

Strengthening Financial Resilience in Agriculture Knowledge Exchange Series Part 2

Disaster Risk Financing Solutions for Climate-resilient Livelihoods in the Agricultural Sector

Session 4:

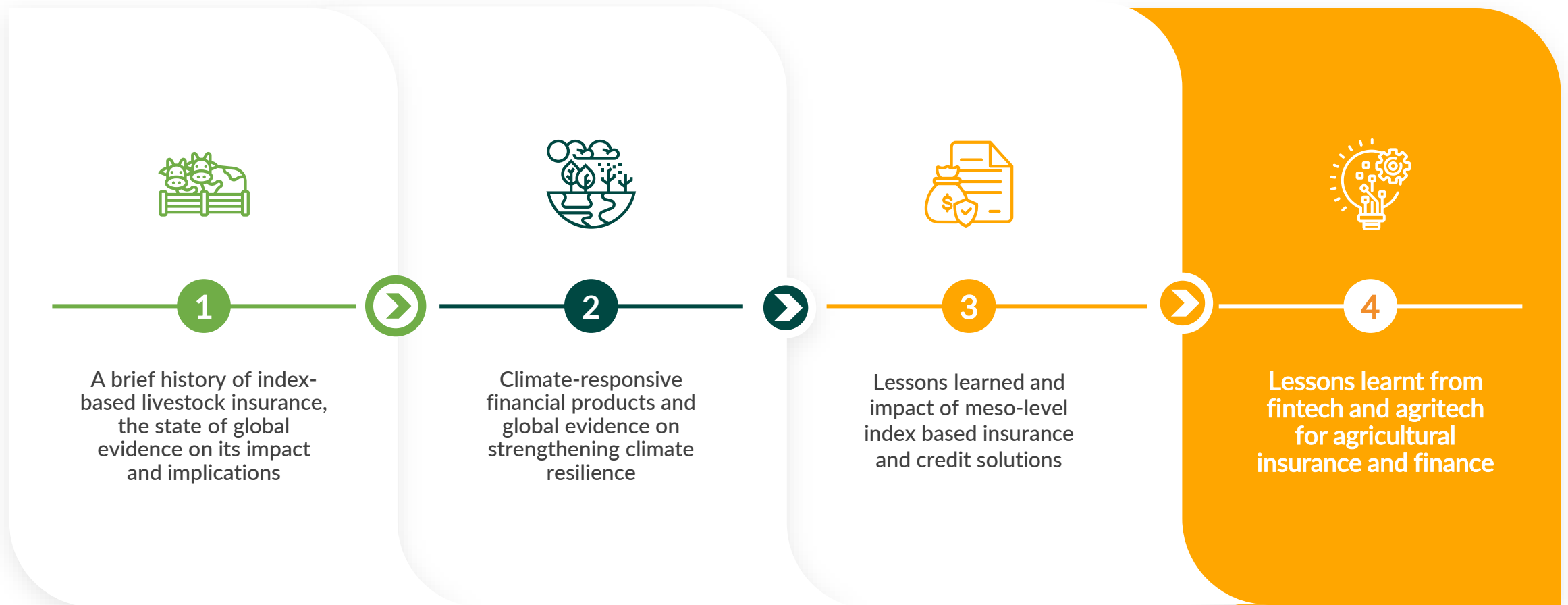
**Lessons Learned from Fintech
and Agritech for Agricultural
Insurance and Finance**

Disaster Risk Financing
& Insurance Program



USAID
FROM THE AMERICAN PEOPLE

Welcome to the final webinar!



One more step to earn your completion certificate!



Total of 4 Factsheets & 90-minute Webinar for each Factsheet



Different guest speakers



Q&A: Please share your questions via chat



Participants will have an opportunity to obtain "Certificate of Informed Policymaker" from the World Bank on successful completion of following criteria:

Completion Certificate:

Participants need to attend 4 webinars and complete a short survey/quiz.

Introductory remarks

Fintech for financial inclusion and financial resilience



Jean Pesme

Global Director, Finance Innovation and Competitiveness, World Bank



The challenge and an overview on agritech and fintech

Qhelile Ndlovu

Financial Sector Specialist, World Bank

Challenges to scaling up micro-level agricultural insurance

OBSTACLES TO SUPPLY

Cost of insurance

- Pure risk is high due to farming practices and climate change
- Low level of risk diversification as farmers face aggregate risk
- Limited risk pooling due to low population of farmers covered
- Positive basis risk increases cost of insurance

Distribution channels

- Geographically disbursed farmers hard to reach
- High cost of last-mile distribution
- Business seasonality often results in high turnover of sales agents and high costs of training every insurance season

Product design & delivery

- Limited knowledge of end client to design specialized products
- Low value of contract does not justify high cost of customization
- Limited data for accurate risk assessment
- Low loss assessment resources and capacity



Price



Accessibility



Customer experience

CONSTRAINTS TO DEMAND

Affordability and value

- High cost of premium
- Downside basis risk reduces value of product, increases mistrust and diminished farmer welfare
- Weather index offers inadequate cover against range of risks farmers face

Access to providers

- Seasonal access to service provider due to limited physical presence in rural communities
- Low trust: business interaction limited to seasonal transactions
- Low access to insurer results in poor service inquiry experience

Customer expectation

- Low trust due to limited insurance knowledge and interaction
- Long time taken to process and make payout
- Non-transparent payout determination
- Lack of product customization and needs not adequately met

Global leaders in agritech and fintech ecosystem solutions for small scale farmers

Israel



Strong innovation networks

Early entry of youth into innovation

Government supported incubation programs

Globally competitive Agritechs

Netherlands



Dedicated agrifood tech funds

Incubators and accelerators

Wageningen information desk and support for students to start Agritech

China



Advanced digital payment system

Government support for agrifood innovation

Strong Startup Factory encouraged agrifood entrepreneurs

Investors in agri-food

India



Agritech focused incubators and grants

Favorable policy environment (e.g. Digital India Campaign)

Increased and timely support to early-stage start-ups

India's ID program, a digital innovation which enables a range of fintech services

Kenya



Expansion of innovation in digital payment systems

Public private support for agritech through a digital innovation challenge in 2019 and 2023

Indonesia

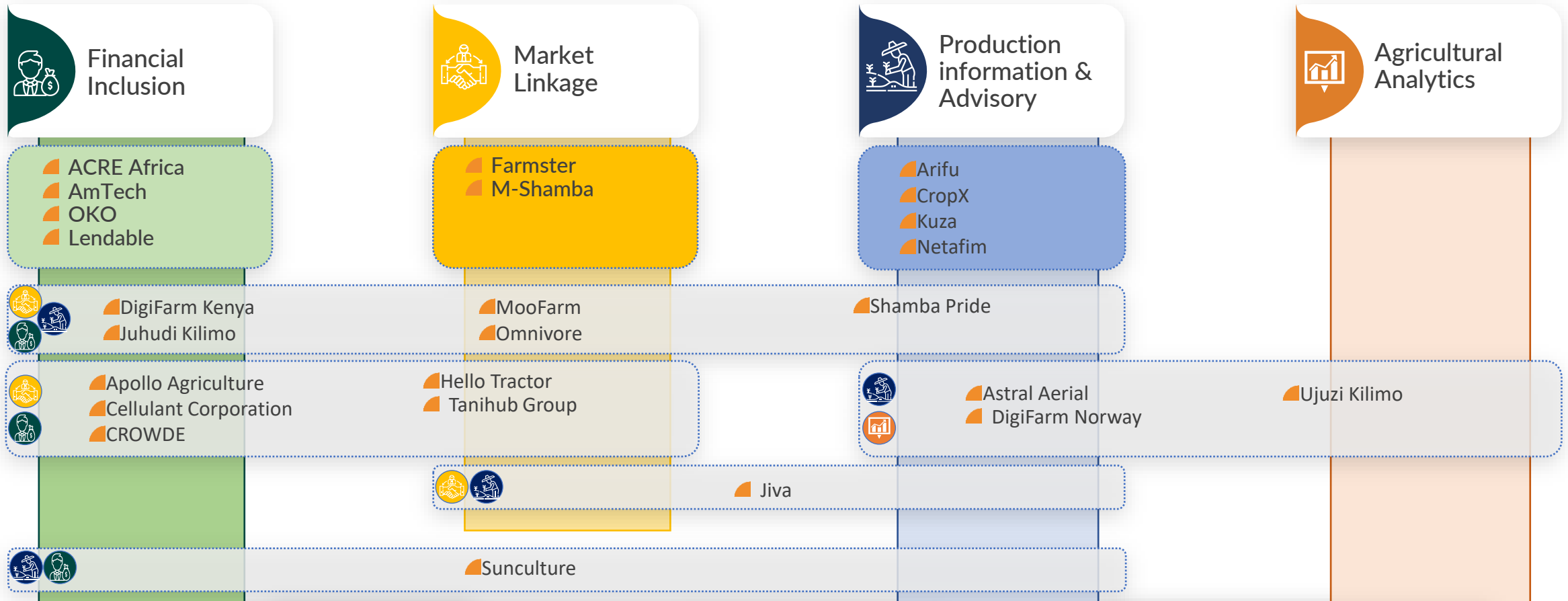


Enabling regulatory environment

Low capital requirements for fintechs and digital lenders

Large collective strength of the Fintech community, through the Indonesia FinTech Association (AFTECH),

Although some agritech and fintech players are specialized, other have become multifunctional



Success & Impact Stories

ACRE Africa:

- o +1.7 m. farmers insured
- o +\$180 m. insured

Cellulant Corp.

- o +250 payment method
- o +220 m. payments processed

CropX

- o Up to 15% yield increase
- o Up to 50% water saving
- o Up to 20% fertilizer saving

MooFarm

- o +160,000 farmers under cover
- o +70,000 cattle on the app

DigiFarm Norway

- o 12-15% higher accuracy in field boundary
- o 12 yrs of performance reports
- o Performance measures from +13k farms



Leveraging digital technologies for the transformation of the agriculture sector in Kenya

The case of Kenya's One Million Farmer platform

Shobha Shetty

Food and Agriculture, Practice Manager, World Bank

The Why, The What, and The How



The “Why”

- Improving productivity to small scale farmers

WHAT?

The “What”

- World Bank Agriculture Portfolio in Kenya
- Big Data Platform and other key Applications (Public Sector Driven)
- One Million Farmer Platform (Private Sector Driven)

HOW?

The “How”

- Challenge in 2019 and 2023 followed by Regular Matchmaking Exercises
- Leveraging the Analog Investments being made under the project as the Public Good Investment
- Intensive Technical Assistance
- Partnerships with multiple external stakeholders

World Bank Agriculture Portfolio in Kenya



National Agricultural and Rural Inclusive Growth Project (NARIGP)

200 million USD, Covers 21 counties and 524,000 smallholders' farmers organized along selected priority value chains (VCs). Organizing Farmers into Common Interest Groups, federating into Producer Organizations (POs) and investments along the value chain.



