-stakeholder approach, to ensure farmers are at the center of a responsible and sustainable scale-up of digital payments.

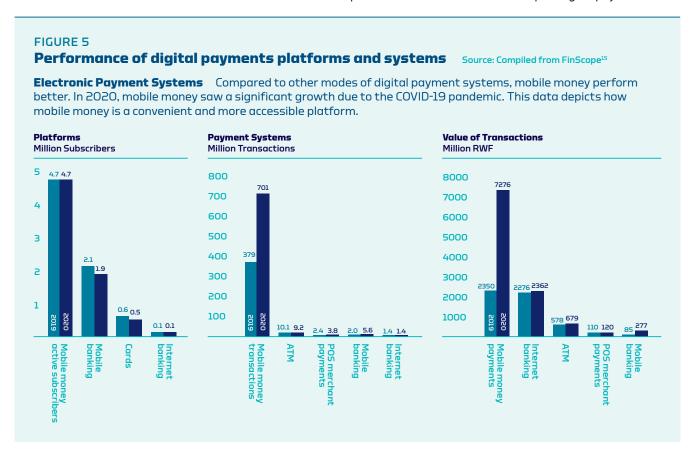


FIGURE 6

The United Nations Principles for Responsible Digital Payments

UN Principles for

Responsible Digital Payments

Building trust, mitigating risks & driving inclusive economies



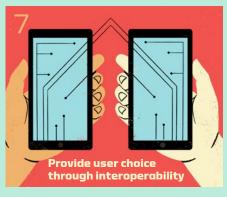
















STAKEHOLDERS THROUGH RESPONSIBLE SCALING UP OF DIGITAL PAYMENTS



Accountability Needed for a Fully Digitized Value Chain



Why it Matters

Standards for responsible scale-up across payment value chains are being constructed. The coming years will provide salutary lessons. To begin, it is important to define what being responsible means – among all actors – and to establish oversight mechanisms.

- Promote the understanding of different actors' roles and responsible behaviors.
- Ensure oversight across the user journey and define accountability.

Advances in digital technology and telecommunications have presented new opportunities for the financial inclusion of rural smallholder farmers. The Government of Rwanda, through the implementation of its national and sectoral strategies, has signaled the importance it attaches to the digitization of agricultural value chains. A growing number of payments, savings, credit and insurance products are being delivered digitally to address the financial needs of smallholder households. Smallholders can benefit from mobile phone platforms, especially. These offer immediate, safe access to government subsidies, cash transfers and remittances. The messaging features of mobile phones can complement digital financial services by offering timely weather information, farming tips, market prices and connections to potential buyers, which can all help to increase farming yields and profitability.

In 2021, seven out of the 18 tea factories in Rwanda were paying their farmers using digital systems. These use a mix of mobile money solutions, automated savings and credit cooperative organizations (SACCOs) and online or mobile banking. The seven companies currently serve around 22,000 smallholder tea farmers across the Northern, Western and Southern Provinces. Workers employed directly by smallholder farmers tend to be paid in cash.

KEY INFORMANT INTERVIEW

Managing Director,

Tea Company

"We pay our workers their wages either via MoMo [mobile money] or into their bank accounts depending on their preference. We pay our farmers through their SACCOs [savings and credit cooperative organizations], who then deliver the payments to farmers using MoMo. Each of our seven tea factories has between 2,000 and 3,000 workers. Previously, it took us about a week to pay them, but now with digital systems, we can pay them instantly with much lower risk. We used to lose crop in the past with workers having to leave work early to go and queue to collect their wages when they were paid using manual systems, but this is no longer the case."

Women farmers indicated that they had benefited from the introduction digital payments as they no longer needed to spend time traveling to collect wages or payments. Women farmers also tend to save more with access to digital accounts and this is manifested by the higher participation in village savings and loans associations (VSLAs).

KEY INFORMANT INTERVIEW Female participant in focus group discussion, Mulindi

When asked about the effects of digitization of the value chain, this participant said, "When we were still getting paid from SACCO [savings and credit cooperative organization], I would leave home at 4 a.m. and come back at around 7 p.m., which means that day, all my responsibilities would be ruined. My kids would come back from to school to no lunch and my cows would spend the day without grass to graze.

"Now, I get to be paid on time without having to sacrifice my time and responsibilities like before."

The existing digital payments solutions are already delivering significant efficiencies that can be scaled up across sectors, such as a 10 percent reduction in plantation worker costs due to the eradication of "ghost workers."21

KEY INFORMANT INTERVIEW Manager, Tea Company

"All farmers and workers should be moved to [a] digital platform. This will improve transparency and increase productivity. We should also find ways of facilitating loans and advances on these platforms."

KEY INFORMANT INTERVIEW Director, Tea Company

"We moved to paying our workers using MTN's mobile money [MoMo] solution at the start of the pandemic. Initially, there was some push back from the workers as they preferred cash but, given the pandemic, they had no choice but to move to using MoMo. For us, the greatest benefit has been the speed of delivering payments to the workers and a significant reduction in labor costs resulting from the eradication of ghost workers from our payroll."

Around \$8 million could be saved over the next 10 years if payments to farmers in the tea sector alone were digitized, removing the time needed by farmers to collect their payments, and that needed by companies to manually process them (see Figure 7). The savings could be spent on pressing issues facing the industry such as climate change resilience. Increased transparency is resulting in strengthened relationships between value chain actors, as evidenced in the feedback from tea factories.

In the Rwandan tea sector, several areas of the value chain have been digitized and/or are supportive of the existing digital payments systems.

Farmers

FIGURE 7

Potential gains from responsibly digitizing payments for farmers in the Rwandan tea sector

Companies

Around **\$8 million savings*** over 10 years that could be spent on addressing climate change issues

At least 10% reduction in plantation wages due to the eradication of ghost workers

Approx. **30% increase in productivity** and/or potential to improve quality

* By removing time spent by farmers collecting cash payroll and admin staff cost handling cash payroll

FINANCIAL SECURITY

87% reduction in payment timelines

(from 4 weeks to 3 days)

Biweekly payments is an incentive with potential for stronger cash-flow management

Approx. **30% increase in productivity** and/or quality of harvest, enabling increased incomes

Increased visibility of deductions, building trust and retention

FINANCIAL INCLUSION

Lower interest rates on digital loans (potential 42% reduction)

Financial service providers

Access to **new agribusiness customers**, whose farmer base
collectively make up the largest
private-sector customer segment

Digitizing SACCOs led to approx.:

- 34% increase in savers
- 40% increase in value saved
- Increased profitability

Government bodies



Supporting the drive for a

cashless economy

Inward investment from companies seeking traceable supply chains, having clear visibility of the farmers and the farms they procure from

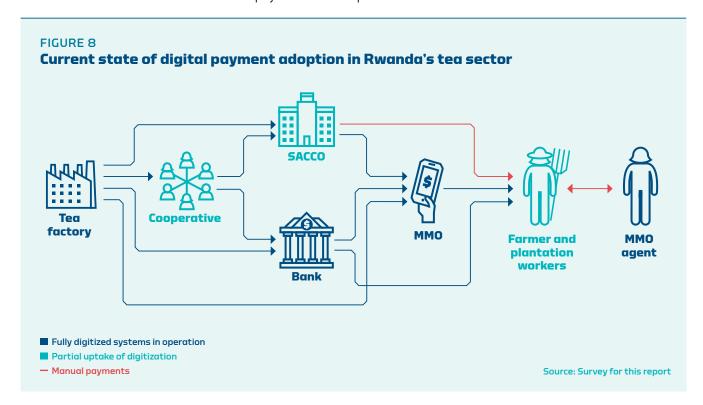
Based on 45,000 farmers and our own calculations of administrative staff processing the payroll taking 5 to 7 days for around 4,000 farmers with an average salary of RWF800,000, over 10 years. The time taken for physical cash collection from a bank or coop is half a day, for travel. ²² Average land holdings per tea farmer are around 0.36 hectares. At a yield of 7,500 kilograms per hectare, this would equate to 2,700 kilograms of green leaf per farm per year. At the average green leaf price of RWF344 per kilogram (April to June 2022), the annual gross earnings would be around RWF928,800 (RWF77,400 monthly and, based on 26 days worked, RWF2,977 daily).

