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Financial Access and Digital Services within Agri-Food Value Chains in Bangladesh

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Agri-food value chains are a crucial element of food systems and local economies around the world. Existing estimates show that intermediary agri-food value chain actors—the operating enterprises that transport and transform food from the farmgate to retailers—account for 60 to 75 percent of value-added produced by the entire agricultural sector of an economy (Reardon, 2015; Yi, et al., 2021; Barrett, et al., 2022).

In Bangladesh, targeting intermediary agri-food value chain actors for the purpose of improving value chain efficiency, increasing prices for producers, and improving quality and value for consumers is increasingly a policy focus. For example, a 2021 book chapter on the rice value chain in Bangladesh (Mujeri, Ahmed, and Hossain 2021) concludes with the following:

> *"The failure to provide fair prices to the farmers, low innovations and productivity, and market imperfections are the outcomes of unfair dependency relationships and lack of collaboration across the chain. The implementation of a value chain focus for the rice sector will improve the conditions of the chain participants as well as deliver rice of better quality and higher value to consumers."*

Although intermediary agri-food value chain actors play an important role in providing reliable access to food both domestically and in some countries internationally, very little research focuses on describing their financial activities and needs. This paucity of information on the financial activities of intermediary agri-food value chain actors contrasts sharply with the abundance of research documenting financial access among smallholder farmers.

This research note summarizes key findings from an innovative survey of intermediaries in two agri-food value chains in Bangladesh. Our survey design adapts the "respondent driven sampling" approach (Heckathorn & Cameron, 2017) to collect data on intermediary actors within the rice and potato value chains (Ambler, et al., 2023). We conducted most of the data collection in Bogra and Rangpur districts in the northern region of Bangladesh. These districts represent prominent regions in the production of both local and hybrid varieties of potatoes, and rice is produced throughout Bangladesh.

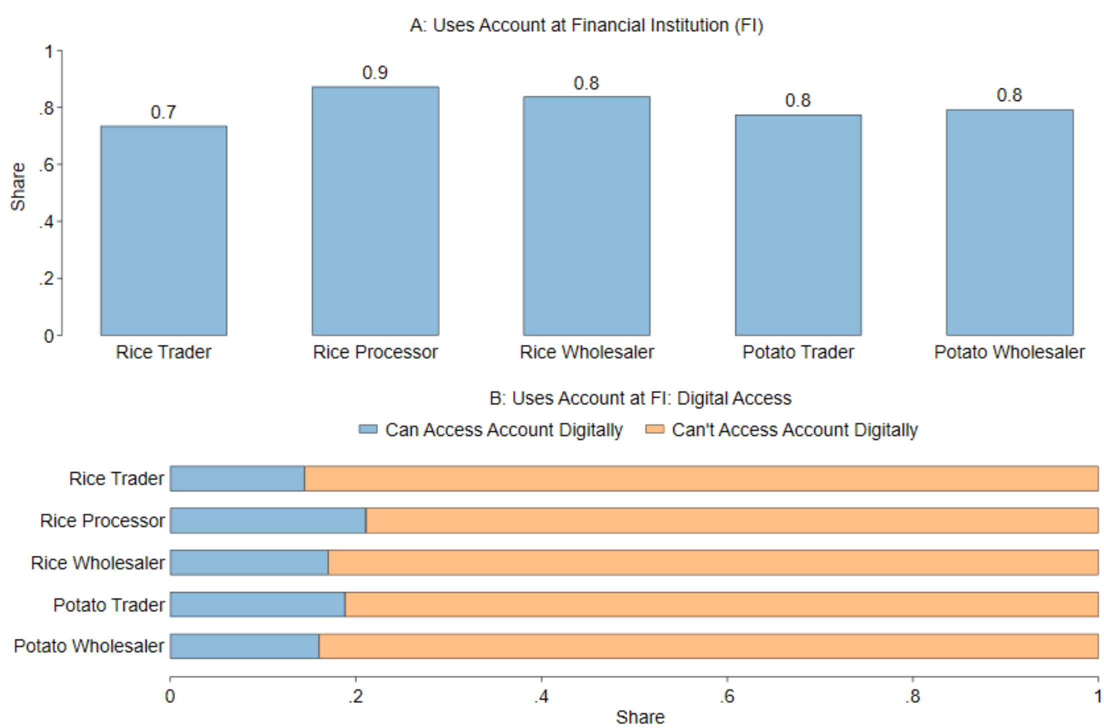
Our sampling approach allows us to construct weights that adjust our data to enable the calculation of statistics representative of intermediary segments within these agri-food value chains. The sample consists of traders, processors, and wholesalers within both value chains, and we disaggregate our statistics by primary roles of value addition. One exception is that very few potato processors were within the geographic scope of our data collection effort, so we refrain from reporting statistics based on a small number of respondents.

