MERCY CORPS

AGRIFIN

8th ale AGRIFIN LEARNING EVENT

Enabling Rural Economies:
Creating Lasting Impact for the Digital Ecosystem in Africa.

COPE. ADAPT. THRIVE

8th Annual Learning Event // October 2024

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Executive Summary

1.1 Background

Since 2012, Mercy Corps AgriFin and its partners have been working to design, deliver, and scale digital solutions aimed at helping small-scale producers in Africa and Asia. These solutions focus on agricultural finance, information services, and market access, supporting both public and private sector organizations. To facilitate peer learning and provide an opportunity for gathering insights on effectiveness of the programs, Mercy Corps AgriFin holds an annual learning event to enable partners to share lessons, experiences and network, where the outcomes are used to help in refining strategies and improve future initiatives. Mercy Corps AgriFin invited its partners to speak, explore and share leanings under the theme ***"Enabling Rural Economies: Creating Lasting Impact for the Digital Ecosystem in Africa."*** at its 8th AgriFin Learning Event (ALE) on October 15-16, 2024, at the JW Marriott Hotel in Nairobi, Kenya. The event was hosted in collaboration with esteemed strategic and content partners from notable organizations such as the World Bank, CGAP, IDH, IDEO, SPARC, CGIAR, CLIC and FSD Kenya.

Figure 1:8th ALE event design

8th ALE design included presentation, panel discussions, group breakout discussions, marketplaces and master-classes, focusing on financial and information services provision to smallholder farmers, the learning event brought out several outcomes and learning.

1.2 Key learnings from the opening sessions

- There needs to be increased investment in the AgTech sector in Africa
- Industry needs to find ways to encourage adoption of digital products and services
- Players should understand the importance of identifying needs of the market and responding with an innovative model that create value to the farmers while exploring the available business opportunities, creating value for investors. Critical still is maintaining strong customer relationships e.g despite its challenges, iProcure's loyal customer base continued to support the company

- Choosing the right partners is key in delivering services for small scale producers.

  Managing expansion and operational costs is critical. There is pressure to scale rapidly following significant funding rounds can lead to unsustainable growth and ballooning operational costs.
- The agricultural sector is vulnerable to external factors such as government policies and market fluctuations. There is need to work on products that are not influenced by politics and not ignore the regulators.
- Reducing heavy reliance on a particular product/value chain is also essential.
- Reducing reliance on foreign currently denominated costs is key. Foreign-denominated debt becomes increasingly expensive as the local currency depreciates, highlighting the importance of managing currency risks in emerging markets.
- Manage the transition to professional management carefully to avoid disconnect between the company's original vision and its new direction. Professional managers can bring valuable expertise, keeping founders involved in key decision-making processes is crucial.
- Deep understanding of the business and market can be invaluable

1.3 Key learnings on the future of the Agtech ecosystem in Africa

The future of the Agtech ecosystem in Africa should focus on: business models rather than products, reimagine the "ecosystem support stack", increase diversity and innovation in funding, engage and align with corporates and, find commercial use cases for AI, inclusion and climate. Further, to achieve significant impact, increased inclusion of women, expanded data collection on farmers, and a deeper focus on African-specific challenges and solutions. Instead of following global tech trends, emphasis should be placed on scaling proven solutions that address local needs effectively.

1.4 Key learnings on scaling gender inclusion in digital agriculture financing

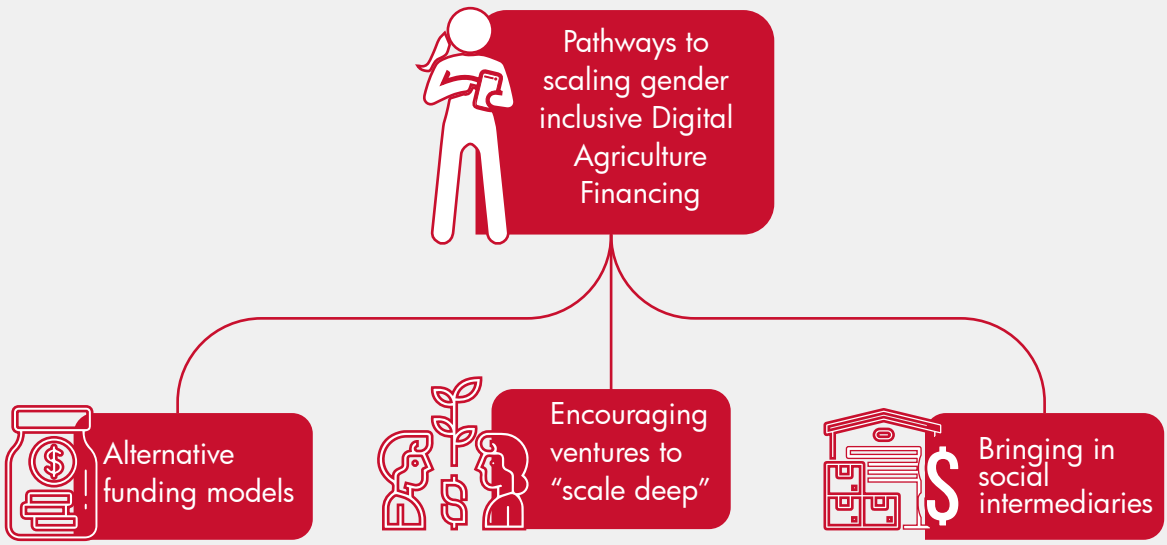

Figure 2:Key learnings on scaling gender inclusion in digital agriculture financing

- **Alternative funding models – i.e.,** leveraging local capital like pension funds on a patient capital model which incentivises slow and resilient growth.
- **Encouraging ventures to "scale deep" –** Involves cultivating relationships with local funders, and, in so doing, growing sustainably.
- **Bringing in social intermediaries** like SACCOs, Cooperatives and Farmer Associations to potentially be a source of funding, but they can also partner with innovators to develop and distribute solutions that work for their constituents.

1.5 Key learning on financial services

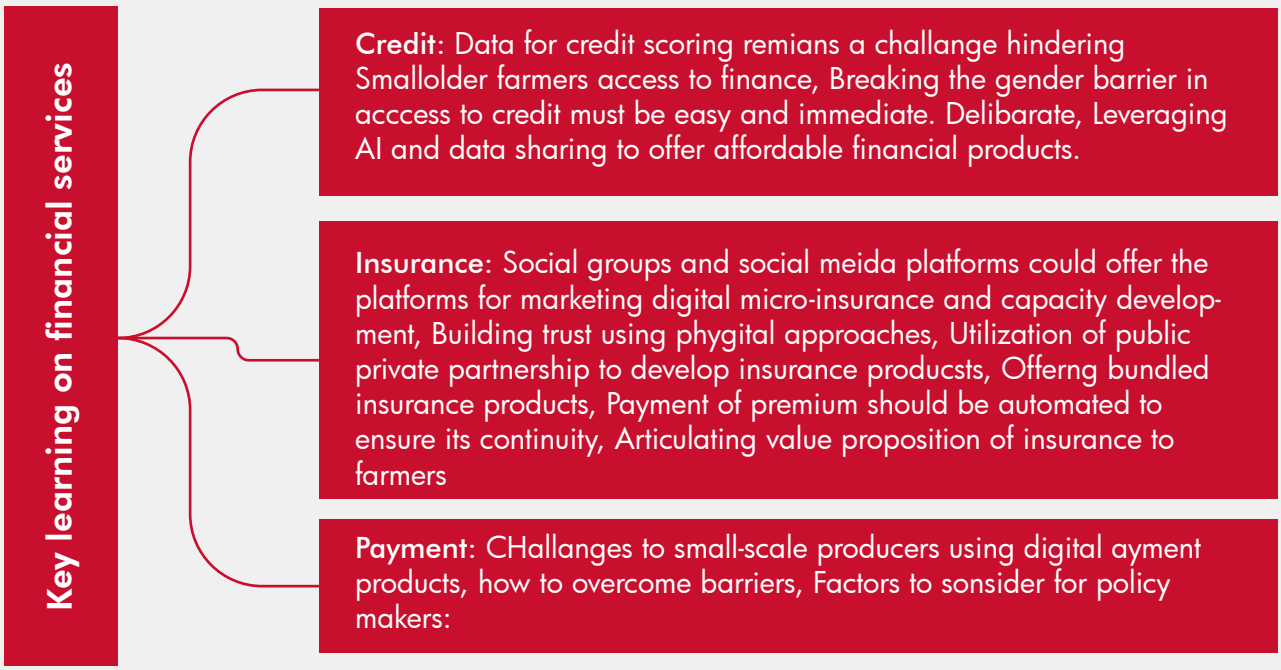

Figure 3:Key learning on financial services

1.6 Key learnings on AI

- AI holds the potential for both financial and information service. Several solutions have been developed however, there is need for collaborations, and coordination among all players to increase efficiency and reduce duplication while also harnessing investment for common infrastructures such as Digital public infrastructure. Other outcomes on AI which were noted included: Cost of AI and localization process and statues, navigating data compliance, protection and representation of rural households, Pathways to delivering AI solution to farmers for adoption, Consultation with farmers and strong collaboration with the government aimed at packaging AI products to farmers.
- AI touches on all aspects of agricultural production and can be used for predictive analytics which can help in making decisions around breeding, weather forecasting and understanding animal behaviour and which can be translated into advisory information to farmers tailored to the questions they have in an interactive manner. A lot does need to be done before fully exploring the available opportunity such as creating great partnerships, establishing digital public infrastructure, inclusion of local voices and filling the data gaps to eliminate bias and bring more people on board. There are some concerns over data privacy. There is need to ensure that AI products can be used and applied in the future by collecting relevant, useful data and have sustainable business models to ensure SMEs and digital start-ups are able to thrive in Africa.

1.7 Key learnings on information service

Platforms and market

- Digital platforms increase market and delivery efficiency.
- Multi-channel approaches for better adoption.
- Aggregated farmer data enhances innovation.
- Customized digital platforms drive impact and scale. Interventions required for digital platforms systems to thrive:
    - Creating partnership with commercial platforms
    - Provision of bundled services
    - Contractual farming and assuring farmers of markets

Advisory

- Providing contextualised information:
- Use of multichannel platforms to disseminate information:
- Utilising feedback sessions to improve advisory systems:
- Digital literacy as the key to improved adoption and use of digital advisory services

DCAS

- DCSA services like weekly forecasts, early warning systems, and climate-linked insurance enable farmers to anticipate climate impacts, improving decision-making and resilience.
- Tailored, localized data on climate risks and market trends, along with field teams from local communities, ensure that DCSA solutions are relevant, actionable, and effective for smallholder farmers.
- Public-private partnerships are critical to delivering cost-effective CSA solutions, reducing risk, enhancing product offerings, and improving business performance.
- Involvement of Agribusiness to spur DCSA Adoption
- Is a single unified data system possible?

Cross Cutting

- Digital solutions must be affordable for smallholder farmers (SHFs) to ensure sustained adoption. Strategies like partnerships, subsidies, and cost-sharing models enhance affordability.
- Standardizing data collection and sharing practices among AgTechs, financial institutions, and governments improves SHF access to services.

  Public-Private Partnerships is essential for scaling of digital solutions
- Special consideration such as allowing women to pay for digital products and services in instalments, mobilizing and accessing women through groups as well as providing services to women preferred value chain among others should be made to be able to attract female users.

- Network of agent have proven to be crucial to speed adoption and collection of data.
- Successful Digital Platforms are secure, easy to use, and reduce conflict.
- The Government role in Digitalization of information services is pivotal in ensuring reduction of cost of DCSA, providing a central database.

1.8 Key learnings on Digital Public Infrastructure (DPI)

Open-Source Community developed through DPI, developed in collaboration with the private sector, will be integral in scaling the services offered by AgTechs.

1.9 Recommendations

Programming focus: AgTech program or projects should include elements of collaboration and coordination, Agtech solutions for dryland and climate resilience, bridging the gap between technology and smallholder farmers, human centered thinking design approach to solution development, programming for DPI and AI solutions, Actionable digital advisory services content, credit score profile development for smallholder farmers

Policy focus: Policies should focus on capitalizing on the economy of scale so that digital Agricultural finance can reduce the cost of lending to smallholders' farmers for the banks.

2.0 Background and Context

Since 2012, Mercy Corps AgriFin and its partners have been working to design, deliver, and scale digital solutions aimed at helping small-scale producers in Africa and Asia. These solutions focus on agricultural finance, information services, and market access, supporting both public and private sector organizations. To facilitate peer learning and provide an opportunity for gathering insights on effectiveness of the programs, Mercy Corps AgriFin holds an annual learning event to enable partners to share lessons, experiences and network, where the outcomes are used to help in refining strategies and improve future initiatives. Recently, technology startups and their teams in Africa have faced significant challenges, particularly those focused on improving the lives of small-scale producers. This has created a pivotal moment for stakeholders in Africa to pause, reflect, and support these efforts. Mercy Corps AgriFin invited its partners to speak, explore and share leanings under the theme "Enabling Rural Economies: Creating Lasting Impact for the Digital Ecosystem in Africa." at its 8th AgriFin Learning Event (ALE) on October 15-16, 2024, at the JW Marriott Hotel in Nairobi, Kenya. The event was hosted in collaboration with esteemed strategic and content partners from notable organizations such as the World Bank, CGAP, IDH, IDEO.org, SPARC, CGIAR, CLIC and FSD Kenya. The two-day event included plenary sessions, masterclasses, breakout sessions, marketplaces for Digital Financial Services and Digital Information Services, all designed to drive meaningful conversations, sharing and collaboration among industry players.