It is clear in Figure 8 that most digital solutions, including payments, have been implemented at the factory level (including field operations), whereas activities further down the supply chain are still using manual systems, both for payments and operations.

Most of the tea factories have digitized their own operations, covering both field and factory activities. This has generally been achieved through the implementation of enterprise resource planning solutions, which cover all aspects of the tea business, with digitized payments for their employees. These systems include digitized green leaf collection and weighing components in some tea catchment areas that could be rolled out to smallholder tea farmers and will allow for the introduction of digital payments.

SACCOs serving tea farmers are a mix of dedicated tea SACCOs and Umurenge SACCOs. At least four tea SACCOs have already been automated with funding and technical assistance from Access to Finance Rwanda (AFR). A further nine are in the process of being automated under a similar AFR program. The 416 Umurenge SACCOs, some of which serve tea farmers, are being automated by a separate initiative being rolled out by BNR and Rwanda Cooperative Agency.²³ The pace of the automation of SACCOs is a hindrance to the adoption of digital payments at the level of smallholder farmers. Nevertheless, the COVID-19 pandemic and the associated health restrictions have helped to drive the use of mobile payments systems in rural areas and in the tea sector.

Sustaining these significant achievements and ensuring farmers reap the full benefits of digital payments requires further action to ensure payments are responsible.



The Action Needed to Make Digital Payments More Responsible and to Increase Usage

In the case of the tea factories that included automated SACCOs in their payment chains, data sharing between the factories, cooperatives and SACCOs was limited to deductions and payments to be made into farmers' accounts. Farmers receive an alert on their mobile phones as soon as their accounts are credited, and they are then able to transfer money into their mobile wallets from their SACCO accounts. Under this model, farmers were not aware of the extent of their information being shared between the various payment chain actors.

Some factories use bulk payments via mobile money platforms, and the information shared between the factories, cooperatives and mobile money operators (MMOs) is limited to farmers' phone numbers and amounts to be credited into their wallets. There have been instances of farmers reporting scams from unknown callers requesting them to return amounts that they claimed to have wrongly transferred. How these scam callers got access to the farmers' mobile numbers was not clear.

The collection and sharing of critical data and information that underpins production and financial decisions needs to be carefully managed. Lead firms within the supply chain (factories) have a responsibility to show leadership and to task relevant stakeholders with ensuring that users are aware of the purpose of the digital solution and the responsibilities of each stakeholder. This could be delivered through a tailor-made digital literacy program that details the responsibilities of each stakeholder within the digital payment chain, so farmers/users are aware of who has access to their data, and how it is managed and kept secure.

Though most tea cooperatives have computer systems, only six have access to the enterprise resource planning implemented by the tea factories. SKS (see box 2) forms a part of this strategy and there are plans to introduce it in the tea sector. Introducing this payments system, already being used in the coffee sector, presents an opportunity to digitize the remaining supply chains currently operating manual systems, with longer term goals to migrate all supply chains to this system. The potential rollout of SKS will have a significant impact on the digitization of the tea cooperatives.

BOX 5

Smart Kungahara System

The Smart Kungahara System (SKS) is a digital platform for use by farmers developed by BK TecHouse in partnership with the National Agricultural Export Development Board. It enables and standardizes the real-time reporting of cash crop produce data across entire value chains, facilitating data-driven decision-making. This system is currently used in the coffee value chain.

Women's Access to Digital Payments is Essential



Why it Matters

Women represent a major constituency in the digital payments landscape and in the agriculture workforce. Too often, though, they suffer from systemic and organizational biases that exclude them. The prioritization of women is crucial to the realization of financial equity. Embedding a gender lens across the Principles for Responsible Digital Payments is a crucial first step. Closing the gender gap will also need transformational measures that prioritize women and redress their systemic exclusion.

To achieve the sea change needed, women's voices need to be included at the decision-making stage. Products must reflect and improve women's lived realities. Data analysis needs to be fully gender-disaggregated to provide the ecosystem with the insights needed to drive improvement.

Rwanda has made significant progress in empowering women in all aspects of their lives. The government's financial inclusion strategy and its approach to gender mainstreaming have delivered significant improvements in the ability of women to access and use financial systems. The changes to land laws, for example, have delivered equality in terms of access to land and so have enhanced women's ability to access collateral, which is key for financial inclusion.

The tea sector, like many agricultural industries, relies on a majority female workforce in a number of countries. Despite this, there are no gender-disaggregated employment data for the tea sector in Rwanda. While the 2020 agricultural household survey by the National Institute of Statistics of Rwanda indicates that women constitute the majority of farmers across agriculture sectors (57 percent), most farmers registered in the tea SACCOs are men. This suggests women may not be financially independent and in control of the income they earn.²⁴ These gaps need to be addressed if financial equity is to be realized.

The bulk of the current payments systems have been designed to consider the fact that most Rwandans do not have smartphones, so all the platforms offer both USSD, 25 used in feature phones, and API, 26 used in smartphones.

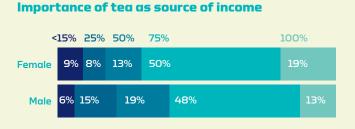


BOX 3 **Profile of a female tea farmer**

Over 85 percent of the women farmers surveyed held a land title for the land on which they had cultivated their tea crop, indicating a high level of security of tenure. Most of the tea farmers surveyed (58 percent), including women, were in smallholder greenfield production.

On average, women had less land under cultivation than their male counterparts, but they had a double the level of productivity per hectare. When asked what percentage of their income was derived from tea, 69 percent of the women indicated tea accounted for at least 75 percent. Rwandan tea farmers have a high level of dependency on tea, with very limited diversity in their income sources. In the Rwandan agriculture context, this is not surprising. Tea farmers' average land holdings are small (0.36 hectares), which does not allow for crop diversification.





Source: Survey for this report

Positive Impact of Digital Finance on Women

Factory owners also observed that women could exercise financial independence with access to digital payments.

KEY INFORMANT INTERVIEW Director, Tea Company

"Since we launched mobile payments, we have heard of women workers (a majority in our plantations) now receiving their wages directly rather than through their husbands' accounts and we are also seeing more youth turning up for work as they see the advantage of being paid quickly via MoMo [mobile money].

"We'd like to see our cooperative, COOTHEMUKI, introduce digital systems as this will encourage and motivate their farmers to take a more active interest in tea farming."

Both male and female farmers indicated that the most important advantages from digital payments were time savings (30 percent) and a reduction in transport costs (23 percent) (Figure 9). The results are similar when disaggregated by gender (Figure 10). The large majority of those using the digital payments platforms rated the service good to excellent.

When asked what mode of payments they preferred, half of women opted for mobile payments and over a third opted for direct deposits into their SACCO accounts (Figure 11). Using the mobile money platform, they could track the growth of their balances and they found this was a less cumbersome process compared with accessing their SACCO accounts.

In some instances, farmers receiving digital payments have the option to save a portion of their incomes on their mobile wallets and use the other portion for day-to-day transactions. When they are paid cash (via SACCOs and cooperatives), by contrast, there is a tendency to use the money all at once. Farmers indicated that they were using their mobile wallets to save, given the minimal transaction cost associated with this mode of saving (they did not have to walk to the SACCO).

