Strengthening plant health systems to improve nutrition and livelihoods

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KNOWLEDGE FOR LIFE

CABI

Evolving requirements for a food secure world

Requires farm practices that:

- Increase **crop yields** without using more land
- Reduce **crop loss** pre- and post-harvest
- Reduce **indiscriminate use of hazardous pesticides & harm to the environment**
- Enhance **adaptation** to and **mitigation** of effects of **climate change** among vulnerable rural communities
- Respond to the demands of **growing urban populations**
- **Meet standards** for international trade and food safety

Tropical Agriculture Platform

A global partnership, initiated by the G20, fostering coherence & greater impact of capacity development for innovation in agriculture

CABI has adopted the Common Framework for Capacity Development in Agricultural Innovation Systems (CDAIS)

3 Dimensions of Capacity Development

Improving nutrition and livelihoods

1. Helping farmers grow more and lose less

2. Connecting farmers to markets

3. Developing capacity to support international trade

Improving nutrition and livelihoods

1. Helping farmers grow more and lose less
2. Connecting farmers to markets
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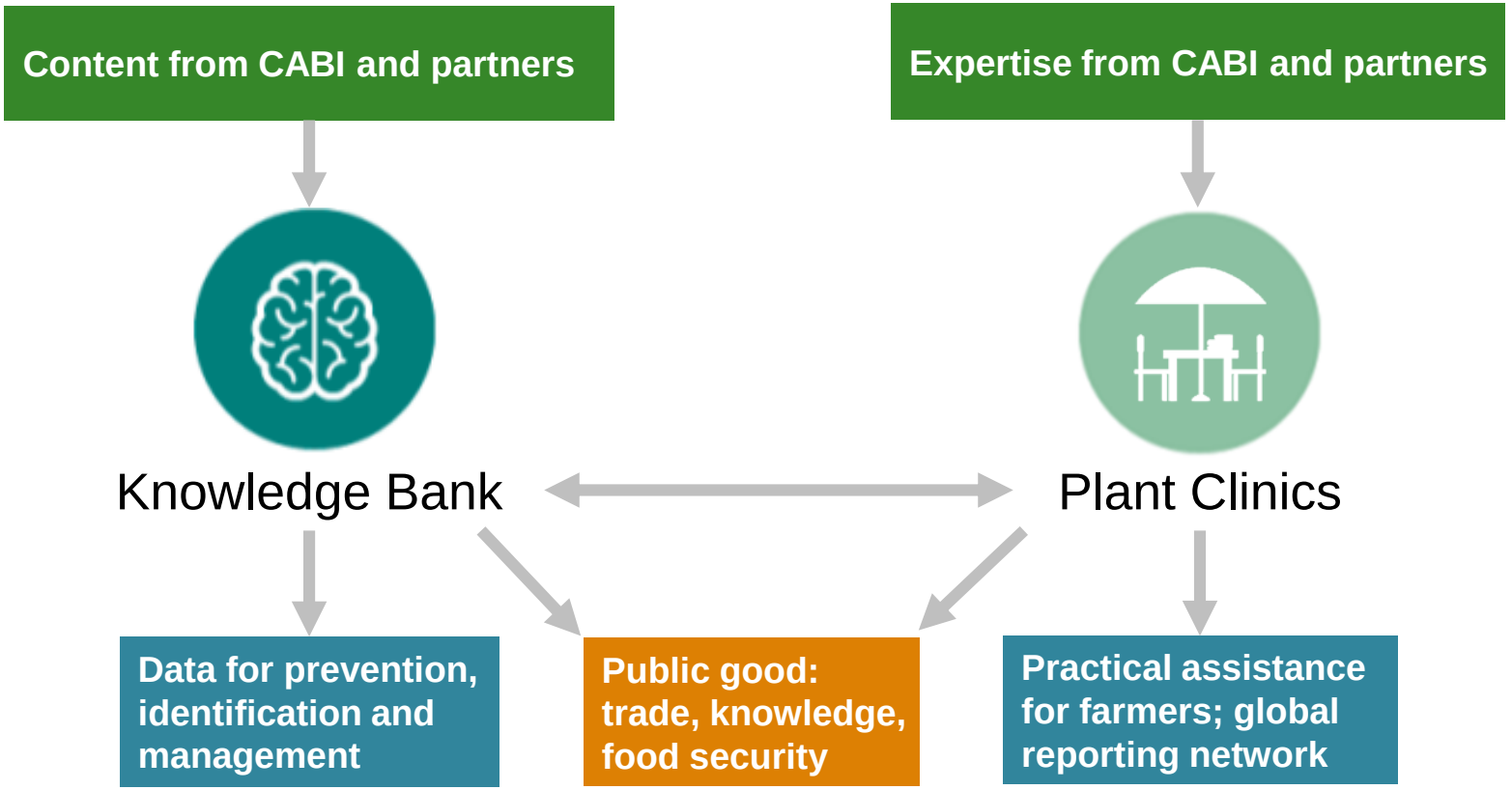
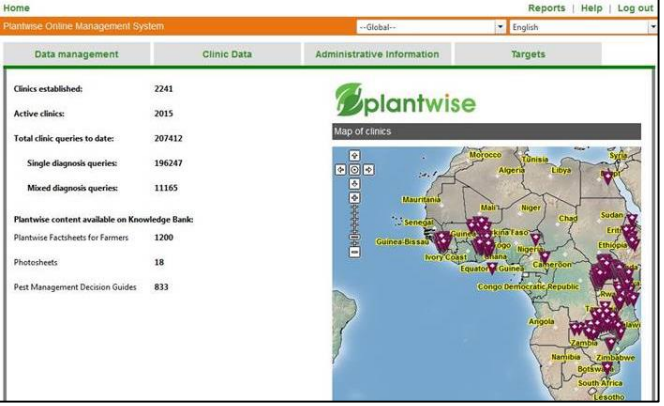
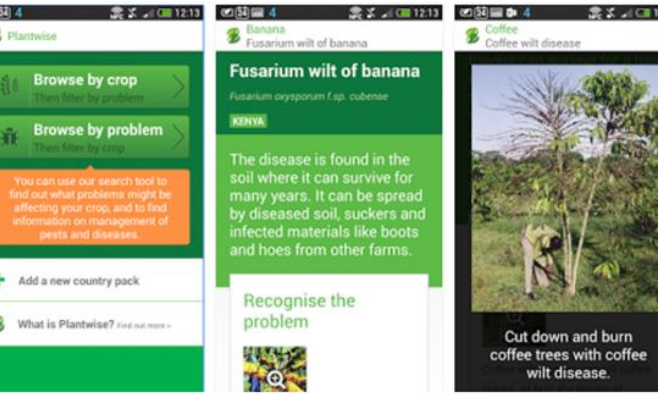
Think global, act local



