



# Plantwise

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February 2016

**LOSE LESS, FEED MORE**  
[www.plantwise.org](http://www.plantwise.org)

## A need for Plantwise

- ✦ A significant proportion of the food grown worldwide is lost to crop pests
- ✦ International trade, intensified production and climate change make the problem worse by **increasing the spread of plant pests**
- ✦ Our plan is to give farmers better access to **practical knowledge at local level** to help them **enhance productivity and food safety** (reduction of pesticide residues)

## Plantwise components

- National **networks of plant clinics** to give regular advice to farmers and facilitate pest surveillance
- A **knowledge bank** developed with information tools on pest diagnosis, management and distribution
- Innovative **linkages between key stakeholders** in a plant health system



# Plantwise countries



## Caribbean & Central America

- Costa Rica
- Honduras
- Nicaragua
- Barbados
- Grenada
- Jamaica
- Trinidad & Tobago

## South America

- Bolivia
- Brazil
- Peru

## West Africa

- Burkina Faso
- Ghana
- Sierra Leone

## Eastern & Southern Africa

- DR Congo
- Ethiopia
- Kenya
- Malawi
- Mozambique
- Rwanda
- Tanzania
- Uganda
- Zambia

## Central & West Asia

- Afghanistan
- Pakistan

## East Asia

- China

## South Asia

- Bangladesh
- India
- Nepal
- Sri Lanka

## Southeast Asia

- Cambodia
- Myanmar
- Thailand
- Vietnam

## Partnerships

- 🌿 The success of Plantwise is dependent on partnerships
- 🌿 Plantwise facilitates institutional change through strong in-country partnerships with **national authorities** (extension, research, NPPO, etc.) as well as **international organisations** (FAO, IPPC, CGIAR, etc.)

## Ensuring Best Practice

- Policies help to ensure that Plantwise activities align with international standards:
  - International transfer of biological specimens for ID
  - Pest reporting
  - Plant clinic data use
  - Personal data use
  - Pesticide use
  - Engaging agro-input suppliers
  - Fundraising