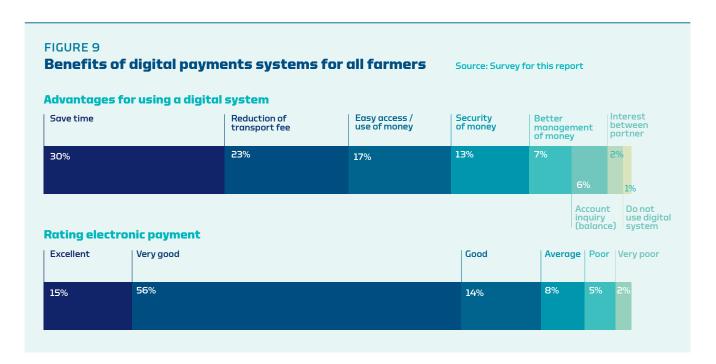




FIGURE 11 Preferred mode of payment Source: Survey for this report FEMALE 12% 37% Cash Direct deposit into bank/SACCO account Via mobile money wallet MALE 22% Cash Direct deposit into bank/SACCO account Via mobile money wallet SACCO = savings and credit cooperative organization

Barriers to Digital Payment Uptake and Usage by Women

Data from FinScope 2020 indicate that, while most adults in Rwanda own or have access to a mobile phone, smartphone penetration is still quite low, with 73 percent of adults instead owning a feature phone. This is further reflected in the findings from the survey (Figure 12). This also indicates that women are still lagging behind men in terms of mobile phone ownership.

A significant number of the women surveyed (54 percent) indicated they faced challenges in using digital platforms. Specifically, they cited fraud (39 percent), mobile network coverage (access; 21 percent) and high or unjustified charges (transparency; 21 percent) when transacting (Figure 13).

Although the users in the tea sector recognized the benefits of digitized payments in the survey, more effort is needed in the design of the solution to make it more user-friendly. Most of the farmers surveyed (58 percent) indicated they were not comfortable using their current digital payments solutions without guidance. When analyzed by gender, the responses show that women were at more of a disadvantage (66 percent) in using the existing digital payments solutions without guidance (Figure 14). Over half of farmers did not find the menus of their current digital payments system easy to navigate, and women found it more difficult to navigate the same menus.

From the survey, women farmers have lower levels of education compared with men; 11 percent of women versus 9 percent of men had received no education at all, and only 19 percent of women farmers had primary four to six education, compared with 47 percent of men. These levels of literacy give a proxy indication of the levels of digital illiteracy faced by women. Digital illiteracy is one of the factors that limit the potential of farmers to adopt and use digital payments systems.





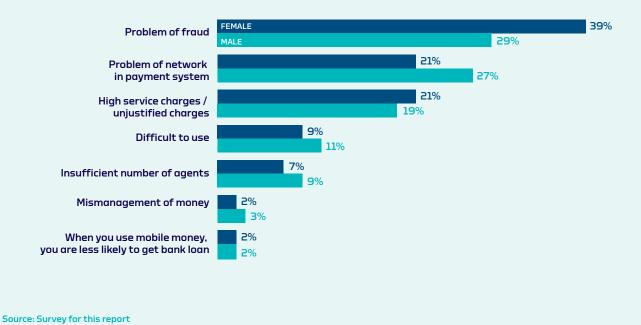
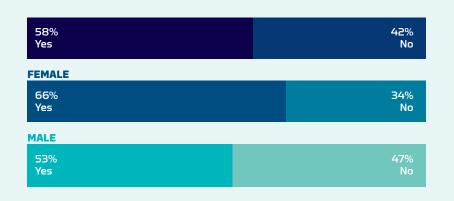
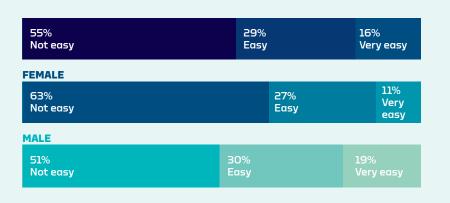


FIGURE 14

Comfort using current digital payments service without guidance



Ease of navigating menus of current digital payments service



Source: Survey for this report

KEY INFORMANT INTERVIEW Female participant in focus group discussion, Kitabi

"I haven't really figured out how to use the phone because of my age. But I receive money (and my kids and neighbors help me). It would be good to get support on how to use it. So that I can do it, because it's a good thing."

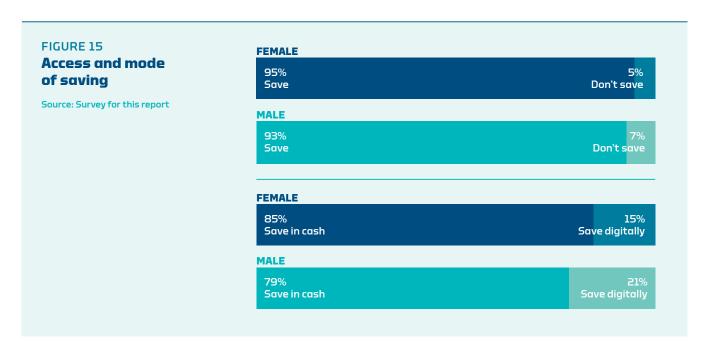
Language barriers were highlighted as one of the challenges for tea farmers in being able to effectively use payments in their daily lives. While MMOs have made efforts to provide language choices, there are still some components of the payments systems that tend to default to the design language (usually English), yet most of the rural population understands or speaks only Kinyarwanda.

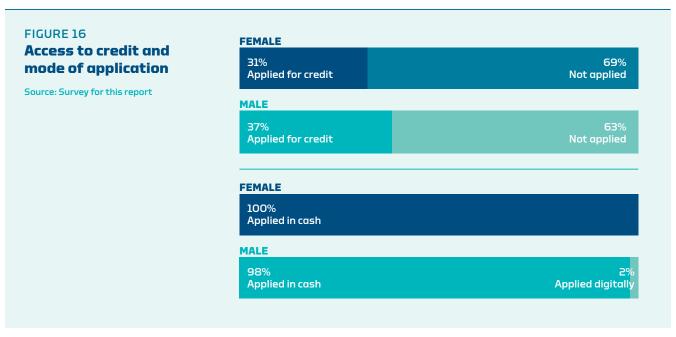
KEY INFORMANT INTERVIEW Female participant in focus group discussion, Kitabi

"Another problem we face is the way sometimes you check your balance and the message is in Kinyarwanda and afterwards it changes to English, yet you don't know the language so it requires you to find an educated child to read for you. But if it were in Kinyarwanda, you could read it yourself."

The results indicate the importance of mobile payments and the role that SACCOs continue to play in providing access to finance for rural farming communities. Significant gaps remain, however, in access to and usage of broader digital financial solutions.

Nearly all farmers have savings (Figure 15), but less than 20 percent use a digital option for these. In the survey, 87 percent of male and 78 percent of female farmers indicated they were saving with their VSLAs, which suggests that funds from mobile wallets were cashed and then deposited in VSLA accounts. Similarly, while over two-thirds of women farmers accessed credit, none of this was through a digital platform (Figure 16).





The Action Needed to Increase Women's Access to and Usage of Digital Payments

Although the users in the tea sector recognized the benefits of digitized payments in the survey, there are several barriers that still need to be addressed for women to reap the full benefits of digital payments.

