



AgriFin Accelerate Program

Cotton Industry Digital Payments
Project Snapshot: October 2016 – July 2017

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01 AFA Program Background

AFA program objectives



THE GOAL

AgriFin Accelerate is a 6-year, \$25 million program working in Kenya, Tanzania and Zambia

AgriFin Accelerate will **support the expansion of digital financial services to one million farmers in Sub-Saharan Africa over six years, delivered by growing ecosystems of diverse service providers.**

TARGET GROUP

AgriFin Accelerate's underserved **smallholder farmers** living on less than **\$2.50/day**



Approach: innovation focus



FOCAL AREAS FOR INNOVATION

Products & Services for SHF

Last Mile Distribution

Farmer Capability Tools

Technology Start Up Acceleration

Alternative Data & Credit Scoring

Project context and goals

Background

- › Cotton represents one of the largest value chains in Zambia, with more than **600,000 cotton farmers** (95% of whom are smallholders)
- › In the Zambian cotton industry, the process of paying smallholder farmers for their crop involves a massive, complex operation of delivering up to \$50m in cash to over 300,000 highly dispersed farmers within a period of four to five months a year
- › **The movement of high volumes of cash is costly and presents a significant security risk. The cotton ginnerers are actively looking for a digital payment partner to acquire their contract farmers and manage a bulk payment solution for their members**

Project objectives

- › AgriFin Accelerate and Musika are **supporting the cotton industry in its transition towards digital payments** while ensuring that the transition process is based on the principle of 'shared value' in which both agribusiness and farmers benefit from the process.
- › This first project supported the cotton ginnerers to develop their own **business requirements** and **value proposition** to financial partners and then select the optimal partners for the pilot, linked to partner ability to deliver on digital bulk payments to farmers in selected geographies.

In the last three years, two of the largest cotton companies have attempted various models of digital payment, but these ad hoc efforts have been hampered by multiple constraining factors. An overriding factor has been the lack of any meaningful scale to drive the development of the rural digital payments market and ecosystem, which is currently very weak. Only 12% of farmers claim to have ever used their phones to send or receive money (IAPRI, 2015). Unlike other countries with existing digital payment platforms that agribusiness can leverage to pay farmers, in Zambia, in the short term at least, agribusiness and the farmers associated with them, will need to drive both farmer demand for and the market ecosystem's ability to provide rural digital financial services.

Key project activities

1

Stakeholder research

- › Research with **ginners association** and individual **ginning companies** to refine their needs assessment (led by AFA)
- › Focus groups and in-depth **individual farmer interviews** to capture farmer preferences, experience and aspirations (led by Musika and BDSA/Agova)
- › Preliminary meetings with bulk payment providers

2

Service provider selection

- › Develop a **business requirement document** (BRD) a detailed '**Expression of Interest**' solicitation document to distribute to service providers
- › **Analyze bids / proposals** including a cost-benefit assessment of the various options
- › Select bulk payment providers to engage for the project

3

Project implementation

- › Select geographic areas to pilot
- › Create project working group, led by the Zambia Cotton Ginners Association (ZCGA)

Key stakeholders involved (interviewed or actively involved in pilot)

Cotton ginners

- Zambia Cotton Ginners Association
- Ginning companies: China Africa, NWK, Cargill, Alliance Ginneries, Grafax and Parrogate

Farmers

- Interviews conducted with cotton farmers in:
- Southern Province
 - Eastern Province

Banks

- FNB
- Standard Chartered
- Zanaco

MMOs

- Airtel
- MTN
- Zoona

Payment Aggregators

- Cellulant
- Zynle

02 Project Background Research

Relevant stakeholders when considering a bulk payment solution for the cotton industry

Demand side

Cotton farmers



- › About 600,000 farmers in the cotton value chain, majority of whom are smallholder farmers

Cotton ginners association



- › An apex organization with 7 member cotton ginners and over 300,000 contracted SHFs producing the bulk of Zambia's cotton.

Ginning company



- › Two cotton ginners have tried bulk payments solutions i.e., NWK and Cargill. NWK managed to pay 5,000 farmers
- › These cotton ginners have worked with both banks and MNOs for bulk payment solutions

Distributor / agent



- › Ginners collect cotton from the farmers through their distributors, who also typically pay farmers in cash

Supply side

Banks



- › Formal banking penetration is very low in Zambia and very few banks serve smallholder farmers specifically; currently, banks primarily offer bulk payment solutions for high volume clients (corporates, commercial & emergent farmers etc.)

MMOs



- › Mobile money operators (MMOs) view bulk payments as a strategy to increase market share by retaining customers to their network
- › B2P platforms however remain limited

