Zambia Ecosystem Assessment

AgriFin Accelerate Zambia Assessment

Deliverable 10

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Dalberg

The Zambia Ecosystem Assessment consolidates key insights and learnings from research conducted thus far

Document includes highlighted findings about (1) the Zambian DFS enabling environment, (2) smallholder farmers, and (3) potential solutions for improved financial inclusion among smallholder farmers

Farmer demand for services

- What financial and information services do Zambia's smallholder farmers need?

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Supply of services

- How developed is the offering of financial and information services currently available to Zambia's smallholder farmers?

Gaps to be filled by AFA programming

- What are the gaps between the need and supply of financial and information services?
- How can these gaps be resolved through AFA program activities?:

  1.1 Product development support
  1.2 Service points interventions
  1.3 Accelerator/tech partner support
  1.4 Alternative data use support
  2.1 & 2.2 Farmer capability training
  3.1 & 3.2 Sharing of learnings

- Who should AFA partner with to fill these gaps?

Farmer centric needs & opportunities

Value chain specific needs & opportunities`

What is current state of the ecosystem?

AgriFin Accelerate aims to take an ecosystem approach to develop mobile-enabled services offering farmers affordable access to financial and non-financial services on digital platforms

- In order to understand the current agricultural, digital, and solutions landscape, Mercy Corps engaged Dalberg to conduct an ecosystem assessment to enable identification of opportunities for AgriFin Accelerate
- This ecosystem assessment will be updated periodically and is conducted across three pillars: (i) the enabling environment, (ii) the smallholder farmers, and (iii) digital solutions currently targeting farmers

Our assessment showed that currently:

- **Enabling environment:** The regulatory environment is relatively open, providing a supportive environment for DFS innovations. The regulatory authorities are progressively developing policies to create a more favorable environment for its nascent DFS landscape. The tech ecosystem is in its infancy stage, with a few start-ups focusing on agriculture. The few incubators are all based in Lusaka, hence limiting the reach of business development services. One of the main bottlenecks to the growth of DFS is a weak agent network; although the number of agents has significantly increased over the past few years, agent capability and level of activity has not matched this growth. Despite the infant DFS and tech landscape, Zambia's digital infrastructure is relatively strong with 74% cellular network coverage. Given high urbanization and population concentration along the railway lines, most of the population live within cellular reception.
- **Smallholder farmers:** There are a few financial and non-financial products targeting SHFs. Digital literacy is also low and there are no programs currently addressing this perennial problem. Despite high phone penetration, farmers only use basic phone features due to lack of awareness of mobile VAS features. In fact, low awareness is the biggest demand-side reason for low uptake of DFS among farmers. The best channels to reach SHFs are through outgrower schemes, VC and market actors, and farmer/women groups. Few farmers are in VSLAs while primary co-ops are normally active only during input subsidy season (except VC-specific co-ops)
- **Solutions:** The solutions landscape is still nascent with a few providers providing solutions that target SHFs. However there is collaboration between providers to launch products i.e., many SPs collaborate with at least one other player to launch products. There are a few digital non-financial products and are yet to reach scale. Service providers have shown a lot of interest to partner with AFA to either scale existing products or design new products targeting SHFs

What are key constraints to ongoing evolution of the ecosystem? What changes would we hope to see in 2-3 years?

Constraints	Ideal changes in 2-3 years
Enabling Environment	
• Limited interoperability, posing significant challenges given Zambia's fractured market • High registration but low utilization of MM • Donors focus on specific, high value VCs like soya beans and dairy, leaving subsistence farmers unassisted	1. Platform and ultimately customer level interoperability across MTN, Airtel, and Zamtel 2. Higher utilization of Mobile money amongst registered users 3. Donor attention expands to underserved value chains such as millet and sorghum
Smallholder Famers	
• Low access to risk-mitigating financial services like insurance despite farmer demand • Lack of affordable input and asset financing • Limited farmer digital, technical, and financial literacy • Low levels of entrepreneurial farming	1. An increase in the levels of access to crop specific and weather based insurance 2. Growth in small denomination input credit and uncollateralized asset financing options 3. Coordinated financial literacy approach across MNOs 4. Increased numbers of commercially oriented SHFs
Solutions	
• Very low levels of access to DFS with leading products focused on OTC transactions • Few commercial start-ups in general with almost none working in Agriculture • Banks mostly focused on financing large farmers	1. Strong growth in utilization of mobile based DFS solutions to complement OTC offerings 2. Increased seed fund and incubation of agriculture focused start-ups 3. More banks with SHF focused financing strategies

Source: Dalberg analysis based on data presented in this document

What should other market actors be thinking about?

Donors

1. Is there a model of engagement that can support increased productivity for value chains like soya beans that have low participation amongst SHFs but are important for nutrition and food security?
2. How can donors better fund start-ups to replace the missing angel and seed capital?
3. How can donors support a better understanding of the causes of low uptake of DFS across Zambia and what SHF specific bottlenecks would have the highest impact if removed?
4. Would quantifying and comparing the cost of cash vs. investment required to drive uptake of mobile money help drive greater investment in DFS infrastructure e.g. more and better funded agent networks?

Investors

1. Which value chains are exhibiting high growth and potential for high returns i.e., ripe for commercial investment?
2. What stages of the value chain (e.g. aggregation, processing, and export market linkages) are lacking investment and show potential for sustainable investment?
3. With whom should we partner in Zambia to ensure successful interventions in the agriculture sector?