Tracking Gender-Disaggregated Data

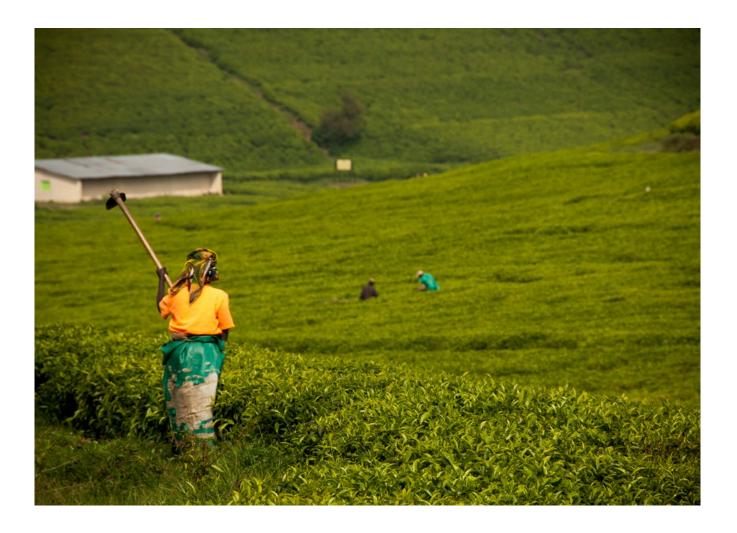
There is evidence of data being disaggregated by gender, as illustrated by the data reported by MMOs to the regulator and ultimately captured in FinScope. The Gender Monitoring Office also undertakes surveys of women's use of digital financial services, and these provide valuable insights into the challenges and opportunities they face. However, there are no gender-disaggregated employment data for the tea sector in Rwanda. This is a gap that needs to be addressed. SKS could be one option to fasttrack this.

Being Gender-Intentional in Design

The design of any new digital payments service should go beyond simply capturing gender-disaggregated data, to including a specific and contextual understanding of the barriers to and the opportunities for female access, use and benefit. Although the providers of payments systems are customizing them to respond to certain user needs – in providing, for example, USSD-based payment platforms, given the low smartphone penetration in Rwanda - more effort is needed in the usability of such solutions while ensuring that no part of the demographic is inadvertently left behind.

In the case of tea farmers, it is not clear that a conscious effort has been made to understand the unique barriers and challenges faced by female farmers. Most farmers indicated they were not comfortable using their current digital payments solutions without guidance, and did not find the menus easy to navigate, but women were at an even greater disadvantage. The lack of language options was also cited as a barrier to usage. Financial service providers (FSPs) need to make more effort in the design of digital payments solutions so that they are more user-friendly, for women in particular.

Addressing digital literacy is also important in helping women to maximize the benefits of using digital payments platforms.



Increasing the Uptake of Digital Finance Through Added Value

In the survey, 87 percent of male and 78 percent of female farmers said they were saving with their VSLAs, which suggests that funds from mobile wallets were cashed and then deposited in VSLA accounts. In some instances, farmers were also using their mobile wallets to save – there is a minimal transaction cost associated with this mode of saving. Over 30 percent of farmers (31 percent female, 37 percent male) were also using credit products accessed in cash. Exploring digital savings and credit products could facilitate not only increases in the value and volume of digital transactions but also greater economic opportunities for farmers.

Exploring Partnerships to Develop Innovative Solutions for Women's Access

Most farmers registered in the tea SACCOs were men, even though most of the work on the farm was being done by women. There are social and cultural norms that contribute to this, so a careful, multi-stakeholder approach is needed to create equality in financial inclusion and to increase economic opportunities for women.

Factories and Financial Service Providers Must Collaborate to Ensure Farmer Access to Funds



Why it Matters

All users rightly expect their funds to be safe and readily available, but this is not always the case. Maintaining user confidence in the safety and accessibility of their funds is paramount. Successfully putting users' funds within their reach means giving them transparency and control in being able to view, access and use their funds on demand. It also means giving them the confidence that all the necessary steps are being taken to safeguard their money - both proactively, to prevent loss or compromise of their funds in the first place, and reactively, to ensure swift action following any loss of funds.

From a user's perspective, digital funds can seem to disappear via mistaken transactions and poorly communicated fees. Even when the money is safe, system downtimes and last-mile challenges can make it inaccessible in times of need. For marginalized users, these challenges can have devastating consequences, such as late fees, damaged relationships with suppliers and even foreclosure.

The introduction of digital payments has helped to improve the predictability and flexibility of access to payments for most tea farmers where they have been implemented. For these farmers, there are cost and time savings that result from using these types of payment platform.

In the focus group discussions (FGD), tea farmers who received digital payments said they now had greater clarity as to when they would get paid - on the same day of the month. Farmers also indicated that access or proximity to MMO agents gave them greater flexibility to access their money whenever they wanted. This contrasted with farmers who were not paid digitally - they experienced significant delays in receiving their payments.

KEY INFORMANT INTERVIEW Female participant in focus group discussion, Sorwathe "We used to collect our payments at the cooperative headquarters. We would wait in long lines for our turn to arrive and sometimes it would get dark, and you'd have to go back home without the money. But now, as soon as salaries arrive, you go to the MoMo [mobile money] agent and get your money whenever you want (and go home)."

Barriers to Uptake and Usage

Limited mobile money agent networks constrained farmers' access to their funds. In the survey, only 17 percent found they had easier access to their money, while 25 percent said they encountered mobile network problems and 8 percent experienced a lack of agent availability, which meant that they did not have access to their funds when they needed (Figure 17). Participants in the FGDs also said there was a shortage of agents in the rural areas, which then led to long queues, reduced levels of privacy and a perceived lack of security.

Furthermore, farmers indicated that the agents lacked sufficient liquidity to service withdrawal requests on the days when farmers were paid. Farmers must therefore make numerous trips to and from the agency kiosks to cash out their mobile money accounts.

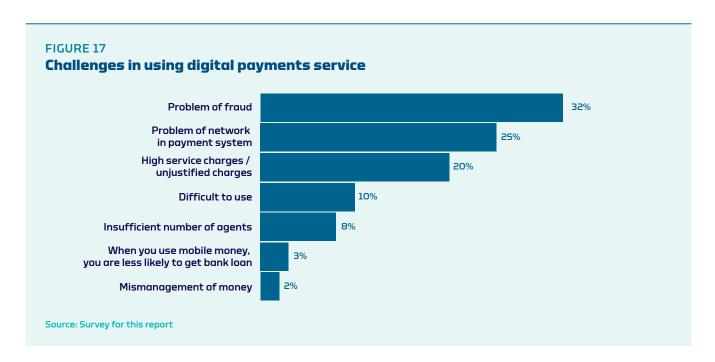
KEY INFORMANT INTERVIEW

Male participant in focus

group discussion, Mulindi

"The other issue with getting our payments through Airtel Money is that we all get our payments around the same time [around 4,000 farmers in Mulindi] and we all want to withdraw at the same time as well. Sometimes, we end up being in long lines at the agents' kiosks. And most of the time, the agents run out of money, and we have to come back the next day, or even days later, to get our money."

The enabling infrastructure for digital payments systems is critical to incentivizing the rural adoption of these new forms of payment. In some cases, the lack of mobile network coverage and access to mains electricity or alternatives such as solar power was limiting the ability of rural communities to adopt digital payments. Some respondents in Cyato shared challenges against charging their phones, resulting in having to walk long distances to charging facilities.



KEY INFORMANT INTERVIEW Male participant in focus group discussion, Cyato

"In addition to most of us having no access to phones, electricity has not reached this area either. Even those who have phones have to travel long distances to find places to charge them."

Moreover, a number of the interviewees said the current mobile payment platforms were not readily acceptable forms of payment in many of the rural areas, thus limiting their use for goods and services. As a result, many farmers simply resorted to cash transactions in their communities.