Payment



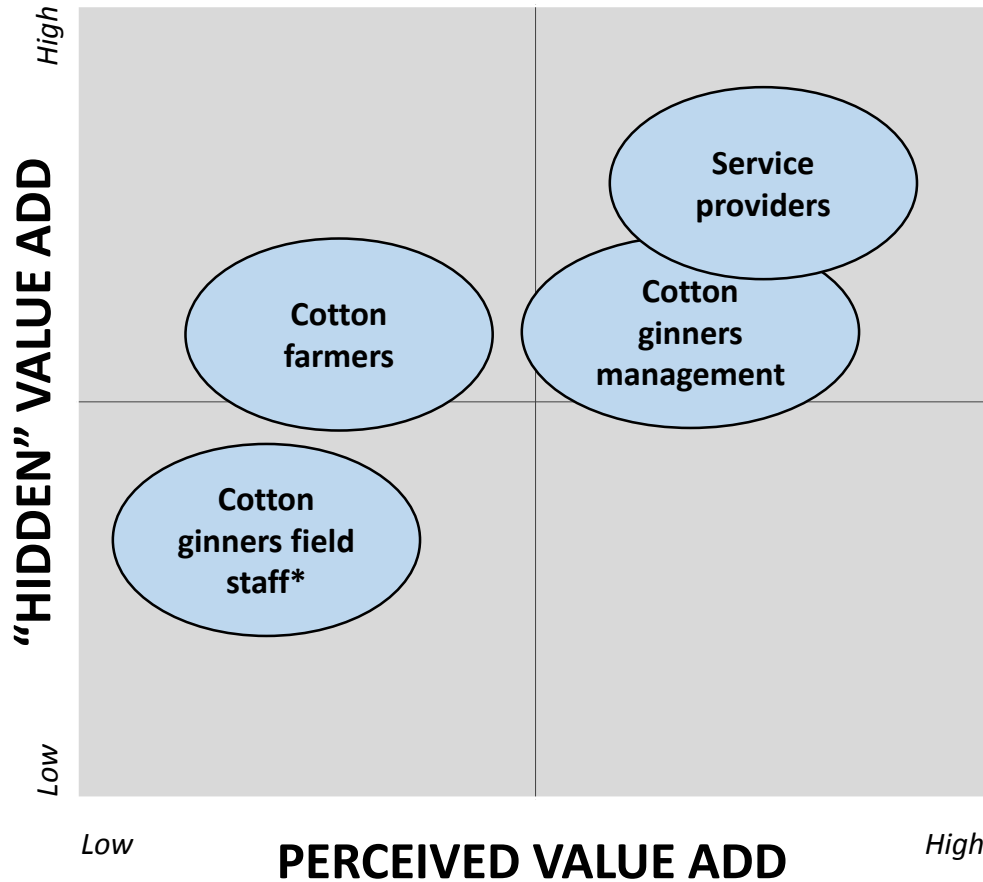
- › Aggregators integrate with mobile money deployments to handle payment processes on behalf of organizations making bulk payments
- › Aggregators play an important role by offering cross-network transactions to organizations looking to make bulk payments

Other enablers




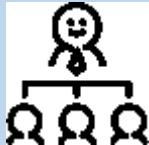


- › **Regulators:** effective April 2017, the Bank of Zambia put a limit on OTC and cheque transactions in an effort to move Zambia to a cash-lite economy
- › **Development actors:** organizations such as AFA and Musika play an important role in facilitation, project design & project activities such as training

Value proposition mapping for key stakeholders



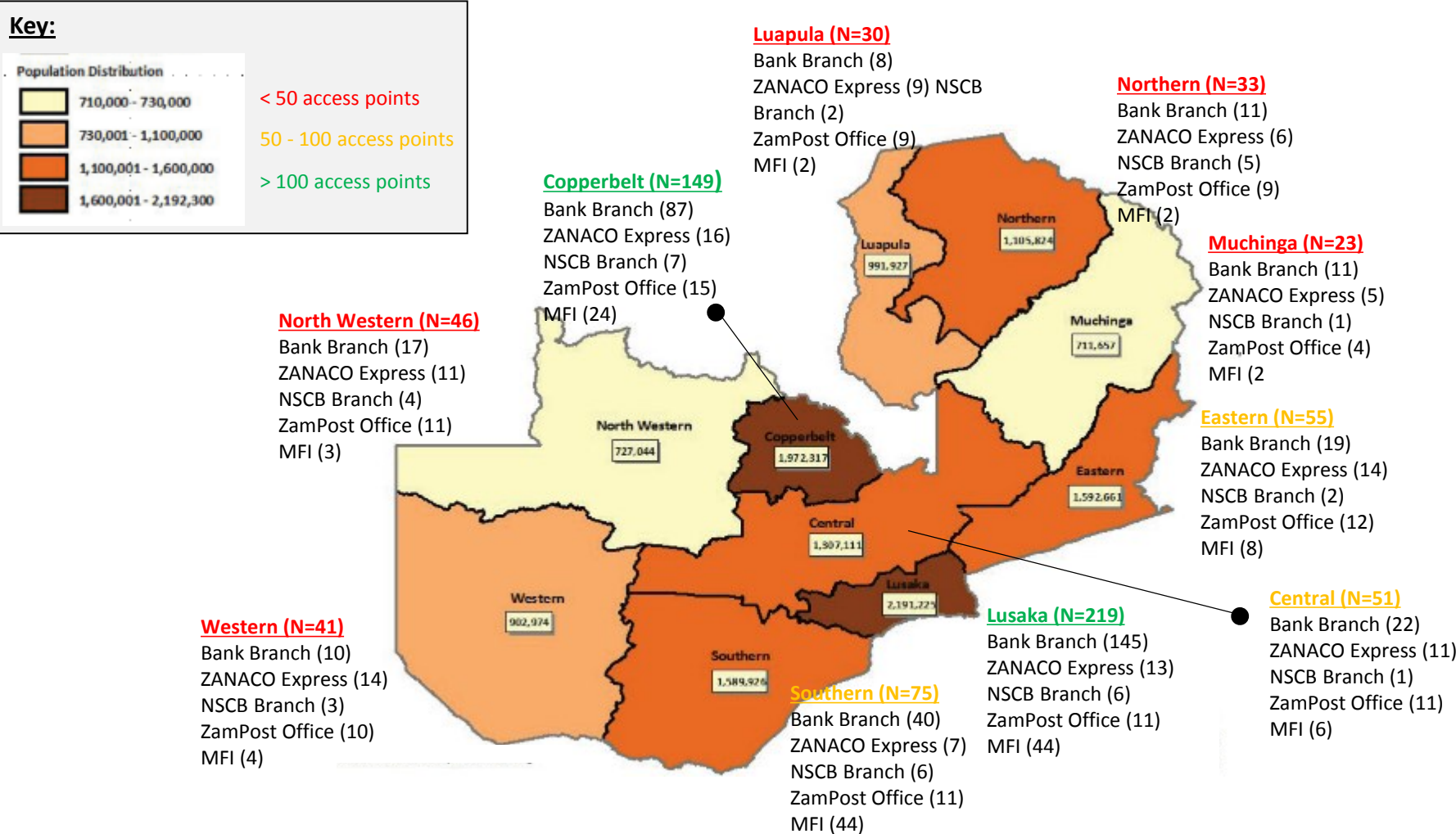
- › **Perceived value add:** these are benefits that key stakeholders (payors and payees) see they would get out of transitioning to e-payments e.g., lower CIT costs, safety, timely payments etc.)
- › **“Hidden” value add:** these are additional benefits of transitioning to e-payments that stakeholders do not always see e.g., established digital footprint for payees, reduced finance-related tasks for field staff etc.