Plant clinics

- **SET UP** in local meeting places
  - e.g. at markets, village squares and near human health clinics
- **PROVIDE** diagnosis and treatment advice
  - for any crop and any problem
- **RECORD** data collected about farmers and crops
  - e.g. outbreaks of maize lethal necrosis disease (MLND) and tomato leaf miner (*Tuta absoluta*)



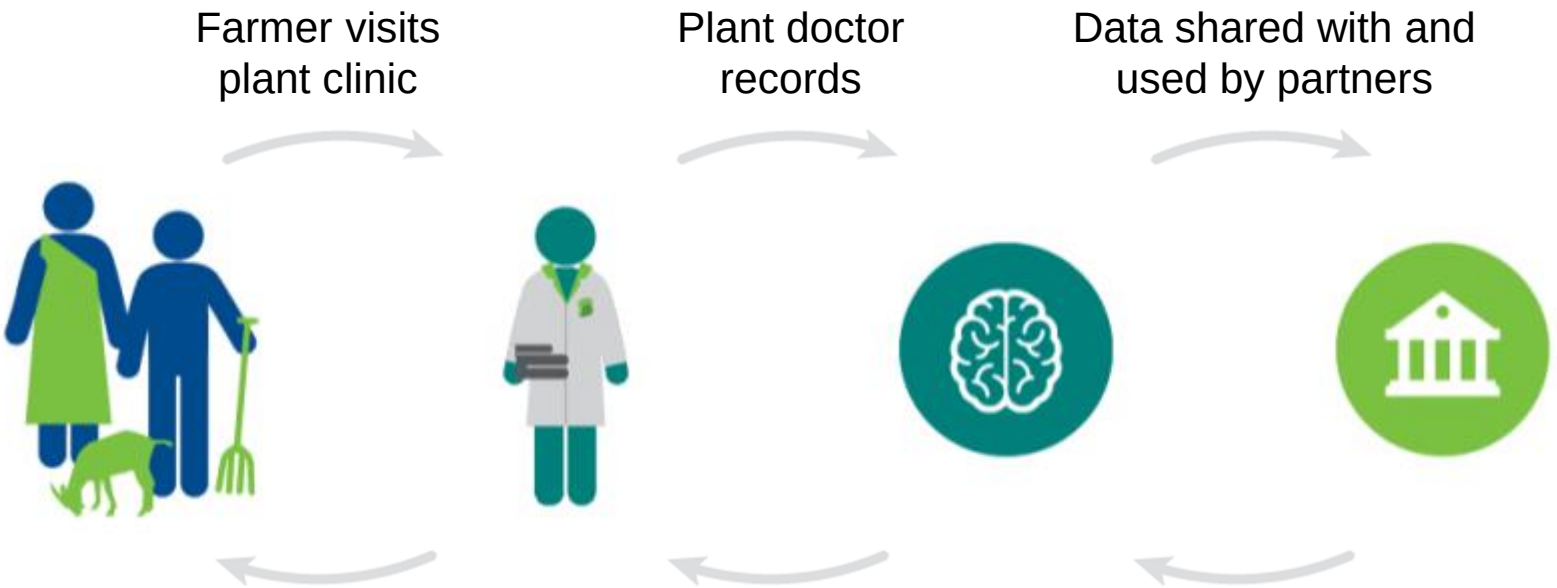


Knowledge Bank