KEY INFORMANT INTERVIEW Female participant in focus group discussion, Sorwathe "You find that most of the rural people do not use these kinds of technology [mobile money payments]. Most boutique owners or market vendors insist they want cash when we buy from them. Then, it does not make sense to keep money on the phone."

The Action Needed to Ensure Farmers have Access to Their Money When They Need it

The problems with network availability, coupled with a lack of sufficient float held by mobile agents, and their limited reach in some areas, undermines the ability of tea farmers to access their money as and when they need it. MMOs thus need to improve their service offering while ensuring sufficient liquidity.

In addition, it would be prudent for both MMOs and policymakers to devise strategies to enhance the acceptability of mobile payments, **especially in the rural setting**. This may include revising transaction charges/fees to make mobile payments more attractive. It is also important for the government and private sector to work together to improve access to electricity and mobile network coverage.

There is no systemized primary data collection to inform user experience/ satisfaction. Current payment platforms, especially mobile money ones, are designed for general use and are not specifically customized in a sectoral approach. Regulators can use the regulatory framework to incentivize payment platform providers to design and deploy user experience and satisfaction surveys in their existing payment platforms. For example, there is potential for the regulator to introduce a licensing renewal requirement for operators to undertake interim consumer satisfaction surveys broken down by key user demographics (older people, women, the youth, etc.),²⁷ learning from good practices in the Ghana cocoa value chain.

The data collected should be made available to the regulators (BNR and the Rwanda Utilities Regulatory Authority), the National Institute of Statistics of Rwanda and FinScope. The findings can then be used to inform policy, provide evidence on whether users of various payments systems are being treated fairly and indicate the quality of service they are receiving.

Full Interoperability Needed to Ensure Farmers Reap Digital Payment Benefits



Why it Matters

The full benefits of digital inclusion will be unlocked only when services are truly interoperable. Developing a successful open digital payments ecosystem starts with an architecture that facilitates the seamless flow of data and funds. Most importantly, it requires ecosystem-wide buy-in, collaboration and collective innovation from banks, payments service providers and agent networks.

Today, many users experience services within fragmented ecosystems in which providers operate independently, neither sharing data nor transacting across one another. Some providers offer these flexibilities at a cost, which deters users from transacting with peers and retailers over the platforms. For underserved populations in particular, many of whom live in rural or low-income communities, the socioeconomic constraints in particular make this cost an untenable prospect.

The next leap forward hinges on how swiftly governments, companies, international development organizations, and providers converge toward ecosystems supported by open infrastructure. This transition will represent a tangible advance to a seamlessly integrated digital payments experience, greater user choice and, ultimately, still stronger demand for digital payments.

BNR has developed the national payments strategy to guide the development of the payment ecosystem in Rwanda. Laws and regulations have also been put in place to guide how key players in the ecosystem interact with each other and, most importantly, deliver quality services to the end user. To this end, in 2018, the Government of Rwanda launched an initiative to implement the Rwanda National Digital Payment System (RNDPS). RNDPS is expected to be a single gateway for digital financial transactions that can be accessed by all FSPs and fintechs. The real-time gross settlement system is also being upgraded to operate around the clock, which will result in significantly quicker transactions. A similar solution was launched in Ghana in 2018²⁸ and in the first six months of 2020, it saw a year-on-year 400 percent increase in mobile money interoperability transactions.²⁹

While these interventions are important, they are dependent on the digitization of value chains downstream, to the farm level. This means that tea factories, cooperatives, SACCOs and microfinance institutions must all have automated platforms that can be linked directly or indirectly to the RNDPS and the real-time gross settlement system. To ensure that interoperability benefits the farmer, the first point of call for digitization is the SACCO. A new project to automate all 416 Umurenge SACCOs is expected to be completed in the second half of 2023. The Association of Microfinance Institutions in Rwanda (AMIR) is also implementing a

centrally managed, subscription-based banking solution to support the automation of non-Umurenge SACCOs. AMIR recognized the importance and benefits of SACCO automation and how interoperability would unlock farmers' potential.

KEY INFORMANT INTERVIEW Executive Director. Association of Microfinance Institutions in Rwanda

When asked about the status of savings and credit cooperative organizations (SACCOs) in relation to digitization, the director said, "Digital payments increasingly gaining momentum. We had many SACCOs that were not automated but [the National Bank of Rwanda, the Ministry of Finance and Economic Planning and the Rwanda Cooperative Agency] have an ongoing initiative to automate Umurenge SACCOs while [the Association of Microfinance Institutions in Rwanda] has a project that will automate 11 non-Umurenge SACCOs, several of which serve tea farmers.

"With automation, we can look at integration of other solutions as there are clear benefits from digitizing systems, particularly the freedom to transact from any location at any time."

Barriers to uptake and usage

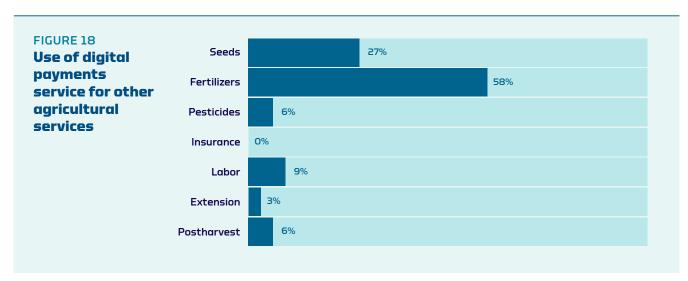
Mobile payments are still not readily accepted in rural areas. Farmers in both the survey and the FGDs said they understood the time saving benefits associated with the use of mobile payments platforms. Nevertheless, some farmers said the costs of using mobile money to pay for goods and services were high, so they opted to cash out each time they were paid. It would cost \$0.70 (equivalent to plucking just over a kilogram of green tea) to pay for \$5 of goods or services (14 percent of purchase price), or \$0.28 to withdraw the same amount in cash (6 percent). The proportion is even higher for lower amounts, for example \$0.60 for \$ of goods or services (20 percent) versus \$0.25 to cash out (8 percent).30

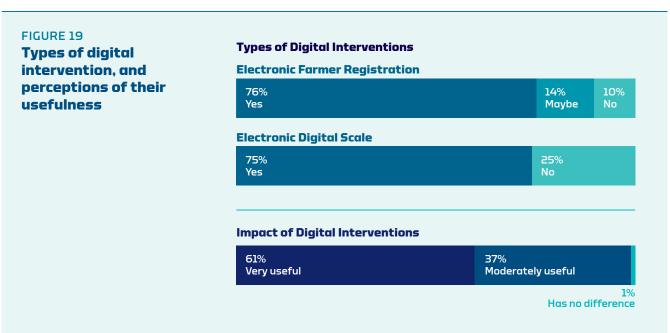
Farmers also indicated that payments using mobile money were not readily accepted in their areas, so they preferred to cash out. In the survey, respondents were asked to indicate the extent to which they used a digital payments system to access other goods and services. It is clear in Figure 18 that farmers were using mobile money payment platforms only to receive payments and not to pay for other agricultural services.

Interoperability is an issue, as several different systems are in use. It is currently not possible to transact across different mobile networks. The RNDPS was expected to deliver interoperability, but a final consensus on pricing, scheme rules and the user journey has been a challenge due to the diverse understanding of the platform. Consequently, although the implementation of the RNDPS is ongoing, interim alternative solutions to address the interoperability challenges have been developed. For example, MMOs have developed platforms that provide some level of interoperability. Feedback from the MMOs indicated that this was done to address market

development needs and in line with viable business models. As such, the marketplace has shifted, and players are taking a commercial approach and devising their own routes to avoid additional costs.