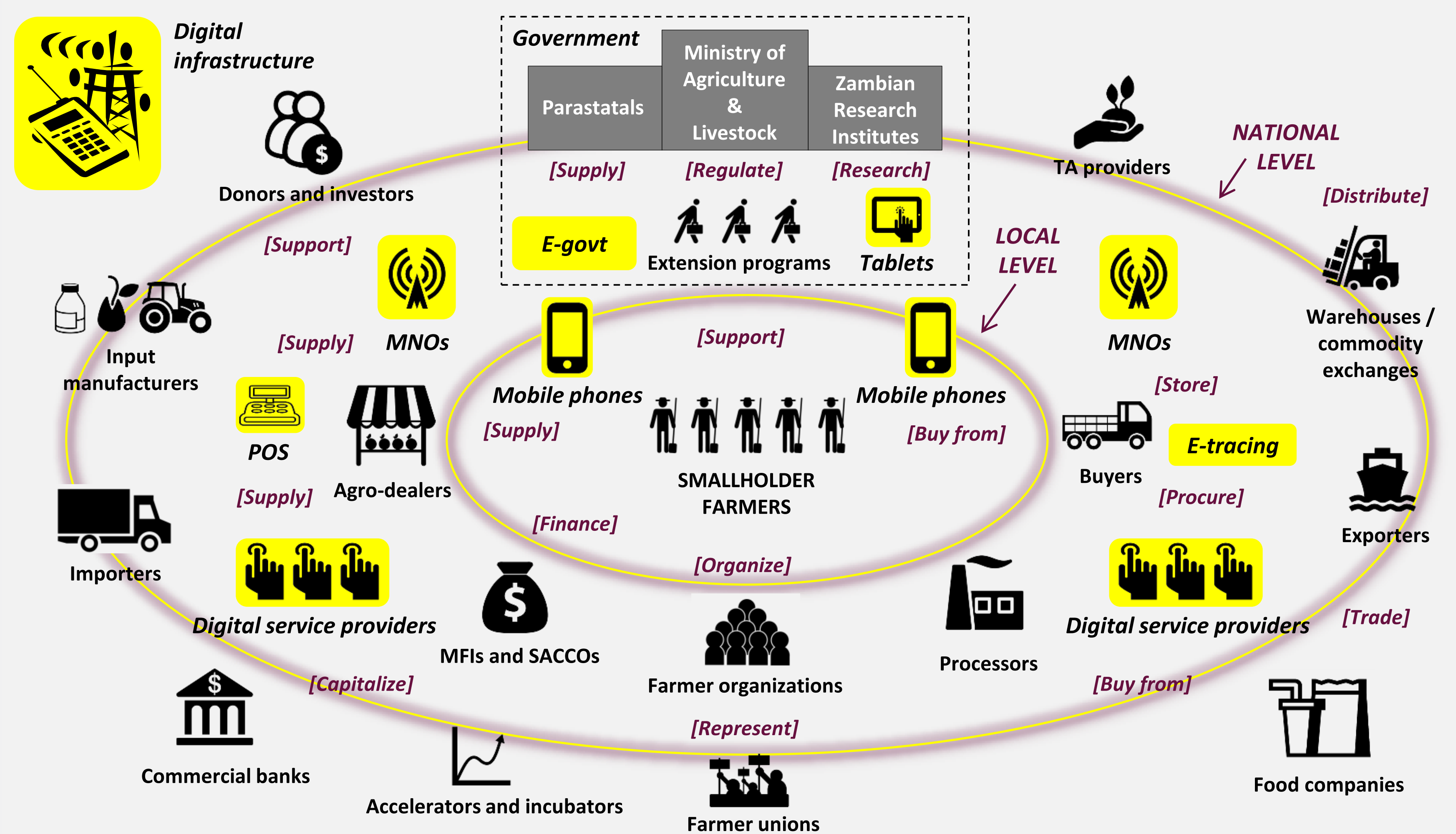
Government Bodies

1. How can government encourage more interoperability between the MNOs?
2. How does high level government involvement in the sector (e.g., controlled maize prices, pricing, export bans etc.) impact the ecosystem? How can negative externalities from these policy choices be mitigated?

Source: Dalberg analysis based on data presented in this document

We adopt an ecosystem view of the agricultural / digital landscape to establish where AFA fits in

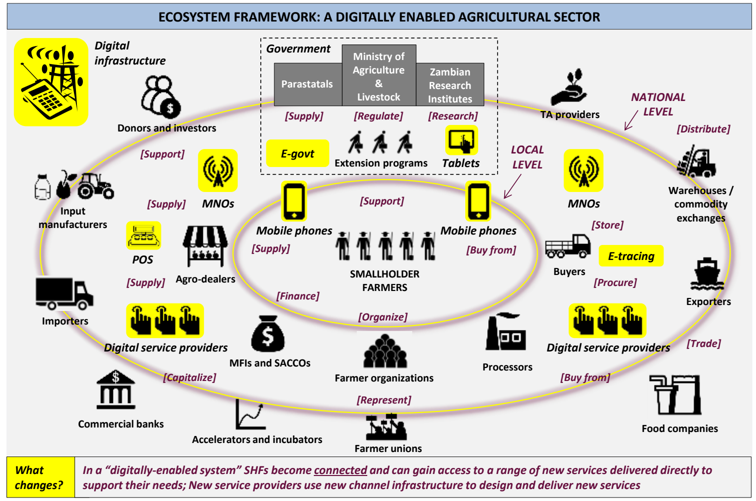
ECOSYSTEM FRAMEWORK: A DIGITALLY ENABLED AGRICULTURAL SECTOR



What changes?	In a "digitally-enabled system" SHFs become connected and can gain access to a range of new services delivered directly to support their needs; New service providers use new channel infrastructure to design and deliver new services

SOURCE: Dalberg analysis

The ecosystem assessment framework will be applied in three key ways for the AgriFin Accelerate program



APPLICATIONS:

How it can be used

1. Contextualizing impact

Defining what a mature, well functioning digital services ecosystem looks like

- To define **elements of a mature ecosystem**
- **To Inform Ecosystem reviews** on **current state** and **changes over time**
- To clearly demarcate the **ecosystem elements that AFA affects**

2. Prioritizing for impact

Focusing AFA on the highest potential areas for impact

- **To contextualize the different dimensions** that AFA can focus on (e.g. crops, providers, products..)
- To consider **how to prioritize opportunities around these dimensions**

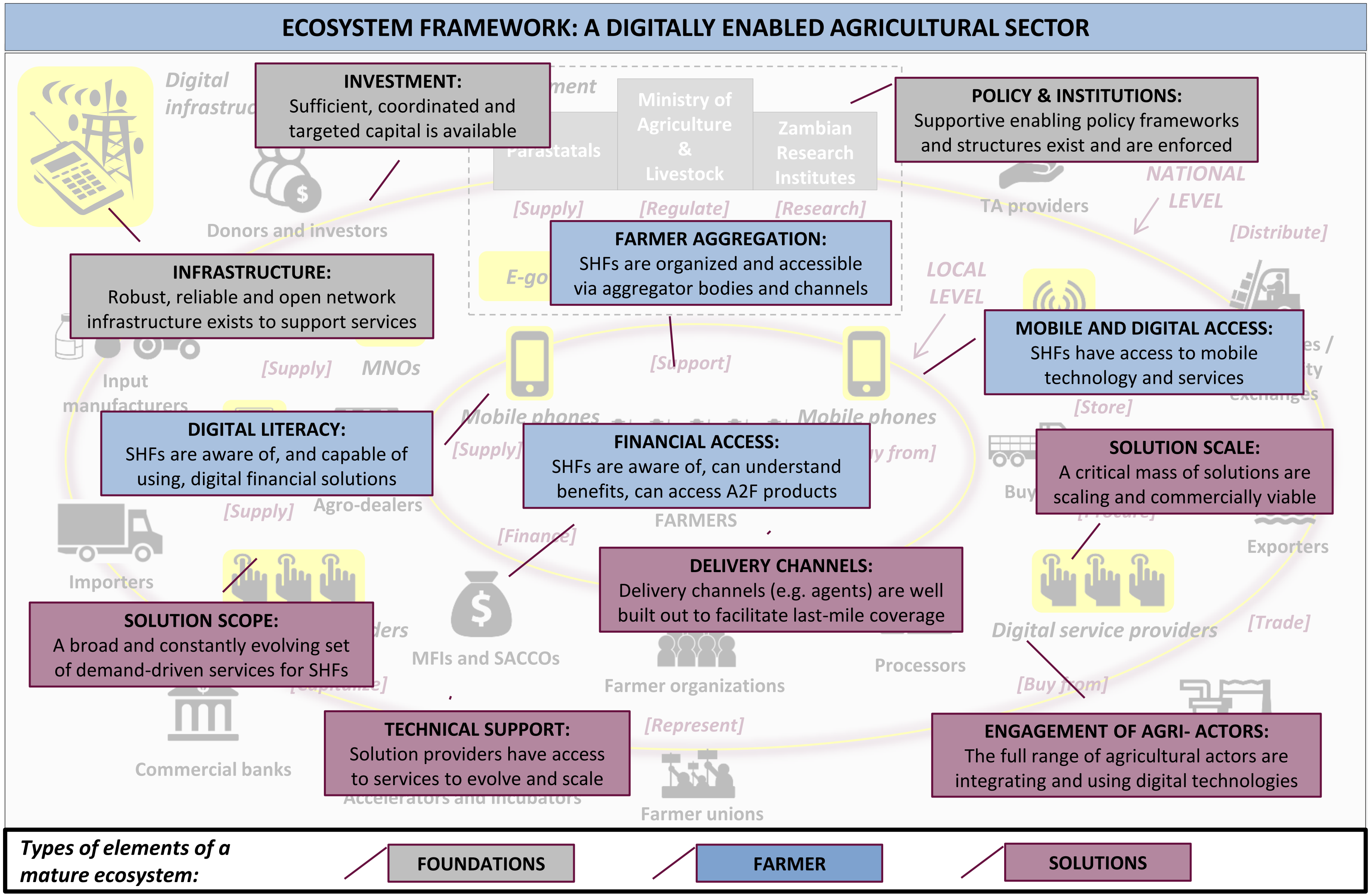
3. Establishing positioning

Positioning AFA relative to others to develop complementary and ecosystem-building partnerships

- To establish gaps where **additional input or work is required**
- To assess **where supportive partnerships can be established** in conjunction with a mapping of the activities of other players

SOURCE: Dalberg analysis

What changes in a mature ecosystem to support provision of digital services for SHFs?