# Information flow



Diagnosis and  
recommendation

Farmers

Farmer  
interviews and  
data collection

Plant Clinics

Extension  
materials and  
other support  
tools

Knowledge Bank

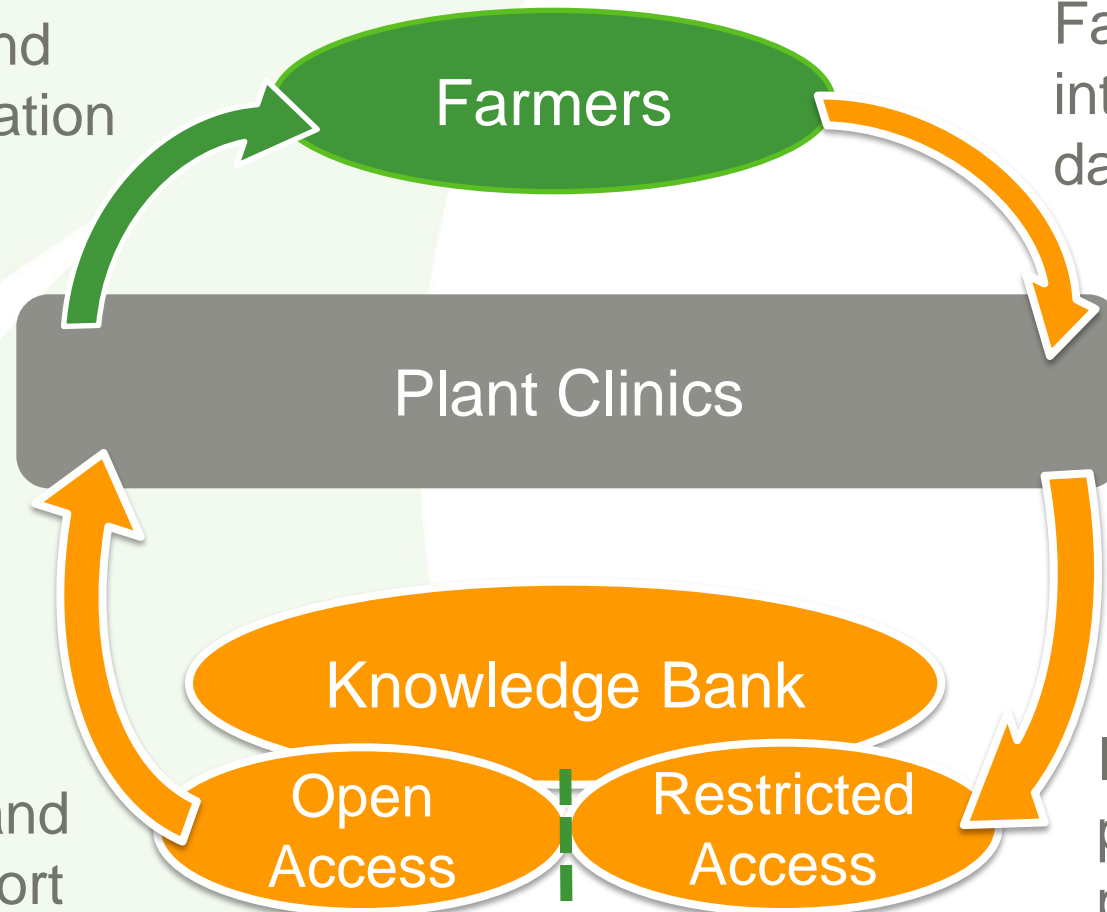
Open  
Access

Restricted  
Access

Intelligence on  
pests causing  
problems

**Access! Control**

Plant clinics are channels for the 2-way flow of information to and from farmers



# Knowledge Bank

<http://www.plantwise.org/KnowledgeBank>



- 🌿 9,500 factsheets for plant health management
- 🌿 3,300 maps
- 🌿 2,500 pests
- 🌿 1.3 million page views
- 🌿 35% growth in visits year to date
- 🌿 75% growth from PW countries
- 🌿 Memory stick with all content available to all plant doctors
- 🌿 43,000 views on Factsheet app

1 Location of interest: Angola

2 Crop / host: banana

This includes the following species:  
wild banana (*Musa acuminata*)  
*Musa balbisiana*  
*Musa x paradisiaca* (*Musa x paradisiaca*)  
plantain (*Musa paradisiaca*)  
manila hemp (*Musa textilis*)

3 Plant part affected: Leaves

4 Symptoms:

Search results: 40 Ordered by relevance

Submit an image

All Results (40)

- abnormal colours (24)
- abnormal forms (12)
- abnormal leaf fall (13)
- abnormal patterns (4)
- external feeding (16)
- frass visible (5)
- fungal growth (1)
- honeydew or sooty mould (10)
- internal feeding (1)
- leaves rolled or folded (3)

coconut scale  
*Aspidiotus destructor*

bunchy top of banana  
*Banana bunchy top virus*

black rot of pineapple  
*Ceratocystis paradoxa*

dictyospermum scale  
*Chrysomphalus dictyospermi*

cucumber moth  
*Daphania indica*

pineapple mealybug  
*Diamococcus brevipes*

Go! 2 Type to search for pests/crops

Pesticrop selection quick query

Add to map

Zoom to points

plar

Close window X

About Plantwise

Cookies

Help








# Pest management information

## PEST MANAGEMENT DECISION GUIDE: GREEN AND YELLOW LIST

### Cowpea mosaic virus on cowpea

	Prevention	Monitoring	Direct Control	Direct Control	Restrictions
 <p>Aphids (<i>Aphis craccivora</i>) on cowpea stem (J Litsinger, CABI)</p>  <p>Aphids on stems (J Litsinger, CABI)</p>  <p>Infection (M Kameya-Iwaki, CABI)</p>	<ul style="list-style-type: none"> <li>Use clean seed</li> <li>Select aphid-resistant varieties, such as Slipea 1, 2 or 3</li> <li>Use the correct planting density:                             <ul style="list-style-type: none"> <li>50 x 20 cm (erect variety)</li> <li>50 x 30 cm (spreading variety)</li> <li>1.0 x 1.0 m (local: Tabe spreading variety)</li> </ul> </li> <li>Remove alternative aphid host plants from around the field (Weeds are generally host plants)</li> <li>Avoid planting between November and March (dry season). Plant during the early rains, especially if using the local Tabe variety.</li> <li>Plant a trap crop (e.g., <i>Chromolaena odorata</i> – Nuwha [Mende], Bupi-bupi [Temne]) around the field to trap the aphids which spread the disease</li> </ul>	<ul style="list-style-type: none"> <li>Scout/make regular visits to the farm to look for signs of aphid infestation:                             <ul style="list-style-type: none"> <li>Presence of aphid colonies on the underside of leaves</li> <li>Presence of ants at apical part of plants</li> <li>Presence of honeydew on leaves, pendules and stems</li> <li>Leaf shedding in severe infestations</li> </ul> </li> <li>Look for signs of cowpea mosaic virus infection                             <ul style="list-style-type: none"> <li>Leaf yellowing and deformation (folding at margin)</li> <li>Stunted plants</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Early in the aphid infestation and during the early stages of the aphid life cycle, apply a botanical mixture consisting of leaf extracts from papaya, teabush, Siam weed (<i>C. odorata</i>) and neem. See related factsheet for more information on how to prepare and apply the mixture</li> <li>Uproot and bury infected plants away from the crop field</li> </ul>	<ul style="list-style-type: none"> <li>Early in the aphid infestation and during the early stages of the aphid life cycle, apply                             <ul style="list-style-type: none"> <li>cypermethrin + dimethoate</li> </ul> </li> <li>cypermethrin + dimethoate</li> </ul>	<ul style="list-style-type: none"> <li>Moderately hazardous (WHO Class II)</li> <li>Apply at most two times per planting season</li> <li>Moderately hazardous (WHO Class II)</li> <li>Apply at most two times per planting season</li> <li>Apply early in the morning or late evening</li> <li>There are no chemicals against viruses. Once a cowpea plant has been infected with Cowpea mosaic virus, spraying with a pesticide will not cure the plant</li> </ul>