Developing solutions that are fully integrated, covering all aspects of value chain activities, would provide benefits for all value chain actors. There are several digital innovations that have been implemented in the tea sector, such as digital farmer registries and the use of digital weighing scales. These innovations have delivered some efficiency savings and greater transparency for farmers, increasing their interest in digital technology (Figure 19). Nevertheless, some of the gains have been restricted, and the potential for reaping greater economies of scale has been undermined by the lack of digitization along other parts of the tea value chain. More could be done to integrate these other parts into the digital platforms, as was the case with the introduction of SKS in the coffee sector.





The review of the existing digital payments platforms in the tea sector suggests that both of the MMOs have been actively working with stakeholders in the sector to digitize payments to farmers. Both MTN and Airtel Money have worked closely with tea cooperatives and factories to design solutions that are relevant for the respective client base. The key informant interviews with representatives of both companies indicated that there was an appetite for expanding their current digitization in the tea sector.

KEY INFORMANT INTERVIEW Representative, **MTN Rwanda**

MTN is currently implementing a digital financial solution for Sorwathe and its two smallholder farmer cooperatives supplying its factory. The project is supported by the GSM Association. MTN is also implementing a digital payments solution in collaboration with Kitabi tea factory and its outgrower cooperatives. Executives at MTN are keen to expand these two digitization pilots.

When asked about their appetite for digitization in tea, the representative said, "Tea is an important sector for MTN. We currently have an ongoing project with Sorwathe and are also shortly embarking on a pilot with one of the RMT [Rwanda Mountain Teal factories.

"We find the tea value chain to be uncomplicated, making it easier to develop tailor-made solutions. Our intention is that our system is not just used to send or receive payments which are cashed out immediately, but that it is also used to transact using MoMo [mobile money]."

KEY INFORMANT INTERVIEW Representative, **Airtel Money Rwanda**

Airtel Money, in collaboration with AFR, Mulindi and Shagasha tea factories, automated three tea SACCOs and then integrated its mobile payments system for last-mile delivery. A representative of Airtel, when asked about their appetite for digitization in tea sector, was clear about the importance of expanding their current portfolio in the sector.

"Mobile money is still a growing sector, with transactions being valued at only around 10 percent of GDP. The uptake of mobile money transactions is increasing with the support of [the Government of Rwanda], who have put a lot of effort into making digital payments acceptable. This has helped us in our initiative in Mulindi [tea factory], which is one of our strongest areas, with both farmers and workers receiving their payments digitally through our system."

These pilots have offered MMOs and fintech companies a demonstrable case of the value of designing digital payments interventions that are responsive to users' needs but that also go beyond the provision of primary use solutions. When asked about the future of digitization in the tea and other agricultural value chains, MMOs, fintechs and commercial banks were confident about the prospects of, and the need for, exploring secondary use solutions that would pave the way for sustainable expansion and increased penetration of digital payments in the rural areas.

KEY INFORMANT INTERVIEW Representative, MTN Rwanda

When asked about their plans for the agriculture sector, the manager said, "We are now looking to move from a primary use case to secondary use case; that is, putting the farmer in the center of a digital ecosystem that offers them a fully integrated digital solution that allows them to access a range of products, from loans and insurance to extension services."

KEY INFORMANT INTERVIEW Representative, Bank of Kigali Digital Factory

When asked about their plans for the agriculture sector and tea, the representative said, "We already have the IKOFI digital wallet system integrated with the SNS [Smart Nkunganire System] solution for other crops, with over 300,000 farmers currently using this to pay for inputs. We are working with BK Techouse on similarly integrating the IKOFI solution with their SKS system [Smart Kungahara System] for coffee. This will allow coffee farmers to make financial transactions through the SKS system."

KEY INFORMANT INTERVIEW Agriculture sector expert, Equity Bank

When asked about the suitability of their digital solutions for use in the agricultural sector, the expert said, "Our digital banking system has the facility for the integration of mobile wallets and can be used on both smartphones and feature phones. Several of our large clients who are involved in agriculture, including both tea and coffee, make payments to farmers via their SACCOs using our banking system. We are keen to grow our agriculture portfolio with a particular focus [on] the smallholder farmer."

The Action Needed to Accelerate Full Interoperability

Interoperability is Key to Driving Increased Use of Digital **Payments Systems**

The introduction of interoperability across mobile money platforms would also result in a significant uptake of mobile money use. An analysis of the primary data collected from the surveys and FGDs suggests that farmers are not maximizing the use of the payments solutions available, beyond simply cashing out. The Governor of the central bank said that value in mobile money as a platform for becoming cashless was created when money payments were made through the platforms as opposed to being cashed out. "As we send money through digital platforms, let's also challenge the receivers to transact and pay directly rather than cashing it out." he said.

Interoperability Between Mobile Payment Platforms Does Not **Truly Exist**

There are ongoing efforts to introduce interoperability. For example, the implementation of the RNDPS project is in progress. The current status means the users are captive to the providers, with no room to opt out of the service or to try other platforms that may deliver better results or are more competitive. This is a perfect demonstration as to why interoperability is critical in giving consumers choice but also helping to lower transactional costs.

Existing Systems have Limited Use Cases

The pilots that have been implemented demonstrate the level of interest from payment providers in providing solutions that work to facilitate the user experience. That said, what is clear is that each provider is designing for and onboarding farmers to their individual platforms, thus restricting the usage to these. This is an indication that, although there is a significant level of effort employed in designing for the individual or the sector, more needs to be done in assessing the value addition for various user groups to ensure such digital payments solutions without wider interoperability.

AMIR recognizes the importance and benefits of the automation of SACCOs and how interoperability will unlock farmers' potential. Therefore, the accelerated automation of Umurenge SACCOs will ensure these benefits can be realized.

Urgent Improvement Needed in Transparency of Pricing, Payments, Deductions and Operations



Why it Matters

The surging growth of digital payments services means that providers are increasingly engaging with new users. These customers often find the software and terminology surrounding digital finance opaque and bewildering, but they are not alone. A disinclination to read the small print persists in more knowledgeable consumers, and lack of understanding breeds distrust. To address this in terms of digital payments, transparency is pivotal. Equipping users with the information needed for a positive digital payments experience builds a more predictable environment – and predictability fosters trust. This trust in turn leads to better outcomes across the user journey. If sign-ups become more informed, transactions become more accurate and there is less need for recourse.

The importance of transparency is not new, but it is evolving. Being transparent with users means not only disclosing information about the product's own features and terms, but also about how the data may be used. This is done with the goal of promoting informed decision-making. Moreover, complexity in the digital payment ecosystem will continue to grow. Actors in the ecosystem should now embrace a culture of transparency focused on empowering users, rather than simply meeting compliance requirements.

Tea factories view digitization as a key driver of growth in productivity among farmers, while also delivering increased efficiencies and introducing transparency within their supply chains. This is apparent in situations where payment times have been reduced, from three to four weeks to two to three days, with farmers being able to receive pay slips detailing the deductions applied to their accounts. This has resulted in farmers becoming more motivated and productive. Factories have also benefited from cost reductions due to the eradication of "ghost" workers on digital systems and a reduced need for handling physical cash, with its associated risks.

Tea farmers appreciate the security of digital payments. Tea farmers indicated that, in the past, when they were paid at SACCOs or cooperatives, lists of their names with amounts were posted for everyone to see. Today, payments via mobile wallets are private. In addition, farmers who used to collect payments at SACCOs and cooperatives would be paid out in the open, which made them susceptible to theft. They no longer worry about these incidents with digital payments.

Barriers to uptake and usage

Findings from the survey and FGDs indicate that farmers encounter issues of transparency at two levels: (i) on the pricing and deductions made by cooperatives and (ii) the charges made by FSPs. The use of manual systems at non-digitized SACCOs has limited the ability of farmers to reconcile the deductions made on their accounts. Farmers also face significant delays receiving payments. In some cases, there have been accounts of farmers not being paid for 20 days and, in the most extreme cases, for six months. These challenges are a serious threat to the sustainability of farmers' livelihoods and their willingness to continue growing tea.