Two important demographic features of our data are worth noting before discussing financial access and use. First, the average age of intermediary actors in our data is between the ages of 43 and 46. Second, nearly all our respondents are male—99 percent, across all types of agri-food value chain actor. Thus, although employment within agri-food value chains is often touted as a mechanism to close both gender and age gaps in employment in many low- and middle-income countries, these data suggest few women or youth are self-employed within these agri-food value chains.

Access to Formal, Informal, or Adequate Financial Services

We first discuss statistics documenting access to formal or informal financial services and assess the adequacy of these existing financial services in meeting financial needs. Panel A in Figure 1 shows the share of each type of intermediate value chain actor reporting the use of an account at a financial institution. Roughly 80 percent of intermediary actors across both the rice and potato value chains report using an account at a financial institution. While not universal, this rate of financial account use is much higher than the rates we found in Uganda among intermediary actors within the arabica coffee and soybean value chains (Adong, et al., 2023).

Figure 1: Access to Formal and Informal (Digital) Financial Services



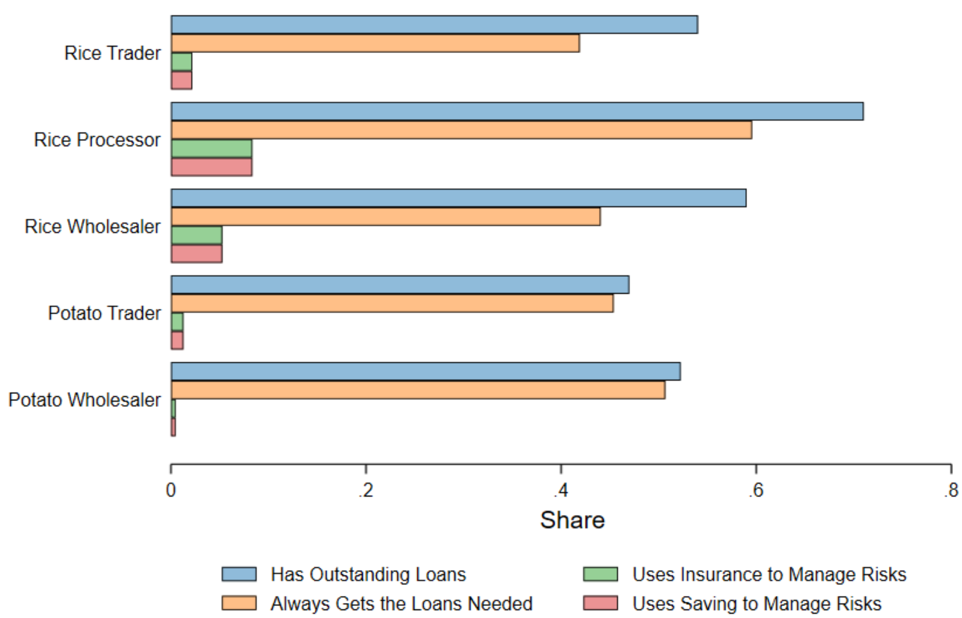
Source: Authors' survey data.