The learning event aimed to answer the below questions

- Where are we on the journey to support small scale producers on digital agriculture, assessing the maturity and reach of digital Agriculture tools? What is the state of Agtech-oriented organisations?
- How to improve public sector data sets to make the data actionable and then impactful to be leveraged to support initiatives on small-scale producers to improve access to digital financial services and information services? What does a successful private-public partnership look like? What links are critical?
- How can alternative data and artificial intelligence be leveraged to scale positive impact? Which countries in Africa and elsewhere are successfully implementing AI tech in Agriculture and how can we learn from them?
- How can we collectively scale up and accelerate finance for digital agricultural technologies for climate-resilient food systems? What is the role of digital ag solutions in managing risk?
- What are the existing financial models and investor perspectives? How can we invest patient capital to enable these Agtech organisations/initiatives to thrive over the long term?

  How are we integrating a systems framework towards sustainable approaches? What are the key pathways addressing barriers?
- Which policies and regulations are required to create an enabling environment?

3.0 Day 1 Sub- Theme:
Pathways/Strategies to Scaling and Sustainable Growth of Agricultural Digital Financial Solutions

3.1 Introduction

3.1.1 Opening Remarks

AgriFin Program Director, Sieka Gatabaki provided the opening remarks by welcoming the participants. He further gave a brief overview of the history of AgriFin, reiterating the pivotal role of partnerships in its progress. He shared that, since 2015, AgriFin had tested and refined approaches under its Accelerate program, developing a comprehensive playbook for working with AgTechs to deliver impactful solutions for small-scale producers.

Through iterative learning and testing, AgriFin has identified effective strategies, and in partnership with the Bill & Melinda Gates Foundation (BMGF), it is now focused on scaling these success stories. He highlighted that the digital agricultural ecosystem is facing many challenges with the most pressing one being climate challenges that are impacting productivity at the producer level.

Despite the challenges, AgriFin has to date managed to successfully reach 17 million farmers, created over 250 partnerships and developed tools and skills to help farmers but he also acknowledged the need for stronger collaboration with the government. He closed his remarks by urging the participants to explore ways to further support the rural economies to improve the livelihoods of small-scale producers and drive sustained impact, setting the tone for the event.

3.1.2 Scene Setting

The session aimed to delve into the current landscape of AtgTech and related technologies, focusing on their growth, maturity, scalability, and challenges. Exploring whether AgTech solutions are effectively achieving commercial success and delivering impactful results.

Stewart Collis, Senior Program Officer, Digital Solutions, Agricultural Development at Bill and Melindas Gates Foundation provided an overview of how AgTechs are performing in Africa. ''There are various AgTech solutions spanning five major use cases including advisory services, market linkages, financial access, supply chain management, and macro agricultural intelligence. Most of the solutions are found in East Africa with Kenya leading the way,'' he mentioned. He highlighted that investment in AgTech remain minimal, and primarily fuelled by donors, while private investment is lagging, with less than 2% of global fund going to Africa digital startups. Despite reduced funding, the sector has experienced some growth, but adoption and meaningful use remains a challenge, with the current rate of adoption at 10% (between 5-17%) indicating that the sector has a long way to go to reach 500m farmers. According to 2019 CTA report, AgTech have led to improvement in income and yield, with engagement of women needing improvement. Other challenges included lack of skills and infrastructure. He concluded by indicating that BMGF is working to address issues of adoption and digital public infrastructure through initiatives such as Digital Green and Agristack where they are incorporating AI to interact with farmers.

Eric Muriuki Njagi, CEO NCBA Loop DFS presented an example of what a successful digital financial model can do for small scale farmers. He highlighted the importance of understanding the market and responding with an innovative model that creates value to farmers while exploring the available business opportunities, creating value for investors. NCBA Loop found an opportunity in the rice value chain where 90% of rice consumed in Kenya is imported yet there are vast resources available to grow the crop. Loop created a platform for rice farmers to access funds, input and access markets resulting in farmers reporting increase in income from an average of KES 5,000 to KE S75,000. Loop's solution is implemented in collaboration with various ecosystem partners.The model is working well, and Loop aims to scale it up by signing up 1000 new hectares per month in 2024 to be increased to 2,000 hectares per month in 2025.

Stefano Carcoforo , Founder iProcure Ltd shared the company's story. IProcure was founded in 2013 as a supply chain tech company with the aim of helping agrovets manage their inventory. Over the years, the company raised an impressive $17.2 million from investors to expand its operations and develop its technology stack. They were able to serve up to 7,000 agri-dealers and operate in 3 countries. Their mission to connect agricultural product distributors with manufacturers addressed a critical need in Kenya's agricultural sector. Initially charging farmers KES 5,000, iProcure realized that it was not a sustainable model and started to sell agri-dealers' data and use to purchase and supply fertilizers in bulk to the agri-dealers since they knew their inventory. This enabled iProcure to bring investors on board to expand the business. However, with the engagement of investors, the pressure to perform and make the organization more professional, led to management challenges as the cost of operations increased. Additionally, the government subsidized fertilizer, affected 60% of iProcure income and bottom-line and due to these challenges, the firm was unable to pay their obligations and was put under administration in 2024. Stefano cited the lack of diversification in products, burden of foreign debt as the KES weakened against the US dollar, increase in fuel prices, and loss of management control as the key contributing factors to the company's downfall. He ended on a positive note, indicating that when the company went under, some of the agro dealers stayed on the platform and when they heard of the challenges, decided to start paying the initially requested fee, and this is what has been helping the company during its recovery stage.

Key takeaways from the opening session.

- There needs to be increased investment in the AgTech sector in Africa
- Industry needs to find ways to encourage adoption of digital products and services
- Players should understand the importance of identifying needs of the market and responding with an innovative model that create value to the farmers while exploring the available business opportunities, creating value for investors. Critical still is maintaining strong customer relationships: Despite its challenges, iProcure's loyal customer base continued to support the company
- Choosing the right partners is key in delivering services for small scale producers.
- Managing expansion and operational costs is critical. There is always pressure to scale rapidly following significant funding rounds can lead to unsustainable growth and ballooning operational costs.
- The agricultural sector is vulnerable to external factors such as government policies and market fluctuations. There is need to work on products that are not influenced by politics and not ignore the regulators.
- Reducing heavy reliance on a particular product/value chain is also essential.
- Reducing reliance on foreign currently denominated costs is key. Foreign-denominated debt becomes increasingly expensive as the local currency depreciates, highlighting the importance of managing currency risks in emerging markets.
- Manage the Transition to professional management carefully to avoid disconnect between the company's original vision and its new direction. Professional managers can bring valuable expertise, keeping founders involved in key decision-making processes is crucial.
- Their deep understanding of the business and market can be invaluable.

3.2 The state of AgTech Investment 2024

David Saunders, Director Strategy and Growth at . Briter Bridges, and AgBase program lead, provided an overview of the state of AgTech investment in Africa, establishing a new baseline or reference point for investors and innovators. AgTech in Africa is concentrated in the Big 4 countries i.e Kenya, Nigeria, Egypt and South Africa, who mainly focus on agriculture. AgTech funding experienced a boom in 2022 with a sharp decline in 2023, though it stabilized in 2024. Currently . There are at least 745 active AgTechs across the continent. More than half, or 426, having received funding since 2014 totalling more than $1.56 billion across 700+ investments. AgTech represents more than 30% of the total funding in the overall startups' ecosystems.

Trends shaping the new baseline for AgTech Investment in Africa include a decline in general funding. The ones getting funding are asset-heavy AgTechs, on farm solutions, climate and mixed gendered while women and AI, although have gained some traction, do not attract funding. Kenya, Ethiopia, DRC and Zambia are the only markets that saw growth in Agtech funding.

The future of the Agtech ecosystem in Africa should:

i. Focus on business models rather than products

ii. Reimagine the "ecosystem support stack"

iii. Increase diversity and innovation in funding

iv. Engage and align with corporates

v. Find commercial use cases for AI, inclusion and climate.

3.3 Panel Discussion to Reflect on the Digital Landscape in SSA.

The panel, moderated by Sieka Gatabaki,of Mercy Corps AgriFin and featuring David Saunders (Briter Bridges), Toffene Kama (Mercy Corps Ventures), Tamara Cook (FSD Kenya), and Ali Hussein Kassim (AHK Corp), explored key challenges and opportunities within the digital agriculture landscape in Sub-Saharan Africa.

Investment Gaps and Sector Challenges:

Panellists acknowledged that while agriculture is Africa's most critical sector, it remains significantly underfunded. The group highlighted a persistent gap in understanding Africa's unique context among many investors, partly due to insufficient data, which can lead to misaligned expectations and pressures on entrepreneurs.

There was a consensus on the need for collaboration between private and public sectors, combining both local and international funding to better support AgTech growth.

Infrastructure Needs for Sector Growth:

The panel identified the critical role of infrastructure, such as irrigation and roads, as foundational to accelerating AgTech's impact and accessibility for farmers. Improved infrastructure was seen as essential to making digital solutions more viable and widely adopted.

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Impact of Policy on AgTech Growth:

Panellists highlighted how governmental actions, both enabling and restrictive, impact sector growth. Programs like the 1 million Farmer Platform initiative by the World Bank aim to bring AgTechs onboard an impactful digital platform to help innovators scale up including through partnerships with each other and with the government.

However, government policies are both inconsistent and reactive leading to mistrust among investors. Additionally, lack of investment in public infrastructure (irrigation, energy, and transportation) was also seen as a barrier to attracting private sector investment.

Key Takeaways for Impact and Growth:

To achieve significant impact, panellists recommended increased inclusion of women, expanded data collection on farmers, and a deeper focus on African-specific challenges and solutions. Instead of following global tech trends, they urged focusing on scaling proven solutions that address local needs effectively.

3.4 Strategies and Pathways to Scaling Gender-inclusive Digital Agricultural Finance

Jared Ochieng, Agriculture and Processing Finance Project Lead -FSD Kenya gave a presentation on scaling innovation in rural economies through Agtechs and Fintechs. He highlighted that while the challenges to farmers such as lack of access to information, logistic and liquidity, the key problems platforms interfacing with smallholders face still encounter include high transaction cost, and the need to provide diverse services from a central point. These comes at the backdrop of substantial investments made to overcome these challenges. Furthermore, despite the investments, the sector still struggles due to strategic errors, inadequate management capacity, fragile tech startup financing ecosystem and pressures from investors to scale. He proposed the following challenges to scaling and their possible solutions.

The problems with the rapid scale 'scale up' model	Possible solution to enable scaling
Introduces fragility into the system. Makes startups susceptible to shocks like a pandemic or inflation or FX risk. Pushes innovators into unsustainable business models to demonstrate rapid growth - for instance subsidised credit.	Alternative funding models – i.e., leveraging local capital like pension funds on a patient capital model which incentivises slow and resilient growth.
Mismatch between the needs of VCs and the needs of consumers- e.g. small-scale farmers. Business models are shaped for the former not the latter.	Encouraging ventures to "scale deep" – Involves cultivating relationships with local funders, and, in so doing, growing sustainably.
Crowding out: a mental model that ties together VC and innovation leaves little room for developing or imagining alternative funding models.	Bringing in social intermediaries like SACCOs, Cooperatives and Farmer Associations to potentially be a source of funding, but they can also partner with innovators to develop and distribute solutions that work for their constituents.

Table 1:Challenges to scaling and their possible solutions in rural economies through Agtechs and Fintechs

3.5 Round Table Discussions on Credit, Insurance, Payment and Savings

Through a round table discussion of between 10 to 15 participants and with industry cases, the participants were requested to discuss the four key sub thematic areas of agricultural finance services innovators offered to farmers. Each sub-thematic area cases were spread for discussion in specific assigned tables. Some of the key outcomes and recommendations are highlighted below.

3.5.1 Credit

i. Data for credit scoring remains a challenge hindering Smallholder farmers access to finance:

Whilst there is data available on smallholder farmers e.g. demographic, income related, agronomic etc., the data is normally not in formats that can be easily used by financial service providers impeding the offer of credit products. Additionally, alignment of partner motivations when it comes to sharing data on farmers is not straightforward and requires time for partnership agreements to be formed. Lack of formal financial histories on farmers also limits formal FSP offering of financial products Revenue sharing models also need to be developed where partnership agreements are leveraged.

ii. Breaking the gender barrier in access to credit must be immediate and deliberate:

The Lack of collateral among women and youth especially the limited access to land and lower incomes impacts their access credit. Similarly, despite estimates (FAO) that at least 80% of rural smallholder farmers worldwide being women, other barriers such as low access and ownership of digital devices further excludes them from access and usage of digital financial services. Additionally, there is a need to intensify actions towards financial and continuous digital literacy to reach more women and equip them to be able to use the available solutions. There was consensus that design of financial products need to take into consideration the above factors to ensure that products are fit for purpose for women smallholder farmers.

iii. Leveraging AI and data sharing to offer affordable financial products

Once the quality and categorization of data has been improved, FSPs can use AI to reduce information and transaction cost, educate farmers and provide contextualized data and information. Additionally, AI can be used to enable farmers to access these platforms in their native languages.

To reduce cost to serve, providers can collaborate and share data. However, this needs data policies and agreed protocols to govern the sharing of data, storage, management and usage.

3.5.2 Insurance

i. Social groups and social media platforms could offer the platforms for marketing digital micro-insurance and capacity development.