SOURCE: Dalberg analysis

We assess the Zambian agriculture ecosystem across 3 pillars: enabling environment, smallholder farmers and solutions

Enabling Environment

- **Digital Infrastructure**
  - Network coverage by region
  - Agent network for MNOs and MMOs
- **Investment**
  - Volume of commercial, donor, and government funds raised to support digital solutions providers
  - Number of donors and investors with focus on agriculture and ICT space
  - Types of partnership
- **Policy and Institutions**
  - Is there an enabling regulatory environment for developing and launching DFS and DIS solutions (type and quality of regulations supporting DFS and DIS)
  - What policies are needed?
  - How important is financial inclusion on the national agenda?

Smallholder Farmers

- **Access to Finance**
  - # of SHFs using financial products such as savings, loans, and insurance
- **Financial Literacy**
  - What financial literacy programs currently exist?
- **Digital Access**
  - Percentage/# of SHFs who own a mobile phone
  - Percentage/# of SHFs who use mobile money, mobile wallet, mobile savings & loans products
- **Digital Literacy**
  - Levels of digital literacy
  - What digital literacy programs currently exist?
- **Farmer Training**
  - # / type of farmer training programs
- **Farmer Aggregation**
  - Percentage/# of SHFs that are members of some aggregator body[1]
  - Number of SHFs registered with non traditional financial providers[1]
- **Access to markets**[1]
  - Access to market & pricing information
  - Proximity to collection / storage points

Solutions

- **Solution scope**
  - What financial and non-financial solutions are currently offered in market?
- **Solution scale and business model**
  - Number of solutions being provided at scale
  - Cost / pricing information of these solutions
  - What is the payment models of the solutions i.e., who pays for the service?
- **Delivery Channels**
  - Platform providers: number of bank branches ATMs, and POS terminals
  - Market actors: number of agro-dealers, input providers, buyers, and distributers
- **Technical Support**
  - What technical advisory services are currently provided?
  - Who is providing these services?
  - What is the reach and scope?

Digital infrastructure

expected outcome: robust, reliable and open network infrastructure exists to support services

SUMMARY

- **Zambia's digital infrastructure has developed rapidly over the last 10 years** having been the first African country to deploy DFS services on their cellular networks. However, the rise in network coverage, number of mobile subscribers and registered mobile money users has not resulted in a commensurate increase in actual mobile money users
- **There is a general sense that MNOs are only just beginning to take investment in mobile money infrastructure seriously**

	Key Findings	Qualitative information	Sources
Physical infrastructure	• Agent network*: Airtel – 6,835; MTN – 3000; Zoona – 730; Zanaco – 533; Investrust - 550 • Agent activity varies widely across providers. Only ~1000 of Airtel agents have transactions on a 30 day basis;	• **Current:** Agent network is concentrated in urban areas despite fairly high levels of rural network coverage • **Future:** Vodafone has launched services in Zambia in May of 2016 with a focus on providing mobile internet services. This should further increase competition in the Zambian MNO landscape	Company websites; FSDZ Zoona: A case on 3rd party innovation in digital finance 2015; Agent Network Accelerator Survey: Zambia Country Report 2015
Network coverage	• 74% cellular network coverage • Zambia has 3 MMOs (Zoona - 33%, MTN - 27%, Airtel - 27%) • 77% of the population have access to mobile phones; 18% have internet access (2.6 million out of 15 million)	• Airtel has the most extensive network coverage followed by MTN and Zamtel • High levels of urbanization relative to other African countries (44%) makes it easier to have high network coverage even with limited infrastructure	Agent Network Accelerator Survey: Zambia Country Report 2015; TechTrends 22 Jan, 2014
Cost of infrastructure	• **Phone calls:** cost between K0.022-K0.015/second across networks • **Mobile agent profitability:** agent profitability is significantly lower ($42) than in East Africa ($95 for Tanzania and $77 for Kenya)	• Zambian mobile money agents have low margins compared to other benchmark countries like Kenya and Tanzania which hampers agent network expansion • Competition between MNOs is driving prices lower • There are very high levels of MNO agent exclusivity (91%) increasing relative cost per agent	Company websites; Agent Network Accelerator Survey: Zambia Country Report 2015

*Not mutually exclusive; NICTBB – National ICT Broadband Backbone – a fiber optic network that MNOs use for data and voice.;

Investment landscape

expected outcome: aspiration for a mature ecosystem with sufficient, coordinated and targeted capital

SUMMARY

- **The start-up ecosystem in Zambia is very nascent with few commercial start-ups. Most start-ups are self funded** resulting in slow growth due to limited access to resources
- There are few angel and early stage investors. **A few challenge grants are working to close the gap in early stage funding**
- A number of accelerators and incubators exist that **provide in-kind support to start-up linkages to networks**

	Notable Players	Key Findings
Accelerators and incubators	AgBiT Agribusiness Incubation Trust; Agri Pro Focus; BongoHive; WECREATE Women Revolutionizing the World; Startup Junction; Zambian Entrepreneur	• There are very few players focusing on groups such as youth and women, that are most relevant to AFA (e.g. WECREATE focusing on women) • Current, no equity-based incubators and venture capitalists are investing in tech startups. Incubators and accelerators generally provide business development services (BDS), networking, mentoring and linkages to external funding sources • Agbit is an agriculture-focused incubator while AgriProFocus is an online platform for agriculture entrepreneurs
Challenge funds & competitions	Nyamuka Zambia Business Plan Competition; Zambia 2050; Startupper of the Year by Total	• Most funding for startups is available through participation in challenge fund competitions, with most incubators informing entrepreneurs about these sources of funding • A number of private sector companies such as MTN and Total are interested in supporting the startup ecosystem by funding incubators or establishing their own challenge fund competitions
Sector Donors	UKaid from the British people; The Awesome Foundation; Department of State United States of America; indigo; pep Zambia Private Enterprise Programme - Zambia	• Donors such as Indigo Trust, the US Embassy and the DFID, have supported the growth of acceleration and incubators, as well as entrepreneurship and technology training in Zambia • There is a gap in the provision of business development services and funding support for the establishment of Agriculture focused start-ups and incubators

Source: Desk review and stakeholder interviews; Dalberg Analysis

Policy and Institutions

expected outcome: supporting enabling policy frameworks and structures exist and are enforced

SUMMARY

- The **regulatory environment in Zambia is flexible and dynamic having been the first African country to introduce DFS**
- Bank of Zambia is keen on ensuring that regulatory processes do not impede innovations in this space
- Key challenges include **improving interoperability, improving competition and supporting improved digital financial literacy**