#### Sierra Leone



CREATED: December 2012

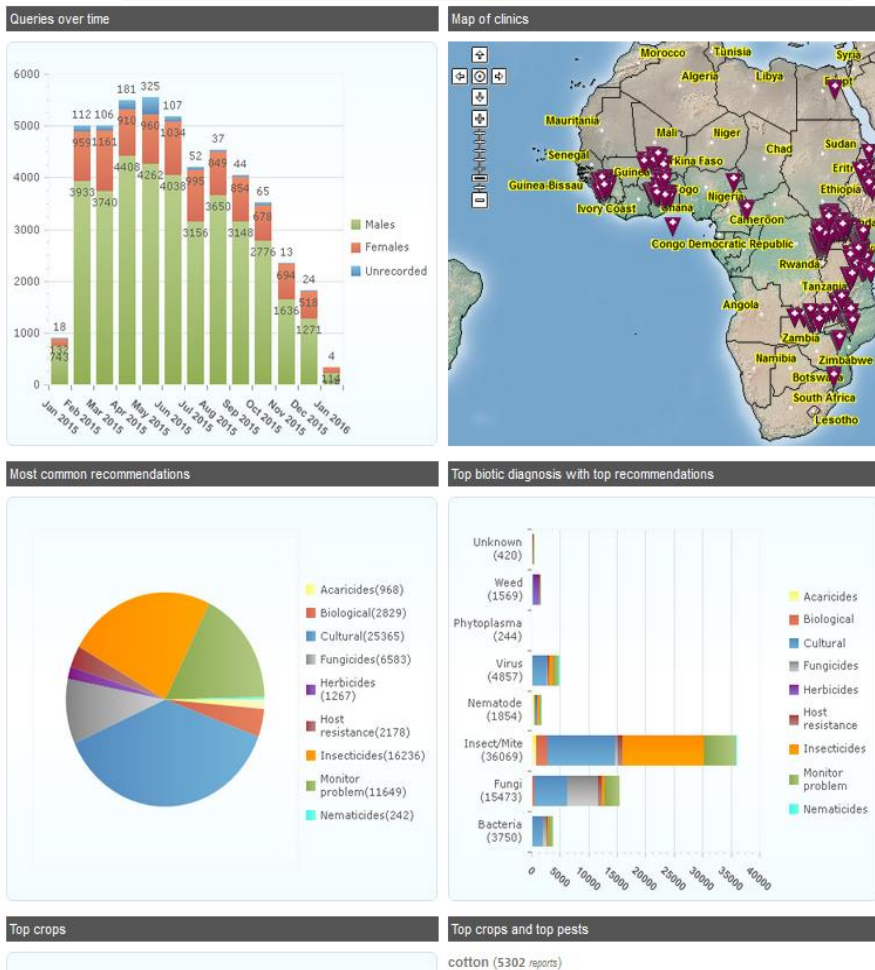
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# Plantwise Online Management System (POMS)



- 160,000 plant clinic records from 30 countries
- Information on partner organisations, plant clinics, etc.
- Ongoing improvements to user experience
- English, French, Spanish
- Most Plantwise countries using POMS – some with over 50 active accounts
- Data analysis used in an increasing number of ways