Leveraging on existing platforms such as WhatsApp or informal village saving groups to engage farmers could offer the best forum for creating awareness and capacity development of smallholder farmers on insurance. WhatsApp groups have a huge audience that can be easily capitalized for marketing of insurance products and provide information and education needed in local and easy to understand language. VSLAs are a trusted platform for many farmers and the group setting also affords insurance providers with a good way of conducting training sessions. Above the line, radio in local languages is also a powerful way to engage smallholder farmers to build awareness and disseminate information on digital solutions available to them.

ii. Building trust using phygital approaches:

However, despite the digital access, farmers still need human touch to create, enable and build trust. A good balance of digital solutions and strong agent networks is important to build trust. Sustainability considerations also support consistency in trust building, adoption and active use of digital solutions. Insurance is still nascent in most developing countries and there is a need for human touch even when the solution is offered digitally. The human element helps build trust and demystify insurance providing an avenue for farmers to get comfortable with the product before they can adopt it.

iii. Utilization of public private partnership to develop insurance products:

Projects like ILRI's and KALRO's Kenya Livestock Insurances Program (KLIP) and DRIVE have experienced some successes due to bringing together different sector partners where each brings their strengths to the partnerships e.g. the government should play a crucial role of disseminating information and creating awareness on importance of insurance. Subsidy programs can also be leveraged as launching tools to build awareness of insurance as a useful risk mitigation tool.

iv. Offering bundled insurance products:

Bundling insurance products with others such as credit, access to input can also improve access to insurance. Providing insurance for products such as poultry where women participate, is likely to improve women's uptake of insurance.

v. Payment of premium should be automated to ensure its continuity:

Removing the burden of remembering when to make insurance premiums by automating payments can help with frequent usage of products.

vi. Articulating value proposition of insurance to farmers:

The value of insurance such as claims payout, advisory services etc should be clear. Farmers think insurance is expensive and demystifying this can help in uptake. Creating awareness can be done through gamification, experiential learning etc.

3.5.3 Payment

i. Challenges to small-scale producers using digital payment products:

Participants listed several challenges inhibiting uptake of payments such as low trust in digital platforms, mismatch between offers and needs, limited financial and digital literacy, and cost of migrating to digital platforms.

ii. How to overcome barriers:

Guarantee farmers access to market, offer financial literacy, develop products which match farmers' needs.

iii. Factors to consider for policy makers:

Universal access to funds across countries co-exist. This can be opened beyond telecom services to include digital payment. Consider e-receipts as proof of payment and tracking for taxation.

3.6 Feedback from the Audience on the Morning Session and Pathways to Scaling Gender-inclusive Digital Agricultural Finance.

Led by Grace Njoroge the Technical Director Programs at Mercy Corps AgriFin, a session focused on reflecting upon the involvement of women in AgTech and key challenges within the sector.

Reflection on gender: A participant proposed that the engagement of women is ineffective due to lack of understanding of the nuanced role that women play. An example was given in the tea value chain where most women are tea pickers, hence if data is collected on the tea farm, issues of land and gadget ownership may suffice as the relevant metrics, hence effectively not capturing the crucial role the women play on the farm.

Data collection: Off takers can play a crucial role in bridging the data gap and assisting in the digitization of farmers. By collaborating with other stakeholders, off-takers can help capture more accurate and actionable data, which is crucial for scaling AgTech solutions.

Insurance: Insurance was discussed at length, particularly around farmers' lack of trust in receiving payouts and the high cost of coverage. Additionally, the sector is marked by fragmented insurance offerings, making them expensive and difficult for farmers to navigate. A recommendation emerged for insurance companies to form partnerships to provide farmers with comprehensive and affordable cover for a wider array of risks.

Access to credit: High credit costs were identified as a major barrier for farmers. Banks are often reluctant to lend to agriculture due to its perceived risk, including reliance on weather patterns, pests and diseases. It was suggested that Insurance companies explore ways to de-risk the sector, thus encouraging more financial institutions to lend farmers.

Post harvest loss and need for quality control: Aside from understanding the role women play, there is need to understand the role of the value chain players, and challenges. Without even looking at financing or insurance, can we instil quality control or getting the infrastructure which prevent loss. An example was given of a milk aggregating company in Eldoret that has 1 test kit for quality assurance, which cost KES 800, but have 2,000 collection points. Currently they must collect and test at a common point, instead of at the farm, which leads to a lot of loss for the collectors. Alternatively, if they can afford the kits, they can test at the collection point instead of the aggregation point.

3.7 Masterclass and Marketplaces

3.7.1 Masterclass 1: Agribusiness impacts in a climate context Session 1: A hands-on crash course on tracking what matters by CGIAR & CLIC.

Andreea Nowak, Research Team Lead for Climate Action at the Alliance for Biodiversity International and CIAT provided a presentation on tracking and collecting data to be able to tell impactful stories. She also introduced the participants to Climateshot Investor Coalition (CLIC), a platform for collecting and telling socially impactful stories, including the necessary metrics and indicators to be collected, reiterating that the best indicators are the ones that allow you to tell your impact story.

She highlighted the importance of telling impactful stories to be able to secure funding, improve performance, meet regulatory standards, build a brand and ensure accountability towards donors and beneficiaries.

She took the participants on the three key steps in creating impact such as building their story of impact; measuring what matter; starting small and building big over time.

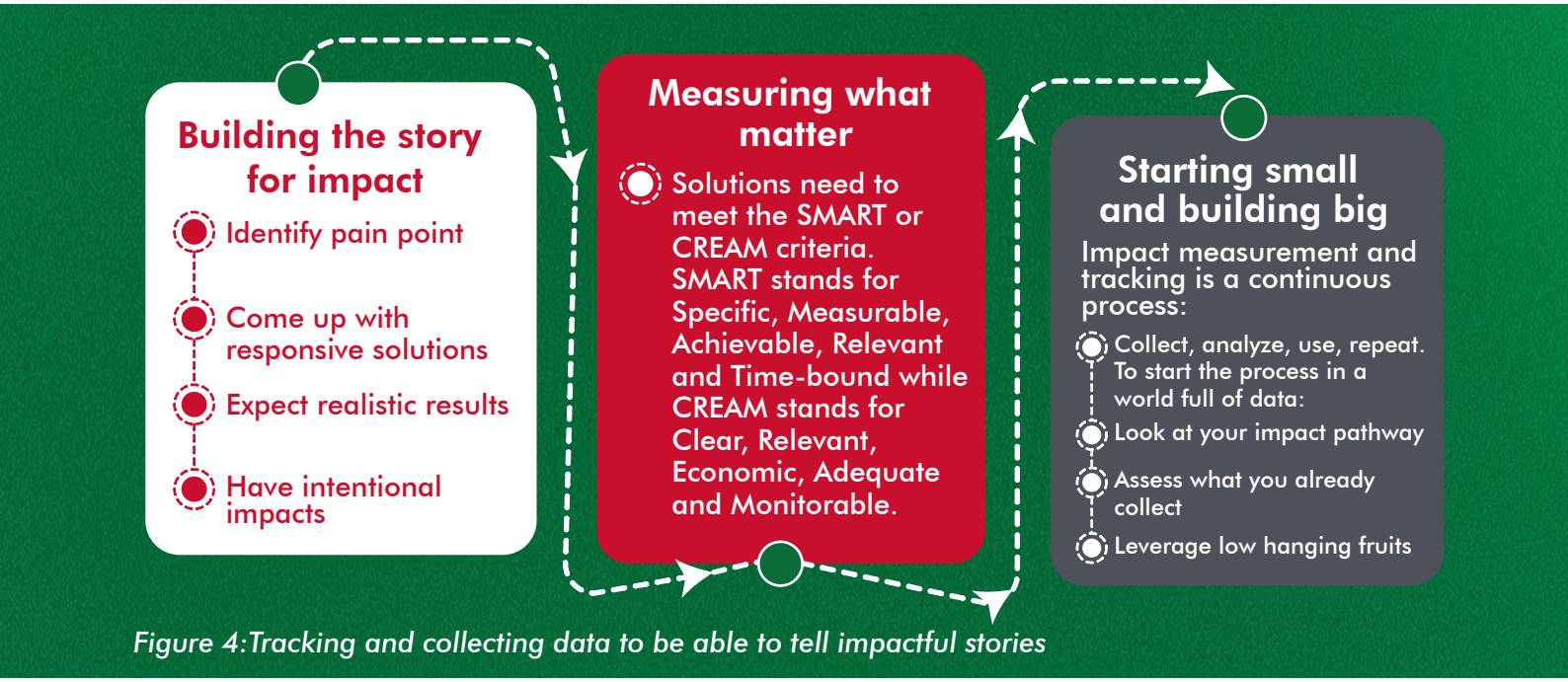


Figure 4:Tracking and collecting data to be able to tell impactful stories

3.7.2 Masterclass 2: Human Centred Systems Thinking- IDEO.org.

Alex Nana Sinkam, Design Director at IDEO.org shared on how their portfolio focuses on women's health, digital financial services, agriculture and climate change and have generated solutions that have reached over 64 million people.

She explained that Human centered systems design is an approach that is centered in co-creation with communities. This involves engaging the communities and end users in the design process. Together with communities, they move through what they call loops of research which entails understanding their needs, testing what they've built, and then ultimately introducing the solution to the market.

Major take away about human-centered design (HCD) approach, is that it places human experiences at the centre to uncover and identify the barriers in their experience, the strengths, the things that are really working well for them in a product or service, needs, and then ultimately the solution that one might want to design for them.

There are two main tools that are used to help design solutions for smallholder farmers

i. User Journey mapping or Archetypes-

archetypes are basically a set or a group of people who have certain characteristics that are similar. E.g. for age sets, the Gen Z's and the Millennials, all have certain characteristics that make them fall under different categories.

ii. Ecosystem mapping tool -

this involves designing a framework to understand the ecosystem, the actors and stakeholders, the different forces that might be influencing a user and their ability to access or make use of a product or service. The tool is used at the start as they are thinking about the leverage points for design, and where in the ecosystem do, they design a solution that's going to be valuable and impactful.

Nakhanu Wafula gave an example where they used the Archetypes tool option in a project, using Tupande (One Acre Fund) as an example. They were looking to design solutions around encouraging young people to get into farming as young people don't see Agriculture as a career option. They spent a lot of time with young people to understand their desires, challenges and needs when it comes to accessing agriculture as a career option. They categorized them based on their needs as follows:

i) Explorer - that's someone who's very new to agriculture, they're still considering it as a career option, but they don't have the necessary tools and resources for them to make an informed decision on whether they want to get into agriculture

ii) Flourishing - the people who've been in Agriculture for a while, they're thriving and earning an income from it. Most of the time, they're the ones who are mentoring the explorers.

iii) Contemplating - this is someone who basically grew up in an agricultural environment, but they still struggle to understand the value of agriculture, just because maybe they haven't had enough income from it or had some challenges around it. So most of the time they resort to see agriculture as a secondary source of income and take up a different career option.

iv) Sceptical independent – this is someone who was raised in agriculture, they've seen it growing up, but they've been struggling to earn a sustainable income from it. So they probably do agriculture as a side job and then take up a different business activity to supplement their income.

Different solutions were developed for the different categories of archetypes. For the explorers, it was discovered that they need tools to educate them and one campaign idea IDEO had was "in my farm this week". Basically, it was an idea around using technology (YouTube and TikTok) to show different ways people in agriculture are earning an income.

For someone who is a sceptical independent and who is contemplating at this stage, needed a lot of encouragement. One of the solutions they had for this category was showing the individuals different ways that different farmers are doing agriculture. Another solution involved having a podcast where they can hear stories of different people and their experiences around agriculture.

Another example was where IDEO used the Ecosystem mapping tool to come up with an ecosystem map indicator specific to mango. They spoke to the different tiers of people who buy mangoes and looked at the different journeys and the different stages that that mango passes through before it reaches the final consumer. Through those different steps they identified the waste occurring at each stage. This mapping helped them to understand the different points of wastage and they looked at different solutions that they can come up with to eliminate the wastage.

3.7.3 Masterclass 3: Dryland Financing: (SPARC) Financial Services Symposium / Networking led by Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises (SPARC)[1]

Alexis Teyie of SPARC, facilitated the panel session on dryland financing and how to create value for agropastoral communities. The panellists included: Dr Rupsha R. Banerjee is a Senior Scientist at the International Livestock Research Institute (ILRI); Dr Wario Sake, Livestock Director, Northern Rangelands Trust (NRT) Trading; Kristin Girvetz, Director, AgThrive, and Tito Tibi, senior manager in Gatsby Africa's Livestock Program.

There is a lot of demand for beef in Kenya which is not being met. Organizations such as Gatsby, ILRI and AgThrive among others are working towards increasing productivity and meet the gap in demand, through working on how to increase bio stocks, lean beef, and poultry investment across the continent by via assessments studies. In 2015 alone, there were more than 100 deals in agricultural sector in Kenya to the tune of $500m dollars and less than 10% had been in bio stock and even lesser in anything related to the dryland with most investment focusing on processing.

Even though there is underfinancing in drylands and livestock, deliberations on the available financing, and the progress was elicited. Poultry and dairy were mentioned to get over 50% of the financing in the livestock sector as the sectors form the most developed chain, which have proven to be profitable. Similarly, Investors were noted to be starting to consider other opportunities such as animal feeds, but impact investors are wary of the risks associated with investment in drylands. Additionally, businesses are not investment ready, even in pitching the professionalism is lacking.

Data for dryland financing and its level of use

While there are some data on drylands on markets and household nutritional statues among other, there has been rigorous quality data check, and the data has been used by organisations such as KALRO and Mercy Corps on how to access various markets. However, unfortunately the transactions are not done on one platform hence it hard to follow, and it is hard to assess the market quickly. The available data has been collected by community workers, collecting and observing indicators such as prices, household nutrition, and others.

Despite having the data, there is still a conservative approach when it comes to financing, but a lot of money still goes into the value chain. The formal system is not a one size fit for all. To truly unlock financing, capital needs to be customized to the system, enhance collaboration, provide saving plans, and researchers to provide evidence of working models. There is need to recognize various factors such as the youth, as every producer has an investor somewhere.

Dryland financing investor calibre

Research indicate that small and independent investors are more willing to invest in dry lands than big financial investors such as commercial banks and DFIs. This is because due to limitation on the minimum amount of investment they cannot go under. To unlock investment, there is need for design products suitable for pastoralists in the dryland. Example was given of an informal lender who gives pastoralists loans based on the number of cattle, which can be sold off in event of defaulting. This is a system which currently works under the local social set up.

Improved utility through bundling:

Another key to unlocking finances is through bundling financial services with insurance, as the risks associated with the drylands is what is hindering commercial investment. A current study indicates bundling animal health services and insurance as a package which pastoralists are likely to pay for.