*distributors / agents who collect cotton and pay farmers

Stakeholder	Cost-benefit analysis of e-payments
Cotton farmers 	<ul style="list-style-type: none"> ✓ Safe, convenient, less time-consuming way to receive and store money ✓ Increased digital footprint expected to increase access to other financial services ✗ Money seen to be inaccessible given limited access to CICO points, use cases (mobile money is not ubiquitous yet), and poor network ✗ Unwillingness to incur phone/SIM acquisition and transaction costs
Cotton ginners field staff 	<ul style="list-style-type: none"> ✓ Lower risks associated with carrying cash in the field ✓ Reduced finance-related task for field staff ✗ Streamlined cashflows limits opportunities for unofficial benefits that some field staff enjoy with cash payments
Cotton ginners management 	<ul style="list-style-type: none"> ✓ Reduced CIT costs ✓ Reduced exposure to fraud associated with field staff handling cash payments ✓ Increased ability to recover input loan repayments ✗ Exposure to side-selling risks
Service providers 	<ul style="list-style-type: none"> ✓ Increased customer / subscriber base, opportunities to increase revenues through balance on e-wallet and/or bank accounts, transaction costs, and other service offerings ✗ Significant investment required to establish infrastructure needed yet bulk payments occur once annually

Zambia market overview

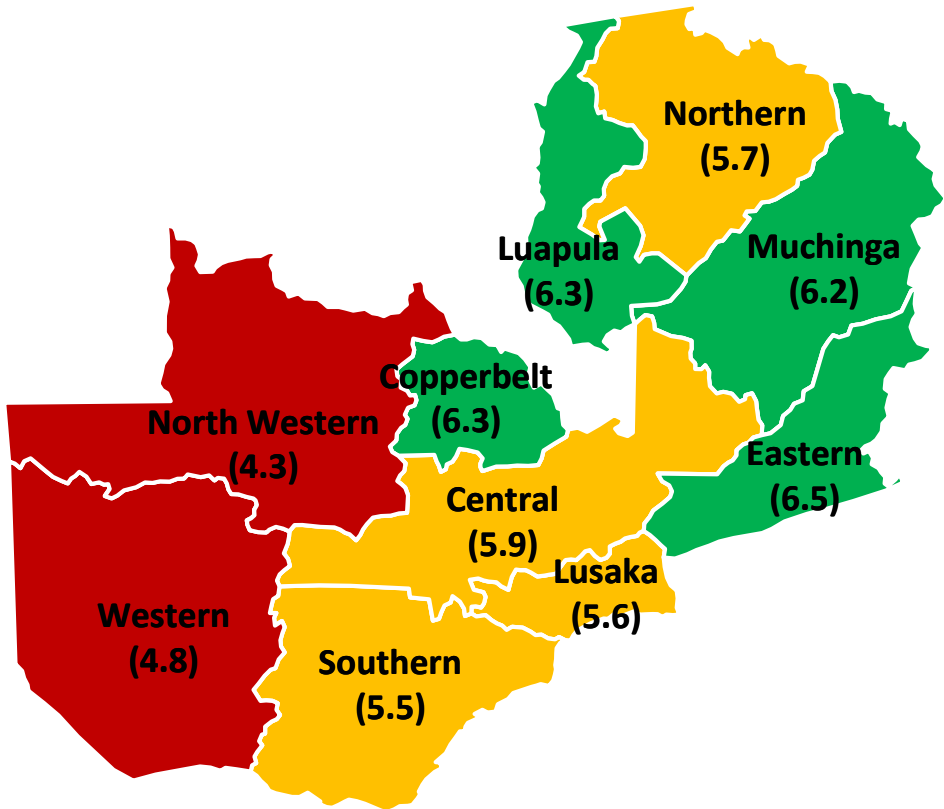
Service delivery channels / access point for DFS in Zambia