	Key Findings	Sources
Platform management	• **Interoperability:** Though system interoperability is a stated BOZ requirement it is yet to implemented and MNOs charge significant premiums to connect to competitor networks • **Agent exclusivity:** Zambia has very high levels of agent exclusivity (91%) compared to Kenya (87%) and Tanzania (28%). This limits the pace of agent network expansion in a competitive market • **USSD access:** Regulators grant banks and other 3rd party providers access to USSD codes; thus, unlike in Kenya, access to USSD codes is not a barrier to entry in Zambia.	Interviews with BOZ and Airtel; Company websites; Agent Network Accelerator Survey: Zambia Country Report 2015
Customer management	• **KYC:** There are no simplified “know-your-customer” guidelines presenting a challenge with regards to registration for mobile money. Registration is time consuming and not available through all agents. There has been a major push by all 3 MNOs to register all sim cards and simultaneously conduct KYC and registration for mobile money	Digital financial services in Zambia 2014 - UNCDF
Government commitment	• **Bank of Zambia** has shown commitment to mobile money growth, incorporating input from MNOs to introducing the **National Payment Systems Act** in 2007, which provides adequate space for a range of DFS providers to enter the market. • The Bank of Zambia is a champion of financial inclusion, **viewed favorably by the industry by banks and non-banks alike**, and has taken a consultative and ‘watch and learn’ approach to DFS • There is a **DFS working group** that addresses policy issues related to DFS. It constitutes of banks, MNOs, UNCDF and FSDZ	Digital financial services in Zambia 2014 - UNCDF

We assess the Zambian agriculture ecosystem across 3 pillars: enabling environment, smallholder farmers and solutions

Enabling Environment	Smallholder Farmers	Solutions

Enabling Environment

- **Digital Infrastructure**
  - Network coverage by region
  - Cost of coverage (price of SMS, data bundles, mobile money transactions
- **Investment**
  - Volume of commercial, donor, and government funds raised to support digital solutions providers
  - Number of donors and investors with focus on agriculture and ICT space (by growth stage where possible)
  - Type of partnerships
- **Policy and Institutions**
  - Is there an enabling regulatory environment for developing and launching DFS and DIS solutions (type and quality of regulations supporting DFS and DIS)
  - What policies are needed?
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Smallholder Farmers

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  - Who is providing these services?
  - What is the reach and scope?

Access to finance

expected outcome: SHFs access and use of financial products

SUMMARY

- Financial inclusion remains low among SHFs, with 41% of them financially excluded
- In general, there is **limited uptake of formal financial products amongst farmers. Mobile money has played a minor role in increasing financial inclusion;** only 7.7% of adult farmers use mobile money
- **Key unmet needs include high cost of credit and transaction services;** the need for savings is less immediate because of low income levels and a strong cultural aversion to leaving money on digital platforms.
- There is higher availability of and interest in agricultural insurance products, especially weather based index insurance

	Key Findings	Qualitative information	Sources
Use of financial products	• 38% of adults have active bank and/or MM account: 60% of adult males vs. 57% of adult females are financially included • Informal financial mechanisms are a key form of financing for most farmers; 21% use informal mechanisms exclusively • 41% of SHFs are excluded from any form of financial services	• Farmers tend to avoid saving in banks because of the high banking fees associated with small deposits • There is also a general distrust of keeping cash with banks or MNOs	Finscope Zambia 2015
Financial service providers (FSPs)	• **FSPs:** 21% of adults exclusively use formal FSPs, 21% use informal FSPs and 17% use both • **Transactions:** 14% of adults transact using mobile money services; however for most farmers, cash is the preferred alternative • **Savings:** 42.7% of the general population save cash at home, 4% save using mobile money, 7% save in kind, 15.4% save with SACCOs, and 30% save with a bank • **Credit:** 70% of adults borrow from family and friends with the 2nd most frequents source of credit being money lenders (9%) • **Insurance:** 42% of adults have not heard of insurance and 20% of those who have heard of insurance have a policy	• Savings groups called Chilimbas are the most used providers by farmers due to proximity and lower fees • Farmers' lack of substantial income limits the need and use of formal financial services especially savings • Borrowing is done via informal channels – formal institutions are perceived to have strict requirement • Farmers are unaware of insurance products but express interest when informed of its availability	Finscope Zambia 2015

Financial literacy

expected outcome: SHFs are aware of, and can understand benefits of, financial products

SUMMARY

- Most smallholder **farmers have low financial literacy with limited knowledge about what services are available and how to access and use them**
- **Current financial literacy programs are primarily run by public sector actors, private enterprises and NGOs –** They are yet to reach scale, both in terms of number of customers reached and depth of curriculum; they also don't directly target SHFs
- **Service providers have difficulty coordinating to improving financial literacy –** This is an artifact of the competitive landscape where there is no dominant player and thus no incentive to invest in non-excludable financial 'public goods'

Key Findings	Qualitative information	
• Farmers have low financial literacy. They have limited awareness of financial concepts, products and financial options available to them • 62% of adults do not know what mobile money transfer services are. 42% have not heard of insurance • However, farmers have some familiarity with less complex financial concepts: only 3% of adults say they do not have a bank account because they do not know how to open one • Farmers have very basic account management and budgeting skills • Over 90% SHF lack title to the land they farm on and thus lack collateral • There is a general fear and mistrust of FSPs and financial products among farmers	**Delivery Channels for Financial Literacy Programs:** **Client training:** • **Private sector:** Inputs providers like BASF, Omnia Fertilizer and Dupont fund integrated farmer literacy programs like Lima Chuma • **Public sector**: Bank of Zambia and the Pension & Insurance Authority support financial education through the **Financial Education Coordination Unit (FECU)** under FSDP guided by the **National Strategy for Financial Education for Zambia** • **NGOs:** Organizations such as DFID, Finmark Trust, the Financial Education Fund and FSDZ provide technical assistance fund for providers of financial literacy **Training Models / Platforms:** • Direct farmer training Indirect farmer interaction through peer learning • Trainings through mass media e.g. TVs, Radio, phones / SMS-based e.g., SNV and ZNFU	Financial Education Periodical Feb 2015 Dalberg interviews, 2016 Organization websites

Digital access

expected outcome: SHFs are aware and use digital solutions

SUMMARY

- **Mobile phone penetration is quite high** with 76.9% of the adult population owning a mobile phone. Despite there being over **6M registered mobile money accounts, less than 10% are active users**
- Highest mobile money usage is for **sending/receiving remittances**. Saving and payment activities have minimal usage

	Key Findings	Qualitative information	Sources
Mobile / Digital Access	• MNO Customer share: MTN – 4.8M (43.6%), Airtel – 4.5M (40.8%), Zamtel – 1.8M (15.6%) • 76.9% of all Zambian adults own a mobile phone compared to 65.7% of farmers • **Access to electronic money transfer services has increased** from 15.5% of the adult population (1M adults) in 2009 **to 36.8%** (3M adults users) in 2015.	• Mobile ownership is expected to increase with the cost of phones decreasing steadily • Zoona and SwiftCash are the most used money transfer services. They are the greatest driver for the increase in access to electronic money transfer services	MM4P, Consumer Behaviors in Zambia, 2016; FSDZ, FinScope Zambia 2015
Mobile / Digital Use	• There are ~**11.1 million mobile subscribers** in Zambia. • **Only 4.6%** of **farmers** have **internet access** • **69% of DFS users have used Zoona while 28% have used SwiftCash**. MTN and Airtel money has been used by only 17% and 13% of DFS users respectively • **75.1% of mobile money users use it for remittances;** only a quarter of users pay bills or save on mobile money • Although 14% of the adult population has used mobile money, only 10% of adult women and **7.7% of farmers have used it** • Airtel's digital micro-insurance product has 1 million subscribers in 2014	• Of the ~6M mobile money registrations, less than 10% are active users. A majority of the registered customers are unaware that they have a mobile money account • Mobile money usage among farmers will only increase if MMOs and other ecosystem players address the weak agency network, lack of awareness, lack of trust, and low digital literacy among farmers	MM4P, Consumer Behaviors in Zambia, 2016; FSDZ, FinScope Zambia 2015; ZICTA, ICT Survey Report – Households and Individuals 2015