However, when we further analyze digital access to those accounts, we find that very few respondents can access their accounts digitally (Figure 1, Panel B). Among those with financial accounts, less than 20 percent of all intermediary actors within the rice and potato value chains have digital access to those accounts. Thus, although the use of financial accounts is relatively high, there appears to be scope to expand digital access to those accounts.

We next consider four indicators related to formal financial services (savings, loans, and insurance) that agri-food value chain actors might use. The indicators are: (i) whether the respondent has any outstanding loans, (ii) whether the respondent can always obtain the loans they need, (iii) whether the respondent uses insurance to manage risk, and (iv) whether the respondent uses savings to manage risk.

Figure 2 illustrates these four indicators, by value chain actor type. Within the rice value chain, over half of traders, 70 percent of processors, and nearly 60 percent of wholesalers report having an outstanding loan. Within the potato value chain, roughly half of both traders and wholesalers report having an outstanding loan. Additionally, across all types of intermediary actors, the share of respondents who report they can always obtain needed loans follows a similar pattern. These rates are much higher than those among intermediary value chain actors in the arabica coffee and soybean value chains in Uganda. In Uganda, less than 20 percent of all types of intermediary actors have outstanding loans, and a minority of respondents indicate they can always access needed loans (Adong, et al. 2023).

Figure 2: Adequacy of Financial Services



Source: Authors’ survey data.

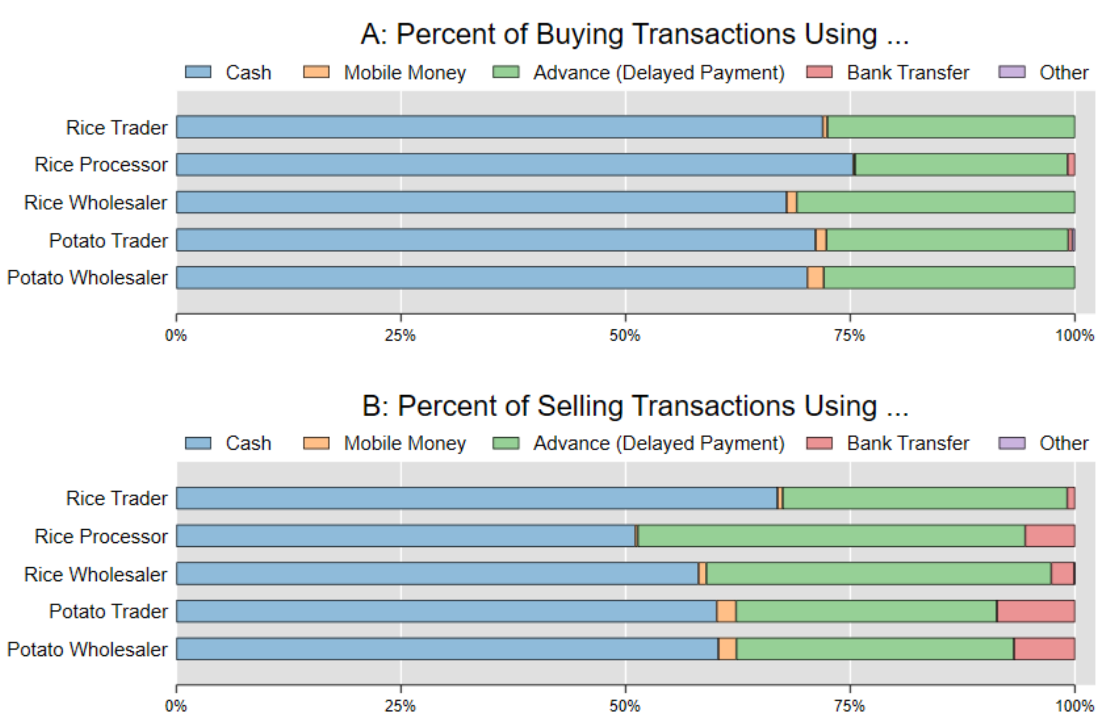
Meanwhile, in both the rice and potato value chains, a very small share of intermediary actors report using savings or insurance to manage risks. Thus, we can summarize as follows. The use of financial accounts is high, but digital access to financial accounts is low. While many intermediary actors report access to loans, a substantial share is not able to access the loans they need, and nearly all respondents in our data use neither savings nor insurance to manage enterprise risks. Therefore, many intermediary actors in the rice and potato value chains within Bangladesh lack access to adequate financial services, defined as credit, insurance, and savings products. These unmet financial needs illustrate a need for potential interventions to go beyond simply improving access to financial services and aim to improve the quality of financial services available for intermediary agri-food value chain actors.