- 78% of population with network coverage
- 76% of the population have access to mobile phones (65.7% of farmers)
- 18% Of adults have / use mobile money (7.7% of farmers)
- 826 ATMs
- 404 bank branches
- 170 post offices
- 19 banks, 37 MFIs
- ~12,000 active mobile money agents

Zambia market overview

Farmers in Copperbelt, Luapula, Muchinga, and Eastern have a higher Mobile Money Readiness Index, hence more likely to be early adopters of DFS and DIS products



Key:

<5	Scores between 0 – 5 low mobile money readiness
5-6	Scores between 5-6 medium mobile money readiness
>6	Scores greater than 6 high mobile money readiness

**Mobile Money Readiness Index (MMRI) scores
for top 22 districts (> 6 out of 10)**

1. Eastern	6.5
Nyimba	8.0
Mambwe	7.3
Chipata	6.5
Katete	6.2

2. Copperbelt	6.3
Kalulushi	8.4
Ndola	7.9
Luanshya	7.8
Chingola	6.5
Kalomo	6.1

3. Luapula	6.3
Kawambwa	6.9
Nchelenge	6.8
Mansa	6.5

4. Muchinga	6.2
Mpika	7.0
Isoka	6.8
Mafinga	6.5
Nakonde	6.1

5. Central	5.9
Kabwe	7.6

6. Northern	5.7
Mpulungu	6.4
Kasama	6.2
Mungwi	6.2

7. Lusaka	5.6
Chongwe	6.2

8. Southern	5.5
Siavonga	7.4





Zambia bulk payment landscape overview

Models of bulk payment solution currently existing in Zambia

	CARD	E-WALLET	OTC
BANK-LED <ul style="list-style-type: none"> Standard Chartered, FNB, and Zanaco have bulk payment solutions where clients have access to an online portal to upload a list of beneficiaries Some of the banks (e.g., Standard Chartered) have been working with Telcos for bulk payments and have done system integrations 	   <p>(e-voucher)</p>	  <p>(Zanaco)</p>	
MNO-LED <ul style="list-style-type: none"> Both Airtel and MTN offer a robust and scalable bulk payment solutions They have agent networks in parts of the country and are able to work with any bank With the MNO model, the client needs to deposit float at MNOs wallet to transact 		 	
3RD PARTY AGGREGATORS <ul style="list-style-type: none"> Cellulant and Segovia have a bulk payment solution that is integrated to banks, MNOs and utility providers. Does not have any agency network for cash out 		  	
OTC PROVIDERS <ul style="list-style-type: none"> Zoona does only OTC transactions Shoprite does only OTC transactions, limited network 			 



Assessment based on service provider assessment and market overview of Zambia

MODEL How would the model work?	PROS	CONS
 BANKS Through existing bulk payment platforms	<ul style="list-style-type: none"> › Better liquidity management › Can provide roll-out and ongoing support › Provides both card and mobile solutions 	<ul style="list-style-type: none"> › Limited agent network, CICO/access points
 MNOs Through existing bulk payment platforms	<ul style="list-style-type: none"> › Can provide roll-out and ongoing support › Agent management support › Infrastructure support e.g., discounted phones › Potential to negotiate lower transaction costs 	<ul style="list-style-type: none"> › Lack of interoperability › Challenges with agent liquidity › May require exclusivity
 3rd PARTY AGGREGATOR (Cellulant, Segovia, Zynle) Cellulant has one portal, integrated to multiple suppliers (banks, MNOs, OTC)	<ul style="list-style-type: none"> › Allows for interoperability / users to access to multiple channels › Less complicated float management / account funding 	<ul style="list-style-type: none"> › Lack of field support thus requiring dedicated teams from the partners to provide this › Likely to be more expensive given the additional charge from the 3rd party › Issue resolution is more complex given the 3rd party does not have a dedicated customer support line
 OTC providers (Shoprite, Zoonia) Through their own bulk payment platform (TBC)	<ul style="list-style-type: none"> › Better liquidity than MNO agents › More robust agent network › Higher adoption rate given high preference for and trust in cash over digital money) 	<ul style="list-style-type: none"> › Lack of interoperability › Still a “cash” play

Assessment of cotton bulk payments using a 3RD PARTY AGGREGATOR to access multiple platforms

