Online Atlas of Roots, Tubers, and Bananas
RTBMaps

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Online Atlas of Roots, Tubers and Banana Crops

http://rtb.cgiar.org/RTBMaps/
GIS TEAM

CIAT: Glenn Hyman, Bernardo Creamer, Jesus David Hoyos
CIP: Simon Reinhard, Henry Juarez
BIOVERSITY: David Brown
IITA: Tunrayo Alabi
External Consultant: 
Application: Ernesto Giron
Development: 
Data Development: Elizabeth Barona
It is estimated that around 200 million people depend on root, tuber and banana crops for food and income in developing countries, particularly in the poorest regions of Africa, Asia and the Americas.

(RTB Annual Report-2013)
Pest and disease constraints

- Decrease agricultural yields
- Raise production costs
- Risk livelihood and food security

<table>
<thead>
<tr>
<th>PEST</th>
<th>Cassava</th>
<th>Potato</th>
<th>Sweet-Potato</th>
<th>Banana</th>
<th>Yam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whitefly</td>
<td>Tuber moth</td>
<td>Weevils</td>
<td>Nematodes</td>
<td>Nematodes</td>
<td></td>
</tr>
<tr>
<td>Mealybug</td>
<td></td>
<td></td>
<td>Nematodes</td>
<td>Banana weevil</td>
<td></td>
</tr>
<tr>
<td>Green mite</td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>DISEASES</th>
<th>Cassava mosaic</th>
<th>Late Blight</th>
<th>SPVD complex</th>
<th>Altemaria storage mot</th>
<th>Fusarium wilt</th>
<th>Sigatoka leaf spots</th>
<th>Xanthomonas wilt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cassava Brown streak</td>
<td>Leaf roll virus</td>
<td>Leaff spot</td>
<td>bacterial wilt</td>
<td>Leaff spot</td>
<td>leaf spot</td>
<td>streak virus</td>
<td>Ralstonia strains</td>
</tr>
<tr>
<td>Bacterial blight</td>
<td>Frog Skin</td>
<td>stem blight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bunchy top</td>
</tr>
</tbody>
</table>
Pest and disease potential distribution mapping

Methods + Climate change scenarios

Source: CIAT, CIP-IRRI
CIAT, CIP, IITA and BIOVERSITY

Joint forces to address RTB’s crop constraints, and increase the impact for the benefit of smallholder farmers, consumers, and everyone else involved in RTB value chains.
GIS team goal:

Online digital atlas for understanding the geographic dimension or roots tubers and banana crop improvement
GIS mapping on the cloud

- CGIAR-CSI Platform
- ArcGIS Online
- ArcGIS-JavaScript
- APIs
- Centralized Geospatial data
- Direct path to ArcGIS Online
- Money-cost saving
- Location-based Services
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Cassava yield trends by country

Source: FAOSTAT
Web Mapping Application

Public Network

- ArcGIS Server
- ArcGIS API-JavaScript
- Proxy
- HTTP/HTTPS

INTERNET

On Premise GIS Server

Organizational Network
CGIAR-CSI

ARCgis ONLINE

ArcGIS 10.1 Desktop

GIS team
Web Mapping Application

Tools:
1- Print / export image
2- Multi-criteria Decision analysis

Data: (50 Layers)

Priority areas for intervention

Social Media: YouTube
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Banana HA

Crop suitability

Cassava Yield Gap

Failed Season Drought

Cassava Mealybug

Soil constraints
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Multi-criteria Decision Analysis (MCDA) Tool
Multi-criteria Decision Analysis (MCDA) - Tool

Weighted overlay targeting:
Conclusions:

- RTBMaps provides a platform for the RTB crop research and development community to understand geographic dimension of these crops
- Digital mapping and targeting will help prioritize locations, places and regions where the RTB program can have the biggest impact
- No software, data or GIS expertise is needed, just and internet connection and a browser
- More data and new functionality need to be included on the Atlas to continue support the RTB research and development community in addressing food security issues related to roots, tubers and bananas
THANK YOU!

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