[1] https://www.sparc-knowledge.org/about-us

Risk of keeping exotic pastoral breeds in pastoral farming system as a barrier to insurance access:

Most insurance companies are hesitant to cover free range, as the animals are susceptible to higher risks. The idea of animal feed concentration may be a key intervention which will encourage movement towards a common point, reducing movement and associated risks.

As much as investors should have consideration for smallholders. Research indicate that pastoralists also need to be investment ready. Some training on professionalism, record keeping, financial management among others to be able to adequately pitch and attract investors.

Investment should also be in business enabling areas. Investment in areas such as land use planning as opposed to title deeds, will make community members work well together and enhance peace. Making the areas more investment conducive.

Successful formal and informal institutional arrangement for dryland financing

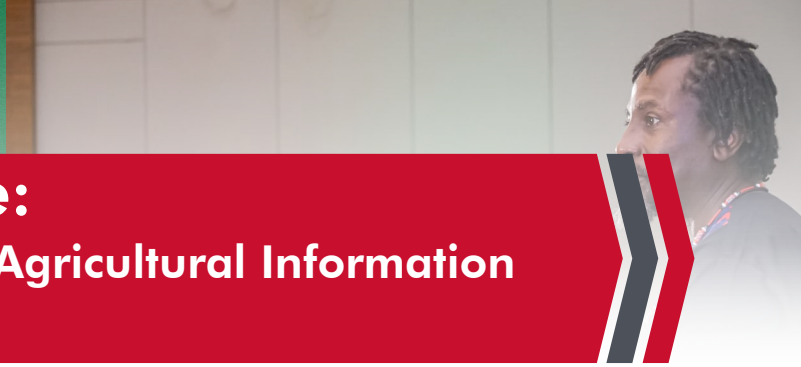
Groups and Saccos are the successful finance access groups for pastoralist: There are various Saccos e.g Mashinani Sacco which has grown from 215 to 6000+ members in 8 years, the number is still growing. There are various groups which can be harnessed and grouped for secure investment.

Harmonization and review of agricultural policies is key to improving financial access and investments in the drylands

In Africa, the ag sector is governed by several polices, laws and regulations, which are very fragmented with some being outdated. Harmonization is required consistently to assure alignment with current issues to meet current challenges. Stakeholders are not only fully participating in policy formulation but also don't have enough data for evidence-based policy.

Standardization of risk profiles format, form and content for individuals, regions and sectors key to improving financial access and investment in drylands.

Risk profiling has been done by ICRAF and UNDP but there is no standard profile. Challenges remain relatively the same, but opportunities are evolving. Investors should not be people who are risk averse. There is need to take a chance and understand that these solutions take time, and results will be seen in 10 years. It is not about quick changes but implementable ones.



4.0 Day 2 Sub- Theme:
Pathways/Scaling Digital Agricultural Information Solutions.

4.1 Introduction

4.1.1 Scene Setting

Sriram Bharatam, Founder & Chief Mentor at Kuza Biashara who was inspired by the success of Safaricom's mobile money transfer, came to Kenya and developed a "shoelace" business to help other businesses in the agricultural ecosystem work. While partnering with Safaricom and Google, he created a micro-learning company called KUZA BIASHARA which is aimed at growing business by providing bit size learning on topic such a s life skill, agronomy etc. Kuza got 135,000 businesses to go digital at the beginning and has managed to profile 6.5 million farmers.

Kuza founders started off with a beginner's mindset where they were largely optimistic about capitalizing on the existing gaps. The opportunity existed on the infrastructure built by Safaricom which established the connectivity and provided affordable smart phones, dependence of 70% of Kenya's population on agriculture and the vast unemployment among the youth. Kuza then developed thousands of videos and deployed the youth as agri-preneurs who used their platform to offer extension service. The venture has attracted partners such as WFP, world bank and the private sector.

The venture has scaled to other countries in the region. In the last quarter over $25 million worth of transactions occurred on the platform. Some key lessons they have learnt in their operations include:

i. 76% of their patrons are men but the women are their most repeat and loyal customers,

ii. 98-99% completion rate of their leadership academy

iii. Most people who access their products have secondary level of education

iv. Success is hinged on being accountable to your partners.

Sukirti Vinayak, Commercial Director at PULA. highlighted the common misconception that farmers know everything about farming condition e.g. weather, soul, pest and diseases, only to discover that most do not and are vulnerable to these natural factors. To address these challenges PULA, in collaboration with various partners, developed an insurance product that deal with climate uncertainty. Using various rural enumerators who collect data for the farmer insurance index program to be able to determine who deserves payout.

In the process of providing farmers with insurance, PULA faced and overcame various challenges especially in scaling distribution and figured that bundling insurance with input supply was the most effective model. PULA developed a cloud based digital product which enabled them to provide services at scale instead of use of excel. This made the process faster for farmers, and enhanced trust. Focused on providing farmers with demand-based insurance product which has allowed PULA to understand the needs of farmers to increase both the company's and farmers resilience.

Amrik Heyer of FSD Kenya, shared some reflection on AI, data, information and utilizations. AI utilizes old concepts which have been used by farmers such as inspection of animal poop to be able to assess the state of the animal and predict its future needs. Reading of animal guts is a complex process that brings together elders and generational farmers, it is an interactive system filled with experiential and tacit knowledge. There is a cabbage farmer in Kenya who has a simple information system flowing from input dealer to farms to offtakes. It is a simple system, but we are not sure of how resilient it is.

AI is promising and can be used to study what we already know to be able to analyse and make sense of existing system and understand how resilient they are. AI and use of quality data has a huge potential to assist in

in addressing complex issues. She reiterated some concerns in utilization of AI such as development inequality, biases which may arise given data gaps. Issues of governance and data ethics. She concluded that although AI is promising, it can be used to uphold an unfavourable status quo, as it is just a tool and not a silver bullet to all our problems.

Key takeaways

- Agricultural solutions do not necessarily need new innovations all the time but rather mindset and solutions that brings together and work with the available resources, to fill the existing gaps and solve existing problems for smallholder farmers.
- Scaling of insurance product distribution is largely dependent on bundling mix with agricultural inputs and other products

  Digital innovation such as cloud-based services are key to scaling of insurance services, improving efficiency and enhancing trust with farmers.
- Demand based approach to insurance product development increases uptake, improve company growth and farmer resilience.

Compensations for climate related risks are informed by data, and which can be effectively and efficiently collected by rural enumerators. This can however be supported by other data sources. AI, Machine learning and deep learning presents an opportunity to capture and utilize tacit knowledge in agricultural production that are key to resilience development

- Although AI is promising, it can be used to uphold an unfavourable status quo, as it is just a tool and not a silver bullet to all our problems.

4.2 AI in Agriculture leads the innovation in localization for Africa

4.2.1 Introduction and Scene Setting

Emmanuel Makau the Sector Regional Technology & Data Manager at Mercy Corps AgriFin introduced the machine learning portion of AI, training machine to look at scenarios to help make predictions and provide localized solution to the African Ag landscape. Some of the key themes to consider in increasing use of AI in Africa include examining the opportunities and challenges, collect insight from early implementors, focus on localized solutions and share them as case studies and develop a collaboration framework for the future.

Philip Nelson of Google Research provided a preamble of the work done by google in the AgTech space and introduced the next speaker. He highlighted that google see their role in the sector as accelerators. He reiterated that digital technologies, specifically AI have significant potential to drive economic growth and presents a once-in-a-generation opportunity to improve the ways people live, work, and learn across all sectors and in all countries. Some projects google has worked on that involved use of AI are an eye technology used by a hospital in India which use of AI and machine learning to help in diagnosis of blindness as a result of diabetic conditions and are currently working with Aisha to contextualize voice recognition in Ghana. He concluded by indicating that, to realize the AI opportunity, public and private sector need to collaborate.

4.2.2 Systemic Challenges in Scaling AI Across Africa

Dr. Aisha Walcott- Bryant of Google Research reiterated that with increase in population, a quarter of which will be in Africa, there will be increase in demand in various sector such as food, health, housing etc. It was noted that Google is working to address future challenges by use of synthetic data to address African

challenges. Research suggests that every $1 invested in digital technology in sub-Saharan Africa will create over $2 in wider economic value for the region by 2030. Some Google research projects in Africa include work on weather, food security, open building such as green light, Mmeka, & Skai, and onboarding of African languages among others.

The work which Google has done on food security include food insecurity forecasting, plant phenotyping and AI assisted actionable Ag advice. AI is set to transform agri-food systems along the agriculture value chain in LMICs. To realize the AI opportunity, public and private sector need to collaborate across four pillars: Physical capital, Human capital, Technology and Competitiveness. She finalized by advocating for partnership and data to enable the ecosystem to prepare for the looming demand.

Key takeaway

- While google might have done some work with AI on food security, collaboration between the private sector and public sector is key to fuelling the solutions and putting the small beats together to form the whole and bring the much-needed changes.

4.2.3 Case studies of AI solutions implemented

Masilin Gudoshava of IGAD Climate Prediction and Applications Centre provided the case study on the utilization of machine learning to enhance early warning systems over the greater Horn of Africa. She started off by highlighting the role of ML in Early Warning Systems such as improved accuracy of prediction, providing personalized forecasts tailored to specific locations or sectors, integration of non-traditional data sources, such as social media feeds, crowd-sourced observations, and sensor networks; and providing real-time decision support.

IGAD is implementing the Strengthening Early Warning Systems for Anticipatory Actions (2023-2026) by assessing the skilfulness and sustainability of developing a cloud-based machine learning post processing technique for improved high-impact weather forecasts.

The project has been able to improve data collection and weather forecast at a low cost. It is not a perfect system as it cannot capture distribution of rain or extreme events.

Note: *IGAD and Google are implementing similar solutions on weather forecasting, could collaboration of all players in AI for agriculture provide a common platform for solution development, reduce duplications and improve efficient use of resources?*

Steve Mutuvi of CGIAR provided a case study on enabling on-farm breeding using AI. Using a model called Artemis, which applies computer visioning and smart phones to determine flowering plants and pods. Combined with speech recognition which help to illicit farmer preference to help in improving advisory on breeding. Artemis has 80% accuracy and can help breeders determine varieties which meet the needs and preferences of farmers.

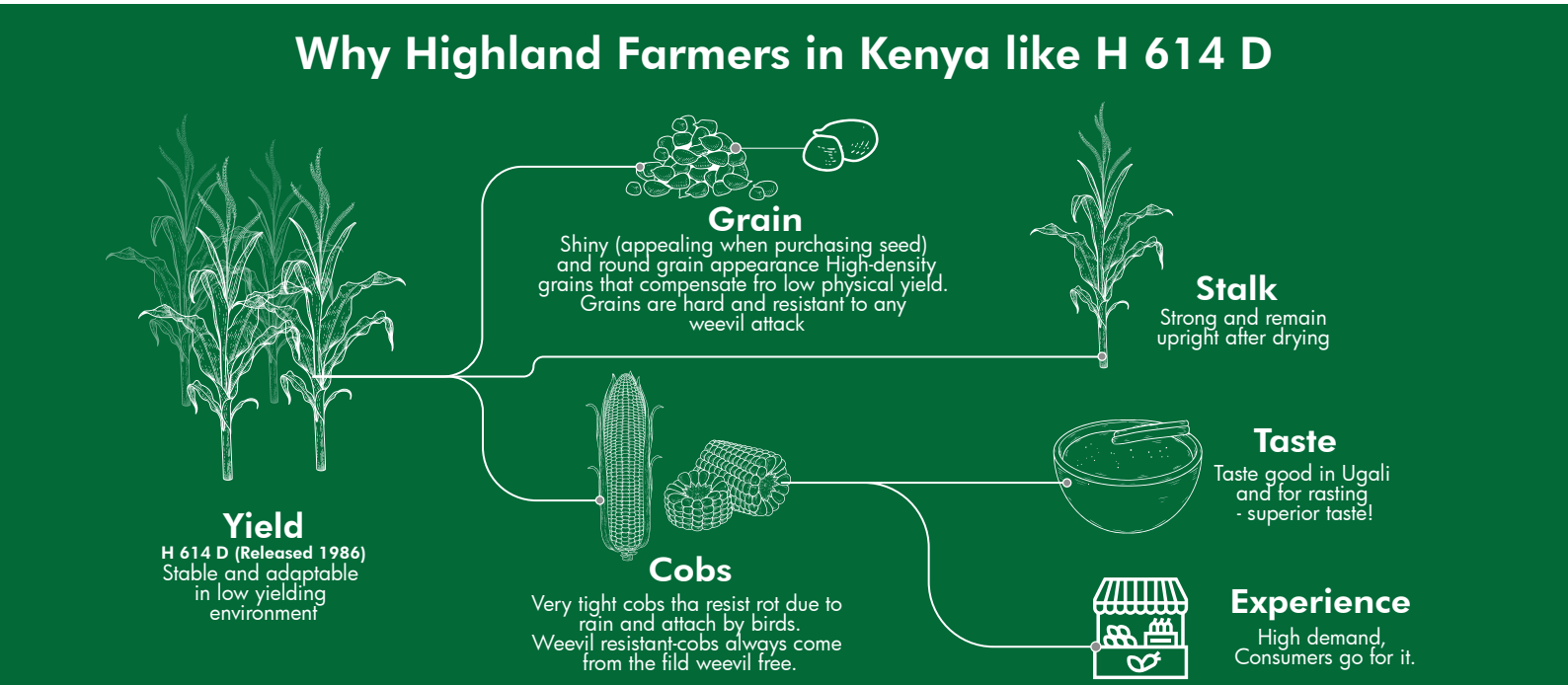


Figure 5: NDIZI is a speech-based systems used to understand farmers' preference in variety selection

Kennedy Senagi of the International Centre of Insect Physiology and Ecology (ICIPE) provided a case study on use of deep learning as an approach to processing cricket sounds to improve farming of cricket as a food source. Highlighting that cricket are delicacies across the globe. ICIPE has set up an experiment to study cricket behaviour and sound production under varying temperature and relative humidity conditions. Being able to interpret the sounds of crickets and categorize them into signal mating, aggression or calling, highlight the capability of application of internet of things as a decision support system which can be applied in other sectors to support farmers in managing their farm animals.