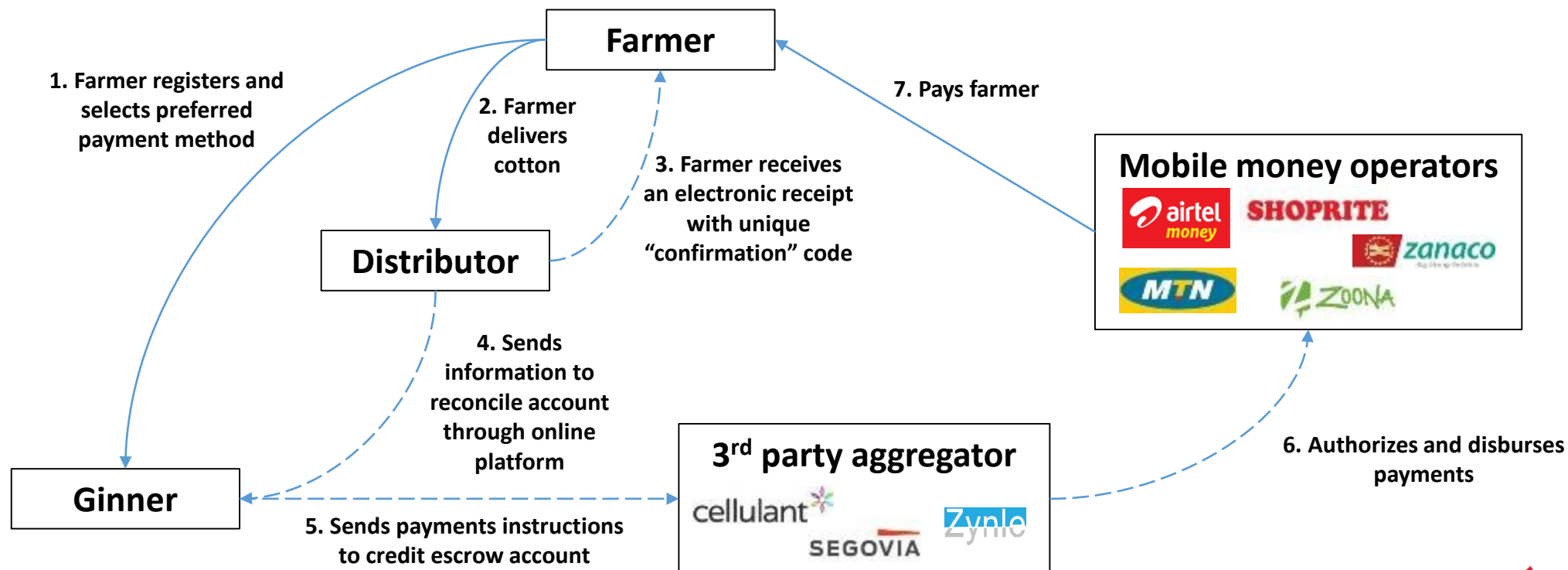
Given the challenges identified with current bulk payments solutions (poor network coverage, limited access to agents, lack of agent liquidity etc.), we propose that the cotton ginners use a 3rd party aggregator to provide and test multiple solutions

Pros

- ✓ Allows for faster reconciliation of accounts thus facilitating faster payments
- ✓ Allows farmers to select payment channel most suitable to them
- ✓ Offers alternative solutions for payment confirmations
- ✓ Easier account funding and settlement

Cons

- ✗ 3rd party aggregator increases transaction costs
- ✗ Increased level of difficulty in training farmers to use multiple platforms,
- ✗ Potentially less involvement & support by the digital payment providers



Assessment of cotton bulk payments using multiple platforms

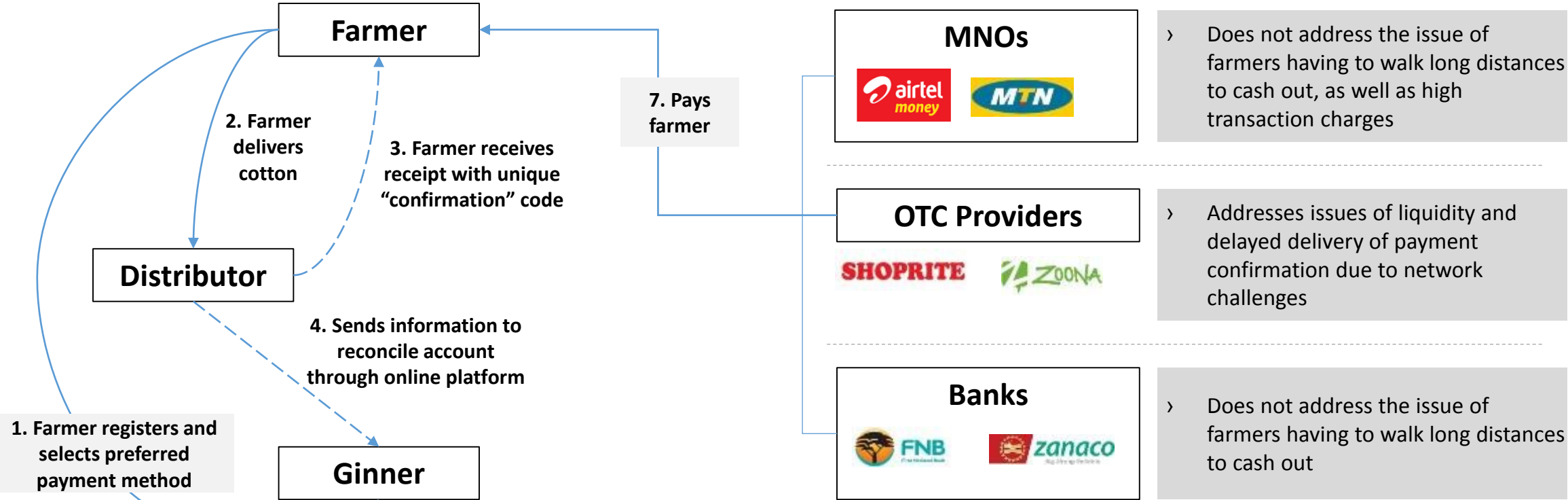
The cotton ginners could work with each platform provider separately

