



# Precision Agriculture for Development (PAD)

---

*Emmanuel Bakirdjian*

*December 15<sup>th</sup>, 2020*

# PAD at a glance

A photograph of two men in a field of green plants. One man, wearing a light-colored shirt, is holding a smartphone and pointing at the screen. The other man, wearing a maroon shirt, is looking at the phone. The background is filled with lush green foliage.

Global non-profit organization with operations in 9 countries in Africa and Asia

Founded in 2016 by 4 co-founders - including 2 Harvard professors - with expertise in impact evaluation, business, technology, and agricultural development

Offices in 4 developing countries, and partnerships with national and state level governments

193 employees with mix of technologists, data scientists, agronomists, researchers, and program managers

# What we do: Provide high quality agricultural advice

## Farmer profile information

- Location
- Agro-ecological zone
- Socio-demographics
- Crop variety
- Water management

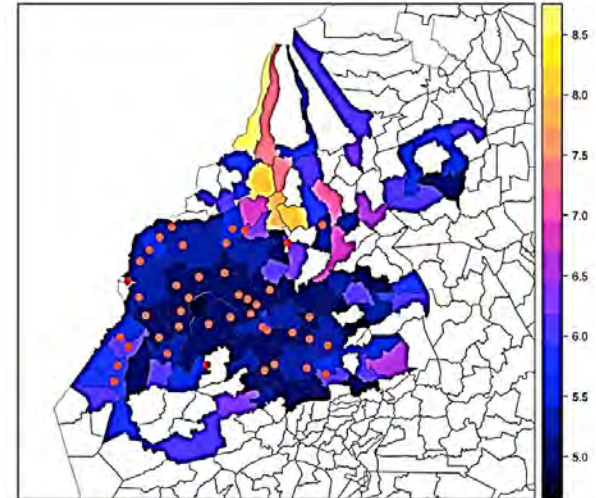


## Agricultural data

- Soil type
- Rainfall
- Market prices
- Pest/disease outbreaks

## Customized content

- Input recommendations
- Management advice
- Market information
- Weather-related content



# How: Leverage mobile phones through multiple channels

**SMS:** Regular written messages timed to crop calendar

**Voice:** Regular push calls timed to crop calendar

**IVR:** Users pull content from automated menu options

**Q&A Hotline:** Users pose questions that are answered by agronomic experts

**Mobile apps:** More advanced content (e.g. video, photo, etc.) for smartphone users

**Learning Platforms:** Self-directed, interactive content for smartphone users



## Key Features:

- Two-way communication
- Available on demand
- Customized
- Timed to crop calendar
- Cost effective



# Key elements differentiating PAD's model

Low-cost communication

+

Human-centered design

+

Customization & targeting

+

Iteration & learning

(A/B tests, RCTs)

+

Data science

+

Free to the user

# PAD is currently reaching 3.7 million farmers across 8 countries\*



- One Acre Fund
- Ministry of Ag
- World Bank

- One Acre Fund
- Root Capital
- Rwanda Agricultural Board
- Technoserve
- Hanns R. Neumann Stiftung (HRNS)
- IFPRI

- Ministry of Ag
- CABI

- Agricultural Transformation Agency (ATA)
- Digital Green
- Awaaz.de

- Gov'ts Odisha, West Bengal
- International Rice Research Institute (IRRI)
- Coffee Board

- Departments of Ag, Punjab, KPK

- mPower

\*Farmer reach numbers as of Q3 2020

# PAD is launching programs in two new countries



**Nigeria**

- Federal Ministry of Agriculture and Rural Development (FMARD)
- International Fund for Agricultural Development (IFAD)



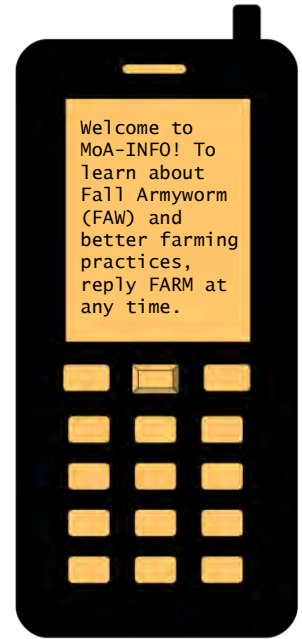
**Brazil**

- Ministry of Agriculture, Livestock, and Supply (MAPA)
- Inter-American Institute for Cooperation on Agriculture (IICA)