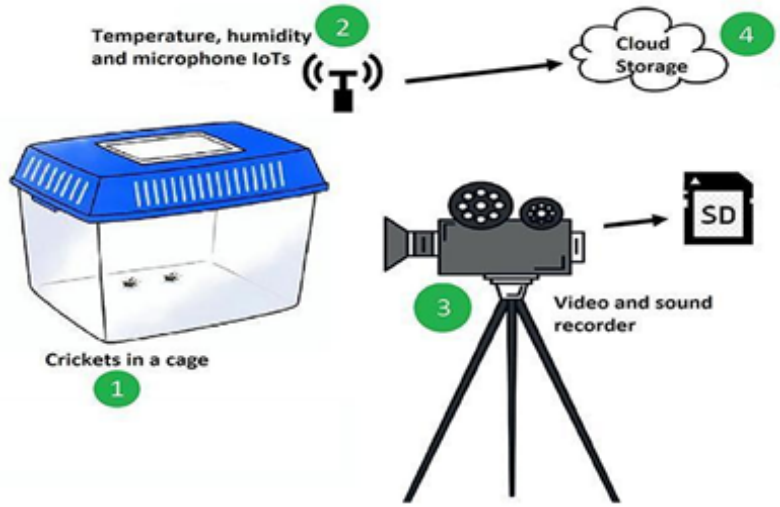


Figure 6: ICIPE experimental set up used to study cricket behaviour to improve cricket farming.

Jay Shapiro & Nathan Wanjau of Usiku Games presented a localized interactive platform where young farmers can get agronomic insight from the older generation, called mzee.ai. Using Retrieval-Augmented Generation (RAG), a technique for enhancing the accuracy and reliability of generative AI models, mzee.ai uses the knowledge of very old farmers to train the AI system. Additionally, it adds research from CGIAR to build up the platform and the output is in colloquial conversations fitting the local context. The key aim of the platform is to prevent loss of key intergenerational knowledge.

4.2.4 Panel Discussion on potential of AI solutions

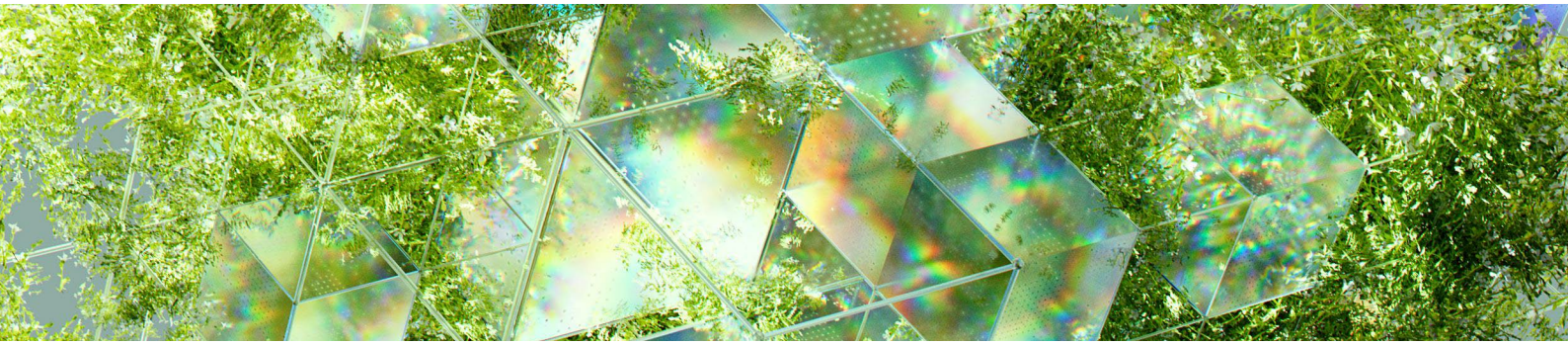
Moderated by Nathaniel Peterson of CGIAR, a panel discussion on AI solutions was held comprising of David Lemayian-Qubit Hub & Tenery Research, Oscar Otieno - Office of the Data Protection Commissioner and Njeri Ngaruiya Ng'ang'a (PhD)-Strathmore University.

Cost of AI and localization process and statues: AI was noted to be very expensive in Africa, especially access of decision support system (DSS). Farm Radio was noted as doing some promising work and could be an entry point to data collection and creating awareness on the availability of DSS. The discussion of localization is currently at a macro level, and there is a need to do so locally at a micro level to ensure its adoption. Mzee.ai is a great start.

Navigating data compliance, protection and representation of rural households: In the Kenyan Case, the role of data compliance is mandated to Kenya National Bureau of Statistics (KNBS), as the primary agency set up to collect analyse and disseminate statistical data. They collect a lot of personal data from farmers which need government protection by ensuring that there is a legal framework in place for protection of data. Any party involved in farmers data collection need to do so in an ethical manner to stick by the stipulated objective. Government has conducted data protection impact assessment to determine the vulnerability of farmers' data. KNBS looks after the farmers' interest.

Pathways to delivering AI solution to farmers for adoption: Farmers are currently obtaining digital information either directly or indirectly through agents, groups or neighbours. This can help in design UX of digital products fit for farmers. It is only ethical to let farmers know that the system they are using is AI powered. Additionally, farmers need to know where the data they are using came from to determine how the AI model was train, and how it applies locally.

Consultation with farmers and strong collaboration with the government aimed at packaging AI products to farmers: We need to consult farmers to determine what process they need to be AI powered. To familiarize farmers with AI, we can consider using use case to make it easier for farmers to understand the digital product. The government is also putting down infrastructure such as fibre cables and building digital hubs to help farmers access these services.



4.2.5 Key Take Away from the AI Session

Dr. Evan Girvetz Principal Scientist at CGIAR provided a summary of the AI session

Highlighting that AI touches all aspects of agricultural production and can be used for predictive analytics which can help in making decisions around breeding, weather forecasting and understanding animal behaviour. Which can be translated into advisory information to farmers tailored to the questions they have in an interactive manner.

A lot does need to be done before we can fully explore the available opportunity such as creating great partnerships, establishing digital public infrastructure, inclusion of local voices and filling the data gaps to eliminate bias and bring more people on board. There are some concerns over data privacy.

Finally, we should ensure that we produce products that can be used and applied in the future by collecting relevant, useful data and have sustainable business models to ensure SMEs and digital start-ups are able to thrive in Africa.

4.3 Understanding the use of digital advisory, DCSA and Marketplace for SHF.

4.3.1 Scene Setting

Dolapo Olusanmokun, Samuel Karanja and Irene Warui -Mercy Corps AgriFin shared some of AgriFin learning on platforms & markets, DCSA and cross cutting lessons across the Agtech Ecosystem.

Platforms and market

i. Digital platforms increase market and delivery efficiency.

ii. Multi-channel approaches for better adoption

iii. Aggregated farmer data enhances innovation.

iv. Custom digital platforms drive impact and scale

Cross Cutting

i. Digital solutions must be affordable for smallholder farmers (SHFs) to ensure sustained adoption. Strategies like partnerships, subsidies, and cost-sharing models enhance affordability.

ii. Standardizing data collection and sharing practices among AgTechs, financial institutions, and governments improves SHF access to services.

iii. Public-Private Partnerships is essential for scaling of digital solutions

DCSA

i. DCSA tools like weekly forecasts, early warning systems, and climate-linked insurance enable farmers to anticipate climate impacts, improving decision-making and resilience.

ii. Tailored, localized data on climate risks and market trends, along with field teams from local communities, ensure that DCSA olutions are relevant, actionable, and effective for smallholder farmers.

iii. Public-private partnerships are critical to delivering cost-effective CSA solutions, reducing risk, enhancing product offerings, and improving business performance.

iv. Involvement of Agribusiness to Spur DCSA Adoption

4.3.2 Round Table Discussion on Pathway/Strategy to scale and sustainability for Digital Information Services Particularly Markets/Platforms, Advisory, Gender, and Climate.

4.3.2.1 Markets/Platforms

Interventions required for digital platforms systems to thrive: Inconsistency in the supply chain, variation in pricing and lack of quality assurance limit uptake of digital platforms. Ensuring consistency in supply, enhancing trust in the digital payment system and availing secondary markets and quality checks will make digital platforms more valuable to farmers.

Creating partnership with commercial platforms: Digital platforms should plug into commercial platforms that already have established markets to ease access to the markets. Farmers should be aggregated in clusters to be able to take advantage of economies of scale and attract the desired market.

Provision of bundled services: Services such as input, storage, advisory and insurance should be bundled accordingly to add value reduce cost to farmers while increasing uptake of digital platforms.

Provision of bundled services: Digital platform should utilize the relationship already established between farmers and the agents and brokers to enhance trust and transaction on the platforms.

Contractual farming and assuring farmers of markets: Another way in which digital platforms could create value for farmers would be through contractual farming which would assure farmers access to markets for their produce, consequently encouraging them to purchase input and insurance. Digital platforms ensure price transparency and be able to pay out farmers instantly.

Improvement of digital platforms: Digital platforms can be improved by ensuring investment in infrastructure assets and equipment aimed at improving the general ecosystem. Additionally, training of farmers and ensuring quality control along the value chain will enhance confidence in the platforms.

4.3.2.2 Advisory

Providing contextualised information: The information provided by digital platforms should be localized and contextualized to meet farmers' need. It is advisable to conduct a needs assessment to determine the type of advisory information that farmers need.

Use of multichannel platforms to disseminate information: it is not every single service that requires a digital platform. Existing structures such as social media or podcast can be used for advisory services like Digicow are doing. The role of the physical agent is also still very important as farmers trust them more. Establishing toll free number and helpline will be more useful to farmers as they will be able to access personalised information as required.

Utilising feedback sessions to improve advisory systems: Advisory systems should be interactive to enable farmers to provide feedback and content created for farmers should provide contextualized messages to farmers. Developing of advisory messages should be an interactive process that includes all stakeholders such as veterinary doctors, extension agents, agronomists and farmers among other people.

Packaging of advisory information: Information should be in easy simple formats that is relevant and easily digestible to farmers disseminated through various channels.

Digital literacy: Digital advisory is Part and parcel of digital literacy. This should include training and partnership with relevant service providers.

4.3.2.3 DCSA

Is a single unified data system possible? Is it possible to streamline the different types of DCSA and sources of information in a consolidated vetted single body that provide farmers with information regarding what, when and where, on issues concerned with climate.

Localization of DCSA: Climate advisory systems should incorporate indigenous knowledge as part of the information being disseminated. Engaging a community champion to assess the relevance of the content and who can advocate for adoption of DCSA services.

4.3.2.4 Gender

Allow women to pay for digital products and services in instalments: Women are known for participating in loyalty programmes and providing them with flexible payment methods will enhance their participation and utilisation of digital products.

Access women through groups: Targeted mobilization through saving groups, use of female agents and involvement of men is crucial in enhancing women participation. Women groups are great platform for providing women with training and accessing credit. Male involvement is important in garnering support for women participation

Women preferred value chain: Intentional inclusion of women will require a target of value chains such as poultry and dairy where women are more active.

4.3.3 Panel discussion: Towards sustainable Digital Advisory, Market platforms, Digital Smart Agricultural services

Moderated by Kristin Peterson from Sprout, a panel consisting of Jerry Oche-Zowasel, Abrahame Endrias-Lersha, Simon Mulwa- KALRO, Hafsah Jumare – CoAmana and Josephine Okolodi- FtMA Farmer Service Centre to discuss the power and depth digital advisory, market platform and DCSA have in Agriculture and food security.

Network of agent to speed adoption and collect data is an essential to adoption: When CoAmana partnered with Sprout, they thought farmers would be willing to pay but they quickly realized that it would not be a sustainable model. The easiest way to improve adoption of advisory systems is to enable farmers to interact with it, learn and adapt. Building a network of agents is a great platform to collect credible data.

Successful Digital Platforms are secure, easy to use, and reduce conflict: Digital Platforms have made it easier for aggregation of agrop-rocessing, scaling and enhanced collaboration with other digital platforms. Digital Platforms create an ecosystem which makes marketing easier. An effective Digital Platform should provide training, ensure access to input and identify suitable markets.

Government role in Digitalization of information services: KALRO has digitized 6.4 million farmers, detailing their profile, location, value chain and estimated quantity of produce. This is in a bid to improve advisory service from general to specific and useful to farmers. Additionally, the government has always utilized various channels to provide advisory services to farmers.

4.4 Summary of the Morning Session

Backson Mwangi of Farm to Market Alliance (FtMA) provided an overview of FtMA. It is a consortium of partners who leverage on each other expertise. Geared towards organizing farmers into economic groups where they are easily accessible to markets. Some of the key lessons FtMA has learned is the importance of partnerships to leverage on skills, knowledge and network. To access quality data, it is best to work with the local entrepreneur to obtain valid data.

Based on the morning session, digital information needs to be contextualized which can only be realized by collecting reliable and relevant data sets. Use of AI can reduce some of the costs associated with digital services depending on how its applied.

4.5 Digital Public Infrastructure - Building the Digital Backbone: Scaling Agricultural Solutions and Innovation with Digital Public Infrastructure.

Moderated by Emmanuel Makau the session aimed to explore digital public infrastructure (DPI) and its impact across the globe.

Boniface Akuku presentation focused on demystifying DPI. DPI is an approach, and not merely a technological solution or output, but a shift to "infrastructure thinking." DPI is an approach to solving socio-economic problems at scale that combines intentional and focused technological interventions, public-private data

governance, and deploying market-facing innovation to combat information overload and distractions. DPI also aim to foster innovations. What citizens and farmers need are services, not necessarily the technology or infrastructure.