Pros

- ✓ Transaction costs slightly lower due to direct contract negotiations
- ✓ More support from the digital payment provider especially when exclusive

Cons

- ✗ High operational costs to manage and reconcile accounts
- ✗ Exclusivity will lead to lower adoption due to liquidity and connectivity issues
- ✗ Managing multiple partner contracts and service delivery could be a challenge
- ✗ Less customization for payment processes



Key requirements for proposed bulk payment solution

Pillars

Sample list of business requirements

FUNCTIONAL REQUIREMENTS

- Payments to more than one mobile network (i.e., Airtel, MTN, Zamtel)
- Flexible pricing arrangements (e.g., volume discounts, rate card for new enhancements)
- Assistance with field registration training for payees and staff
- Customer service support for payments outside of office hours (e.g., weekends)
- Payee database management services (e.g., setup of database to manage payees and their information)
- Additional digital products and services integrated into bulk payment account (e.g., bulk SMS, payee number verification)
- Customized reports and reconciliation summaries

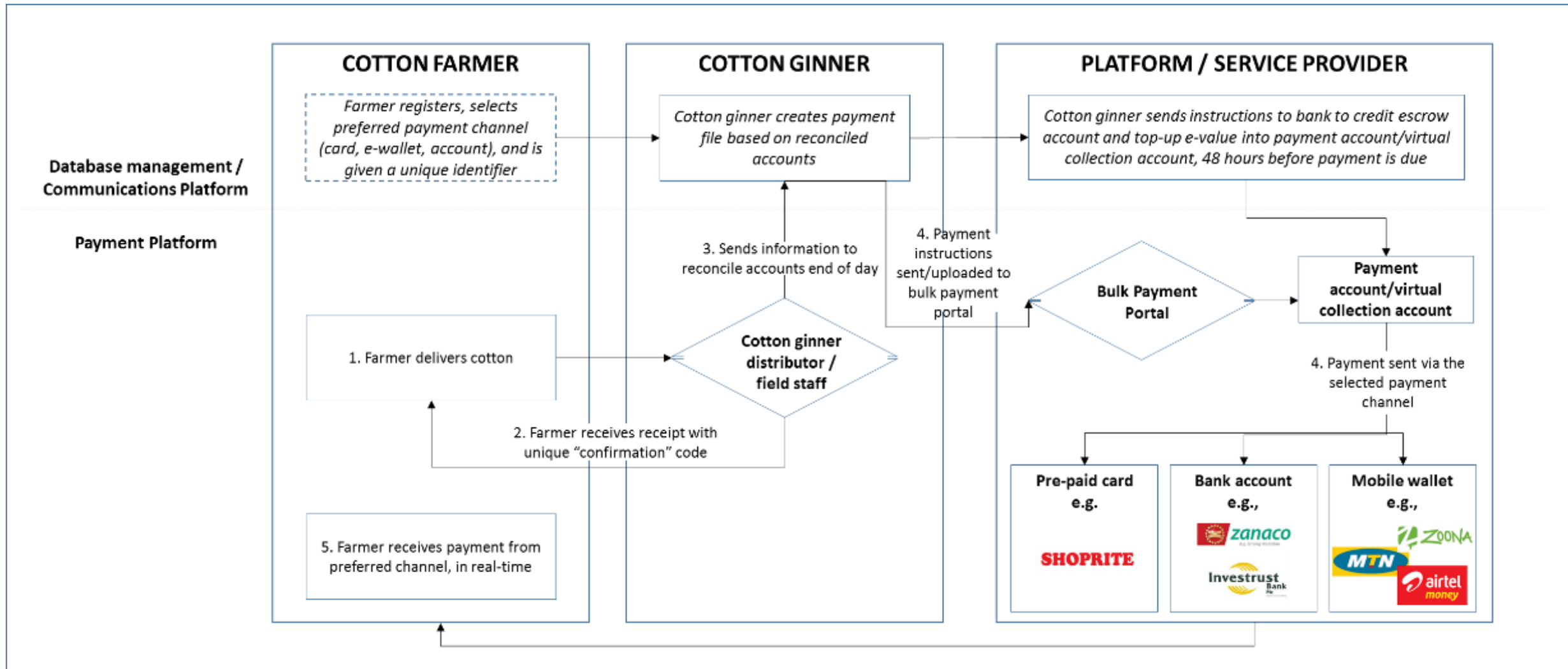
TECHNICAL REQUIREMENTS

- **Reporting:** payment transaction summaries (by date, payer, payee, status)
- **Portal functions and functionality:** bulk upload of payments (via csv file or other mode); scheduled payments (by day or time)
- **User Security:** multiple levels of authentication; fraud / consumer protection?
- **Data Security:** industry-compliant encryption protocols; industry-compliant data storage
- Systems integration
- Strong agent networks / access points
- Customized receipting and payment confirmation
- Convenient account funding and settlement