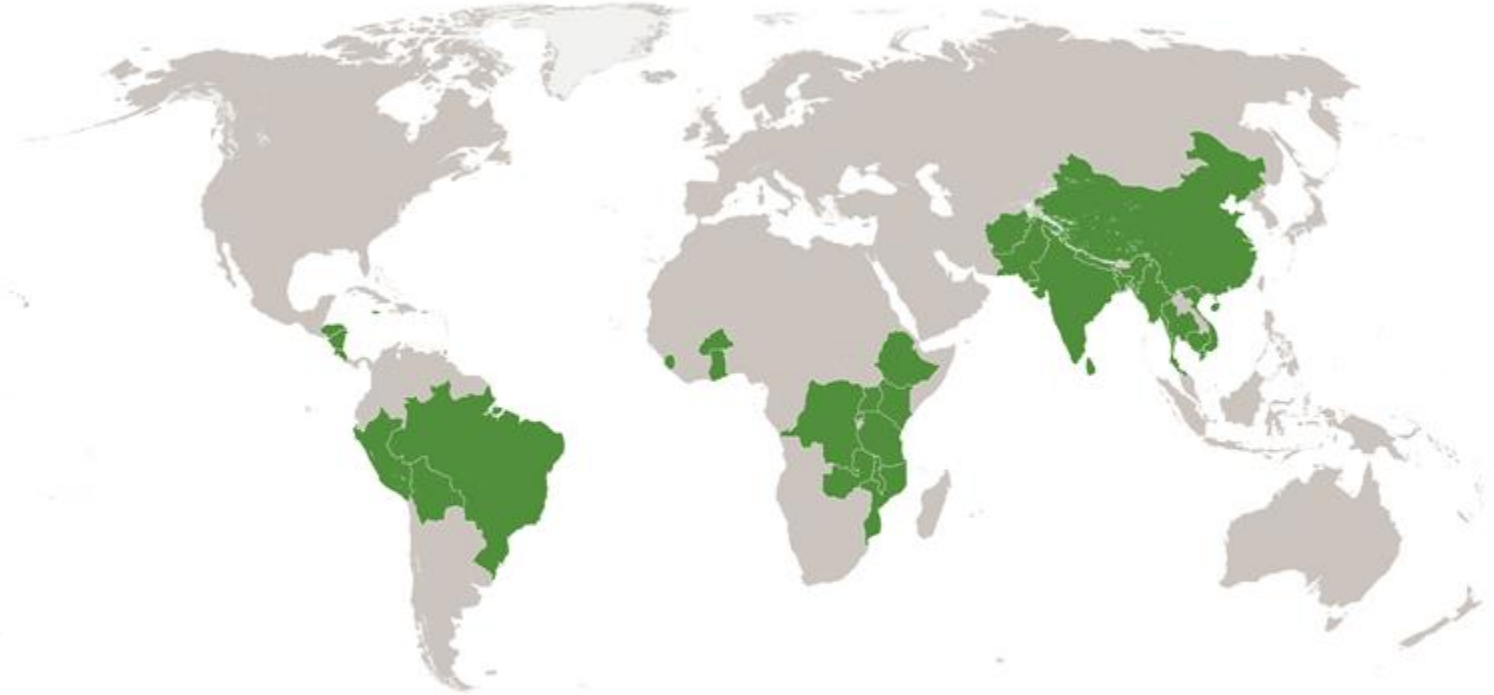
- an **open access** internet resource
- covering **2,500 crop pests** in 80 languages
- over **10,000 factsheets** to provide practical information on pest management
- **thousands of images** to assist with diagnoses
- **interactive maps** showing pest distribution
- **pest alerts** to inform of new pest outbreaks
- **plant health news** from online sources
- **available offline** and via apps