Kenya Climate Smart Agriculture Project (KCSAP)

250 million USD, covers 24 counties including 17 ASAL counties. 677,000 smallholders are increasing their productivity, resilience and farm incomes through investments along the value chain on soil & water management.



Emergency Locust Response Program, Kenya (ELRP)

Kenya's Portion is 78 Million USD, approved in May 2020, covering 15 counties and provides livelihood restoration support to households impacted by Locusts and Drought.



Food Systems Resilience Project (Kenya FSRP)

150 Million USD, the project aims to enhance the resilience of the food systems resilience in 13 of the most vulnerable counties in Kenya.



National Agriculture Value Chain Development Project (NAVCDP)

250 Million USD, the Project builds on the productivity enhancement efforts undertaken under NARIGP and KCSAP and the foundation laid in terms of enabling market access for farmers and aims to enhance market participation and value addition.

Data and Digital Investments across all projects

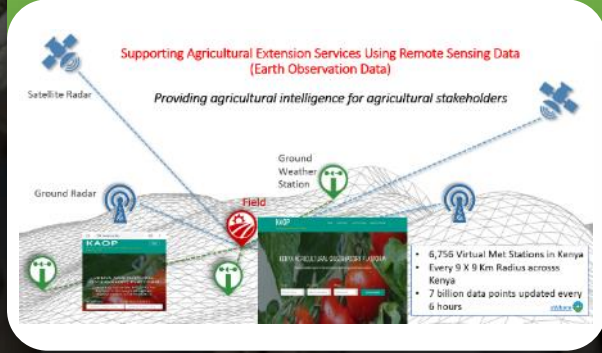
Big Data Platform & Other ICT Applications

Big Data Platform & the Kenya and Agricultural Observatory Platform (KAOP) enabling 1.6 Million farmers to receive integrated Agro Weather , Agronomic and Market information via online website, app or IVRS. 5 million Farmers on the Platform

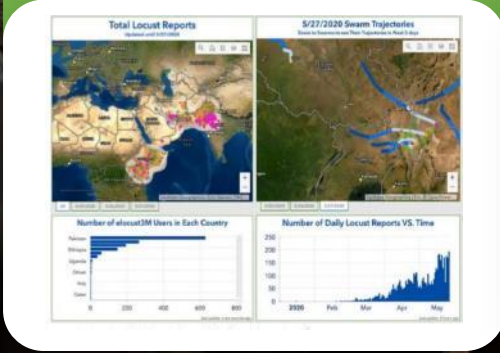
Kenya Big Data Platform



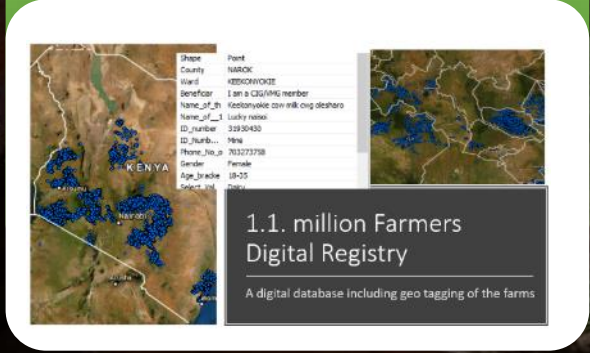
Kenya Ag Observatory



Desert Locusts warning and response



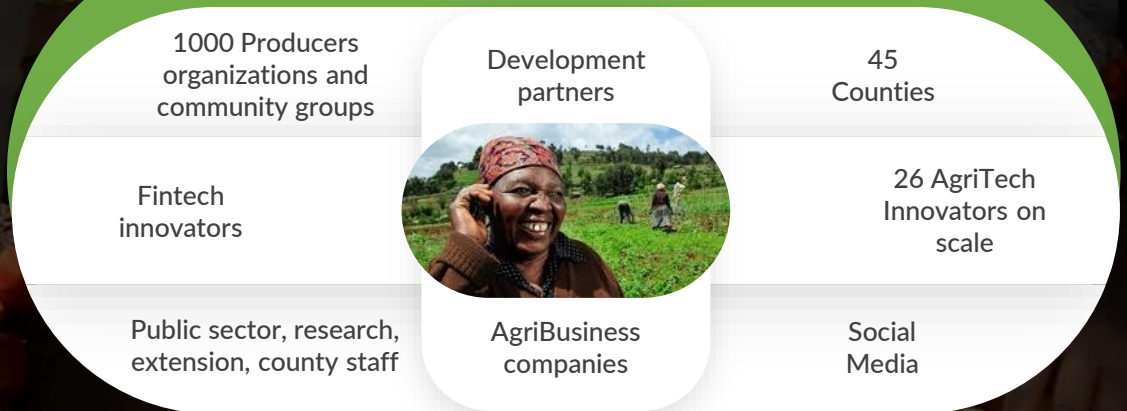
Farmers Digital Registry and Farm Geotagging



Digital Food Balance Sheet



One Million Farmers Platform



Digital e-voucher system



World Bank is also providing technical support to the e-voucher roll out, digital food balance sheet and other applications of the ICT

One Million Farmer Platform (OMFP)

One-Million Farmer Platform Current Cohort Members & Scale



One Million Farmer Platform launched in April 2019 through an innovation challenge and facilitated partnerships between 16 **County governments** and 14 **Agriculture Tech Startups /Innovators** and County Government

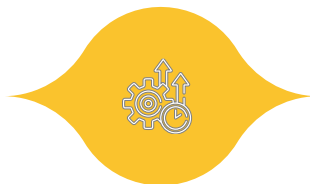


Currently 27 **AgTech start-ups** and innovators providing Data-driven Digital Agriculture solutions and services through partnerships with 36 **County Governments**



Reached 450K Farmers achieved to date using digital tools through the platform. Transforming the Last Mile Service Delivery in terms of inputs, extension, financial services and market linkages

Productivity Track



Aquarech

DigiCow

Digital Green

Farmers Pride

Hello Tractor

SunCulture

EzyAgric

Precision Ag. For Development

Market Linkages track



Farmshine

M-Shamba

TruTrade

Kuza Biashara

ThriveAgic

Financial Inclusion track



Amtech

Acre Africa

Apollo Agriculture

Pula

One Acre Fund

Data Analytics



Astral Aerial

AgriBora

Agrocares

Oakar Services

Ujuzi Kilimo



The “How”

Matchmaking Exercise



The OMFP was launched in 2019 post an innovation challenge that identified 14 AgTech Startups to partner with 16 county governments



Another challenge that attracted Startups from across Africa, Korea, and India was held in February 2023



Subsequently multiple rounds of workshops – titled “Matchmaking” were held to enable signing of MoUs between county governments and Ag Tech Startups



The addition of AgTech Startups to the platform has been a continuous process



Partnerships/MoUs between the AgTech Startups and the County Governments being facilitated through “ Match making” exercises done every 6 to 9 months



The “Match Making” exercises typically held over 2 days, ensure that the AgTech Startups and the County Governments are clear about their respective roles and responsibilities



Intensive Technical Assistance at Multiple Levels



Constant hand holding and technical assistance provided to the National Ministry, Counties, and the AgTech Cohort through a **dedicated team** that works very closely with the teams exclusively on Digital Initiatives



The Digital Ag team is supported by other colleagues that are working closely with the national and county ministries on the Analog Investments being made through the bank projects



Creating an Authorizing environment in terms of buy-in of the National Minister for Agriculture, the County Governors, and County Ministers of Agriculture by the Bank team with the able support of the Global Lead, Digital Agriculture



Disruptive Agricultural Technology

Innovation Knowledge & Challenge Conference

Partnership with other key stakeholders



FAO Team at Kenya

Farmer Registration and Kenya Integrated Agriculture Management Information System



Agri Fin program at Mercy Corps –

Incubation and Acceleration support to the Cohort

Dalberg

Analytics



Rabobank Foundation

Co-Funding



AGRA
Sustainably Growing Africa's Food Systems

Co-Funding



SUSTAINABLE DEVELOPMENT GOALS

Co-Funding



Microsoft

Training and Capacity Building

GRAYMATTERS CAPITAL



CoLabs – Co-Funding

Results and Impact of the One Million Farmer Platform

Before Shock

After the shock



Risk preparedness

- ▶ **Improvements in farming production:** about 86% of farmer experienced improvement in way of farming mainly due to quality inputs and improved planting methods
- ▶ **Improved farm income led to improvements in savings:** about 76% of households increased savings



Investment in the face of the risk

- ▶ **Enabling new financial products:** 70% of farmers did not previously have access to a similar product, neither do they have access to a good alternative product
- ▶ **Improvements in earnings:** about 84% of farmer experienced improvement in productivity on same hectare
- ▶ **Improvements in quality of life:** about 90% of farmers experienced improvement in quality of life mostly driven by increase in income to meet more family needs



Responding to the shock

- ▶ **Enabling recovery from climate shocks:** 71% of farmers were able to recover from climate shocks due to the services of the agri and fintechs
- ▶ **Reduction in negative coping strategies:** borrowing for household consumption decreased by 51%
- ▶ **Deepening of impact on welfare over time:** Outcomes are higher for farmers who have been accessing services for longer

A man in a plaid shirt is looking at a tablet in a field. The background is a blurred green field with some plants in the foreground. The image is overlaid with a semi-transparent teal color.

Use of new technologies to enhance agriculture insurance

Reflections from a range of countries

Roman Shynkarenko

Founder, Agroinsurance International

Use of new technologies to scale up agriculture insurance

New technologies options:



Satellite remote sensing – Optical and SAR



Weather data – automatic weather stations and synthetic weather data sets



Drones (operator, BVLOS, fully autonomous, etc.)