# The MoA-INFO SMS platform: providing critical agronomic advice at scale

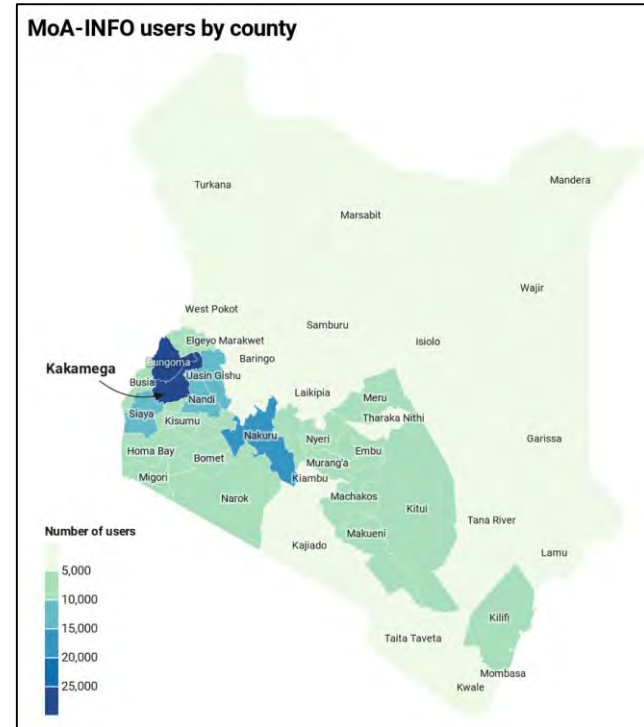
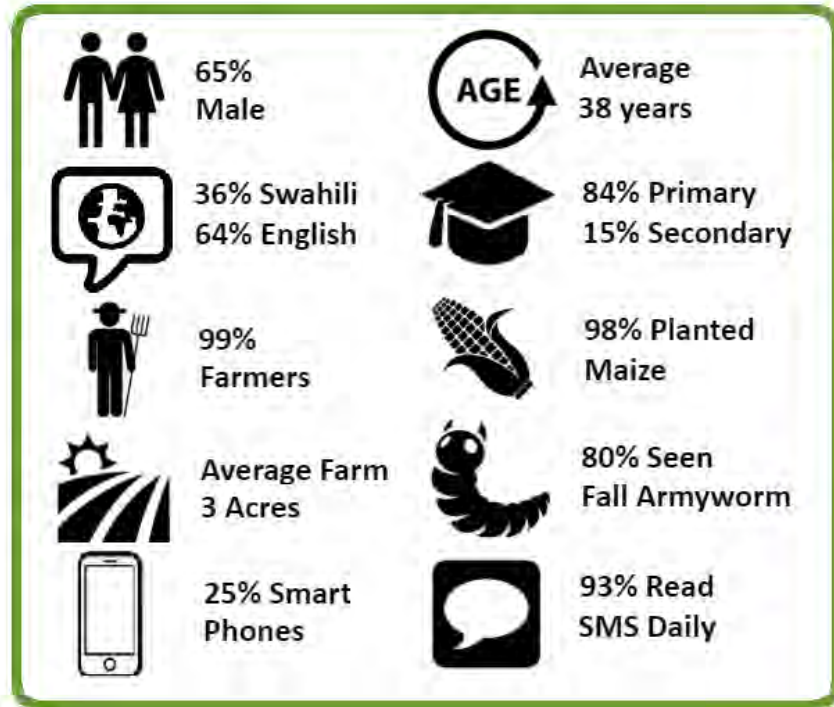


1. On behalf of the Kenya Ministry of Agriculture (MoALFI), PAD set up a **two-way SMS platform**, MoA-INFO, officially launched in July 2018
2. MoA-INFO provides critical information about **Fall Armyworm** to help farmers manage the pest in their field and adopt optimal and safe control measures
3. It is **free** and available in both English and Swahili
4. It also provides actionable and customized **farming advice** for 10 crops (maize, beans, Irish potatoes, sweet potatoes, pigeon peas, bananas, tomatoes, sorghum, green grams, bulb onions)
5. ~**460,000** users have registered on the platform since its launch





# Who are our users?



# What's on the platform?



## 1. Registration survey

- Interactive message sequence giving advice on Fall Armyworm (FAW) and collecting user location down to the ward level

## 2. Menu

- Farming advice on 10 crops and FAW

## 3. FAW monitoring tool

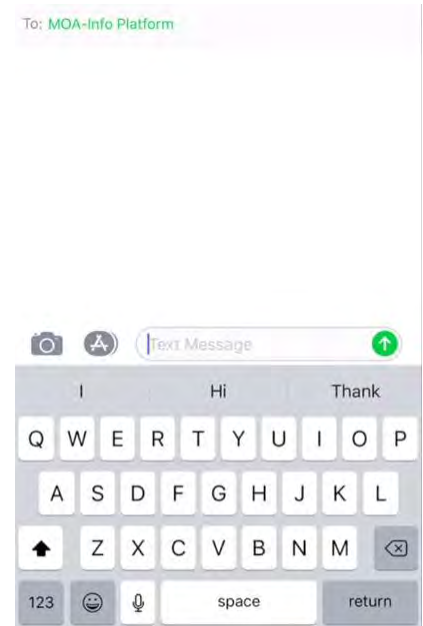
- Sends farmers to measure the rate of FAW infestation in their field
- Provides advice based on reported infestation rate

## 4. Cropping Series (pushed every week)

- Available for all 10 crops
- Users opt-in to receive series for 2 crops of their choice
- Messages timed to be pertinent to the planting cycle stage

## 5. Decision Support Tools

- Seed Selector Tool: provide customized seed varieties recommendations for maize and beans
- Fertilizer Tool: provide fertilizers quantities recommendations based on farm size, location, and budget (4 counties)



# DAT Initiative



## 1. Counties

- Kitui, Nandi, Nyeri, Siaya, Trans Nzoia, Uasin Gishu, West Pokot

## 2. Crops

- Green grams
- Irish potatoes
- Banana
- Tomatoes
- Sorghum

## 3. Reach

- More than 20,000 farmers have accessed content (as of end of November)



# Thank you

*precisionag.org*

*kenya@precisionag.org*

