PlantVillage:
Empowering Smallholder Farmers through Technology

Annalyse Kehs
Executive Director

Why?

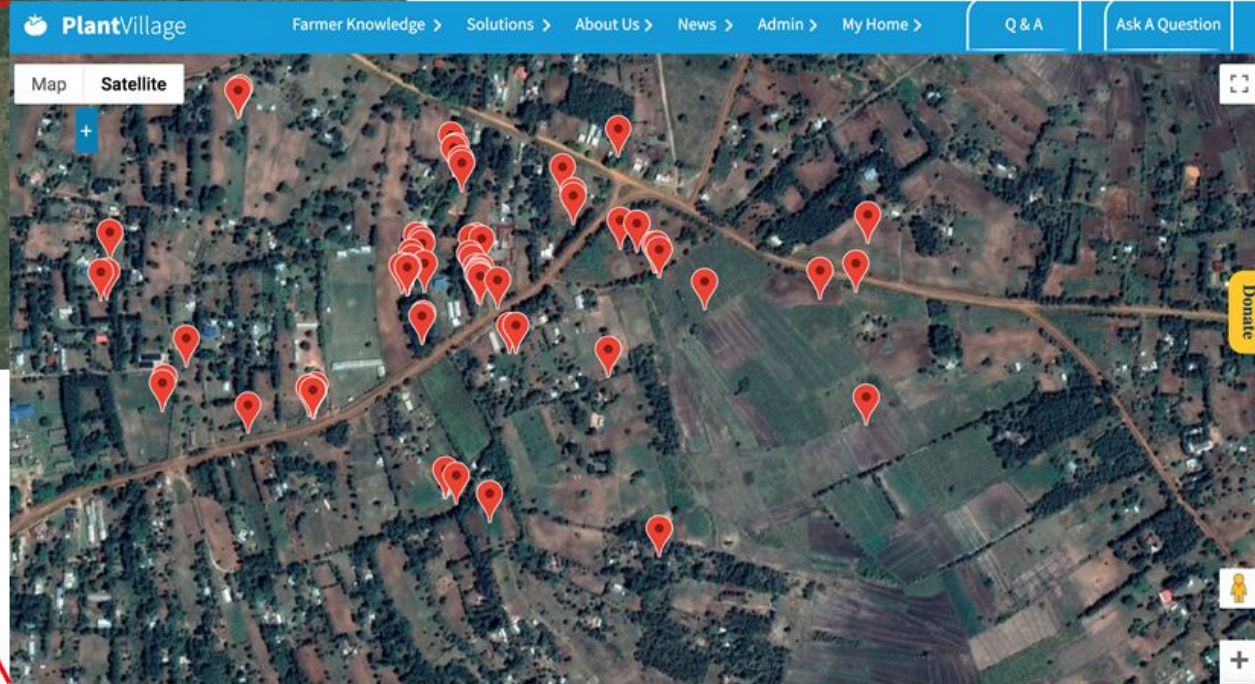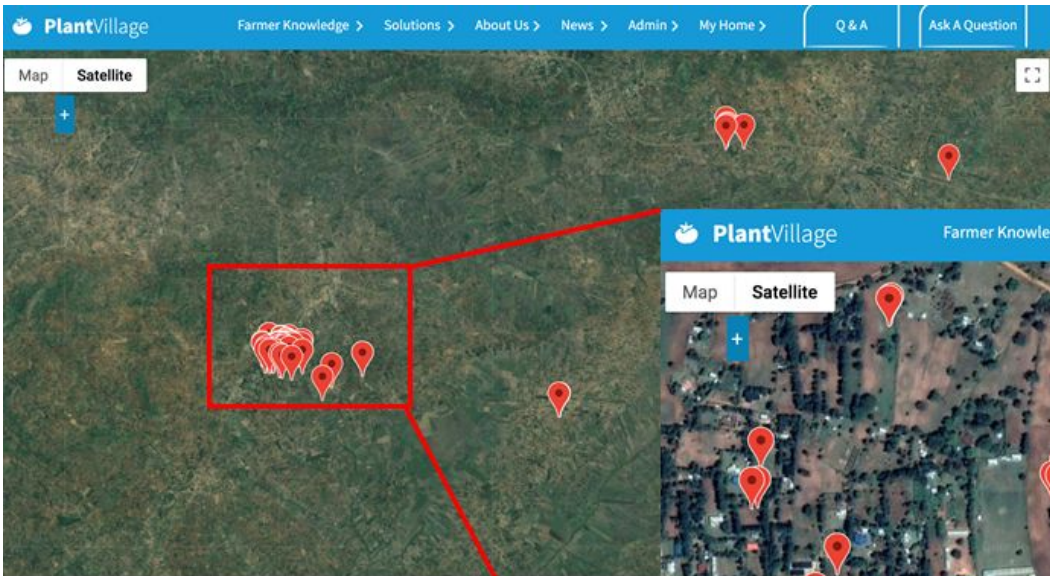Ireland 1849   Africa 2019

What is PlantVillage?