GIS software with analytical capabilities (risk location, risk accumulation, risk analysis, portfolio monitoring)

Useful functionalities:



Crop type identification



Crop emergence and condition during the vegetation cycle

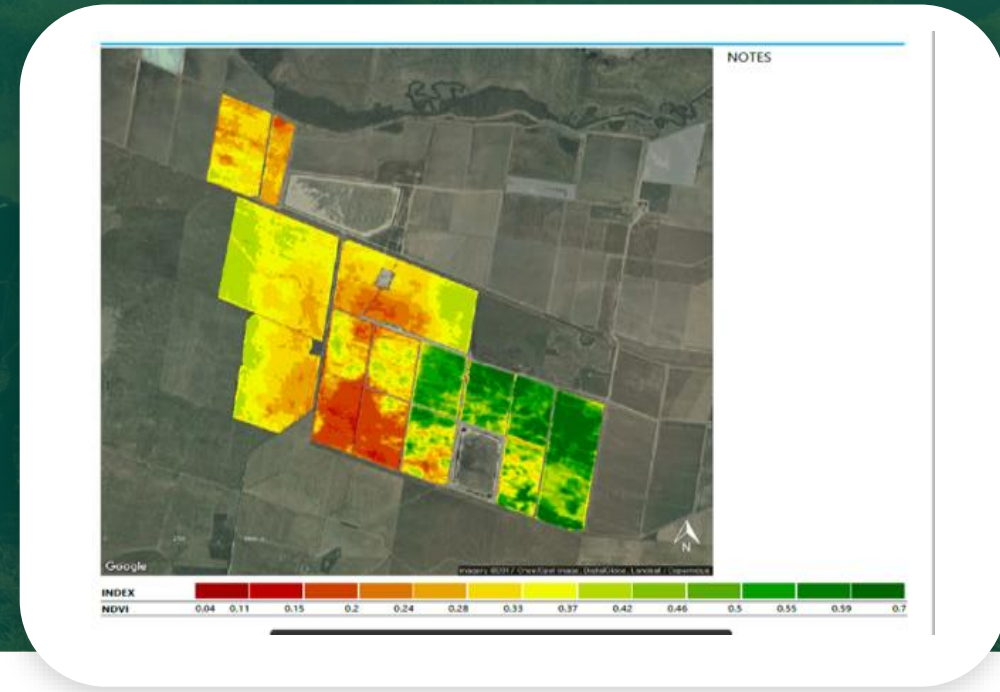
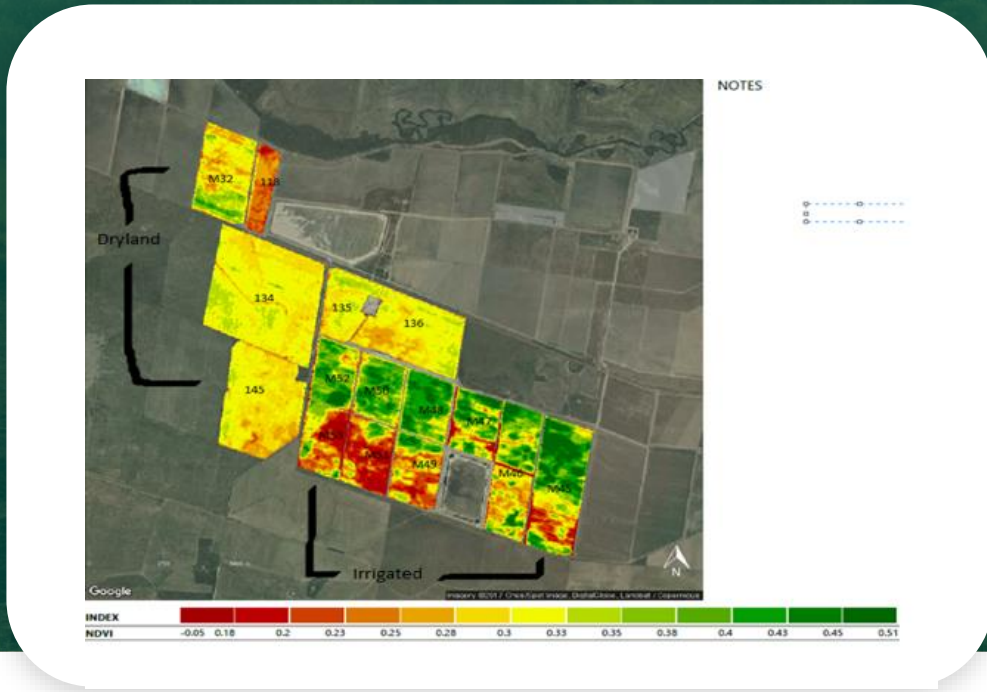


Crop damage after risk events



Crop yield estimation (still challenging due to accuracy for various crop types)

Australia underwriters using remote sensing (NDVI index) for risk assessment



Crop condition before and after risk event

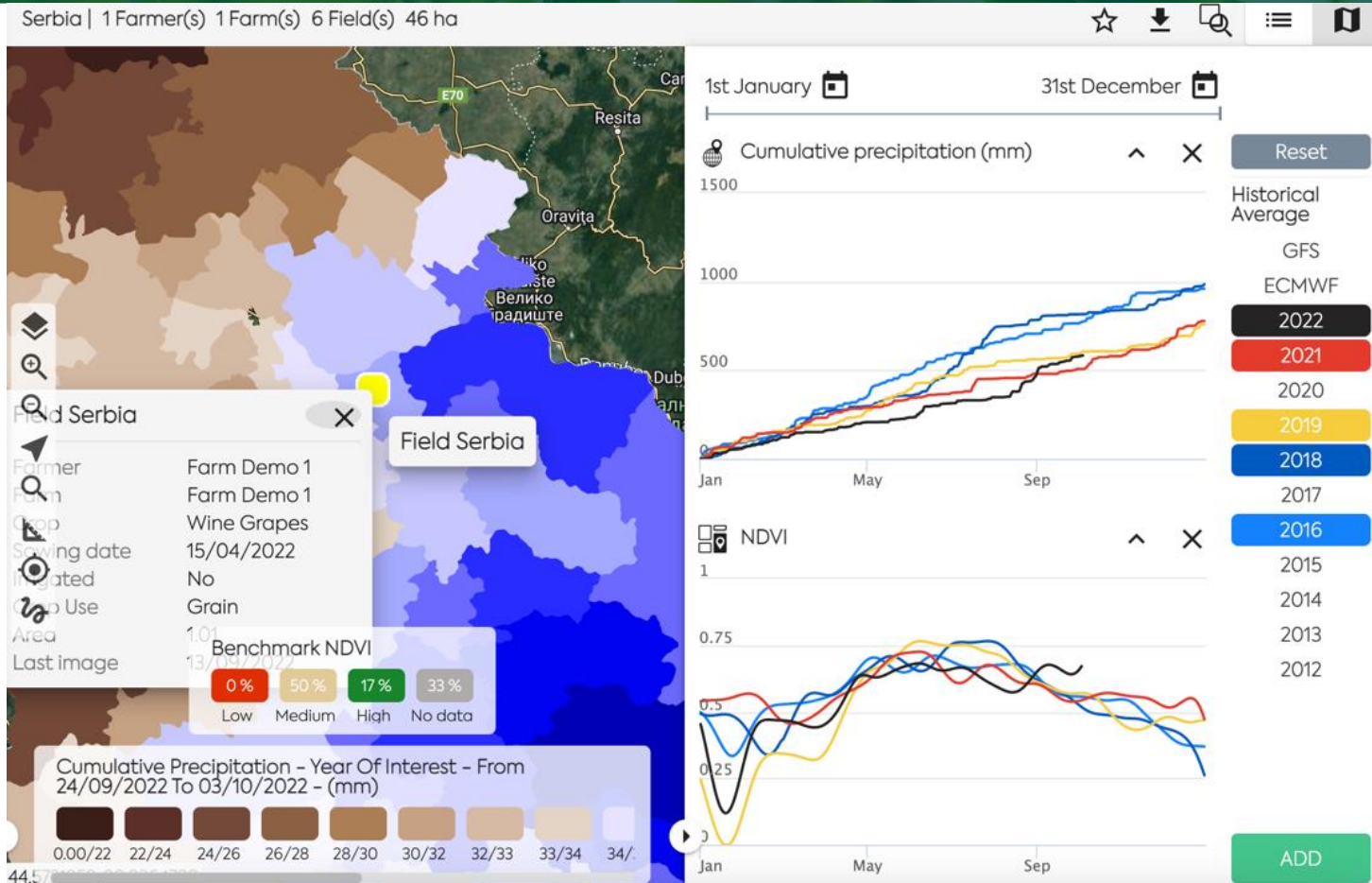


NDVI imagery – historical and current season



Claim saving of 2,4 million due to accurate claim assessment

Serbia - combined use of weather and satellite data for risk assessment



Satellite derived NDVI index to monitor crop condition



Assess current season and historical data



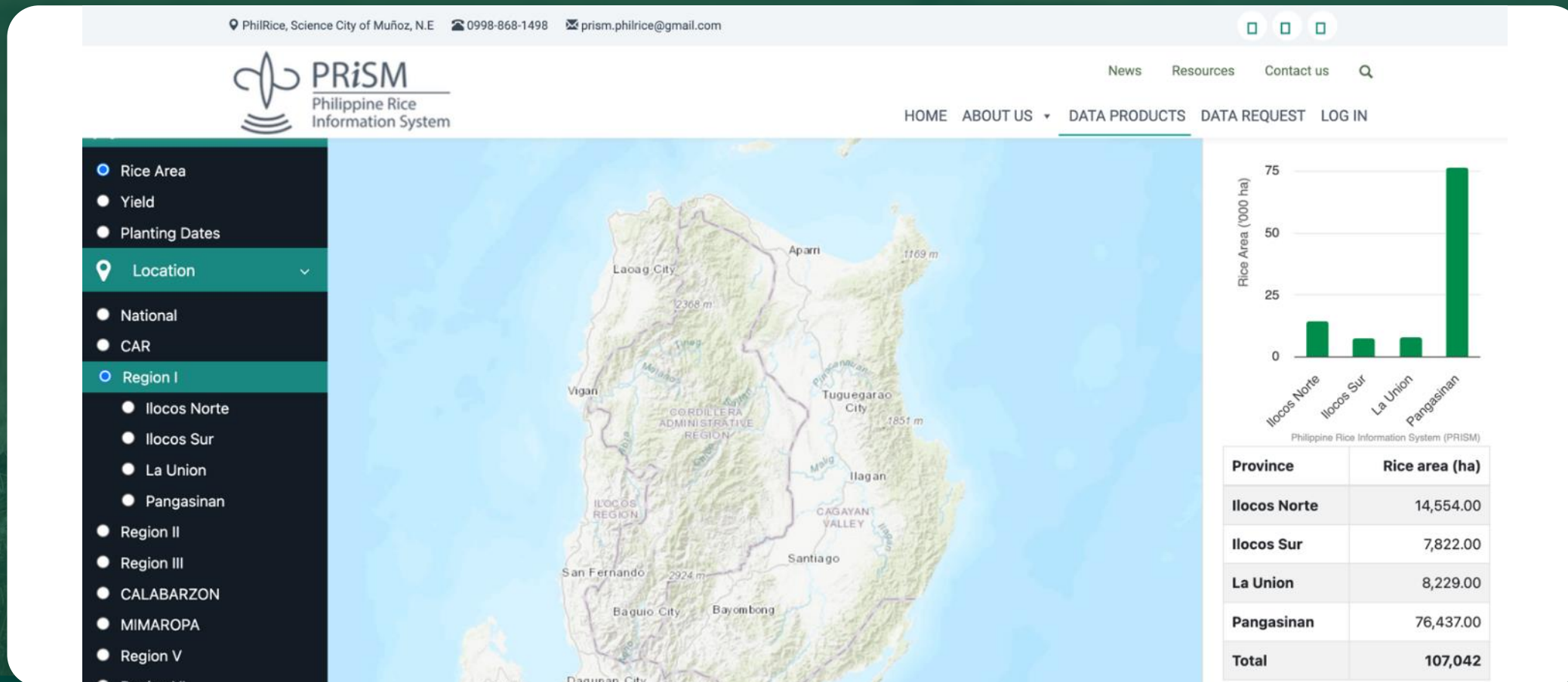
Multiple parameters can be used for crop insurance purposes



