Your webinar will start shortly.

#MFW4Awebinarseries

Onboarding, Monitoring & claim management: Remote sensing solutions and digitization in agricultural finance

September 30th, 2020

1pm GMT
2pm Casablanca
2pm London
4pm Nairobi

Registration link: afdb.webex.com

Our webinar will start shortly...
MFW4A WEBINAR SERIES

OUTLINE

HOUSEKEEPING

MFW4A

PANELISTS

PRESENTATION

Q&A

CONCLUSION
Today’s session is scheduled to last 1 hour including Q&A

To ensure the highest quality of experience, all participants will be muted

QUESTIONS can be submitted via the “Chat” or “Q&A”

For Live questions / Comments. Click on “Raise Hand” icon to speak
(Lower Hand and mute after)

Slides and a recording of this presentation will be circulated after we conclude. They will also be available on MFW4A.ORG.

Message the organizers for any issues

Don’t forget to fill out the survey that appears automatically after the session
• G8 initiative launched in October 2007

• Common platform for the harmonization and facilitation of financial sector development and knowledge sharing in Africa.

• Donor partners, African governments the private sector, and other financial sector with the aim of unleashing the full potential of Africa's financial sector in order to drive economic development and reduce poverty across the continent.
MFW4A WEBINAR SERIES

VISION, MISSION & PILLARS

MFW4A’s activities are broadly focused on three thematic pillars:

<table>
<thead>
<tr>
<th>Financial Inclusion</th>
<th>Long-term Finance</th>
<th>Financial Stability and Governance</th>
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<tr>
<td>• Digital Finance</td>
<td>• Institutional Investors</td>
<td>• Community of African Banking Supervisors</td>
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<td>• Agricultural Finance</td>
<td>• Housing Finance</td>
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<td>• SME Finance</td>
<td>• The Africa Long Term Finance Initiative</td>
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<td>• Trade Finance</td>
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<td>• Insurance</td>
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<td>Knowledge Management and Advocacy</td>
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PANELISTS

MODERATOR
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Assistant Director
FSD Africa

PRESENTERS
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Managing Director
Head of Agriculture Insurance
Agritask

Ms. Einav GOLD
Director
Insurance Products
Agritask
Onboarding, monitoring & Claim management

Remote Sensing & Digitization in Agriculture Insurance in Africa
About Agritask

• Ag-operations platform, software-as-a-service company
• Established in 2010, HQ in Israel with offices in Brazil and Bulgaria
• Interdisciplinary team with expertise in agronomy, remote sensing and GIS, and other technology
• Field-proven in 30+ countries (8 in Africa) and 50+ crops
• Clients include global F&B companies, farm inputs companies, crop insurers (including Nigeria and Mozambique) and other aggregators:

• Lead investor is InsuResilience Investment Fund, set up by Germany’s KfW Development Bank and managed by BlueOrchard, a global impact investment manager
Agritask: Local Impact with Global Footprint

Target geographies: LatAm, Europe, Africa, Asia

- Main markets
- Newly penetrated markets

- Offices
- Dedicated sales (based in offices)
- Distribution partners
- Dealmakers
Agenda
Remote Sensing & Digitization in Agriculture Insurance

• Introduction: The Problem
• Onboarding of Growers: Scalability and Digitization
• Crop Risk Monitoring: Remote sensing & Agronomical Sciences
• Claim Management: Systemization and Moral Hazard Mitigation
• Summary & Vision
• Q&A

Way Forward: (Partial) Solutions
Severe Climate Variability in Africa

Higher chance of drought

Share of decade spent in drought (%)

0
1–10
11–20
21–40
41–60
61–80
81–90
>90

Projected change in temperature vs. pre-industrial (Celsius)

0–0.5
0.6–1.0
1.1–1.5
1.6–2.0
2.1–2.5
2.6–3.0
3.1–3.5
>3.5

Higher average temperature

Climatic Hazards expect to Impair Crop Production in Africa

For all major staple crops - potential yield decline at 5 Celsius temperature change

Maize: -30%
Rice: -20%
Wheat: -60%
Soy: -150%

Significant Risk Protection Gap in African Agricultural Eco-System

% population covered by agricultural micro insurance (2014)

Crop Insurance in Africa: Problem & Opportunity

Growers

- Food Security
- Resilience & Livelihood
- Climate change
- Low financial inclusion
- Affordability of Insurance

Finance & Insurance

- Low penetration
- High costs
- Low risk visibility
- Inappropriate Products
- Technology
## Two main product types

### Indemnity-based insurance

<table>
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<tr>
<th>Multi peril</th>
<th>Named peril</th>
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<tr>
<td>• Covering almost all nature-related risks</td>
<td>• Covering only few risks (often hail)</td>
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<tr>
<td>• Highly subsidized</td>
<td>• Often available on a private basis</td>
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<tr>
<td>• Significant regulations</td>
<td>• Predominant in Australia, Northern Europe</td>
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<tr>
<td>• Predominant in US, Canada, China, ...</td>
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### Index-based insurance

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<td>• Simplify operations - enable insurance offerings for smallholders</td>
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<td>• Mainly linked to weather or satellite indices</td>
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<tr>
<td>• Basis risk</td>
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<tr>
<td>• Key options in several emerging markets</td>
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### Challenges

- Limited data for pricing / underwriting
- Low visibility mid-season
- Costly and lengthy claims management
- Registering and monitoring smallholders
- Limited data for product design
- Consumers’ trust and conviction
**Precision Agriculture technologies & digital tools**

- **Onboarding**
  - Build a picture of “Who grows what and where?”

