Making precision agriculture work for smallholder farmers

ECPA 2019 - Montpellier
WHAT IS CTA?

TECHNICAL CENTRE FOR AGRICULTURAL AND RURAL COOPERATION

FOUNDED IN 1984

JOINT INSTITUTION OF

EU

FOCUS ON INFORMATION AND COMMUNICATION FOR AGRICULTURAL AND RURAL DEVELOPMENT

FUNDED BY EU UNDER THE EUROPEAN DEVELOPMENT FUND
1. Background
(Smallholder Ag)
Small Field Sizes
Mixed Cropping
High Illiteracy
Intermediary Needed
2. D4Ag Report
Digitalisation of African Agriculture
D4Ag Models & Players

Advisory Services
- Participatory
  - Digital Green
- Precision ag advisory
  - eCow
  - Probit Farm
  - MarketLink

Market Linkage
- End-to-end Integrated
  - iBenga
- E-commerce
  - FarmFresh
  - FarmFresh
- Shared econ. / PAYGO
  - TOSTO Tissue
  - Illicit Trade
  - Zowase

Supply Chain Management
- Traceability
  - ChainPoint
  - Veritas
  - SAP
- Logistics platforms
  - Logistimo
  - FarmForce
- Supply chain mgmt ERP

Financial Services
- Payments
  - ADVANCE
- E-wallets
  - cellFun
- Fin analytics
  - Harvesting
- Insurance
  - AFRICA

Macro Agri Intelligence
- AG OBSERVATORY
  - InfoEye
  - TATA Consultancy Services
- Cubica
  - CGIAR
- Platform for Big Data in Agriculture

Source: Dalberg analysis
Advisory Services

1. Participatory services
   - wefarm
   - Digital Green

2. Farm mgmt. systems
   - Probit Farm

3. Farmer info services
   - 8028 Farmers' Hotline
   - iShamba

4. Precision Ag advisory
   - Uzui Kilimo
   - Precision Agriculture Development

Source: Dalberg analysis
3. Approach
(D4Ag)
1. Digital Agricultural Solutions
   1. Be at the forefront of cutting edge innovations
   2. Boundary spanning to identify emerging digital solutions
   3. Enabling access to digital agricultural services
   4. Digital literacy and skills for agriculture

2. Business Development
   1. Proving the business case of smallholder digital agriculture to private sector
   2. Digital entrepreneurship activities – incubation, coaching
   3. Business linkages and networks

3. Big Data & Analytics
   1. Enabling the foundation of content for digital solutions
   2. Digital farmer profiling data
   3. Remote sensing data – satellites and UAVs
   4. Open data from research, government, etc. for decision making

4. The Enabling Environment
   1. Facilitating the enabling environment for the solutions to thrive
   2. Digital strategies/policies
   3. Non-digital enablers like infrastructure, energy
   4. Exchange of knowledge and experience
Digitalisation & Ag Transformation

Know Your Clients

- Farmers
- Agribusinesses
- Other Businesses

Provision of Better Services

Responsible Data Management

Productivity & Profitability

Climate Resilience

Financial Access

Inclusion – Youth & Women

Digitalisation & Ag Transformation

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Inclusion – Youth & Women
Some Technologies

- Drones
- Satellites
- IoT
- Weather sensors
4. Examples
In 2017 Charis UAS Ltd was one of 14 African companies to benefit from a CTA drones training programme in partnership with AIRINOV.
Real-time weather information enables farmers to make crucial decisions about where and when to sell their livestock and how to plan their annual migrations.

FRANKLINE AGOLLA
Executive Director Amfratech
In Sudan, thanks to SMS-based advisory services, farm productivity increased by 300% with improved water efficiency (CTA, 2015)

“
I was a sceptic, now I’m a believer – and so are my neighbours.

AHMED IBRAHIM WAKEA ALLAH, SUDAN
‘Weather insurance payout from EcoSure which is supported by CTA has helped my family to avert disaster due to drought in my farm’

MRS ELLA MAZANI
Beneficiary farmer from Zimbabwe
5. A Case
MUIIS Uganda
**Ground Data**

**Crop Calendar**

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<th>Crop</th>
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**Farmer Profiles**
Satellite (remote sensing) Data

Weather data

Agronomic data

Insurance data
Digital Database of Farmers

A digital profile of over **250,000** farmers including the GPS coordinates of their fields.
SMS Delivery Platform

A functional digital platform based on USSD technology that delivers the Service Bundle
Reliable Source of Content

Service Bundle consisting of weather alerts, agronomic tips, and index based insurance
Functional Agent Network

Over 200 Service Agents trained and equipped with digital tools and content
MUIIS Knowledge App

A Mobile Application for Service Agents to support the SMS to farmers & gather feedback from the field
Agricultural Input Loan

The MUIIS database used as a collateral to disburse input loans to increased subscription.
Training & Education

Over 400,000 farmers and intermediaries have received various training and education
6. Seven Lessons
Seven key lessons

1. Smallholder farmers need **customised advisory services**

2. These rely on **location services**

3. **Remote sensing data** is required

4. **Digital identities** are critical

5. **Sustainable business models** needed

6. **Big data** can be a channel to sustainable business model

7. **Agent Networks** to complement the technology is key for success
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