Digital literacy

expected outcome: SHFs are aware of, and capable of using, digital solutions

SUMMARY

- **Digital literacy in Zambia is low with few people using their phones for other functions beyond general communication**
- Challenges limiting farmers' use of digital services include lack of awareness, limited skills in using products, lack of trust in MMOs, and a default cash behavior

	Key Findings	Sources
Digital Literacy Levels	• **Although 53% of the adult population are aware of mobile money, only 14% have used it** • **62.9% of adults who have not used mobile-phone-based money transfer services lack awareness** of what the services are. An additional 13.9% do not know how to get it, do not understand it, or do not need it • There is a low farmer usage of value-added mobile solutions such as digital extension services; only **5% of farmers get extension information and while 1% obtain weather prediction via their phones** • Farmers generally do not trust MM as a secure savings platform and they immediately cash out after receiving remittances. They are suspicious of MNOs because of fraud, network failures, and fear of MNOs exiting the market • SHFs are **not fully aware of the range of digital, financial and information services** available to them and **do not fully understand how to use the digital financial services** in the market • Of the adults who are aware of MM, **24% believe they can easily lose money sending/receiving payments** and **29% believe they can not get their money back if they lose their phone** • As for the adults aware of mobile money but have not used the service, **26% do not know what it is while 15% do not know how to get it** (although they might have already have a MM account)	MM4P, Consumer Behaviors in Zambia, 2016; FSDZ, FinScope Zambia 2015; Dalberg analysis based on Smallholder Farmer Based Needs Assessment research (Phase 1) and on field interviews
Digital Literacy Programs	• **There are no notable digital literacy programs in Zambia** • However, radios play the greatest role in addressing DFS awareness. 17% of farmers knew of mobile money via a radio, compared to 11% via family/friends, 7% via TVs and 5% via SMS	MM4P, Consumer Behaviors in Zambia, 2016;

Farmer training and extension programs

expected outcome: SHFs are well equipped with proper farming techniques to increase productivity

SUMMARY

- Farmer training programs are primarily **value chain specific** or focused on **specific service offerings** such as agronomic practices (for example use of improved seeds, use of fertilizers, and better land preparation etc.)
- **The level of farmer capability and training programs varies significantly across value chains** i.e., structured VCs like soya and cotton have a lot of actors providing farmer training, whereas unstructured VCs like poultry and potatoes have minimal focus from extension service providers / trainers

	Key Findings	Sources
Farmer Training	• **Public sector led:** typically through extension officers. Trainings are often done to introduce new seed and pesticide varieties. However, there is a shortage of extension staff and the average distance to an extension officer is 17km. Out of the 1,757 agricultural camps, only 76% of them have an extension officer. In the Sixth National Development Plan, govt. planned to have 4,965 agriculture and 2,611 livestock extension officers by 2015 (it is unclear if target was met) • **NGO led:** HarvestPlus works with 480 women groups to train them on orange maize farming and operating agricultural businesses. Other NGOs offering extension include COMACO (offering extension to 89,000 farmers), CFU (offering extension to 200,000 farmers), and PROFIT+ (targeting 200,000 farmers) • **Private sector led:** out-grower schemes and contract farmers receive training and extension services through their off-takers, e.g., Alliance Ginneries recruits lead farmers, sets up demonstration plots and invests in training farmers and offering on-going extension support to its 33,000 contract farmers	Stakeholder interviews; organization websites; Rural Agriculture Livelihoods Survey 2015, 2016; Feed the Future, Assessment and Recommendations for Pluralistic Agricultural Extension System in Eastern Province, Zambia, 2014;
Training Models	• **Direct farmer training** through demo plots, field days, field visits from extension officers e.g., cotton ginners, Syngenta, CFU, • **Indirect farmer** interaction through training of trainers who then work with farmers e.g., Ministry of Agriculture, Cargill and Alliance ginneries (lead farmer model), COMACO, CFU, iDE • These training are conducted **traditionally** (i.e., verbally or using charts), **digitally** (e.g., using phones – ZNFU 4455, etc.) or **through media** (e.g., TV, radio programs like Radio Farm Forum))	Field interviews; Feed the Future, Assessment and Recommendations for Pluralistic Agricultural Extension System in Eastern Province, Zambia, 2014;

COMACO – Community Markets for Conservation; CFU – Conservation Farming Unit

Farmer aggregation

expected outcome: SHFs are organized and accessible via aggregator bodies and channels

SUMMARY

- **The primary channels of farmer aggregation in Zambia are through farmer associations (cooperatives, primary societies), local savings and loan societies, women's groups and outgrower schemes**
- **In less structured value chains, coops are non-existent or play a much smaller role,** with produce traded informally through agents or at open-air markets; farmers in these value chains are typically in multi-produce societies
- **In cash crops with contract farming schemes** (e.g., cotton)**,** farmers are aggregated around a lead farmer

	Key Findings	Sources
Cooperative Societies	• 44% of farmers belong to a farmer association/co-op while 19% are in women's groups. Only 5% are in local savings and loan societies • The co-op movement has 4-tiers: the Zambia co-op federation (apex), 10 provincial co-op unions, 105 district co-op unions, and over 20,000 primary co-op societies. Majority of the 20,000 co-operatives comprise of ~100 people • In 2010, there were **~8,000 co-ops directly involved in agriculture** (40% all co-ops) and 10,000 multi-purpose co-operatives • While some co-ops may offer farmer trainings, input financing, agricultural information services, and market access, a **majority of the primary co-op societies** were created as a means through which FISP subsidies are disbursed and are **only active during FISP season.** Some exceptions include VC-specific co-ops, e.g., dairy co-ops • There are ~800 SACCOs	Status Report on the Provisional Statistics on Registered Co-operatives, 2014; field interviews
Farmer aggregation	• **NGO led:** COMACO has organized 89,000 farmers into 4,800 producer groups to provide input support, extension services and offtake produce • **Private sector led:** Off-takers in different value chains facilitate aggregation activities e.g., cotton ginners aggregate farmers around lead farmers and around their field offices • **Government initiatives:** the Government gives FISP inputs only through co-operatives. As a result, many co-operatives were formed in response to FISP inputs	Field interviews; Feed the Future, Assessment and Recommendations for Pluralistic Agricultural Extension System in Eastern Province, Zambia, 2014;

Below are the key metrics we use to assess the Kenya agriculture ecosystem across 3 pillars: enabling environment, smallholder farmers, and solutions

Enabling Environment

- **Digital Infrastructure**
  - Network coverage by region
  - Cost of coverage (price of SMS, data bundles, mobile money transactions
- **Investment**
  - Volume of commercial, donor, and government funds raised to support digital solutions providers
  - Number of donors and investors with focus on agriculture and ICT space (by growth stage where possible)
  - Type of partnerships
- **Policy and Institutions**
  - Is there an enabling regulatory environment for developing and launching DFS and DIS solutions (type and quality of regulations supporting DFS and DIS)
  - What policies are needed?
  - How important is financial inclusion on the national agenda?