- Public good that empowers smallholder farmers through technology

- Multi-sided platform connecting subsistence farmers to experts

  - Apply machine learning to crop diseases

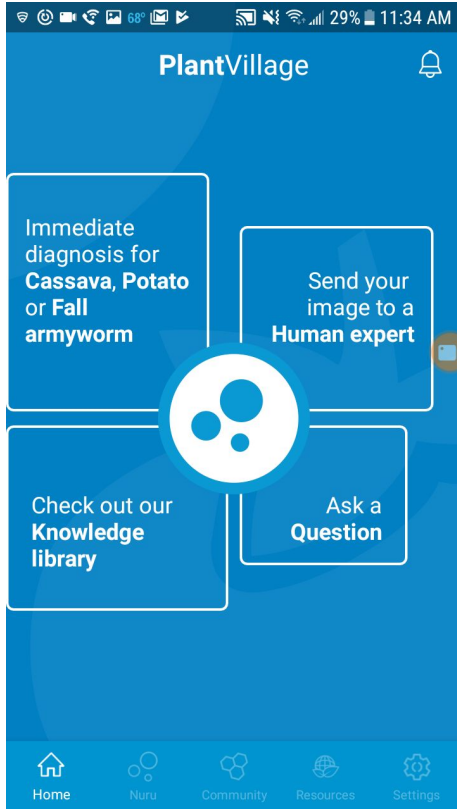 - Provide actionable, updated, real-time advice through SMS
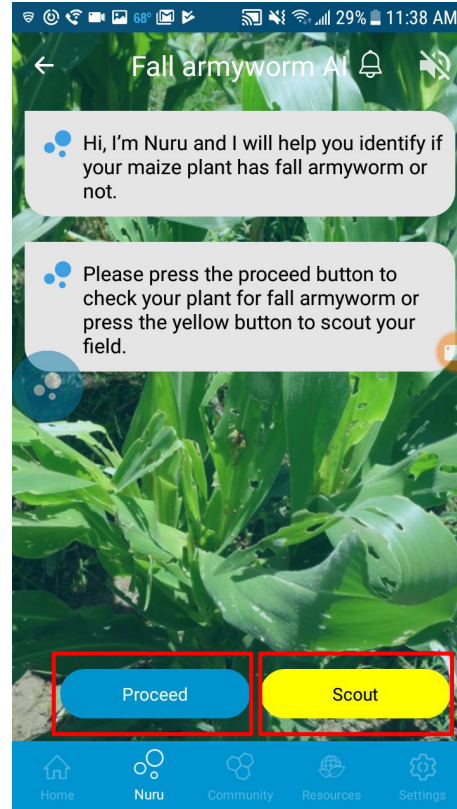
Community Networks

Madam Berta, a school teacher brought her AI assistant to 23 farms!
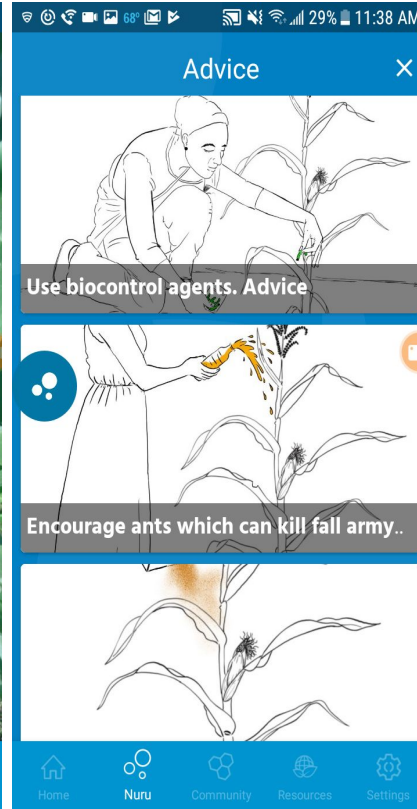
PlantVillage NURU