DPI has three main components including digital identity systems (authentication), digital payments and governance of data exchange, policies and strategies. DPI is a crucial foundational layer required for delivery of digital services and governance of the ecosystem. DPI will enable monitoring of data protection, build capacity and manage cybersecurity risks to ensure effective service delivery. DPI are the automatic platform for collaboration between government entities and private sector innovators.

Example of successful DPIs are Kenya's e-citizen portal and Kenya's Digital Farmer Registry among others. DPI plays a critical role in ensuring equitable access to digital services for all citizens, regardless of geographical or socio-economic barriers.

Rajeesh Menon of OpenAgriNet (OAN), a global coalition committed to revolutionizing agriculture with DPI. DPI solve issues such as trust, discoverability, data ownership, context and personalization of the experience of farmers. Upto 80% of the world's croplands will face increased agricultural water scarcity by 2050 and more pressure will be placed on the food system. Worldwide, the percentage of people who work in agriculture has dropped from 43% in 1991 to 22% in 2022. To tackle the looming challenges, countries are now investing in foundational DPI to augment agricultural productivity. OAN is creating "knowledge- commons" for Agri-data, establishing the right foundational digital trust infrastructure and articulating effective commercialization opportunities for farmers.

OAN empower the global agri-ecosystem through:

- Transparent access to farming inputs via connected networks.
- Discovering & acquiring equipment & mechanization tools.
- Acquiring expertise with on-demand talent
- Better supply chain mechanisms for harvested produce
- Easy access to markets for Agri-commerce
- Exploring affordable credit access & Govt. Grant.
- Upskilling of FLEWs for improved farming practices

Benefits of DPIs are:

- Enabling resource discovery & transactions across farmers, FPOs and other service providers.
- Reduce the costs for service providers.
- Democratizing access to services for farmers, thus improving revenues.
- Increases creditworthiness of data by incentivising end users to maintain data integrity.
- Enable observation and transactions thus improving policy making, credit history of farmers.

OAN is operational in Asia, Africa and Europe.

4.5.1 DPI Case Studies

Merz Christian of GIZ took the audience through a case study of the Agricultural Information Exchange Platform aimed at uncovering the application of DPI. Recent advancements in digital technologies and AI offer the opportunity to deliver high-quality, diverse, personalized, and dynamic information directly to farmers' current devices.

GIZ has rolled out MVP, which focuses on various value chain, and has thousands of registered users to provide information required in various languages.

Lessons learned so far include:

i. Existing public extension systems fall short in providing contextual advice in preferred modalities such as natural conversations in local languages. Gen AI can scale ag advisory through automated information exchange. Implementation is complex and requires a multi-disciplinary partnership.

ii. DPIs offer promising avenues for enhancing agricultural extension services, but its effective and responsible implementation requires careful validation, human oversight, and consideration of local contexts and challenges.

iii. So far, very few efforts focus on the peculiarities of agricultural data and Smallholder Systems to prepare AI-ready data that can help fine-tuning foundational models for domain-specific use.

iv. There is a lack of available and labelled open-source data and curated agricultural content. AIEP spent considerable resources on preprocessing and creating own tagged and annotated data.

v. Orchestrating DPIs into end-to-end solutions and integrating them with (larger) DPI initiatives require standardized and open protocols to exchange data and to interoperate between software components/-modules. DPIs are promising but still in their infancy. Collective road mapping and action planning are crucial to align.

Bertram D'souza of Protean eGov Technologies Ltd provided a case study of a DPI in India - Agristack Solves. The role of DPI has been enabling data standardization, catalysing interoperability and accelerating the ecosystem. Agri Stack addresses the fundamental lack of reliable data in agriculture and empower stakeholders to focus on developing impactful solutions and services. Agri Stack collects data, manages consent, and provide access to information to enable access to services such as loans. The process of acquiring financial services on the platform include:

i. Farmer checking the Online Loan portal to check for relevant Agri & allied activity services.

ii. Lenders onboarding on Open Credit Portals & propose Product offerings for farmers to choose, highlighting pre-requisites.

iii. Farmer applying for Loan online, providing Farmer ID & consent to the Lender to use relevant information through Agristack for Application.

iv. Lender raising consent request from AIP (State Govt.) for concerned Farmer ID

v. Lender processing Loan digitally, within minutes, & disbursement occurs in the same day, while the transaction is recorded online for future reference.

4.5.2 Panel Discussion on DPI

Moderated by Charlene Migwe, a panellist discussion was established on DPI in Kenya and the panelists invoved included: Sheena Raikundalia –Kuza Biashara, Salim Kinyimu- KALRO and Kirti Pandey-COSS

Open-Source Community:

Open-source community aim to localize data set for AI training. Various key actors can access the data and can collaborate in designing the digital Products in a transparent manner.

Partnership and open-Source Models for convening Agtech Solutions:

Agritech is too broad, and an individual organization can't serve all the issues. An open model is aimed at attracting partners with various strengths to provide solutions and build the ecosystem. What KUZA is good at is people and platform. They have a platform for service provision and agents, while providing opportunity for other partners to leverage on their strengths. KUZA is collaborating and competing at the same time. DPI framework just highlight areas for collaboration.

Open-Source Community:

Open-source community aim to localize data set for AI training. Various key actors can access the data and can collaborate in designing the digital Products in a transparent manner.

Open Access for Mutual beneficial partnerships:

Private sector is not just one or 2 people competing e.g as an off takers, what I need is access to quality producers but if open access network can enable me to reach them, I will join the platform.

Demand for DPI by African government is on the increase and is driving PPP investments

The demand from the ecosystem is very intense. The African government prioritising DPI and making it a national agenda to be able to support DPI implementation. Providing localized solution, embracing PPP, improving the infrastructure, scaling the existing are key to a successful initiative.

DPI alone is not the solution for farmers but DPI with AI

AI has enabled us to provide context for the last mile farmers and understanding the needs of farmers. AI helps DPI to provide solution to farmers.

PPP is integral to DPI development:

In India, through a PPP model, a lot of investment was made to help develop the DPI. The farmers data generated enable many companies to join the platform and created more partnership, increased investment in KALRO infrastructure, capacity building on big data etc,

Un-tangability of DPI is a barrier to investment in DPI

Digital and data investment is a soft investment which is hard to get funding or political support as they do not see it as beneficial. Lack of awareness of benefits, funding and support. The registry set up is also expensive. Last year the government spent KES2B. Lack of qualified skills as DPI require to onboard new hires who are technically capable.

USE cases for Private sector scaling of DPI:

There is a huge demand for something like Kenya's 1m network. Once the registry is created, it is up to the private sector to be able to utilize it. Registries provide data for decision-making. What private sector need is a USE case. To also make the platform work we also need farmers and agri-preneur who can access the platform.

DPI, a public good for farmers:

Very important part of DPI is the P, i.e the pubic/ community. OAN in India is created local hubs where farmers can come together, learn and solve any shared pain points.

Focus areas aimed at move DPI from vision to impact:

Creating million grassroot platforms to solves local issues in micro and macro network.

4.5.3 Summary of DPI Session

Stewart Collis of Gates Foundation provided the summary for the session. DPI seems to be key to scaling, as it will be the foundation for building other innovations. Gates foundation has established a DPI team in Kenya. Example India national ID system accelerated access to services from 40 to 7 years. Can we have a similar example for agriculture which can accelerate progress in the sector.

4.6 Masterclass and Marketplaces

4.6.1 Masterclass 1: Agribusiness impacts in a climate context Session 2: Collecting data, assessing climate & nature impact outcomes to attract climate finance with practical case studies from African MSMEs by CGIAR & CLIC

This was a continuation of previous day master class. The second session aimed to delve deeper into the topic – to discuss collecting data, assessing climate and nature impact outcomes to attract climate finance, through practical case studies from African MSMEs. Climateshot Investor Coalition (CLIC) which is a global coalition of leading organizations driving investment in low-carbon, climate-resilient and nature-positive agriculture and food systems globally. Climate policy initiative (CPI) is the secretariat, and the program is funded by the UK government.

The presenters provided an overview of the CLIC Agrifood SME risk impact assessment methodology, focusing on actual implementation.

Steps and how to apply CLIC's Risk and Impact Assessments (RIA) methodology:

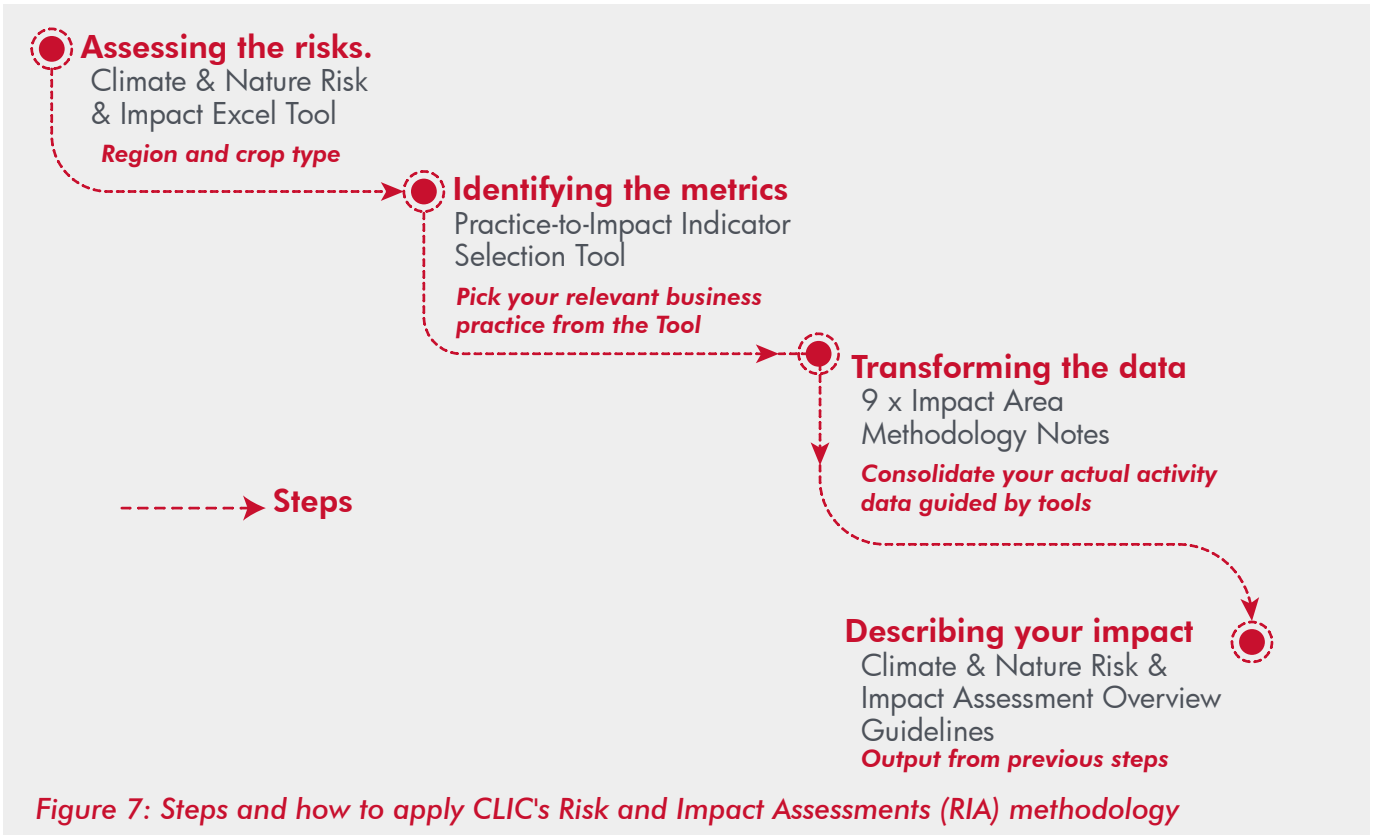


Figure 7: Steps and how to apply CLIC's Risk and Impact Assessments (RIA) methodology

The methodology aims to add logical structure and numerical credibility by leveraging SMEs' available data to strengthen their impact narrative. The indicators are organized into a result chain—moving from business activity to output, outcome, and ultimately impact. This would help the audience to understand, for instance, how selling bio inoculants leads to increased yield, reduced chemical fertilizer use, and ultimately, significant greenhouse gas emissions savings.

A practical example was provided of Organic Fields Limited, which was facing two critical issues such as decline in soil health for smallholder farmers and the rapid increase in environmental waste. To solve the issue, the team collected biodegradable food waste from landfills and converted it into organic fertilizer through composting and microbial fermentation. This eco-friendly alternative improved soil health and crop yields while reducing the environmental strain from landfill waste.

Using the AGRICA risk tool, the team was able to automatically generate reports on yield predictions, temperature trends, and contextual vulnerabilities. We found that 80% of Kenyan farms are degraded to different level due to intensive farming, making organic farming crucial. Reintroducing microbes and organic fertilizer rich in organic matter is essential for reversing this trend. Through the metric selection tool, they matched three key activities to strong climate indicators:

i. **Market waste management:** Waste in landfills emits methane during decomposition. By diverting waste before it decomposes, we calculate methane reduction based on waste volume and emission factors.

ii. **Organic fertilizer promotion:** Organic fertilizer replaces chemical fertilizers, reducing nitrous oxide and ammonia emissions.

iii. **Biochar application:** Biochar sequesters carbon in three ways and reduces the need for chemical fertilizers by 30%. Estimate the climate mitigation potential of biochar use with international carbon standards.

The tool enabled Organic Field Limited to assess their challenges, come up with a solution and narrate their impact.

4.6.2 Masterclass 2: Case study on Drylands & Climate Information systems by ILRI.

The session's panel was made up of Tahira Sharif of SPARC as facilitator, Rahma Hassan, Samuel Odhiambo and Claire Bedellian. All conducting research or providing climate information services in drylands in research institutions, private and public sector.