Smallholder Farmers

- **Access to Finance**
  - # of SHFs using financial products such as savings, loans, and insurance
- **Financial Literacy**
  - What financial literacy programs currently exist?
- **Digital Access**
  - Percentage/# of SHFs who own a mobile phone
  - Percentage/# of SHFs who use mobile money, mobile wallet, mobile savings & loans products
- **Digital Literacy**
  - Levels of digital literacy
  - What digital literacy programs currently exist?
- **Farmer Training**
  - # / type of farmer training programs
- **Farmer Aggregation**
  - Percentage/# of SHFs that are members of some aggregator body[1]
  - Number of SHFs registered with non traditional financial providers[1]
- **Access to markets**[1]
  - Access to market & pricing information
  - Proximity to collection / storage points

Solutions

- **Solution scope**
  - What financial and non-financial solutions are currently offered in market?
- **Solution scale and business model**
  - Number of solutions being provided at scale
  - Cost / pricing information of these solutions
  - What is the payment models of the solutions i.e., who pays for the service?
- **Delivery Channels**
  - Platform providers: number of bank branches ATMs, and POS terminals
  - Market actors: number of agro-dealers, input providers, buyers, and distributers
- **Technical Support**
  - What technical advisory services are currently provided?
  - Who is providing these services?
  - What is the reach and scope?

[1]Some data points that are specific to SHFs and market infrastructure will have to be collected in the baseline study conducted by AgriFin Accelerate

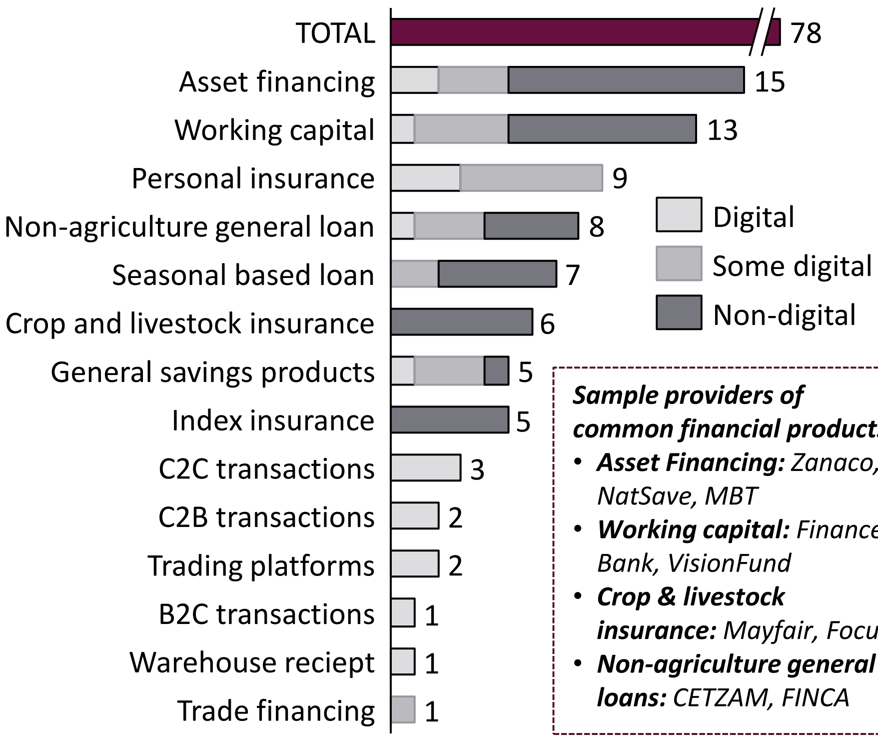
Solution scope – financial products

expected outcome: a broad and constantly evolving set of demand-driven services for SHFs

SUMMARY

- Although there is a quite a number of financial products targeting farmers, **many cater to emergent and commercial farmers**
- The most common financial products are **asset financing and working capital loans.** About half of the products had some digital compatibility
- **Commercial banks and microfinance institutions** are involved in the most number of products. However, many service providers collaborate with at least one other provider to roll out products

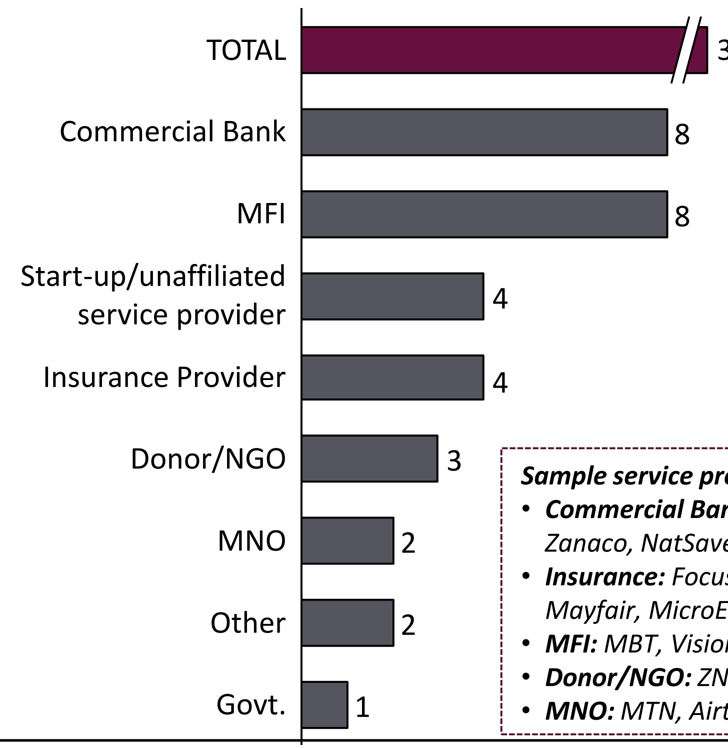
Number of service providers by type of products



Sample providers of common financial products:

- ***Asset Financing:*** *Zanaco, NatSave, MBT*
- ***Working capital:*** *Finance Bank, VisionFund*
- ***Crop & livestock insurance:*** *Mayfair, Focus*
- ***Non-agriculture general loans:*** *CETZAM, FINCA*

Number of products by type of service provider



Sample service providers:

- ***Commercial Banks:*** *Zanaco, NatSave,*
- ***Insurance:*** *Focus, Mayfair, MicroEnsure*
- ***MFI:*** *MBT, VisionFund*
- ***Donor/NGO:*** *ZNFU, iDE*
- ***MNO:*** *MTN, Airtel*

Source: Dalberg analysis based on service provider websites and stakeholder interviews April – July 2015