- **Mobile tools for field operations**
  - Digitize ongoing data collection such as:
    - Field inspections
    - Claim notifications
    - Loss assessment
    - Crop cutting experiments
  - Manage field operations:
    - Task assignment for field inspectors

- **Remote Sensing**
  - Automatically generate data from:
    - Satellite images
    - Weather stations
  - Integrate with existing public database:
    - Soil taxonomy
    - Land use classification

- **Integrative data platform**
  - Aggregate regional view of plot-level data
  - Visualize data on map with dynamic data layers
  - Mass benchmarking

- **Specific modules for:**
  - Onboarding
  - Underwriting
  - Policy management
  - Monitoring
  - Claim management

**Introduction**

**Onboarding**

**Risk monitoring**

**Claim management**

**Summary**
Onboarding of Growers

Scalability and Digitization

- No scalability
- Lack of information

- Mass registration based on Aggregator’s information
- Digitalization of data collection
- Informal market formalization and access to services (insurance, finance, etc.)

- Farmers self registration
- Farmers empowerment
- Risk personalization
Mobile farm registration

On-field offline data collection for customer registration

Farm Data Collection (Primary Data)

Mapping of Plots
Mass registration of farmers

- Mass upload of existing data (Ex. Aggregators)
- Integration with systems and other databases
Risk clusterization:

Risk based clusterization: based on historical weather data, cultural parameters, agriculture aptitude, etc.

Allows operate micro insurance and analyze risk in a scalable way.
Crop Risk monitoring

Remote sensing & Agronomical Sciences

• Lack of in-season visibility
• Remote monitoring (weather + satellite)
• Risk agronomical models
• Policies monitoring
• Early warning systems
• Yield estimation models
Crop growth monitoring

High resolution imagery allows to monitor farms throughout the crop cycle and benchmark them along different parameters.

Analysis of the level of NDVI index curve over time. Discrepancies to optimal growth curve are detected in real time.
Planting risk

Estimated planting date model - outcomes:
- Plot was planted + estimated planting date
- Plot was planted probably not with the informed crop
- Plot was not planted
Yield potential

Productive potential ( % and classification): high risk and low yield potential are indicators of areas which could have claims
Relevant precipitation data sources for Africa:

- **TAMSAT**: 4Km resolution and data available since 1983
- **Arc2**: 10Km resolution and data available since 1983
- **CHIRPS**: 5Km resolution and data available since 1981
Example: Drought Index

Cross comparison of data along different sources helps getting an accurate picture of an event. It enables the insurer to:

- Implement an early warning system (to notify farmers)
- Cross check claims from customers with multiples data sources
Triggers and thresholds allow to have transparency on whether farmers should be payed due to crop losses.
Claim management

Systemization and Moral Hazard Mitigation

- Arbitrary
- High operations cost

- Introduce methodology based on facts
- Introduce best practices
- Systematization of claim-payout process

- More self-reporting of claims combined with contextual data and audit
Claims Notification

Mobile app to notify and communicate with the insurance companies and reduce processing time of claims
Inspection Control

Control inspection activities and ensure that tasks were completed on time and satisfactorily.

Task calendar & Activity Planning tool

Manage, plan and assign tasks to employees & scouts through Agritask's calendar and directly through maps.

Scouts

Scouts receive tasks on their mobile and see path on the map, where they perform and report requested activity/info.

Activity planning tool for inspections
Digitalization of field inspections

Before: Manual operations

- Ability to share best practices and standardized gathering of data
- Automatic calculations
- Reduce human error
- Reduce processing time

Digitized (Exact) workflows
Index insurance: payouts automation

Automation of triggers, loss and payouts calculations based on weather information
Use case: Area Yield Index (AYI)

1. **Onboarding of farmers:** location and plot boundaries identification

2. **Risk Clusterization:** enable profiling of farmers

3. **NDVI monitoring and yield potential:** define sampling groups that statistically represent farmers

4. **Planning crop cutting experiment:** methodical process to choose farmers to be sampled

5. **Field inspections:** digitalized inspections to reduce processing time and ensure best practices

6. **Yield index per cluster:** calculation considering farmers risk classification
Summary & Vision

**Growers**
- Access to insurance more affordable
- Enhance financial resilience
- Reduce losses
- Avoid humanitarian crisis
- Access to finance/credit

**Finance & Insurance**
- Scalability of operations
- Improve enterprise risk management
- Portfolio visibility
- Mitigate moral hazard risk and reduce fraud risk

Remote sensing and digital platform
Thank You

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QUESTIONS & ANSWERS

Send us your questions using the chat and / or question and answer features.

If you want to ask your question directly, please click on the “Raise Hand” button or send a message to the organizers.
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