KEY INFORMANT INTERVIEW Female participant in focus group discussion, Cyato

"Our last payment was months ago. Sometimes we spend three months - sometimes seven - without getting the money."

KEY INFORMANT INTERVIEW Female participant in focus group discussion, Muganza Kivu

"The collaboration between our cooperative [Cothemuki] and SACCO is not good at all. It takes weeks for the cooperative to send lists to SACCOs. And SACCOs also take days, even weeks, to process our payments. Our payments are always late."

KEY INFORMANT INTERVIEW Male participant in focus group discussion, Muganza Kivu

"I have been a tea farmer for 10 years. In the beginning the co-op gave us a loan to invest in our tea. They told us they will be paying themselves from our harvesting. The problem is that some of us do not know the details of how they pay themselves back. We do not know the amount we've already paid, and the remaining amount we owe. We only know that we get charged monthly - and it's been years."

KEY INFORMANT INTERVIEW Male participant in focus group discussion, Cyato

"Even though he is our leader at the cooperative, he doesn't know anything either. He gives us however much money he receives from the factory. We cannot blame him. He says if they give him RWF170 per kilogram in August and then RWF150 per kilogram in September, he will give us just that amount."

KEY INFORMANT INTERVIEW Male participant in focus group discussion, Muganza Kivu

"The problem with SACCO is that they don't respect us farmers enough. On payment days, we are served after everyone else - even when we get there early, and these are always long lines."

The findings from the FDGs were further corroborated by the survey of perceptions. Farmers were asked to indicate whether they had received a notification of the deductions made on their tea sales revenue. Ninety percent of those surveyed indicated they did not receive any digital notice of deductions applied to their accounts (Figure 20). Many also said they had not received any statement of account or had no digital statements of account that would help them to reconcile their balances (Figure 21).

Separately, farmers using mobile money wallets cited incidents where MMOs agents were found to have been introducing additional, unauthorized fees (outside the traditional pricing published by the MMOs). There were several examples of users in the survey complaining about mobile money agents imposing their own additional fees over the MMOs' published charges. Thirty-six percent of the respondents had encountered fraud on digital platforms and 20 percent highlighted that high or unjustified charges were a concern.

FIGURE 20 Digital notice of deductions applied to accounts Source: Survey for this report FIGURE 21 Digital statements of account Source: Survey for this report 5% Yes 90% No 90% No 90% No 90% No No Source: Survey for this report

The Action Needed to Improve Transparency in **Pricing, Payments, Deductions and Operations**

Improving and maintaining client trust is essential for the broader adoption and scale-up of digital services. Of the 18 tea factories/greenfield sites, only seven operated digital payments systems. This is a significant gap and offers the opportunity to develop and implement digital solutions that respond to the nine United Nations guiding principles on responsible payments while also introducing efficiencies that benefit all value chain actors. In developing digital payments solutions at the factory/cooperative level, digital statements of account are recommended, so that farmers have a transparent view of any deductions or charges applied.

There is a need for clear guidance on agency operations, including recourse mechanisms. Although there are systems in place to recruit and train agents, the number of instances of unethical practices found just in this survey indicates that a significant effort is needed to improve transparency. MMOs should recruit and train agents to provide a high quality of service in the interests of the user. It would also be prudent to undertake detailed due diligence of prospective agents. In tandem, MMOs need to put in place strict monitoring systems and feedback loops to ensure users are treated fairly. Additionally, policies could be put drawn up to strike off agents found to be employing unethical practices, with a register of such agents to prevent them from offering financial services in future.

BNR regulation does not permit exclusivity agreements with agents. MMOs should still invest in their agency network, however, as other actors in the financial services in Rwanda, such as the commercial banks, have agreed to share agents to benefit the customer and the industry. The lack of exclusivity agreements with MMO agents should not be seen as a hindrance for investing in a large, high-quality agency network. Such an investment could result in efficiencies that may reduce the risk and associated costs of doing business.

Farmer Confidence Increased by Factories and Cooperatives Working with Financial Service Providers on Recourse Mechanisms



Why it Matters

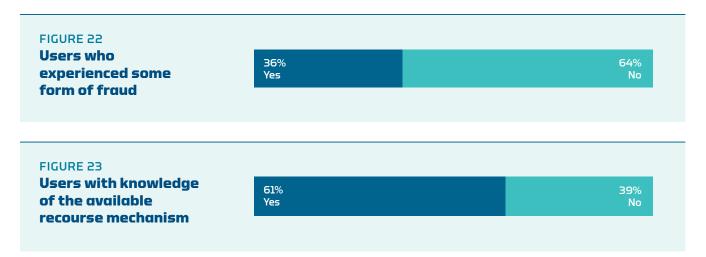
The dizzying proliferation of digital payments has ushered troupes of new actors into last-mile delivery. Additionally, the COVID-19 crisis has turbocharged the volume of digital governmental payments to new users. Unsurprisingly, these shifts have seen a commensurate increase in disputes and grievances, making it vital for redressal systems to advance synchronously with the sector.

When faced with a problem, users need not only a fix but also a holistic understanding of the whole redressal process. Instead, they have often become cynical and wary, and feel that the onus of resolution rests on them. For the underserved, recourse systems act as a lifeline. Loss of funds, or of their utility, is of disproportionate importance to rural merchants, so they operate with abundant caution due to their financial fragility.

A successful recourse system is one that shares clear information with the user, caters for equal access and delivers resolutions that are timely and accountable. Insights and feedback generated through the recourse procedures will strengthen and improve existing structures and processes.

Barriers to Uptake and Usage

Of the farmers interviewed, there was an underlying distrust of digital payments systems. Some indicated their susceptibility to fraud and scamming, for example, and in some cases mobile money agents would take advantage of those who could not read, to steal their money. The survey responses indicate that 36 percent of the farmers experienced some form of fraud in the use of digital payments systems, yet only 61 percent had any idea what the recourse mechanism was to handle such issues (Figures 22 and 23).



In addition, of the farmers who had experienced technical issues in using their digital payments solutions, 83 percent were not aware of the recourse mechanisms to address their specific difficulties (Figures 24 and 25).



There were several examples of users complaining about mobile money agents imposing their own fees over the published charges of MMOs. These users were not able to access a complaints or feedback system enabling them to take up their grievances directly with the MMO. In such instances, the users/farmers were left out of pocket, with no help from the service providers.

The survey also found several older or less educated users having to seek the help of agents or members of their family to operate their mobile money accounts, resulting in several cases of money being stolen from their accounts. At the user level, there is no clearly documented process for dealing with the MMO about such theft, which forces these users to go to the authorities. This has resulted in the erosion of trust in digital payments services.

KEY INFORMANT INTERVIEW Female participant in focus group discussion, Mulindi

"The challenge with getting paid on our phones is that some [older] farmers not only do not own phones, but they also don't know how to use them either. It is common that when salaries arrive, these older farmers go to agents to borrow phones to install SIM cards and withdraw money. If the farmers' salary for that month is RWF20,000, it is common for agents to tell them they received RWF10,000. As a result, some older farmers opted to still get their salaries from SACCOs."

In the FGDs, several farmers complained that they were being paid late. These delays were not attributed to the digital systems but were mainly linked to (i) the lack of digital systems in their SACCOs and (ii) the delays by some factories in paying their cooperatives.

KEY INFORMANT INTERVIEW
Female participant
in focus group discussion,
Muganza Kivu

"The collaboration between our cooperative [Kotemuki] and SACCO is not good at all. It takes weeks for the cooperative to send lists to SACCOs. And SACCOs also take days, even weeks, to process our payments. Our payments are always late."