Types of climate information service needed by pastoralists in dryland:

Despite climatic information being more available now, there is still low demand and adoption by pastoralists. SPARC discovered that for pastoralists, climate and weather information needs to align with their specific timescales and decision-making. They are looking for downscaled, localized, context-specific information. Examples are the short-term forecasts when they want to make immediate decisions on grazing locations, where to move their animals, perhaps responding to immediate weather shocks such as storms. Although seasonal forecasts are very important for pastoralist decision-making. This information needs to be co-produced, co-developed, through some localized scenario planning, rather than them being externally produced.

Barriers limiting pastoralist access and utilization of climate information:

There is disconnect between what is being produced and what pastoralists require, especially in early warning systems, where there is still a lot of uncertainty. The framing of the current information is packaged and designed for households, but pastoralists make decisions as a group. The current EWS needs to be contextualized to enhance anticipatory and emergency preparedness.

Successful integration of indigenous knowledge and tailoring it to local context for climate information for pastoralists:

Kenya Meteorological Department (KMD) conducted a needs assessment and discovered that the most crucial information pastoralists want is on rainfall. To contextualize and localize the information, KMD is using participatory scenario planning approach and multisectoral approach for various actors to be able to co-produce and co-develop the climate information with both indigenous and professional experts. Some indigenous indicators include migration of birds, temperature etc. Locally public barazas are most ideal for dissemination of weather forecast, but this also needs to be a multi-channel approach.

Livestock production remains the most productive livelihood enterprise in drylands and both information and financial services aimed at developing drylands should focus on the enterprise and its value chain.

Dry lands are ecologically dry, and the most productive livelihood is extensive animal production, that is livestock keeping, cattle, camels, among others. There have been trials in the early 1970s for highly mechanized agriculture, but unfortunately most of them failed because it cannot be sustained. Hence the best thing for the dry land is to support what activities and practices that are already existing.

Climate information dissemination system in dryland areas.

Through the National Drought Management Authority, there are the community champions, like those people who are trained to disseminate climate information. This is supplemented with community radio programs. KMD participatory scenario planning involve pastoralist systems, which include chiefs and extension workers who are involved and made aware of the forecast and early warning. There are rangeland management units who manage pastoral zone among others. Hence the last mile issue could be an employee performance issue.

However, there is still some doubt if the information reaches the last mile. As pointed out, they package and how relevant the information is still being tweaked. Additionally, there is a gap in what's next upon accessing climatic information. Pastoralists want emergency response plans to accompany the early warnings.

Women Climate Information Needs in Drylands

Research indicates women have different needs, priorities, according to their livelihood roles, their constraints and their decision-making ability. Roles in pastoral communities are gendered as well as adaptation strategies. Example, if women have more control of the domestic sphere at home or over water collection, they might be interested in getting information about water availability in different places or information on food security. Whereas if men are primarily responsible for livestock management, then they'll want more information on areas to graze, livestock prices and markets.

How climate information services could address the complex and slow-onset hazards in drylands, amidist high uncertainty and multifaceted risks

Effective reach of pastoral communities will require an integrated approach c=that can be embedded into a digital platform, providing information climate, markets, security, water, and other resources. Examples of such platforms include: CASNET, a platform using citizen science for crowdsourced information; SMS; WhatsApp; AfricScout, a mobile app that helps pastoralists monitor pasture and water resources to prevent resource-based conflicts, and MyAnga, which combines satellite and station data (CHAPS data) to provide rainfall distribution patterns, enhancing local climate data accuracy. For successful embedding, there's need for communication channel mapping to integrate digital and traditional methods and ensure widespread accessibility among pastoralists.

Human Centred Design Approach for Successful Climate information solutions for dryland

AfriScout was designed by pastoralists with a lot of their input. There are still some financing challenges, but pastoralist will be able to use it offline if they are willing to pay or an organization is willing to support their access to the platform.

4.6.3 Masterclass 3: Assessing the Commercial Viability of Business Models by IDH.

Rosalie Dekker (Innovation Manager-Investment management) introduced IDH as a Dutch NGO which focuses on market transformation. Its vision is to transform markets for the benefit of people through public and private collaborations.

IDH believes that, by engaging with mainly private organizations through their value chain, they can help them create impact and generate impact across the different sustainable development goals.

They have different teams which look at the value proposition. The business analytics team uses standardized methodologies to investigate business models and identify how a business model can be both impactful and also commercially viable.

The intelligence team focuses on capturing the insights from the business analytics team and using them to identify the factors that are important and could be used to replicate and scale other business models.

Through Technical assistance, IDH teaches companies they work with, and in the process, they also learn, and gets insights on what really works.

Wangari Nduta, who is Senior Manager Business analytics at IDH, explained that they started the journey of inclusive business analysis back in 2015. Inclusive business involves businesses that work with farmers as part of their supply chain. Farmers would be the suppliers to these businesses, and they would also be consumers of the services that these businesses provide.

IDH has done about 150 analyses across SMEs, and AgTechs. They assess the business models in a standardized way that would give them data to be able to inform commercial viability of business models and what can be done using the data. The need to design and develop more financially sustainable interventions necessitated a more evidence-based and design-informed approach to interventions and investment.

A typical inclusive business model is organised based on different influencing factors such as:

i. Type of services – E.g. different range of services that are offered by different organizations, ranging from training, inputs, finance, equipment, and many others.
ii. Procurement practices - the crops being sourced (whether it's food crops or cash crops), use of contracts, and how supplier, buyer engagements are organized.
iii. Delivery mechanisms – there are models where agents are very crucial, or where there are other partners, consortium partners who provide different services.
iv. Use of technology - the farm management information systems and digital platforms in use by the businesses
v. Degree of farm organization - there are those businesses that work with individual farmers, but there are also those that work with organized cooperatives, or both formal and informal farmer groups

An example of a business model that IDH has analysed using the standardized approach is Angala Fintech. This is a subsidiary of Arila Group, which is a Nigerian-based company. They provide a payment platform, through which farmers can also access credits from commercial banks.

Angala Fintech developed the platform, and manages it, overseeing the transactions on the platform that are undertaken by the different players, and earns a commission on the transactions done. They also work with super agents, or agents, who are recruited and trained and onboarded, and who earn a commission on the transactions that they also manage.

These agents are crucial because they onboard the farmers. They are the last mile and are critical players because they engage with the farmers, onboard them on the platform using smartphones, and help them in the transactions. Through the agents, the end users create a wallet and an account. From here, they can receive real-time information, and can see their balances, withdrawals, and they can also see any credit that has been issued to the accounts by the commercial bank.

The commercial banks provide finance to Angala Fintech, and collect the data which assist in credit scoring the farmers

5.0 Recommendations from the 8th ALE

5.1 Programming Recommendation

a. Collaboration and Coordination

The Learning event brought together several partners from different countries working on different thematic areas with measurable success within their operations. Agricultural financial and information service gaps and problems were also noted to be many and varies from one region to another. Similarly, different technological approaches have been applied to develop different solutions for the problems which in some cases are overlapping and duplicated. Throughout the event, every session recommended collaboration and partnership. It is evident that the sector risk having many solutions from many players which will lead to farmer fatigue. Similarly, there seems to be duplication in solutions where one problem is being solved by two different organizations and using to different technological approaches. As such, there is no efficiency in resource allocation and use.

Because all the solutions are aimed at serving the farmer, it is important to think collaboration and coordination of the sector, where from data collection and solutions developed along the values chain are share among the players. This will not only help to bring transparency and reduce duplication but also create robust datasets, help in identification of gaps where new entrants can be involved and to strengthen the development of shared resources such as DPI.

Actions to unpack the collaboration and coordination mechanisms, design and implement, forms the biggest gaps emanating from the successful implementation of ADH 2.

b. Agtech Solutions for dryland and climate resilience

Programming focus on dryland financing should be targeted at supporting livestock production and its value chains to improving the resilience of pastoralist against climate change and its effect. While formal financing sector players consider the dryland areas and pastoral livestock production high risk, considering programming around the informal financing with an aim of institutionalizing the process would lead to not just derisking the sector but also developing farmer profiles, trust among others.

c. Bridging the gap between technology and smallholder farmer

While it was noted that there is need to have a human interface between the technology and farmers to improve adoption, the approach was also noted to be costly. However, several learning indicated that the use of social groups, village advisory teams and leveraging on government extension infrastructure through collaboration and partnership would help fill the gap.

d. Human centered thinking approach to solution development

Solution development approach was noted to be integral to its adoption and use. Involvement of smallholder farmers not only in the identification of financial gaps but also in the preferred technology through which the solution rendered, the information package, trust points among others are integral to the adoption and use of the technology. And because solutions developed using alternative methods require human interface between technology and smallholder farmer something which was noted as costly, given the numbers of smallholder farmers- the use of human cantered approach to bridges this gap.

e. Programming for DPI and AI solution

While these two solutions could be set up separately, their effectiveness to smallholder farmers would be best realised when both are done in collaboration. These require both private and public sector partnership, in addition to strong and close collaboration among AI solution providers along the agricultural value chains.

Similarly, DPI infrastructure could go beyond countries and regions, -something which will require greater coordination in the future. This recommendation ties up with the collaboration and coordination recommendation as one of the area of focus.

f. Actionable Digital Advisory Service Content

While several digital advisories and DCAS solutions provide information to farmers, the form, format and actionability of the content to smallholder farmers with low education remains a challenge. Human centred approach to information repackaging is pivotal to consumption and implementation of the advisory services. This recommendation ties up with the human cantered approach to solution development.

g. Credit score profile development for smallholder farmers

Digital Agricultural finance products reduce the cost of lending to smallholder farmers by financial institutions. Despite this finding, the major obstacle to smallholder farmers financing is the lack of credible credit score profiles. While some partners might have some data which could be used to develop some credit score profile, they are not acceptable my other financial institutions. Deliberate efforts on initiative aimed at developing smallholder farmers credit score is a priority to revolutionizing digital financing of smallholder farmers.

5.2 Policy Recommendations

a. Digital Agricultural finance products reduce the cost of lending to smallholders' farmers for the banks

To increase food production and security and with access to finance being an impediment to scaling agricultural production among smallholder farmers and women in particular, regulations on collaterals and taxes on digital finance require review. Exception of excise duty on digital agricultural finance and subsidizing the interest rates for smallholder famers will provide an incentive for access to finance. Further, review with an aim of lowering the collateral requirement for agricultural loans while providing alternative collaterals by the government for women smallholder farmers would bridge the gender gaps in access to agricultural finance.

b. Access to smart phones vs digital credit

Access to digital finance among women was noted to positively corelate with access to smartphones. Many women with smartphones accessed digital finance. However, ownership of smartphones among women and smallholder farmers is low. This is because of the cost and the tax regimes levied on smartphones in many counties which eventually make the phones expensive and inaccessible to women and smallholder farmers. Similarly, many digital solutions also run on data, something the farmers find expensive. Review of the tax regime on the smartphone gadgets and the cost data which is aimed at lowering the cost would improve access to smartphones and digital finance.

APPENDIX

CONFERENCE AGENDA

DAY ONE

WELCOME AND KEYNOTE SPEECHES

Moderator

Sieka Gatabaki

Program Director,
Mercy Corps Agrifin

Keynote Speeches

Stewart Collis

Senior Program Officer,
Digital Solutions,
Agricultural Development
Bill & Melinda Gates Foundation

Stefano Carcoforo

Founder
IProcure LTD

Eric Muriuki Njagi

Chief Executive Officer
NCBA Loop DFS

SESSION 1:LEADERS DIALOGUE

Theme: The state of AgTech/Fintech oriented organizations and their stages towards scaling, ecosystem study

Moderator

Sieka Gatabaki

Program Director,
Mercy Corps Agrifin

Presenters/Speakers

David Saunders

Director
Briter Bridges

Ali Hussein Kassim

CEO
AHK Corp

Toffene Kama

Principal Investor,
Mercy Corps Ventures

Tamara Cook

CEO
FSD Kenya

SESSION 2: Digital Agricultural Finance

Theme: Strategies and Pathways to Scaling Gender-Inclusive Digital Agricultural Finance

Moderator

Jamie Anderson

Senior Financial Sector Specialist
CGAP

Presenters/Speakers

Jared Ochieng

Senior Agriculture Specialist
FSD Kenya

Munyi Nthigah

Co-Founder & CGO
Ketha Technology Limited

Ewan Wheeler

Chief Executive Officer
ACRE AFRICA

Andrew Ahiaku

Director,
Head of Financial Sector and Country Programs
Aceli Africa.

Eric Massinda

CEO
FSD Tanzania

MASTERCLASSES

Masterclass: Agribusiness impacts in a climate context Session 1:
A hands-on crash course on tracking what matters

Facilitator

Andreea Nowak

Research Team Lead for Climate Action,
CGAIR

Organizers

Alliance Bioversity & CIAT

CGIAR

Masterclass: Human Centered Systems Thinking

Facilitators

Alex Nana Sinkam

Design Director
IDEO.org

Larissa Bachia

Director of Programs & Partnerships,
IDEO.org

Organizers

IDEO·ORG

Masterclass: Drylands Financing

Facilitator

Alexis Teyie

Research Lead,
SPARC

Organizers
SPARC
Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises

MARKET PLACE

The Adaptation Services for Action and Learning (ASAL Adapts) program is implemented by Mercy Corps in Northern Kenya's Wajir and Garissa Counties. By leveraging geospatial technology and multi-faceted digital platforms, ASAL Adapts brings together pastoralist and County Government stakeholders to make decisions about natural resource management, informed by geographical analysis and climate services.

Website Link

Sprout, a project of Mercy Corps Agrifin, we are creating a sustainable future for smallholder farmers in Africa by building an ecosystem and a technical platform to bridge the gap between farmers and access to relevant, reliable, personalized decision making tools. We empower Farmer Facing Organizations (FFOs) to deliver customized expert and scientific content and hyper-local weather advisory services that directly address the challenges faced by smallholder farmers, enabling them to make better decisions about their farming activities to build resilience to climate change and improve their productivity and livelihoods.