Main Menu

Diagnose your field with *Nuru*

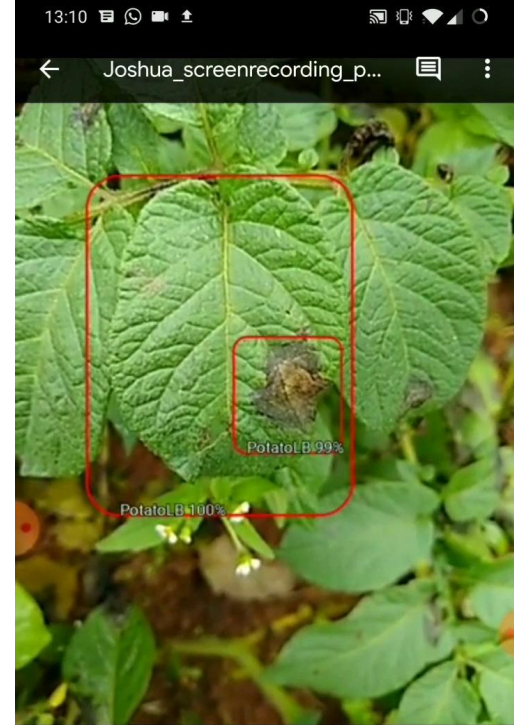Get Advice on how to help your plants

Learn in your language (English, Swahili, French, Twi)

An AI assistant that:

- diagnoses diseases/ pest damage <u>offline</u>
- is free for all farmers
- is <u>equal</u> in accuracy to IITA experts
- twice as good as Tanzanian extension workers
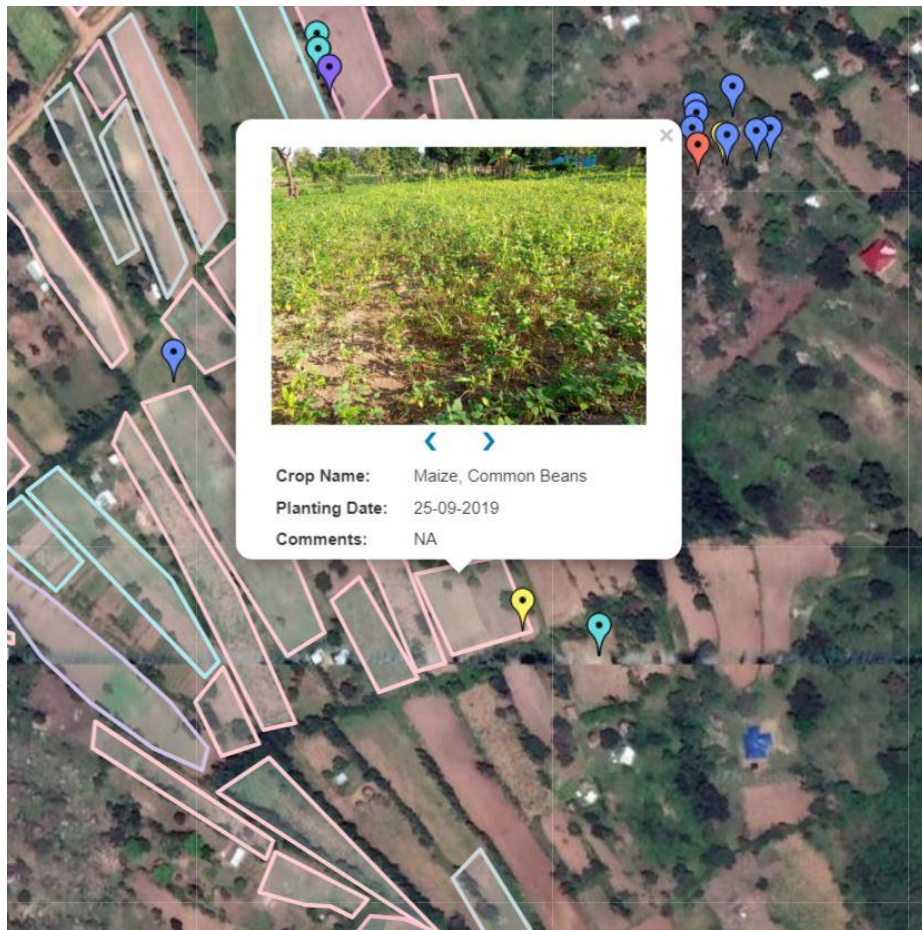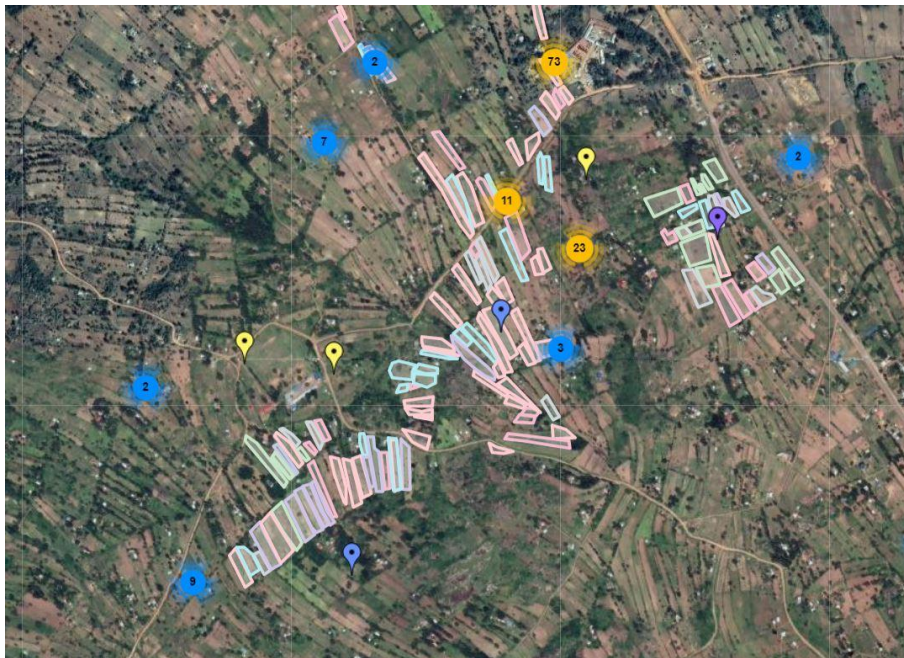
Ground Truthing: The Dream Team