Use of Digital Financial Services

While many intermediary agri-food value chain actors have access to formal financial institutions, only a small share of them can access those accounts digitally. These intermediary actors, however, may also use mobile money and they could use such services to facilitate enterprise transactions. Therefore, we next examine how intermediary agri-food value chain actors use digital financial services.

Figure 3 reports the average percentage of buying transactions (Panel A) and selling transactions (Panel B) using either cash, mobile money, an advance or delayed payment, a bank transfer or other transaction mechanism. In both cases, we find that cash is the dominant mode for facilitating transactions. Across all types of intermediary agri-food value chain actors, between 80 and 90 percent of buying transactions use cash. Nearly 75 percent of buying transactions and between 50 and 65 percent of selling transactions take place with cash at the time of the transaction. Another 25 percent of both buying and selling transactions take place with cash paid sometime after the transaction. When selling, intermediary actors are slightly more likely to use bank transfers; however, this remains a small share of all transactions. Finally, a very small percentage of all transactions are facilitated using mobile money.

Figure 3: Financial Services Mediating Buying and Selling Transactions



Source: Authors' survey data.

Table 1: Use of Digital Financial Services

	Mobile Money	Mobile Banking	Debit Card	ATM	Banking Agent
Panel A: Rice Traders					
Send/Receive Money	0.33	0.07	0.05	0.11	0.42
Save Money	0.03	0.01	0	0.02	0.21
Pay Bills/Suppliers	0.08	0.02	0.01	0.02	0.15
Access Credit/Loan	0	0	0	0.01	0.15
Does Not Use	0.66	0.93	0.95	0.89	0.53
Panel B: Rice Processors					
Send/Receive Money	0.37	0.09	0.05	0.14	0.64
Save Money	0.02	0.01	0	0.02	0.31
Pay Bills/Suppliers	0.11	0.03	0.02	0.03	0.25
Access Credit/Loan	0	0	0.01	0.01	0.35
Does Not Use	0.62	0.91	0.95	0.86	0.32
Panel C: Rice Wholesalers					
Send/Receive Money	0.41	0.08	0.04	0.11	0.58
Save Money	0.03	0.01	0.01	0.02	0.35
Pay Bills/Suppliers	0.13	0.03	0.01	0.04	0.28
Access Credit/Loan	0.01	0.01	0	0	0.2
Does Not Use	0.56	0.92	0.96	0.89	0.38
Panel D: Potato Traders					
Send/Receive Money	0.62	0.08	0.11	0.34	0.55
Save Money	0.07	0.01	0.01	0.06	0.22
Pay Bills/Suppliers	0.2	0.03	0.02	0.08	0.18
Access Credit/Loan	0	0	0	0.01	0.12
Does Not Use	0.37	0.92	0.89	0.66	0.42
Panel E: Potato Wholesalers					
Send/Receive Money	0.59	0.09	0.07	0.27	0.46
Save Money	0.04	0.01	0.01	0.03	0.24
Pay Bills/Suppliers	0.27	0.06	0.03	0.12	0.15
Access Credit/Loan	0	0	0	0	0.11
Does Not Use	0.41	0.91	0.92	0.73	0.5

Source: Authors' survey data.

Notes: Each cell reports the share of respondents within a given type of agri-food value chain actor (panels) who use a given financial product (columns) for a given use (rows). Conditional formatting: lighter = low share, darker = high share.