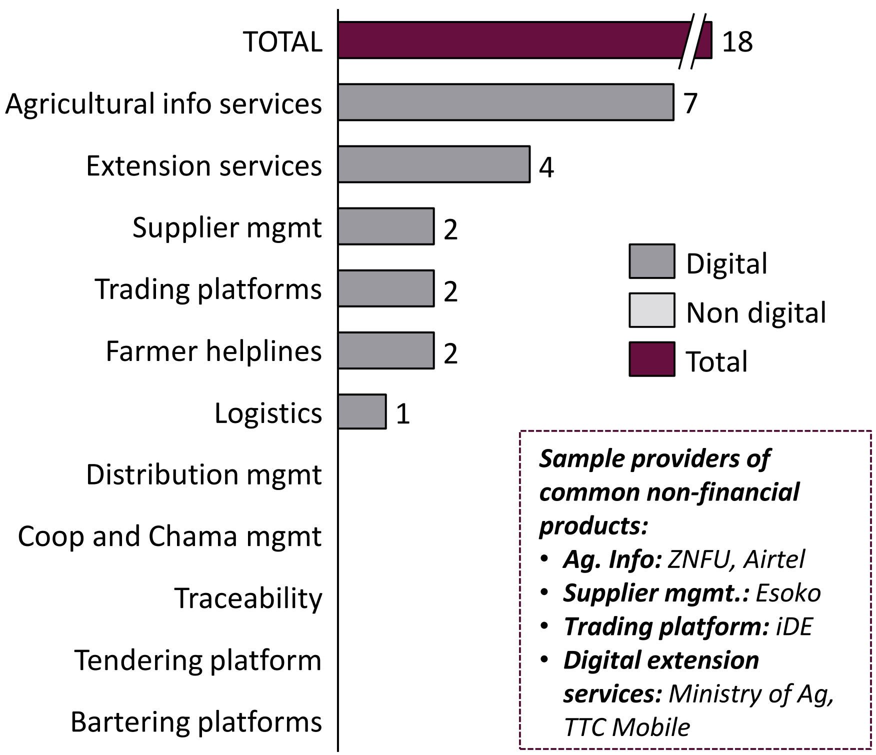
Solution scope – non-financial products

expected outcome: a broad and constantly evolving set of demand-driven services for SHFs

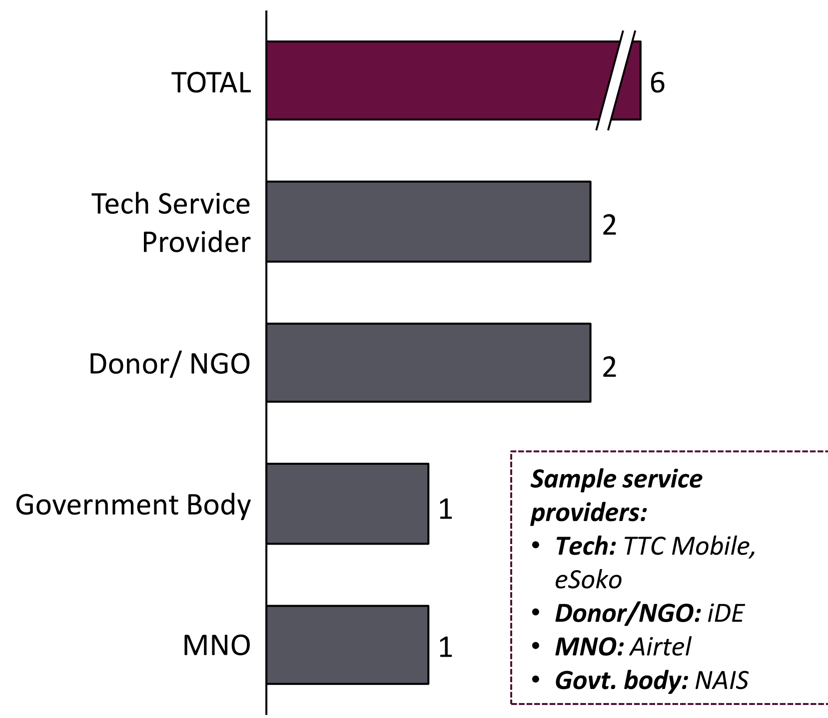
SUMMARY

- **Zambia lags** behind Tanzania and Kenya in non-financial products; **digital non-financial products struggle to reach scale**
- **The most common products were information and extension services.** Most of the information and extension service products are bundled into one product
- **NGOs and technology service providers are the most common** non-financial service providers**. Government** bodies are beginning to adapt traditional non-financial services to digital platforms

Number of Service Providers by Types of Services Offered



Number of Existing Products by Service Provider



Source: Dalberg analysis based on service provider websites and stakeholder interviews April – July 2015

Business models for larger scale financial and non-financial products

expected outcome: a broad and constantly evolving set of demand-driven services for SHFs

SUMMARY

- A **few notable solutions have reached significant scale through partnerships** between banks, mobile network operators, insurance providers, the government, and/or other market actors. These partnerships are typically **revenue share agreements** between the partners involved
- Examples of these partnerships are provided below:

MNO + FSP	MNO + VAS Partner*	FSP + Market Actor
MTN partnered with Africa Life Assurance to launch Life After Life, a subscription-based life micro-insurance product	*TTC mobile's digital extension and helpline service was initially available through Airtel but is now available on all networks via SMS*	*Stanbic partnered with Shoprite for its money transfer service, Shoprite Money Transfer, in order to access a wider market*
MTN partnered with JUMO to launch MTN Kongola, an unsecure microloan product accessible through MTN money	*ZNFU 4455 (market price information service) and ZNFU e-Extension service both use Airtel's platform*	*BancABC partnered with the Ministry of Agriculture to distribute VISA FISP eVouchers to 218,000 farmers*
StanChart partnered with Airtel to allow its Straight2Bank wallet to send bulk payments from the bank to Airtel money		
Airtel partnered with MicroEnsure to launch a loyalty-based life micro-insurance product and reached over 1M users		

*Service providers running their VAS on Airtel's platform

Source: Stakeholder interviews; Service provider websites; Dalberg analysis

Business models for non-financial products

expected outcome: a broad and constantly evolving set of demand-driven services for SHFs

SUMMARY

- **Traditional extension services are provided by donors, the government, and off-takers**. These are typically provided to farmers for free under off-taker payment or subsidized models
- On the contrary, **informational services delivered on digital platforms charge farmers usage fees**

User Fee

- In this model, the end-user (farmer, co-op, farmer group, business) incurs the cost of the service

ZNFU 4455 is a pay-per-use SMS service that offers market prices for various commodities. Each SMS costs $0.15

ZNFU e-extension service is a menu-based platform that offers agriculture information and tips. A ZMW 2.5 upgrade gives extension, weather, disease outbreak, field days, meeting, market, and related information

Off-taker Payment / Business Investment

- End-users do not pay for the cost of service; cost is incurred by the service provider, who gets to promote their products in the market

Contract farming off-takers such as NWK, Cargill and Alliance Ginneries offer extension services to their contract farmers to guarantee a high quality of the produce and ensure a good harvest to repay any input pre-financing

Subsidized Models

- End-users do not pay for the cost of service – this is typically incurred by a donor or the government

Lima Links provides information and trading services for smallholders and traders in horticulture. It is funded by the Gates foundation but plans to graduate to a paid subscription model

REPUBLIC OF ZAMBIA

The Ministry of Agriculture provides extension services financed from the government's budget

SOURCE: Dalberg analysis 2015

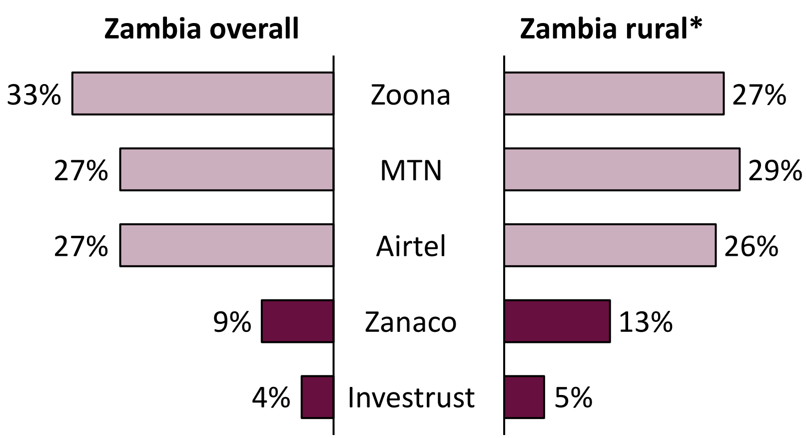
Delivery channels – platform providers (MNOs & top tier commercial banks)

expected outcome: delivery channels are well built out to facilitate last-mile coverage