10 Moi University graduates
  ○ Agriculture background

● Three Objectives:
  ○ Troubleshoot PV app/technology issues
  ○ Survey fields for crop prediction model
  ○ Two-way knowledge dissemination
● $180/day for 10 people
  ○ Transport
  ○ Data
  ○ Salary
● Mapped over 10,000 fields
● Successfully changed farmer behavior for cassava seed systems

Africa AI
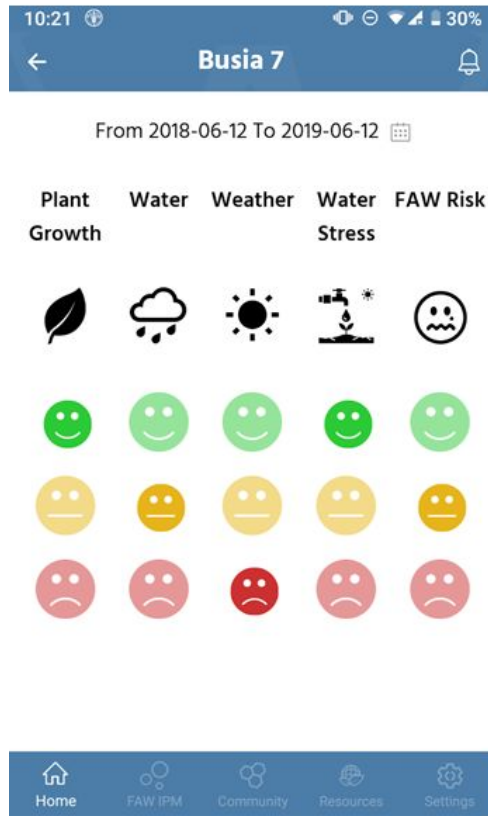www.plantvillage.psu.edu/AfricaAI

Crop Name: Maize, Common Beans
Planting Date: 25-09-2019
Comments: NA

The Data - 12,000 fields over 5 months

Monocrop			Intercrop with One Other Crop		
Crop	**Number of Fields**	**Percentage of Fields (%)**	**Crops**	**Number of Fields**	**Percentage of Fields (%)**
Maize	2784	46.24	Maize +	1560	56.48
Cassava	2271	37.72	Common Bean +	1328	48.08
Not Listed	456	7.57	Cassava +	865	31.32
Common Bean	189	3.14	Soybean +	381	13.79
Sugarcane	155	2.57	Not Listed +	337	12.20
Groundnut	73	1.21	Groundnut +	212	7.68
Soybean	51	0.85	Sugarcane +	79	2.86
Fallow land	10	0.17	Sorghum +	51	1.85
Millet	10	0.17	Millet +	8	0.29
Sorghum	22	0.37	Fallow land +	8	0.29

Extremely relevant and detailed EO derived knowledge now delivered (all Africa/ME)

http://www.fao.org/land-water/databases-and-software/wapor/en/

Thank you! Questions?

Reach out!
annalysekehs@psu.edu