BUSINESS REQUIREMENTS

- **Strategic Alignment:** commitment to serving SHFs
- **Business Stability:** evidence of business continuity (e.g., number of years in business); size of staff
- **Technical Capacity:** existence of a functioning bulk payments solution, with an existing client base available as references; Evidence of capacity to handle proposed transaction volumes (i.e., 300,000 transactions/month); existence of banking integration capabilities
- **Operational Readiness:** existence of Service Level Agreements/Service Level Objectives (SLA/SLO) documentation; existence of field training support; existence of 24/7 customer support and tiered escalation protocols; process integration

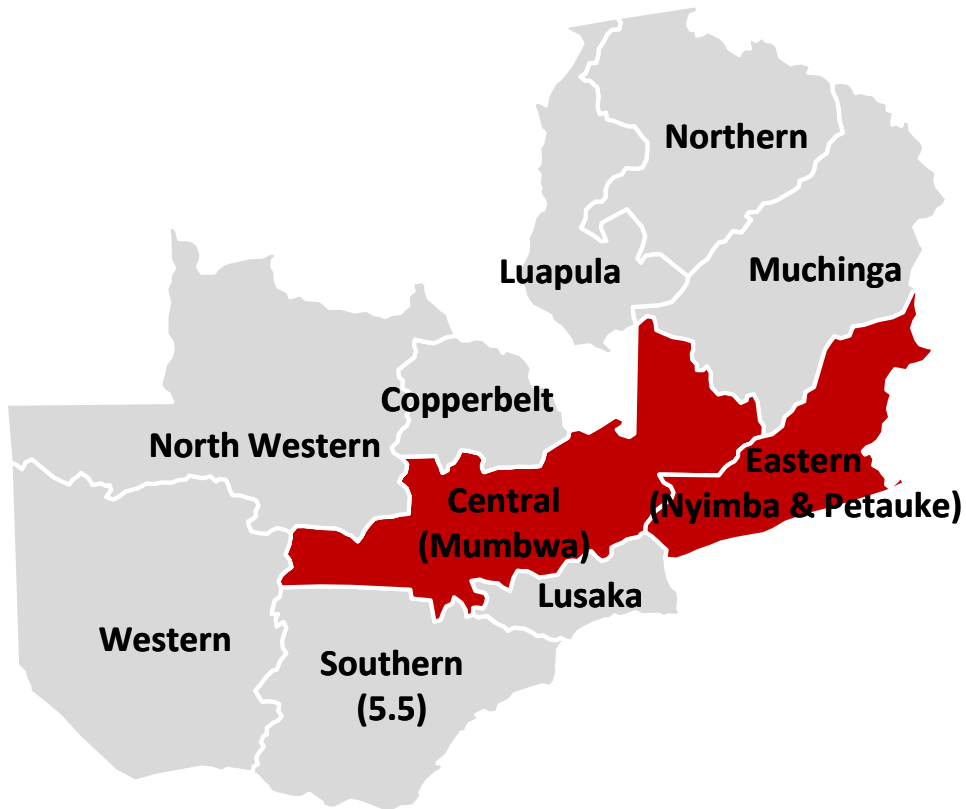
Process flow for BRD




















03 Digital Payment Pilot

Bulk payments pilot: ACTIVITIES & RESULTS

Pilot location: Nyimba, Petauke, and Mumbwa



Project activities		Results
(I) Farmer coordination	<p>Done by the individual ginning companies through their area coordinators and distributors</p> <p>       </p>	<p>Participation from 6 out of 7 ginning companies belonging to the Zambia cotton ginners association (ZCGA)</p>
(II) Farmer training	<p>Done through in-person training and instructional videos projected via mobile cinema</p> <p>     </p>	<ul style="list-style-type: none"> › 8,229 farmers trained in-person; 4,573 through trainings aided by mobile cinema › 18 training sites
(III) Bulk payments	<p>Although 4 providers were selected (Airtel, MTN, Zanaco, Zoono), due to various challenges in the pricing negotiations or contracting process, only MTN was able to sign contracts with some of the ginning companies</p> <p>    </p>	<ul style="list-style-type: none"> › 477 newly activated MM accounts › 13 farmers paid via mobile money › Total payout ZMW 3,195 (~USD 360) › Average payout: ZMW 245 (~USD 28)
(IV) Project funding & coordination	<p>Done by the individual ginning companies through their area coordinators and distributors</p> <p>     </p>	

Bulk payments pilot: CHALLENGES WITH e-PAYMENTS

Challenges	FARMERS	COTTON GINNERS / GINNERS ASSOCIATION	BANKS	MNOs / 3 RD PARTY AGGREGATORS/ OTC PROVIDERS
Awareness	Lack of education on the features & benefits of digital payments	Value proposition for e-payments not clear to ginner's staff		Agents not well-equipped to explain benefits of digital payments to farmers
Ability to use	Low digital literacy levels e.g. forgetting PINs, accidentally deleting confirmation receipts	Low level of technical readiness		PIN reset is a major issue for farmers, agents not equipped to handle this
Preference to cash	Farmers (and Zambians in general) trust cash more than e-value	<ul style="list-style-type: none"> › Risk of farmers side selling to other cotton ginner's due to urgent need for liquidity › Challenges of adoption amongst their staff 		
Accessibility / convenience	<ul style="list-style-type: none"> › Limited agency networks- means few CICO points › Farmers have to travel to urban centers to (i) get registered, (ii) access Bank ATMs › Low priority to serving farmers holding prepaid cards in banking halls 	<ul style="list-style-type: none"> › Remoteness of collection points › Poor onboarding and customer support from the bulk payment service providers 	<ul style="list-style-type: none"> › Few relationship managers to serve cotton farmers › Limited distribution of ATMs and bank branches 	<ul style="list-style-type: none"> › Poor network coverage › Farmers find it complex to use USSD menus due to service time outs › Poor float management due to low demand and low usage
Affordability	<ul style="list-style-type: none"> › Medium to high transaction fees › Some farmers cannot afford to buy / maintain phones 		Bank cards are costly (up to ZMW 60)	High implementation / operational costs (training, ensuring service delivery)
Regulatory		Central bank extension of OTC withdrawals (at the ginner's request) disincentivized some ginner's from using e-payments		

