PlantVillage: Empowering Smallholder Farmers through Technology

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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 offline
- is free for all farmers
- is equal 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
The Data - 12,000 fields over 5 months

[https://plantvillage.psu.edu/AfricaAI](https://plantvillage.psu.edu/AfricaAI)

<table>
<thead>
<tr>
<th>Crop</th>
<th>Monocrop</th>
<th>Intercrop with One Other Crop</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Fields</td>
<td>Percentage of Fields (%)</td>
</tr>
<tr>
<td>Maize</td>
<td>2784</td>
<td>46.24</td>
</tr>
<tr>
<td>Cassava</td>
<td>2271</td>
<td>37.72</td>
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<tr>
<td>Not Listed</td>
<td>456</td>
<td>7.57</td>
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<tr>
<td>Common Bean</td>
<td>189</td>
<td>3.14</td>
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<tr>
<td>Sugarcane</td>
<td>155</td>
<td>2.57</td>
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<tr>
<td>Groundnut</td>
<td>73</td>
<td>1.21</td>
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<tr>
<td>Soybean</td>
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<td>0.85</td>
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<tr>
<td>Fallow land</td>
<td>10</td>
<td>0.17</td>
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<tr>
<td>Millet</td>
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<td>0.17</td>
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<tr>
<td>Sorghum</td>
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<td>0.37</td>
</tr>
</tbody>
</table>
Extremely relevant and detailed EO derived knowledge now delivered (all Africa/ME)

Thank you! Questions?

Reach out!
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