## Why record data?

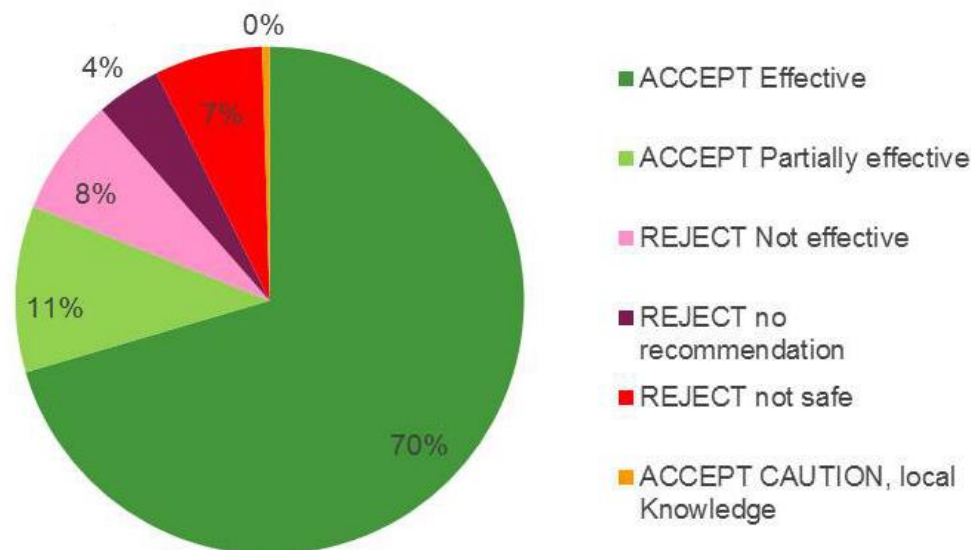
- Understand farmers' problems, perceptions and knowledge
- Monitor advisory service quality
- Identify new and emerging pests (vigilance - invasives)
- Identify research needs
- Shape extension priorities based on information obtained directly from farmers at field level



# Clinic data into use



**Example 1:** Validation of recommendations given to farmers



**Example 2:** Analysis of pesticide recommendations: Year-to-year comparisons showed a reduction in recommendations of hazardous pesticides in Pakistan

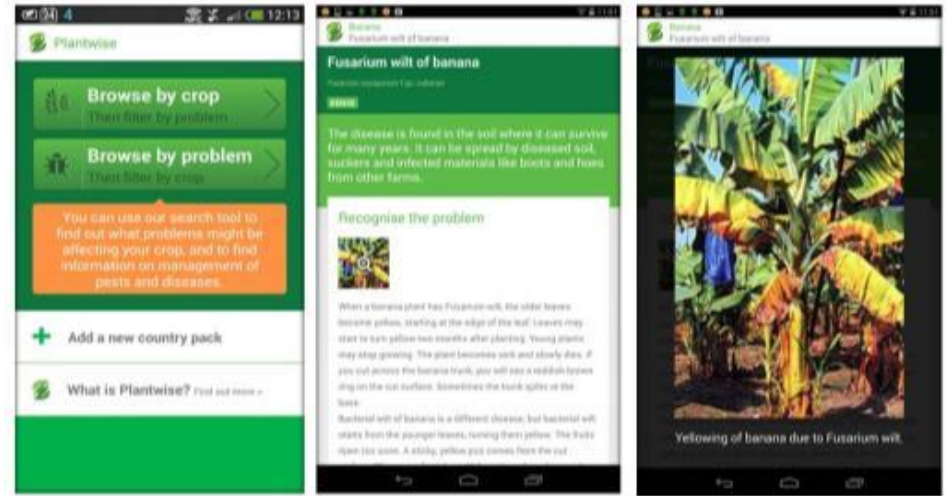
**Example 3:** Analysis of gender-disaggregated data: In Bolivia and Peru, female plant doctors are less likely to recommend a pesticide than male plant doctors and instead encourage farmers to focus more on monitoring and cultural control methods

# ICTs for greater impact



- ✱ Integrating tablets into an increasing number of countries to improve service quality and streamline data management

# ICTs for greater impact



🌱 Developing apps to increase access to information and provide ongoing training

🌱 Integrating tablets into an increasing number of countries to improve service quality and streamline data management





## Programme outcomes

- 🌿 Survey results similar from Asia, Africa and the Americas:
  - 🌿 ~95% of farmers satisfied with plant clinic services
  - 🌿 Over 90% of farmers applied the advice they were given
  - 🌿 Advice led to improved yields in:
    - 🌿 72% of cases in Asia
    - 🌿 88% of cases in Africa
    - 🌿 96% of cases in Americas



## External evaluation

- 3 countries to be assessed in Latin America in 2016
- Evaluation team will assess programme performance:
  - Relevance, effectiveness, efficiency, impact, sustainability
- Previous external evaluations in Africa and Asia have found Plantwise to be highly relevant and cost-effective, stimulating systems change while also having impact at farm level

# Thank you

*We wish to acknowledge the support of our donors, as well as our national and international partners who make Plantwise possible*



Ministry of Agriculture,  
People's Republic of  
China