The Action Needed to Strengthen Recourse

Timely recourse processes that are implemented effectively can have significant positive impacts on consumer well-being, client trust, product uptake and loyalty, and on the overall development of a more responsible digital payments system.

The recourse mechanisms that exist on certain platforms are not clearly documented for users and there is still limited awareness about them among users. Recourse mechanisms should form a core part of the design of any digital payments solution and should be supported by educational and awareness campaigns.

It is recommended that existing recourse mechanisms are reviewed and modified for accessibility, efficiency and user-friendliness for a diversity of users (e.g., older people and women). Most of the users interviewed, in this case farmers, had limited financial experience, lived in remote locations and faced other barriers in accessing formal financial services. This requires a proactive and creative approach on the part of the providers of digital payments systems to ensure awareness of, and access to, recourse options among such users.

In view of these findings, there are five priority action areas recommended for a responsible and sustainable scale-up of digital payments in the tea value chain in Rwanda, as summarized here.

RELEVANT STAKEHOLDER GROUPS

LEADS

RECOMMENDATION

Ensure equa	ıl access and	l user-centered	design
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• Factories can establish a helpdesk to assist farmers/workers with initial enquiries, before escalating them to MMOs. • Community based structures can be leveraged by training

champions on addressing basic literacy issues

A collaborative effort across tea factories, cooperatives and savings and credit cooperative organization (SACCOs) will be important to support women tea farmers and workers to have an account in their own name and be confident using digital financial services	Cooperatives, SACCOs, tea factories, NAEB	Cooperatives, SACCOs, with the support of NAEB
As NAEB continues to develop its capacity on strategic analytics that will enable it to make data-driven decisions, the Smart Kungahara System could facilitate this by collecting data disaggregated by gender in the tea sector	NAEB, tea factories, cooperatives	NAEB
User surveys/assessments can inform mobile money operators (MMOs) and financial service providers (FSPs) on product design to improve user experience and increase uptake and usage by women. Existing barriers for women include the language used in apps, navigating the interface, and handset capabilities	MMOs, FSPs, tea factories	MM0s, FSPs
Limited use cases indicate an opportunity for FSPs, MNOs and banks to explore complementary financial services , particularly digital savings and credit options, to increase usage by women, including the digitization of village savings and loans associations	FSPs, MMOs, banks	FSPs
Tea industry stakeholders along with relevant partners, under the guidance of NAEB, can also explore the digitization of complementary non-financial services such as timely information on weather conditions, farming tips, market prices, and so on	Tea industry	NAEB
Improve farmers' access to funds		
Ensuring sufficient liquidity within the agency network is of prime importance for MNOs servicing their growing client bases	MMOs	MM0s
Regulators can use the regulatory framework to incentivize payment platform providers to design and deploy user experience and satisfaction surveys in their existing payment platforms	Regulators, MMOs	Regulators
Accelerate full interoperability		
All actors should devise strategies to enhance the acceptability of mobile payments, especially in the rural setting , to maximize the benefits of digital payments systems for farmers	ALL	MM0s
The Rwanda National Digital Payment System will be fully operational during 2023. This will allow users to transact seamlessly across mobile money platforms at a nominal cost, resulting in a higher uptake of digital payments	BNR, Access to Finance Rwanda, RSwitch	BNR
Enhance transparency in digital payments		
MNOs can take additional steps in the recruitment, training and monitoring of agents to provide a high quality of service to users and minimize malpractice	MMOs	MM0s
Developing digital payments solutions at a factory/cooperative level , including electronic access to statements of account, enables farmers to access digital information about their financial and production activity and to have a transparent view of any deductions or charges	Tea factories, cooperatives, SACCOs	Tea factories
Strengthen recourse mechanisms		
Recourse mechanisms need to be accessible, efficient, and user-friendly for a diversity of users: MMOs can dedicate a recourse desk which responds to the specific queries from clients in the agriculture sector. Factories are establish a helphask to assist formers (workers).	All	MMOs

Notes

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- Where work is done on a jointly owned piece of land, it is common for one payment account to be registered with the SACCO, which tends to be in the name of the household head a man in most cases.
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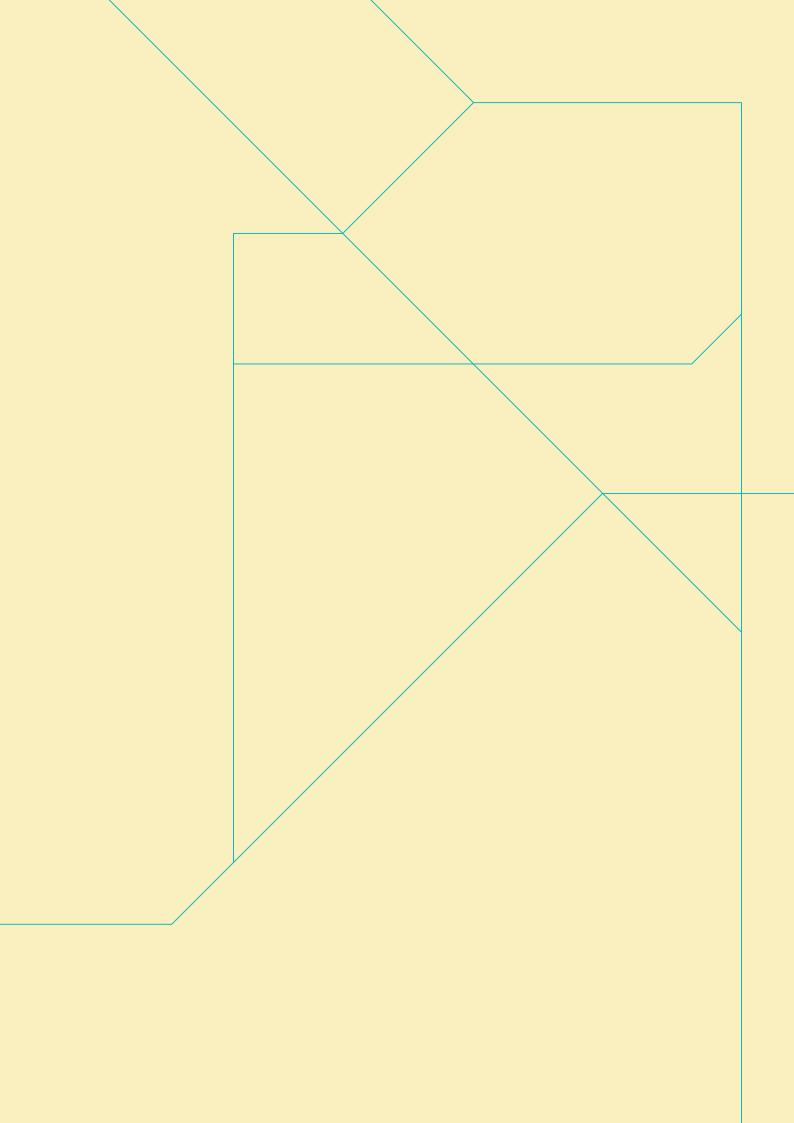
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The Better Than Cash Alliance is a United Nations-based partnership of governments, companies, and international organizations that accelerates the transition from cash to responsible digital payments to advance the Sustainable Development Goals.

www.BetterThanCash.org

The Ethical Tea Partnership is a membership organization working with tea companies, development organizations and governments to improve the lives of tea workers, farmers and their environment. Our aim is to drive long-term, systemic change across three thematic areas in tea – economics, equality and environment. ETP's work improves the progress that is being made towards attaining the United Nation's Sustainable Development Goals in tea-growing regions.

www.ethicalteapartnership.org



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