Risk situational analysis using historical data

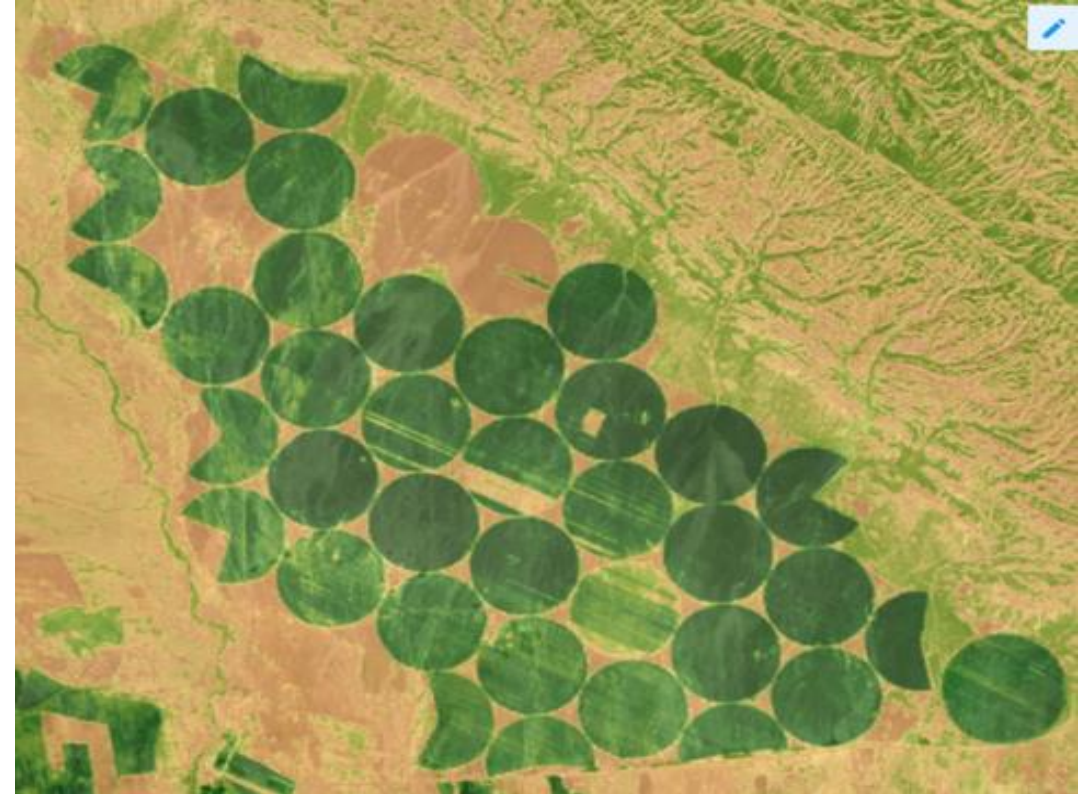
RIICE – PRISM platform for rice crop monitoring in the Philippines

Sarmap tried to apply this solution for crop insurance in Southeast Asia but failed due to the cost of data and service and limited functionality, which is not addressing insurance needs

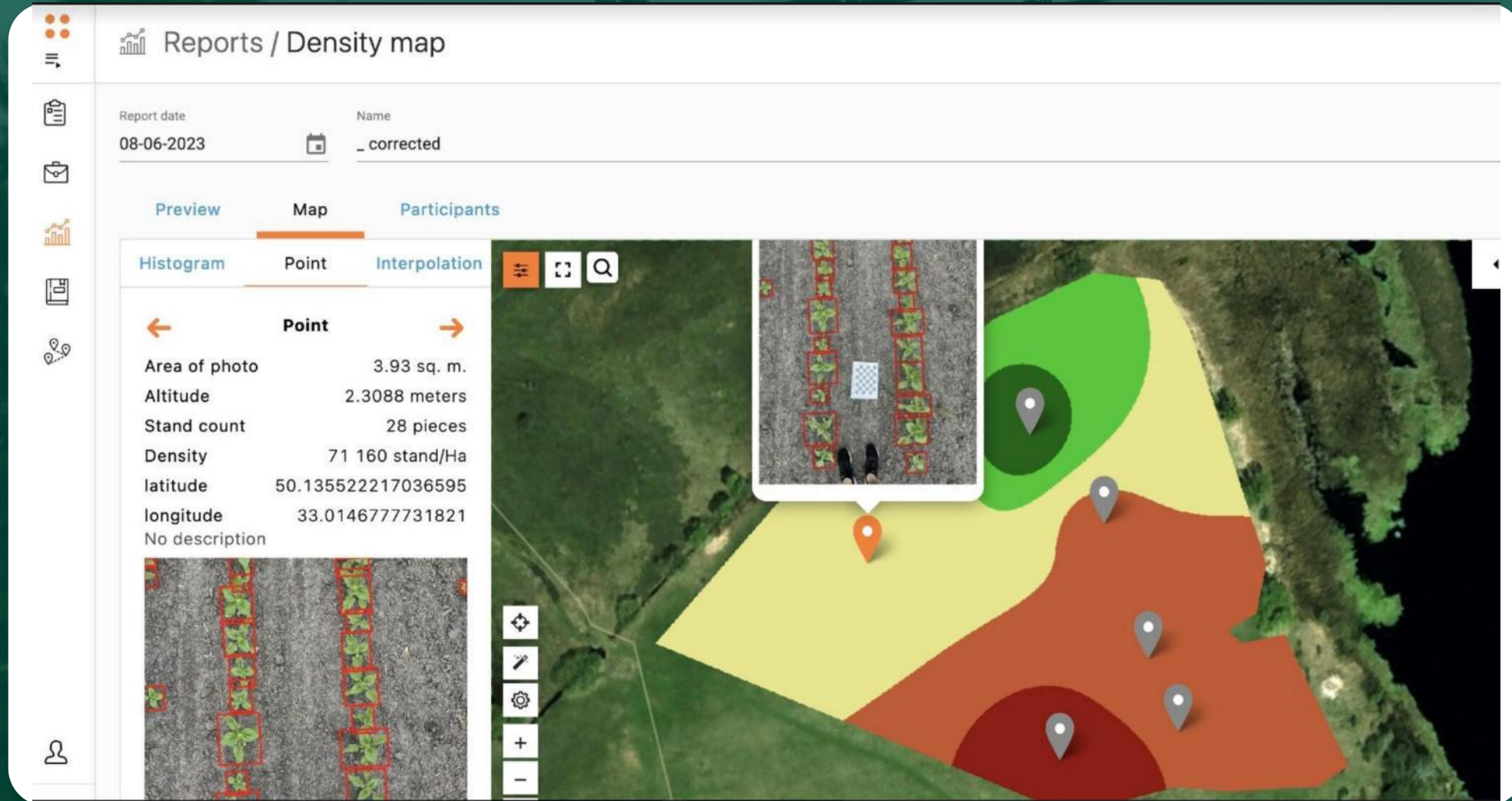


Azerbaijan - risk assessment using optical imagery and drones

About 30% of time saved on risk assessment



Using drones for accurate crop assessment and density maps




Reports / Density map

Report date: 08-06-2023 Name: _corrected

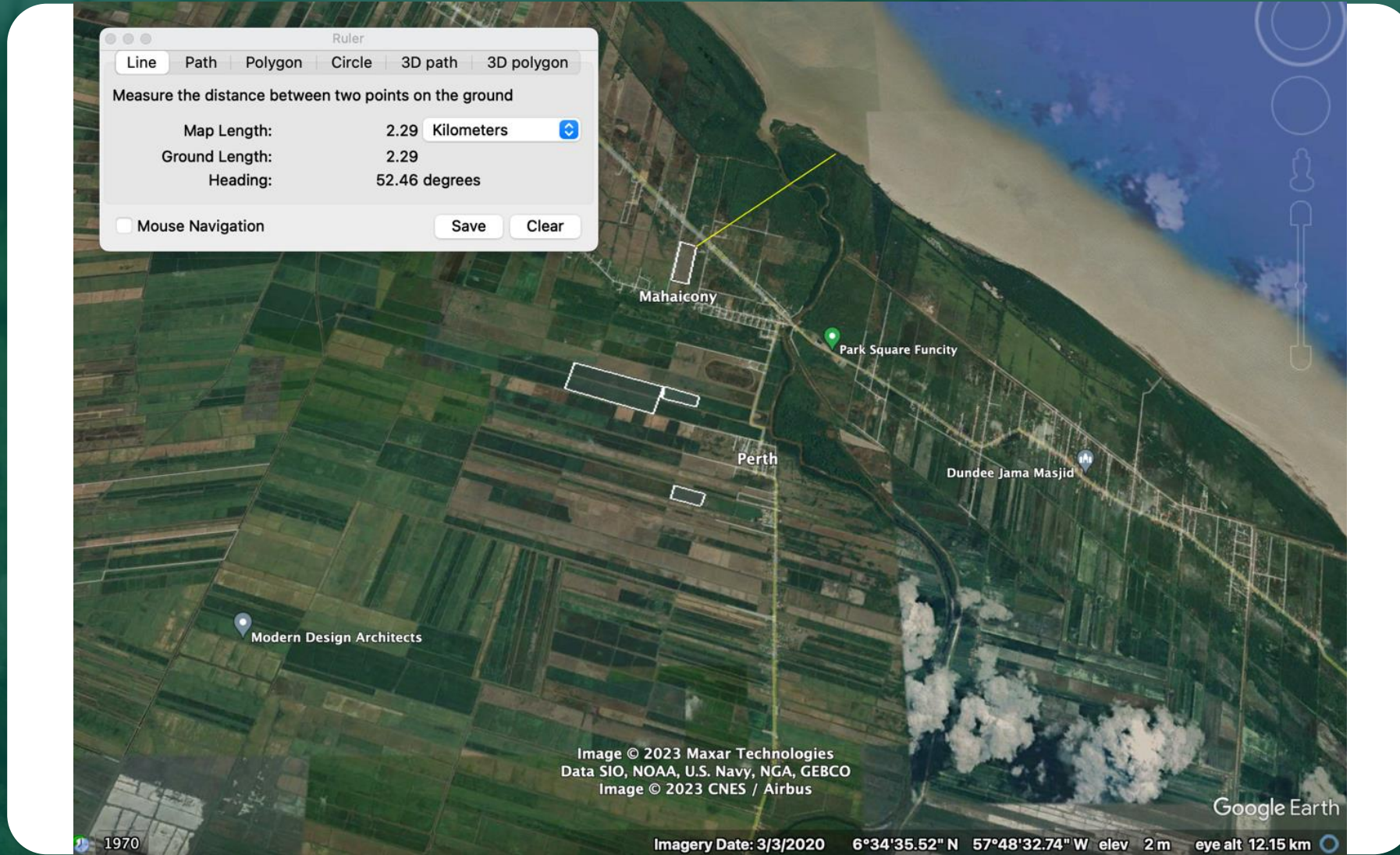
Preview **Map** Participants

Histogram **Point** Interpolation

Point	
Area of photo	3.93 sq. m.
Altitude	2.3088 meters
Stand count	28 pieces
Density	71 160 stand/Ha
latitude	50.135522217036595
longitude	33.0146777731821
No description	