04 Summary and Recommendations

Recommendations for piloting bulk payments for cotton farmers

1

Solutions will have to be location specific

- › Solutions selected need to account for network coverage, proximity to agents, banks/ATMs, farmer attitudes etc. For example, in Chipata farmers were more open to mobile money, had fewer network challenges compared to Choma, and were on average 3-7km away from a ~~an~~ mobile money agent. Therefore, we expect they'd be more likely to adopt a mobile money solution than farmers in Choma

2

Start small

- › Rather than roll-out solutions in multiple places, focus on getting deployment right in one area then roll out nationally. Chipata (and Eastern Province in general) may be more promising given the factors mentioned in (1) above

3

Solutions should include multiple platforms, i.e. e-wallet, OTC, card

- › Different farmers have a preference to different forms of payments; it will be important to test multiple solutions to identify the propensity of farmers to use different solutions before scaling up

4

Given high preference of cash, ginnerers will need to provide an incentive

- › Incentives for farmers could be in the form of: higher prices for cotton, free phones, early payment etc
- › Field staff/distributors are key to successful implementation of e-payments; as such, it is important to define the business case and/or incentive structure for them

5

Negotiate cost-sharing with the service provider(s)

- › One-off costs: these will need to be shared between service providers and the payer. They include costs of purchasing phones, registering/onboarding farmers, conducting training, and marketing
- › Recurring costs: cotton ginnerers should consider (i) covering the transaction costs; (ii) negotiating for lower transaction costs

6

Partner alignment and commitment

- › Government buy-in and alignment of partner political-economy starts early and must be reaffirmed continuously
- › Backsliding must be discouraged through transparency, accountability, and disincentives to back out of deal

Bulk payments pilot: SUMMARY OF KEY FINDINGS & IMPLICATIONS

DEMAND: large transaction volume presents a business case for digitizing bulk payments in Zambia

600K cotton farmers in Zambia
(95% are smallholders)

\$50M paid in cash,
annually

50% CIT costs account for
over 50% of operational
costs for cotton ginners

Challenges

- Low digital and financial literacy
- Farmers likening e-payments to government e-voucher program which has seen implementation challenges
- Transaction costs perceived to be too high
- High preference for on-the-spot cash payments

Recommendations

- ✓ End-to-end farmer education on DFS i.e., from registration of SIM to final cash-out. Facilitated mobile cinemas are a good tool for such training
- ✓ Cost sharing with service providers and payers (cotton ginners) to lower entry barrier for farmers: phone costs, SIM card costs, transaction fees
- ✓ Given high preference of cash, provide incentives for farmer OR allow farmers to choose preferred platform

SUPPLY: bulk payment landscape still nascent and highly fragmented



Challenges

- Several bulk payment solutions in the market but none operating at scale
- Limited rural CICO points
- Agent liquidity not guaranteed
- Agents not well equipped to onboard farmers (explain what mobile money, product offerings, benefits etc.)
- High agent dormancy limited their profitability

Recommendations

- ✓ Still a fragmented market, pilot should include more than one model before scaling (OTC, e-wallet, card)
- ✓ Providers to consider embracing partnerships between MNOs, MMOs, 3rd party providers, agribusiness to build a better business case for building rural agent networks
- ✓ Explore models to manage agent liquidity and quality of service (e.g., seasonal and roving agents, 3rd party agent management firms)
- ✓ Build the value proposition for DFS by designing a holistic suite of financial services around rural cash flow patterns rather than around the one-time bulk payments for a single value chain

ECOSYSTEM: poorly developed infrastructure to support uptake of DFS

Challenges

22 people/km² Low population density

4% % of rural population on electricity grid

18% Mobile money use

75.8% Mobile phone penetration (2017)

71.5% SIM card penetration (2015)

78% national coverage for mobile connectivity but doesn't meet 5km radius requirement in rural areas

Underdeveloped DFS ecosystem

- Est. 12,000 agents;
- 826 ATMs;
- 404 bank branches;
- few merchants payments

Recommendations

- ✓ Explore low-cost shared base stations shared to boost network coverage in rural areas
- ✓ Providers to explore solar power solutions to facilitate use of mobile phones in rural Zambia
- ✓ Government intervention to foster better regulatory environment for a cash-lite economy e.g., BoZ to enforce the limit on OTC and cheque transactions, digitizing G2P transactions
- ✓ Given the diverse set of needs and activities that need to occur almost simultaneously, a high level of coordination, preferably by an external party (e.g., development actors) is needed amongst stakeholders



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