SUMMARY

- **MNOs agents make up 80% of the agent network, with Zoona having the most active agents**. However, MNO agents currently offer OTC services while bank agents offer more banking services including transactional, savings and account opening services
- Zambia has **fewer agents** than in other AFA countries. **MNO agents struggle with float management**, making them unreliable
- **Zanaco and Investrust are the only banks with agents**; their agents tend to be more rural than traditional bank outlets

Market Presence of National Agent Network (2014)[1]



MNOs have significantly more agents than banks, making 80% of all agents**.** However, MNO agents currently offer only OTC services, bank agents offer more banking services including transactional, savings and account opening services

Key Metrics

Agent demographics

- 91% of agents are exclusive, the highest in AFA countries (Kenya: 87%; TZ: 28%). However, only 49% of agents are dedicated (agent-only business) compared to 70% in TZ and 36% in Kenya
- **Only 29% of agents are located in rural areas**

Agent operations and business

- 67% of agents offer OTC money transfer services
- **Zambian agents have the lowest profitability of the AFA countries** (median profits are $42, $95 and $77 in Zambia, Tanzania and Kenya respectively)

Challenges

- **Agents in Zambia are caught in a sub-scale trap**, there are not enough DFS users to make agent businesses as profitable as in other AFA countries
- **High exclusivity further limits agent profitability**
- **Unreliable float makes Zambian agents weak and distrusted**

*Zambia rural is used as a proxy for areas with high SHF concentration

SOURCES: Helix Institute of Digital Finance. Agent Network Accelerator Survey: Zambia Country Report 2015; field interviews

Delivery channels – market actors (input providers and buyers)

expected outcome: delivery channels are well built out to facilitate last-mile coverage

SUMMARY

- **FISP* and agro-dealers** are the main source of inputs for SHFs. Given Zambia's low population density and poor infrastructure, agro-dealers are located far from farmers and are hard to access. Some off-takers provide pre-financed inputs and extension services, repayable in kind through farmers' harvest
- Most smallholder farmers operate in unstructured value chains and primarily sell to brokers or in nearby open air markets. In structured value chains, they sell their produce to off-takers either directly or through farmer associations

	Key Findings	Sources
Input Providers	• **FISP** is the main source of fertilizer for 58% of households while **private retailers** are used by 44% of households. ~50% use save seeds from harvest while a third rely on purchased seed • Major input companies **include Cargill, Yara, MRI Syngenta, SeedCo, Zamseed** and **Kamano Seed** • **Out-grower schemes and contract farmers receive financed inputs** from off-takers. This is popular for cash crops • **A few players have started to work through agro-dealers to deliver services to SHFs:** Syngenta has set up 100 community agro-dealers (reaching 10,000 farmers) to deliver inputs and extension services to farmers while securing market access with local off-takers. FSPs such as FNB, Zanaco and Stanbic bank have distributed POS devices to 204 agro-dealers to allow 217,000 farmers to use their FISP e-vouchers	Vuna, Analysis of Input Subsidies, Incentives, Government Budgets and Related Policies, 2016; IAPRI, Rural Agriculture Livelihoods Survey 2015, 2016; Stakeholder interviews;
Buyers and Distributors	• Since farmers live an average of 42km from a district town (and 26km from a local market), brokers and small buyers/truckers are the main channel for taking SHF produce to market • **Cash crops** (e.g., cotton, sugarcane) **have ready off-takers**, some who pre-finance the inputs • The **Food Reserve Agency** is the largest buyer for maize (40%); **WFP** off-takes pulses and oilseeds while **Export Trading Group** off-takes cereals, legumes/pulses and oilseeds for export • **Supermarkets** off-take fresh horticultural products. However, **most horticulture retailing happens at open-air markets, grocery shops & street vendors**	Rural Agriculture Livelihoods Survey 2015, 2016; Stakeholder interviews;

*FISP – Fertilizer Input Support Program

Technical assistance landscape – support for tech firms

expected outcome: Solution providers have access to services to evolve and scale

SUMMARY

- The **landscape of organizations providing funding and technical assistance to technology firms is very nascent in Zambia** – incubators and accelerators generally provide business development services (BDS), networking, mentoring and linkages to external funding sources
- Most **funding for startups is available through participation in challenge fund competitions**
- There are **very few players focusing on groups such as youth and women**
- **Donors such as Indigo Trust, the US Embassy and the DFID, have supported the growth of accelerators and incubators**, as well as entrepreneurship and technology training in Zambia

Category		Examples of Organizations	Services Offered
Sector funds / donors	7*	• Indigo Trust, Awesome Foundation, Pep Zambia, US Embassy, Citizens Economic Empowerment Commission (CEEC)	• Grant funding for start-ups, incubators, bootcamps, conferences, competitions • Minimal training / mentorship; 3 offer BDS through BongoHive • CEEC offers entrepreneur business loans
Startup incubators	6	• BongoHive, WECREATE, AgriProFocus, AgBits, Startup Junction, Zambian Entrepreneur	• All offer networking, BDS and some training; some offer mentorship • BongoHive and WECREATE have co-working spaces; also only ones with start-up funding
Challenge funds	3	• Nyamuka, Startupper of the Year, Zambia 2050	• All are business plan competition, offering winners up to ZMW 250,000 • Finalists receive mentorship and BDS
Co-working spaces	2	• BongoHive, WECREATE	• Provide physical space, business competition, peer-to-peer training, workshops & links with investors. BongoHive's BDS is more advanced

SOURCES: Service provider websites, stakeholder interviews,

* List includes VC4A and Fund for Rural Prosperity, which are pan-African VC and grant funding platforms

Technical assistance landscape – support for financial service providers

expected outcome: Solution providers have access to services to evolve and scale

SUMMARY

- **There are few organizations providing support to financial service providers to develop agriculture finance capabilities, and few FSPs themselves are investing heavily in agri-finance expertise**
- To expand into agriculture, FSPs require support on product design, market segmentation / information, and development of alternative delivery channels

Examples of Organizations[1]	
UNCDF MM4P MOBILE MONEY FOR THE POOR	• MM4P provides financial and technical support to service providers and financial service agents in several countries including Zambia. They also conduct market research to support development of products that reach low-income and rural households • They work with the central bank to create an enabling environment for branchless and DFS • The program aims to have 15% of the Zambian population actively using DFS by 2019
fsdZambia Expanding Financial Inclusion	• FSD Zambia' core mandate is to develop the capacity of the financial services industry. They work with financial institutions, business services providers regulators, and support institutions. They also provide market information to inform policy decisions and design of financial products
IFC	In Zambia, IFC has: • Recently invested $25M in FNB to enable them to support small scale businesses and agriculture in Zambia • Provided $1M worth of advisory services as well as business management strategies to Airtel to boost mobile money usage and increase access to DFS • Assisted the Zambian government create a modern secured transaction law that will enable entrepreneurs and small businesses to access loans using movable collateral (e.g., machinery, furniture, crops)

Source: Stakeholder interviews; stakeholder websites; http://www.techtrends.co.zm/airtel-zambia-ifc-boost-mobile-money-platform-zambia/;