Guyana using open-source GIS and digital maps for underwriting



New technology for area yield index insurance

Earth Observation capabilities:



Crop type identification



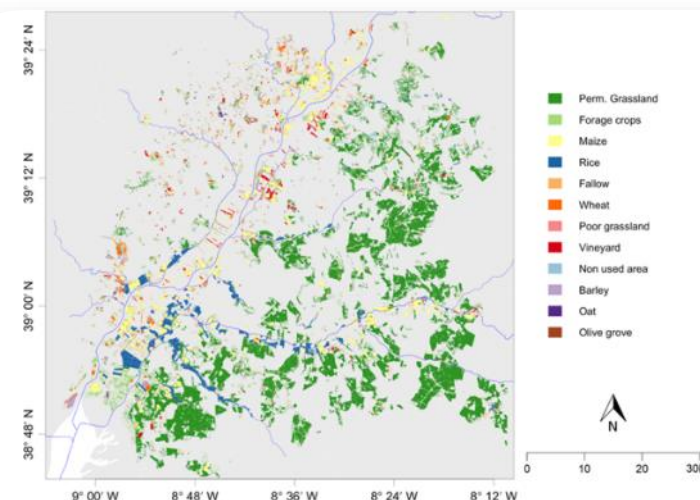
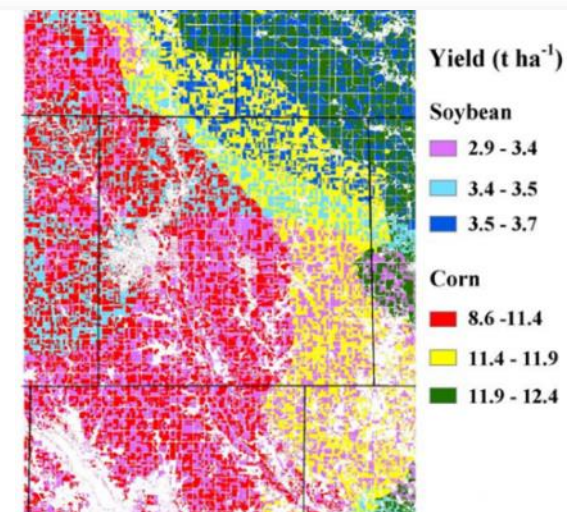
Yield estimation
(need 95%+ accuracy)



Historical data challenge
(optical and radar)

Technology must be cloud-free
No gaps with sensing 30 days to harvest time

Challenge – Different harvest/ripening dates due to production practice, planting decisions, variety production cycle, and especially when grain is underdeveloped



Lessons learned on adoption of technology and impact on agriculture insurance

New technologies offer a wide choice of data to enhance agricultural insurance:

- Historical data sets for countries where data is challenging
- Near-real time actual data (weather data, vegetation indexes)
- Accurate risk assessment
- Additional data for risk analysis and premium rate setting
- Quicker and accurate loss calculation



Insurers introduce front-end solutions to enhance distribution and to improve client communication – application for insurance, updates on coverage, alerts, claim notification, claim communication



Web-based platforms and apps



Reporting portals – transparency, information resources, communication



The key requirements for satellite data to be used for insurance products



Seamless data flow with as short as possible revisit schedule



Calibration of satellite data to increase accuracy of crop yield and green mass volume estimates



Affordable pricing for satellite data and sustainable delivery models to be in line with the insurers processes and needs



Automatic data interpretation and provision of data for claim calculation or crop assessment



Accurate crop type identification, using both historical and real-time satellite data and portfolio mapping



Flexibility to adjust to insurers specific requirements

Key challenges in adoption of technologies for scaling up agriculture insurance

Cost of technology solution development, subscription, on-demand services



Functionality accuracy (below 90% is challenging to be used by insurers), analytical reporting



Data availability and interpretation satellite revisit schedule, cloud cover, merging together different data sets



Drones costs of equipment, qualified operators, software, administration



Technical capacity of insurance companies human resources, technical skills



What are the potential solutions to address these challenges?



Training and education



Special tech teams (drones, remote sensing, apps and software administration) at insurance companies and agricultural program administrator



Strategic planning based on accurate needs assessment

The roles of the public and development sectors in stimulating adoption

What are the roles of the public and development sectors in stimulating adoption?



Situational analysis and development of new tech adoption plans



Needs assessment and procurement



Identification of most effective solutions



Government or donor funding of innovations – understand the future and challenges (RIICE, Flood modeling, weather index pilots – critical analysis of mistakes)



Knowledge sharing – military (dual-purpose), disaster monitoring and response, precise agriculture, etc.

What is the future of agriculture insurance?



Replication of success stories




Critical analysis of mistakes



Indemnity insurance for commercial farmers



Hybrid insurance based on enhanced insurance regulation

A photograph of three men in a field, looking at a laptop screen. The man on the left is pointing at the screen. The man in the middle is wearing a hat. The man on the right is wearing a checkered shirt. The background is a green field.

Use of blockchain and mobile phone to scale up insurance:

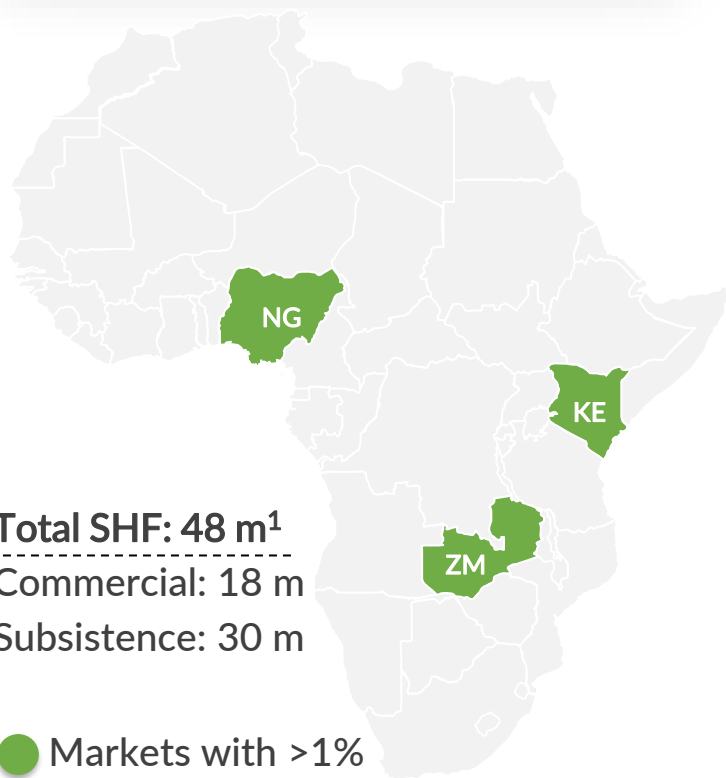
The case of ACRE Africa

Amos Tabalia

Chief Impact Officer, Acre Africa

Problem: The SSA Agri-insurance market is largely underserved, with only 3% of the USD14 bn dollar market addressed

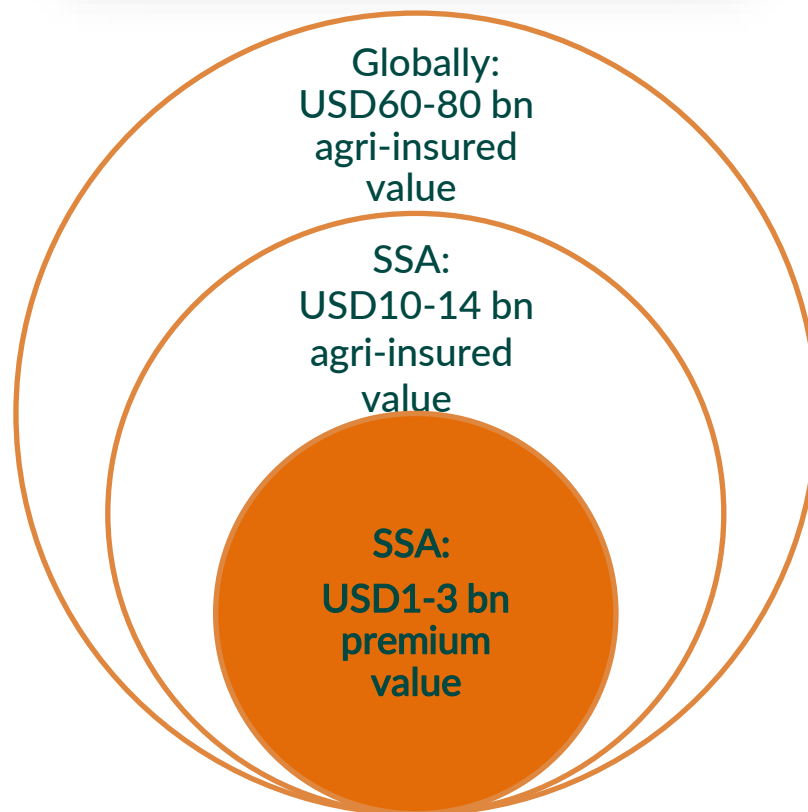
Market: 48m smallholder farmers in Sub-Saharan Africa (270m globally)



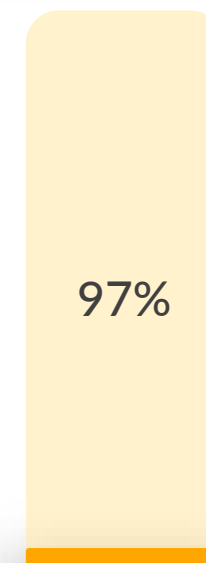
Total SHF: 48 m¹
 Commercial: 18 m
 Subsistence: 30 m

● Markets with >1% penetration

Demand: USD10 -14 bn¹ needed annually in agri-insured value



Supply: In SSA, <1.5 m¹ SHF are insured



97%

Only 3% of SSA is insured

No of SHF

● Insured ● Un-insured

ACRE Africa's smart contracts

Problem: In developing countries, as many as 270 million smallholder farmers, just 3% in Sub-Saharan Africa, are insured. At the same time, the climate vulnerability of crops is increasing, posing a significant threat to food security.



