Sharing Plant Health Knowledge via ICT

Washington Otieno
Plantwise Programme Executive, CABI
Outline

• ICT tools (tablets & computers) to collect data at plant clinics
• Accessing technical resources & information through ICT tools to support diagnostics
• Providing agricultural advisory information via mobile phones
• Mass messaging through SMS
• Inter-link of plant health actors
Plantwise overview

- **A global programme** led by CABI
- Aims to **reduce crop losses** arising from plant health problems
  - thereby contributing to improvement of agricultural productivity by small holder farmers
- Operates through the establishment of
  - networks of **plant clinics**
  - **Knowledge Bank**: database with information & management built on, *inter alia*, data from PCs.
  - **M&E system**: builds in lessons learnt for continual improvement
Plantwise components

Plant Clinics

Knowledge Bank

Monitoring & Evaluation

<table>
<thead>
<tr>
<th>Performance criterion</th>
<th>Monitoring method</th>
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<tbody>
<tr>
<td>1. Quality of diagnosis</td>
<td>1. Monitoring visits to plant clinics</td>
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<td>2. Quality of advice</td>
<td>2. Analyses of plant clinic records</td>
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<td>3. Staff attitude, communication</td>
<td>3. Follow-up meetings</td>
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<td>4. Organization</td>
<td>4. Feedback from farmers</td>
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<td>5. Material, equipment</td>
<td>5. Visits to farmers' fields</td>
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<tr>
<td>6. Backstopping, networking</td>
<td>1; 3; 4; 5</td>
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<td>7. Timeliness, regularity</td>
<td>1; 2; 4</td>
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<td>8. Coverage, access</td>
<td>1; 2; 4 (e.g. causes of non-attendance)</td>
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Some key features

Plant clinics

- Situated at locations easily accessed by farmers
- Run on regular basis (time & place)
- Run by ‘plant doctors’
  - Extension workers trained in visual diagnosis & giving good advice
- **Farmers bring ‘sick’ plants** & receive practical advice for managing plant health problems
- Advice documented in a prescription form – paper or electronic
Data capture & use

**Prescription form**

- Paper version
- E-version
  - Use of tablets & SMS messaging
  - Link with other e-systems in extension

**Vision** i.e. forward plan

- Scale up & sustainability
- Country support & update
- Justification: uses of pest data – surveillance, pest listing, pest reporting
- Opportunity - early warning function of national plant health systems
Plantwise Knowledge Bank

A resource for pest information (online & offline)
- Pest diagnostic support
- Pest management decision guides
- Repository for plant clinic data

Users
- Extension services, farmers
- Plant health regulators
- Agricultural research organizations
- Academia
- Agro-input suppliers

Visit www.plantwise.org/KnowledgeBank
Information flow

- Diagnosis, support, advice
- Farmers
- Dialogue with farmer, collect key information

- Plantwise knowledge bank
- "Intelligence": What crops, pests are being seen?
- Improved, evidence-based extension materials; pest alerts; support tools
- Scientific information and expertise
- Partner materials/data

- Plant clinic networks (extension/plant protection staff)
Farmer visits plant clinic

Plant doctor consults Knowledge Bank

Knowledge Bank shares data with institutions

Plant doctor provides management advice

Knowledge Bank helps diagnosis

Institutions issue pest alerts & best practice guides
Diagnostic search
Datasheets provide information to help you diagnose the problem:

- Host plants
- Symptoms
- Prevention and control
- Impact
- Images
- Link to distribution map
- Links to relevant factsheets
App development

Factsheet app available for Android on Google Play

Fusarium wilt of banana

The disease is found in the soil where it can survive for many years. It can be spread by diseased soil, suckers and infected materials like boots and hoes from other farms.

Recognise the problem

When a banana plant has Fusarium wilt, the older leaves become yellow, starting at the edge of the leaf. Leaves may start to turn yellow two months after planting. Young plants may stop growing. The plant becomes sick and slowly dies. If you cut across the banana trunk, you will see a reddish brown ring on the cut surface. Sometimes the trunk splits at the base.

Bacterial wilt of banana is a different disease, but bacterial wilt starts from the younger leaves, turning them yellow. The fruits ripen too soon. A sticky, yellow pus comes from the cut.
Use of ICT in Plantwise

- ICT is used widely to build capacity, streamline workflows, disseminate knowledge & monitor progress
- PW has constructed an ICT structure that, *inter alia*
  - informs & links together every single actor in plant health
  - extends the reach of plant health information many users who do not necessarily attend plant clinics
- Unique feature – ability to use ICT to provide real-time interlink of plant health problems as observed with specialists
  - needed to trigger action on mitigation
E-plant clinics

• Piloted in 4 countries (Kenya, Rwanda, Sri Lanka and India)
• App to deliver info.
• App to collect data
• SMS messaging to farmers
• Training
• Network of plant doctors & experts to improve diagnostic capacity
Some deliverables

- Development of a data collection app
  - ready for roll out in 2016
- Development of a factsheet app
  (PW factsheet library)
  - over 6000 viewers / month
- Mass messaging
  - Initially 4 countries
    (Ghana, Malawi, Rwanda, Zambia)
Opportunities

• Prompt online diagnostic support
• Instant access to pest management management information
• Near real time plant clinic data flow presenting an opportunity for early warning and prompt emergency action
• Dynamic platform to contribute and use pest information by by plant health stakeholders to mitigate pest risks
We wish to acknowledge the support of our donors, as well as our national and international partners, who make Plantwise possible.

Thank you.