The use of cash to facilitate financial transactions is risky, costly, and ultimately constrains efficiency throughout these agri-food value chains. Cash transactions are risky because cash can get stolen or lost and can require manual accounting. Cash transactions also nearly always require in-person transactions, geographically limit enterprise activities, and require transportation costs that weigh heavily on enterprise profit margins. Enabling intermediary agri-food value chain actors to transact in ways that are more secure, traceable, transparent, and cost-effective could represent an important area for future policy interventions and financial product innovation.

With the finding that transactions using digital financial services among intermediary agri-food value chain actors are relatively rare, we next explore how respondents in our data use various digital financial products. Table 1 reports how respondents use five different financial products (i.e., mobile money, mobile banking, debit card, ATM, or a banking agent) by intermediary actor type. Although Figure 3 highlights that only a small share of intermediaries in both value chains use mobile money for transactions, Table 1 shows that many actors do use mobile money. Between 30 and 60 percent of intermediary actors, varying by actor type and commodity, report using mobile money to send or receive money for personal purposes. However, mobile money is seldom used to facilitate business transactions.

These findings highlight two important implications for the use of digital financial products among intermediary actors within the rice and potato value chains in Bangladesh. First, very few respondents use mobile money to facilitate buying and selling transactions. Therefore, possible interventions might focus on lowering transaction costs and fees associated with specific types of mobile money transactions, providing insurance on financial balances stored in mobile money accounts, or finding other mechanisms that help make mobile money a more attractive option for facilitating enterprise transactions among intermediary agri-food value chain actors.

Second, various forms of mobile banking are rarely used among intermediary actors in our data. Mobile banking can reduce the need to travel to a physical bank for transactions. It can also alleviate social or administrative constraints—such as in-person meetings and paperwork, and safety concerns while travelling with money—which can be especially salient for women. Simply increasing the use of mobile banking does not necessarily imply that mobile banking services will be used within agri-food enterprise operations. Making mobile banking and other digital financial services valuable for use in facilitating business transactions is an important frontier in digital financial product development and innovation.

Unmet Financial Needs and Innovation Potential

Using the evidence described above on unmet financial needs among intermediary actors within the rice and potato value chains in Bangladesh, we conclude with five points that could guide future policy or financial product innovations:

1. Although many intermediary agri-food value chain actors in the rice and potato value chains in Bangladesh use a financial account (Figure 1, Panel A), expanding *digital* access to financial accounts represents an opportunity for the financial sector (Figure 1, Panel B).

2. Some respondents who indicate using a financial account continue to lack access to loans, and many do not use insurance or savings to manage risks (Figure 2). Policy and financial product innovations need to go beyond simply improving access to financial services and instead aim to improve the quality of financial services provided to intermediary agri-food value chain actors.

3. Cash facilitates most transactions among intermediary actors within the rice and potato value chains (Figure 3). While some intermediary actors use digital bank transfers for selling transactions, this remains a small share of their transactions, and mobile money is rarely used in either buying or selling transactions. Providing innovative products that allow intermediary agri-food value chain actors to transact in ways that are more secure, traceable, transparent, and cost-effective could help reduce the reliance on cash.

4. Despite the dominance of cash facilitating enterprise transactions, some respondents use mobile money and other digital financial services for purposes not directly related to their agri-food enterprise (Table 1). A meaningful share of intermediary actors report using mobile money for sending and receiving money, but not for enterprise transactions. Policy and product innovations could help increase the use of mobile money for facilitating business transactions.

5. Finally, agri-food value chains are often mentioned as a potential mechanism to facilitate increased employment among women and youth in many low- and middle-income countries. The data described in this note suggest quite low female or youth participation in at least the rice and potato value chains in Bangladesh. If agri-food value chains are going to play a meaningful role in closing gender and age gaps in employment, systemic barriers that constrain women's economic empowerment and youth employment will need to be appropriately addressed.

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