Solution: To increase smallholder farmers' resilience to climate change through offering a more accessible and affordable index insurance product at scale.



Challenge: Adoption of insurance solutions lags behind. Due to lack of affordability, transparency, and often long delays in disbursing pay-outs, farmers lack trust in insurance products.



Project: Together Acre and Etherisc aim to boost efficiency of existing insurance products with blockchain technology to reduce costs and improve attractiveness, profitability and reach of their products.



Technology: Blockchain technology, if applied properly, has the potential to address the issues with crop insurance.



Innovation: Weather data fed directly to digitized insurance policies (blockchain-based smart contracts) to provide faster and cheaper weather index insurance solutions that can integrate into the value chain.

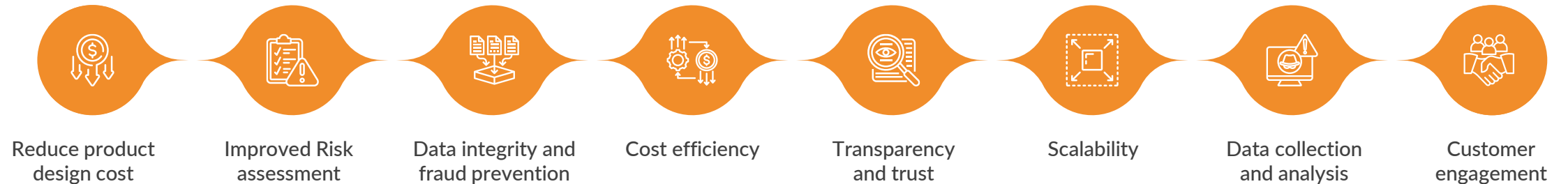


The expansion of blockchain technology

What is Blockchain? - a decentralized and distributed digital ledger technology used to record transactions across multiple computers or nodes. It operates on the principles of transparency, security, immutability, and decentralization. Data in a blockchain is structured into blocks, with each block containing a set of transactions. Once a block is verified and added to the chain, it becomes nearly impossible to alter. Blockchain technology uses cryptographic techniques to secure and validate transactions.

Advances in parametric insurance – Smart contracts, Interoperability, Scalability, improved privacy, sustainability

Addressing the challenges of scaling up solutions



Index Insurance on Blockchain Technology: Operational Set-up



ACRE Africa is the lead partner to develop, provide, and distribute the index insurance product to farmers. Manages farmer engagement and communication through mobile and web interfaces.

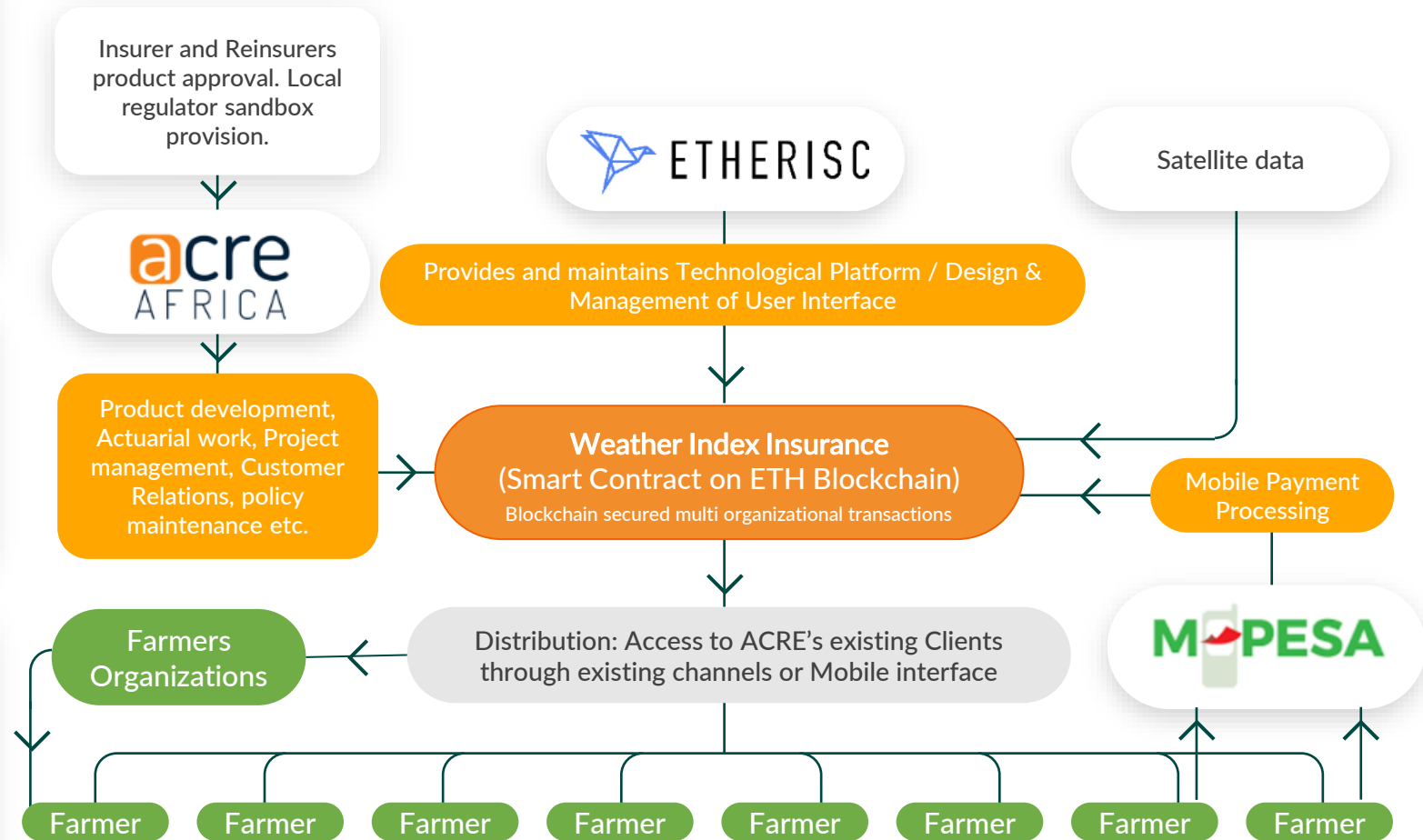


ETHERISC

Etherisc: provides and maintains the backend of the blockchain platform (putting policies on blockchain-based smart contracts).



Mercy Corp: provided implementation funding to support printing of Bima Pima cards in Kenya and Tanzania and the integration of the USSD client-facing modules.



Distribution



Card generation:

- Serial number & unique code generation
- Printing of cards



Card allocation:

- Champion farmer card allocation
- Input suppliers

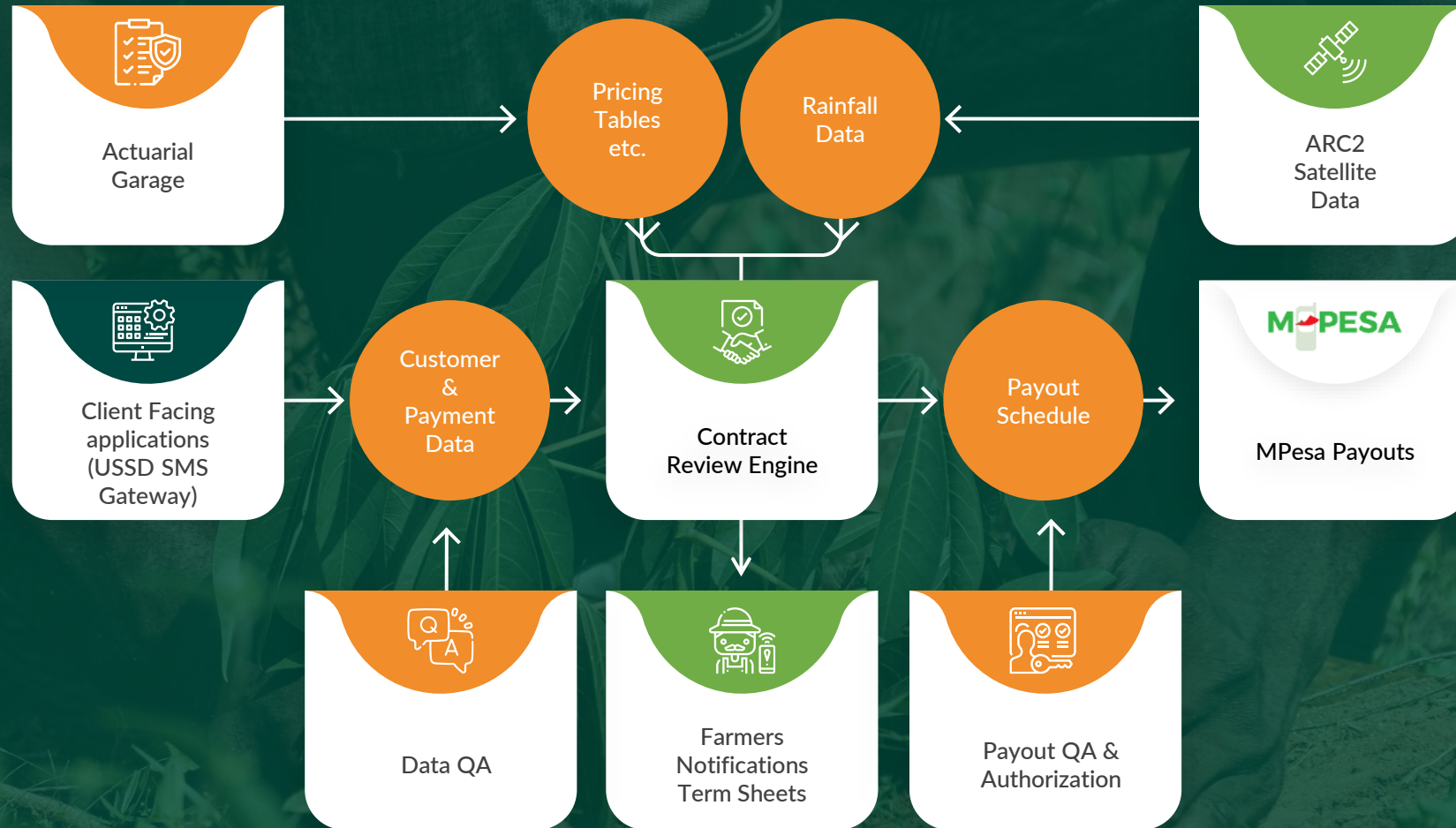


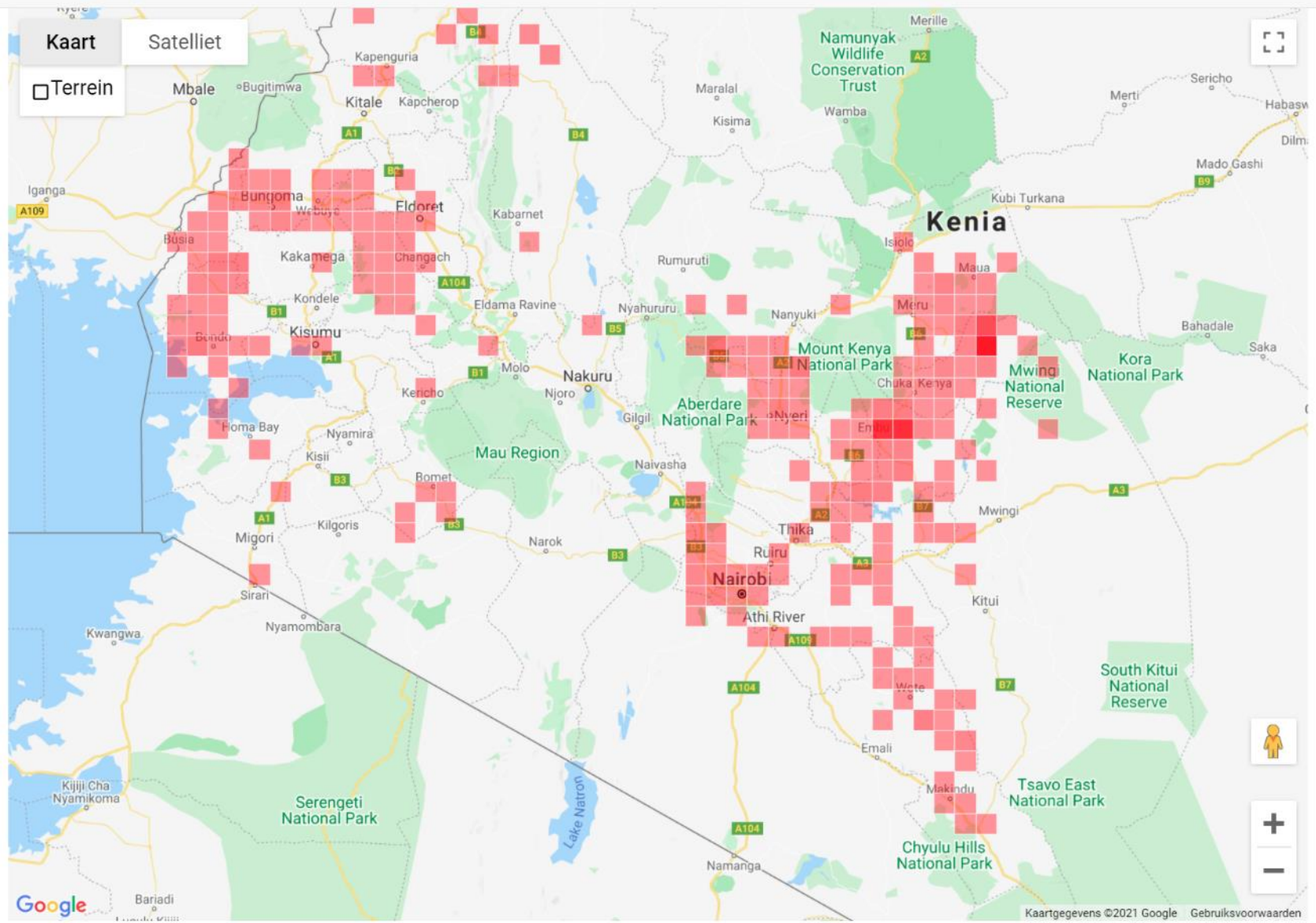
Card Sales:

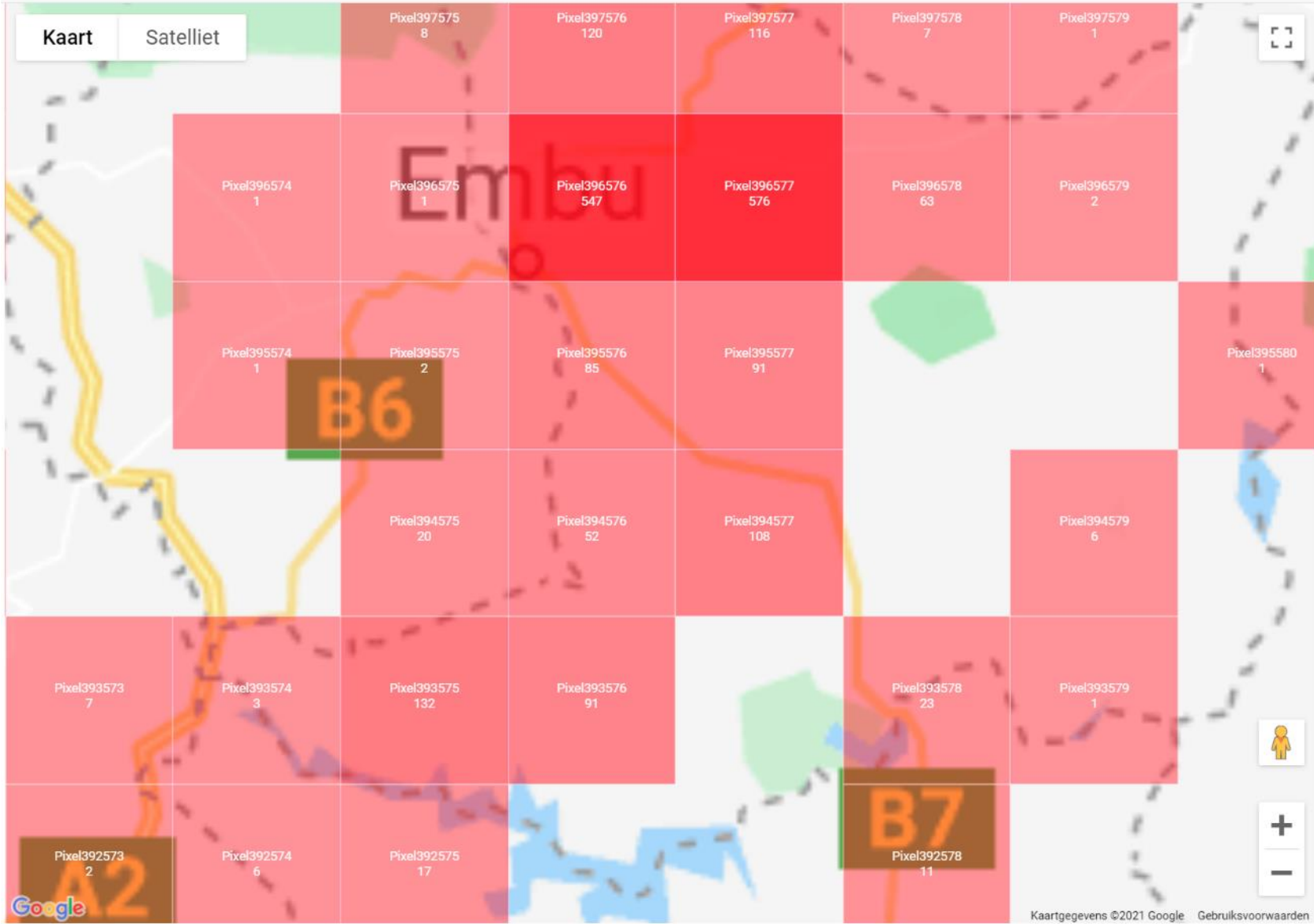
- Insurance cards activation



Overall System Architecture







Activations

Activations

8941

Premiums

KES 1.283.101,00

+ Add new

Search



Mobile Num	Call Time	Latitude	Longitude	Order Number	Activation Code	Value Chain	Amount Premium	Pixel		
254710800218	2021-May-18	-1.20818	36.7867	A100682-0521	718	Potatoes	50	Pixel389569		
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Locations

[+ Add new](#)

Search



Prefix	County	Ward	Pixel		
	BARINGO	BARTABWA	Pixel410559		
	BARINGO	BARWESSA	Pixel408558		
	BARINGO	KABARTONJO	Pixel407559		
	BARINGO	SAIMO/KIPSARAMAN	Pixel408559		
	BARINGO	SAIMO/SOI	Pixel408560		
	BARINGO	EWALEL/CHAPCHAP	Pixel406559		
	BARINGO	KABARNET	Pixel406558		
	BARINGO	KAPROPITA	Pixel406558		
	BARINGO	SACHO	Pixel405558		
	BARINGO	TENGES	Pixel404559		
	BARINGO	ILCHAMUS	Pixel407562		
	BARINGO	MARIGAT	Pixel405560		
	BARINGO	MOCHONGOI	Pixel404562		
	BARINGO	MUKUTANI	Pixel407563		
	BARINGO	KOIBATEK	Pixel400559		
	BARINGO	LEMBUS	Pixel401560		
	BARINGO	LEMBUS KWEN	Pixel402558		
	BARINGO	LEMBUS/PERKERRA	Pixel402559		