A link to your website where attendees can find more details about your offerings.

Website Link

AgBase is a business intelligence platform providing real-time data, market insights, and a centralised hub for information on AgTech and FoodTech in Africa and other emerging markets. Backed by the Bill & Melinda Gates Foundation and the UK Foreign, Commonwealth & Development Office (FCDO), and hosted by Briter Bridges in partnership with Mercy Corps AgriFin, this initiative aims to strengthen the knowledge infrastructure needed to catalyse investments, transform the lives of smallholder farmers and boost socio-economic growth in Africa.

Website Link

Lersha is a platform that uses a phy-gital model connecting 200,000+ smallholder farmers, and 250+ service providers, offering a marketplace for agricultural inputs, mechanization, access to finance, market linkage, and real-time agro-climate advisory. Lersha provides services to smallholder farmers through both online and offline solutions, utilizing the 2000+ Lersha Agent network, Call Center (7860), and the Lersha digital platform, aiming to make agriculture more accessible in six+ regions in Ethiopia and one county in Kenya.

Website Link

CoAmana is enhancing the operational efficiency of agricultural markets and foster ing sustainable growth for farmers and traders. Amana Market, a simple SaaS solution. Amana Market enables market managers, farmers and buyers access information for improved production and decision making, market management, trade financing, post harvest loss protection. Amana market is available via web, mobile and USSD platforms. CoAmana's through Amana Market empowers agricultural communities, reduces trade barriers, and ensures sustainable growth.

Website Link

KAZNET is a digitally-enabled drylands information crowdsourcing initiative that collects weekly data from livestock markets, rangelands, and households and disseminates near-real-time information to (agro)pastoral households for improved decision making and behaviour change to address climate risks.

Website Link

DigiCow Africa LTD is a leading agri-tech company dedicated to empowering small-scale farmers in Africa with digital solutions. Since its founding in 2016, DigiCow has developed innovative tools like the DigiCow Dairy App and Ndume App, which enable digital record-keeping and e-extension services. These tools support real-time decision-making in the livestock industry, helping farmers improve productivity. To date, DigiCow has served over 400,000 farmers, with a continued commitment to enhancing agricultural outcomes.

Website Link

Digifarm is an agri-tech platform that sustainably finances smallholder farmers and connects them to quality products, services and markets. For farmers, the platform offers one-stop access to a suite of smart agriculture services including credit. Buyers can also source directly from smallholder farmers and pay them through an integrated M-Pesa wallet. Digifarm offers working capital for buyers to make on-spot payments to farmers. The platform generates agricultural digital transaction records for farmers and buyers which can be leveraged for credit and working capital. The platform can be accessed through a USSD channel *944#, a smartphone application and has call center support.

Website Link

Agriculture and Climate Risk Enterprise Ltd. (ACRE Africa) is a data and technology-based risk management solutions designer linking stakeholders to localized solutions such as insurance and climate change adaptation strategies to reduce agricultural and climate risks. Through data and technology systems, we derisk the agriculture value chain, especially due to climate change-associated vagaries. Our solutions are localized to enable different value chain players to understand the risks involved in different phases of farming enterprise. We offer tailored solutions based on remote and field accessed data. Founded in 2014 as a for profit private company with the headquarters in Nairobi Kenya, ACRE Africa operates as a licensed insurance intermediary supporting local insurers to offer agricultural insurance across value chains with offices present in Kenya, Rwanda, Tanzania, Nigeria and Zambia and projects in Burundi, Democratic Republic of Congo, Uganda, Ghana, Malawi, Senegal, Zimbabwe, Ethiopia, and Somali. ACRE Africa's mission is to provide holistic risk management solutions to agricultural producers in Sub-Saharan Africa with a bias towards creating solutions that are suitable for smallholder producers (crop and livestock) so that they can confidently invest in food production. Since its establishment in 2009, ACRE Africa has successfully provided customized Agri-Insurance solutions to more than 4 million farmers.

Website Link

Juhudi Kilimo Microfinance provides tailored financial solutions for rural smallholder farmers and micro entrepreneurs. Our offerings include Agricultural Loans for farm inputs and equipment, Business Development Loans for enterprise growth, and Consumer Loans for personal needs. We support both group-based and individual lending with competitive rates and flexible repayment terms. Recognized with the 2023 Starbrands East Africa Award for excellence in agricultural financing, we are committed to empowering rural communities and fostering sustainable development.

Website Link

LOOP is a lifestyle platform that is designed to empower customers with effortless solutions to simplify their everyday lives. The more you transact on LOOP, the more you unlock value.

Website Link

Stable Foods' Irrigation-as-a-Service (IaaS) is revolutionizing smallholder farming in Kenya by making irrigation affordable and accessible. Our system requires no up-front or capex payment on the part of the farmer, they just pay a small monthly fee for access to the water and then focus on the business of farming. Already within our first year we are increasing farmer profits by almost 500%, and we can work almost anywhere across the continent.

Website Link

eProd Solutions is a comprehensive software platform that streamlines farmer and field data management, ensuring traceability and compliance with industry standards like EUDR certification. Our app offers integrated credit scoring and banking partnerships to enable access to finance packages for smallholder farmers. With features like detailed farmer profiles, payment systems, and credit recovery options, eProd empowers agribusinesses to enhance efficiency, strengthen farmer networks, and support financial inclusion in an ever-evolving landscape.

Website Link

FSPN Africa is a non-governmental organization (NGO) registered by the NGOs Board. Our work fosters innovative approaches and integrate Nutrition-Sensitive Agriculture among adolescents, youth and women for sustainable household economic development and nutrition security in Africa.
Our evidence-based approaches to innovation development and strategic partnerships empower communities to build resilient, nutrition-sensitive agricultural systems.
FSPN is supporting young innovators focusing on changing the landscape of indigenous foods that are often underutilized and access to nutrition education digitally on especially on food safety to scale their products and services to create lasting impact in our rural communities.

Website Link

Boomitra is a leading international soil carbon project developer powered by AI and remote sensing technology. Alongside an ecosystem of international partners, Boomitra equips every farmer and rancher to increase their soil carbon and yields, while securing additional income through carbon credits. A 2023 Earthshot prize winner, Boomitra's projects benefit over 150,000 farmers on four continents, covering 5 million acres. With 100 global partners, Boomitra has removed 10 million tonnes of CO2 from the atmosphere.

Website Link

The Farm to Market Alliance (FtMA) is a public-private partnership uniting key agri-focused organizations. It leverages the UN World Food Programme's local expertise, Yara and Bayer's agricultural knowledge, and Rabobank's financial acumen. FtMA empowers farmers through a demand-led approach, establishing self-sustaining Farmer Service Centres that enhance productivity, market access, and farm digitization. To date, this initiative has impacted over 300,000 Kenyan smallholder farmers' incomes, attracting private sector investment and driving the uptake of agricultural technologies and products at the grassroots level.

Website Link

Extension Africa is an agribusiness extension service provided connecting global agribusinesses to rural farmers in Africa through a network of robust rural agents network powered by our technology solutions; FarmEX which matches the demand from farmers with quality vendors and service providers, and an agribusiness extension academy.
So far we have built a reliable platform connecting 500,000+ farmers with reliable products and services through a network of 2,046 rural youths in 14 states in Nigeria.

Website Link

Zowasel has built an interactive platform that leverages technology and data science to connect value chain actors and farmer interfacing organizations for increased productivity and earnings. The platform addresses agricultural value chain challenges by promoting inputs access, financial inclusion and data management, market access, digital advisory to enhance Regenerative Agriculture and digital sustainability through digitization and automation of farmers' footprints throughout the entire value chain.

Website Link

FreshCrop is an award-winning Kenyan company specializing in potato value chain management. We offer our farmer ' s a fully-tested input package including soil testing, certified seed, agrochemical program, agronomy consultation, along with Climate Smart Agriculture (CSA) education and direct market linkages throughout 9 potato growing counties. FreshCrop has a growing network of more than 10,000+ farmers across Kenya. Our main production and stores are located in Mwisho wa Lami, Mau Narok, Nakuru County. Our seeds and agrochemical programs are available to ship anywhere in the country.

Website Link

Sistema.bio is a social enterprise that provides access to innovative biodigester technology, training and financing to address the challenges of poverty, food security, and climate change. Sistema.bio manufactures and distributes high-quality, affordable biodigesters that enable farmers around the world to convert waste into energy and fertilizer. By providing flexible interest-free repayment plans and comprehensive monitoring services, Sistema.bio works with farmers to ensure they become more sustainable, independent, and productive.

Website Link

Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises (SPARC) is a six-year programme that informs more feasible and cost-effective policies and investments in the drylands of Africa and the Middle East. Our research focuses on a number of themes: Reframing aid and resilience; Supporting markets and livelihoods; Understanding land and conflict; Promoting innovative solutions; Working in a changing climate and Gender equality and social inclusion. The programme is funded by the Foreign, Commonwealth and Development Office (FCDO) of the United Kingdom.

Website Link

DAY TWO

WELCOME AND KEYNOTE SPEECHES

Moderator

Sieka Gatabaki

Program Director,
Mercy Corps Agrifin

Presenters/Speakers

Amrik Heyer

Head of Research - Financial Sector
Deepening Kenya

Sriram Bharatam

Founder & Chie Mentor
Kuza Bishara

Sukriti Vinayak

Commercial Director
Pula

SESSION 3: Artificial Intelligence in Agriculture

Moderator

Emmanuel Makau
Senior Regional Technology & Data Manager

Presenters/Speakers

Nathanial Peterson
Senior Scientist Climate Action lever
The Alliance of Bioversity International & CIAT

Kennedy Senagi

Post Doctoral Fellow
International Centre of Insect Physiology and Ecology

Jay Shapiro

Founder & CEO
Usiku Games

Nathan Wanjau

Lead Ai Developer
Usiku Games

Oscar Otieno

Deputy Data Commissioner
Office of the Data Protection Commissioner

David Lemayian

AI & e-Gov Lead and Founder & Principal
Qubit Hub & Tenery Research

Masilin Gudoshava (PhD)

Climate Modelling Expert
IGAD Climate Prediction and Applications Centre - ICPAC

Dr. Stephen Mutuvi (PhD)

Post Doctoral Fellow
CIAT

Dr. Evan Girvetz
Principal Scientist
CIAT

Dr. Aisha Walcott- Bryant
Co-Lead
Google Research Africa & Senior Staff Research Scientist
Google

SESSION 4 : Digital Information Services

Theme: Towards sustainable Digital Advisory, Market platforms, Digital Smart Agricultural Services

Moderator

Kristin Peterson
Sprout Platform Lead and Sr. Tech for Development Advisor
Mercy Corps AgriFin

Presenters/Speakers

Simon Mulwa
Assistant Director of ICT, Kenya Agricultural & Livestock Research Organization (KALRO)

Jerry Chis OCHE
Founder and CEO
Zowasel

Backson Mwangi
Programme Policy Officer
UN World Food Programme

Samuel Karanja
Senior Regional Agriculture Manager
Mercy Corps AgriFin

Irene Warui
Senior Climate & AgTech Strategy Officer
Mercy Corps AgriFin

Josephine Okolodi
FTMA farmer service Centre

Hafsah Jumare
CEO
CoAmana

Abrhame Endrias
Founder and Managing Director, Lersha

SESSION 5 : Digital Public Infrastructure

Theme: Building the Digital Backbone: Scaling Agricultural Solutions and Innovation with Digital Public Infrastructure

Moderator

Charlene Migwe
Digital Consultant

Presenters/Speakers

Boniface Akuku (PhD)
Digital Agriculture Specialist,
Food and Agriculture Organization

Christian Merz
Program Lead FAIR Forward: Artificial Intelligence for All
GIZ

Bertram D'souza
Chief Product & Innovation Officer
Protean eGov Technologies Ltd.

Sheena Raikundalia
Chief Growth Officer
Kuza One

Salim Kinyimu
Director, ICT
KALRO

Kirti Pandey
Director- Program & Solutions
COSS

Ani Ghosh
Data Scientist
CGIAR

MASTERCLASSES

Masterclass: Agribusiness impacts in a climate context Session 2:
Collecting data, assessing climate & nature impact outcomes to attract climate finance with practical case studies from African MSMEs

Facilitators

Wen E Chin
Manager
ClimateShot Investor Coalition (CLIC), Agrifood Investment Connector Climate Policy Initiative (CPI)

Wong Ching Fung Janice
Lead Impact Lead
Climate Policy Initiative

Organizers

Alliance Bioversity & CIAT · CGIAR · Climate Policy Initiative

Masterclass: Assessing the Commercial Viability of Business Models

Facilitators

Rosalie Dekker
Innovation Manager
IDH

Wangari Nduta
Development Consultant
IDH

Organizers

idh

Masterclass: Case study on Drylands & Climate Information systems

Facilitator

TAHIRA SHARIFF MOHAMED(PhD)

Post-doctor fellow
ILRI

Organizers

ILRI 50 2024 | CGIAR

Award ceremony for impact partners

Sieka Gatabaki

Program Director,
Mercy Corps Agrifin

Glossary And Acronyms

IGAD: Intergovernmental Authority on Development (IGAD) in Eastern Africa
SPARC: Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises
CLIC: Climateshot Investor Coalition
FSD: Financial Sector Deepening
DPI: Digital Public Infrastructure
AI: Artificial Intelligence
DCSA: Digital Climate Smart Agriculture
CSA: Climate Smart Agriculture
SHFs: Smallholder Farmers
FSP: Financial sector players
VSLA: Village Savings and Loan Associations
KNBS: Kenya National Bureau of Statistics
DSS: Decision Support Systems
FtMA: Farm to Market Alliance
KALRO: Kenya Agricultural and Livestock Research Organization
FPOs: Farmer Producer Organizations
CPI: Climate policy initiative
SME: Small and Medium Enterprises
NGO: Non-Governmental Organizations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