Group Policies

Sum Insured KES 1.173.500,00

Payments KES 117.350,00

Payout Amount KES 0,00

Policies 2054



Season	Value Chain	Location	Date Begin	Date End	SW Date	Acc Payments	Acc Sum Insured	Acc Amount	# Policies	Payout?
2021-1	Maize-5	Pixel386571	May-10	Sep-30	05-09	KES 100,00	KES 1.000,00	KES 0,00	1	<input type="checkbox"/>
2021-1	Maize-5	Pixel386573	May-10	Sep-30	05-09	KES 1.000,00	KES 10.000,00	KES 0,00	10	<input type="checkbox"/>
2021-1	Maize-5	Pixel386574	May-10	Sep-30	05-09	KES 1.000,00	KES 10.000,00	KES 0,00	10	<input type="checkbox"/>
2021-1	Maize-5	Pixel388574	May-10	Sep-30	05-09	KES 100,00	KES 1.000,00	KES 0,00	1	<input type="checkbox"/>
2021-1	Maize-5	Pixel389567	May-09	Sep-29	05-08	KES 3.150,00	KES 31.500,00	KES 0,00	63	<input type="checkbox"/>
2021-1	Maize-5	Pixel389568	May-09	Sep-29	05-08	KES 4.350,00	KES 43.500,00	KES 0,00	87	<input type="checkbox"/>
2021-1	Maize-5	Pixel389571	May-10	Sep-30	05-09	KES 400,00	KES 4.000,00	KES 0,00	4	<input type="checkbox"/>
2021-1	Maize-5	Pixel390567	May-09	Sep-29	05-08	KES 1.900,00	KES 19.000,00	KES 0,00	38	<input type="checkbox"/>
2021-1	Maize-5	Pixel390568	May-09	Sep-29	05-08	KES 100,00	KES 1.000,00	KES 0,00	2	<input type="checkbox"/>
2021-1	Maize-5	Pixel391567	May-09	Sep-29	05-08	KES 4.400,00	KES 44.000,00	KES 0,00	88	<input type="checkbox"/>
2021-1	Maize-5	Pixel391568	May-10	Sep-30	05-09	KES 2.950,00	KES 29.500,00	KES 0,00	59	<input type="checkbox"/>
2021-1	Maize-5	Pixel392567	May-10	Sep-30	05-09	KES 450,00	KES 4.500,00	KES 0,00	9	<input type="checkbox"/>
2021-1	Sorghum-1	Pixel393575	Mar-29	Aug-04	03-28	KES 50,00	KES 500,00	KES 0,00	1	<input type="checkbox"/>
2021-1	Maize-5	Pixel393575	May-10	Sep-30	05-09	KES 1.900,00	KES 19.000,00	KES 0,00	19	<input type="checkbox"/>
2021-1	Maize-4	Pixel396544	Apr-14	Sep-04	04-13	KES 50,00	KES 500,00	KES 0,00	1	<input type="checkbox"/>

< Group Policy Details

Group Policy Id	BimaPima.2021.1.Maize.5.Pixel386571
Season	2021-1
Value Chain	Maize-5
Location	Pixel386571
Date Begin	May-10
Date End	Sep-30
Payout Total	0
Hurdle	0.15
Payout Actual	0
SW Date Begin	Apr-26
SW Count	2
SW Length	14
SW Window	1
SW Date	05-09
Acc Payments	KES 100,00
Acc Sum Insured	KES 1.000,00
Acc Amount Total	KES 0,00
Acc Amount Deductible	KES NaN
Acc Amount	KES 0,00
# Policies	1
Payout?	No

Crop Stages

Crop Stage Id	Weight	Date Begin	Date End	Trigger	Blocks Total	Blocks Loss	Payout
GerminationDry	0.25	May-10	Jun-06	0.39	0	0	0
GerminationWet	0	May-10	Jun-06	169.36	0	0	0
Vegetation	0.25	Jun-06	Jul-25	16	0	0	0
Flowering	0.25	Jul-18	Aug-26	0.5	0	0	0
ExcessRain	0.25	Aug-17	Sep-30	56.05	0	0	0

Individual Policies

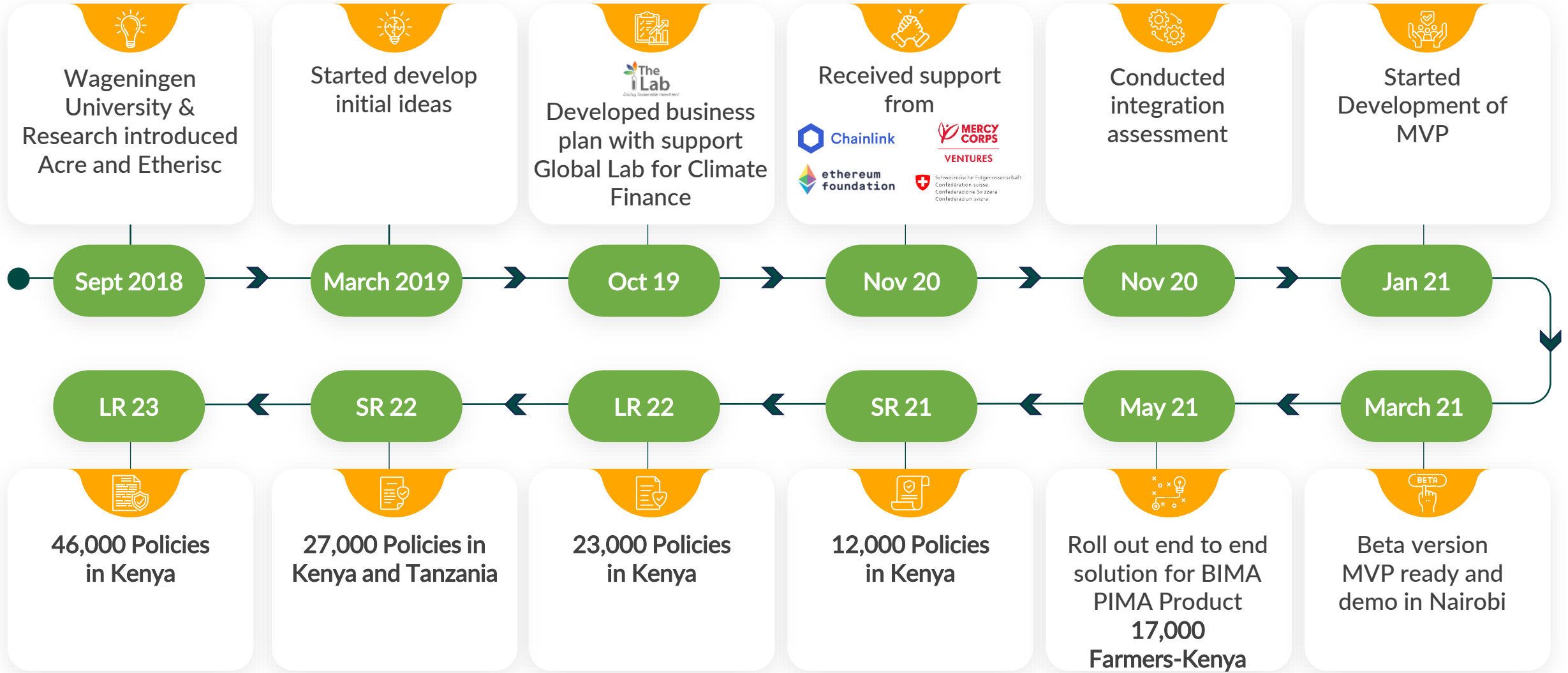
Voucher No	Phone No	Crop	Activation W.	Date Begin	Date End	Activation	Premium	Sum Insured	Paym Amount	Payout Amount
51737	254746197570	Maize	5	May-10	Sep-30	May-18	KES 100,00	KES 1.000,00	KES 100,00	KES 0,00

Contract Review



Value												
Chain	Contract	StartDay	ContractEndDate	GermDryPayPct	GermWetPayPct	VegDryPayPct	FlowerPayPct	ExcessRainPayPct	SumInsured	TotalPayPct	ActualPayPct	ActualPay
Potato1	KE2832	27-Mar	19-Jul	0.15	0	0	0	0	1	0.15	0.025	0.025
Potato1	KE2831	27-Mar	19-Jul	0.0375	0	0	0	0	1	0.0375	0	0
Potato2	KE2832	10-Apr	12-Aug	0	0	0	0	0	1	0	0	0
Potato2	KE2831	3-Apr	5-Aug	0.1125	0	0	0	0	1	0.1125	0	0

ACRE Africa's experience of decentralized insurance



Lessons learned from adoption of blockchain and mobile cellphone technology



Factors driving growth of blockchain and mobile phone technology

- Their unique capabilities and the advantages they offer in terms of security, efficiency, accessibility, and cost-effectiveness.



Constraints to adoption of latest technologies

- High initial costs, complex regulatory environments, and concerns related to data privacy and security. Resistance to change, skill gaps, and issues related to scalability can also hinder adoption.



Role of the development and public sector in addressing these challenges

- Establishing and enforcing regulations to ensure safe and ethical technology use,
- Providing funding for research and infrastructure development,
- Promoting capacity building and skill development to empower individuals and organizations,
- Safeguarding data and cybersecurity,
- Incentivizing innovation, educating stakeholders about the benefits and risks of technology,
- Fostering collaboration through public-private partnerships, and working to bridge the technology access gap, ensuring that technological advancements are inclusive and accessible to all.

Key challenges in adoption of latest technologies and opportunities for scaling up agricultural insurance



What are the key challenges faced by insurers in adopting and using **blockchain and mobile phone technology**?

- Ensuring data privacy and security while handling sensitive information collected by these technologies is paramount. Navigating complex and varying regulations across regions can be a hurdle for insurers.
- Scalability, accuracy, and interpretation of data are essential concerns, as insurers must collect, process, and utilize this information effectively.
- The initial setup and maintenance costs can be significant, and realizing a return on investment may take time.
- Insurers need to attract or train professionals with the necessary expertise to manage these technologies.
- Public perception, environmental conditions, and liability issues add further complexity.



What are the potential solutions to address these challenges?

- Establishing robust data encryption, storage, and compliance protocols can safeguard sensitive information.
- Collaborating with regulatory bodies and staying informed about regional variations can help insurers navigate complex regulations.
- Ensuring the scalability and accuracy of data collection mechanisms is key, requiring constant innovation and refining of technology.
- A phased approach to investment can help manage costs and allow for gradual ROI realization.
- Training and upskilling the workforce to manage these technologies is vital, and integrating them into existing systems should be a seamless, iterative process.
- Promoting public awareness about the benefits of these technologies can mitigate negative perceptions, and insurers can adapt to various environmental conditions by utilizing versatile equipment.
- Developing standardized liability frameworks will provide clarity and help resolve potential disputes.

The future of insurance and the roles of the public sector



Role of the public and development sectors in stimulating adoption



The public sector can provide a conducive regulatory environment by establishing clear guidelines and standards for technology implementation, which fosters a level playing field for insurers



The government can incentivize the adoption of these technologies through subsidies or tax benefits, making them more accessible to insurers, particularly in developing regions



Collaborative initiatives, data sharing, and knowledge exchange between the public, development, and insurance sectors can collectively drive the adoption of sensing technology and drones, ultimately benefiting farmers and communities



Future of agriculture insurance



As climate change and extreme weather events continue to threaten crop yields and farmer livelihoods, there will be an increasing need for innovative insurance solutions



Emerging technologies such as blockchain, mobile apps, sensing technology, and drones will play a pivotal role in streamlining insurance processes, enabling more accurate risk assessment, and reducing costs



These technologies will empower insurers to offer more affordable and accessible insurance products to farmers, especially in developing regions



Time for Questions

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