www.plantwise.org/**KnowledgeBank**

How it works


Farmer visits plant clinic
Plant doctor records
Data shared with and used by partners
Plant doctor provides advice to the farmer
Knowledge Bank helps plant doctor with diagnosis
Partners take action on pests and issue best practice guides

Countries we work in



The Americas

Barbados
Bolivia
Brazil
Costa Rica
Grenada
Honduras
Jamaica
Nicaragua
Peru
Trinidad & Tobago

Africa

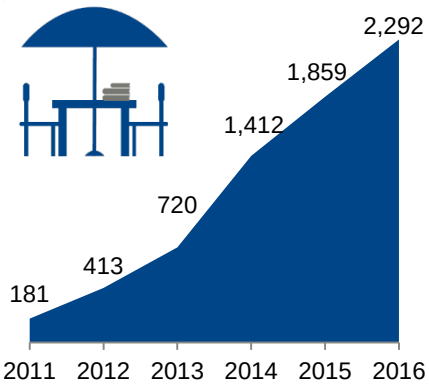
Burkina Faso
DR Congo
Ethiopia
Ghana
Kenya
Malawi
Mozambique
Rwanda
Sierra Leone
Tanzania
Uganda
Zambia

Asia

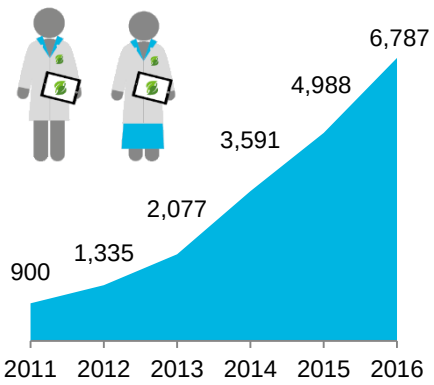
Afghanistan
Bangladesh
Cambodia
China
India
Myanmar
Nepal
Pakistan
Sri Lanka
Thailand
Vietnam

Scale of the programme

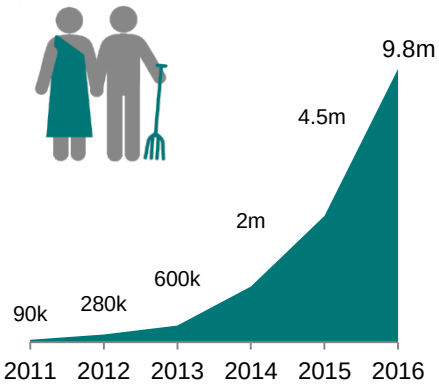
2,300 plant clinics established



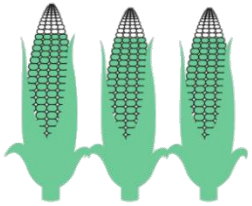
6,800 plant doctors trained



9.8 million farmers reached



Our impact



79%
of farmers report yields **increased** after using advice from plant clinics

70%
of farmers report incomes **increased** after using advice from plant clinics

Farmers' reported use of pesticides **decreased by**
30%

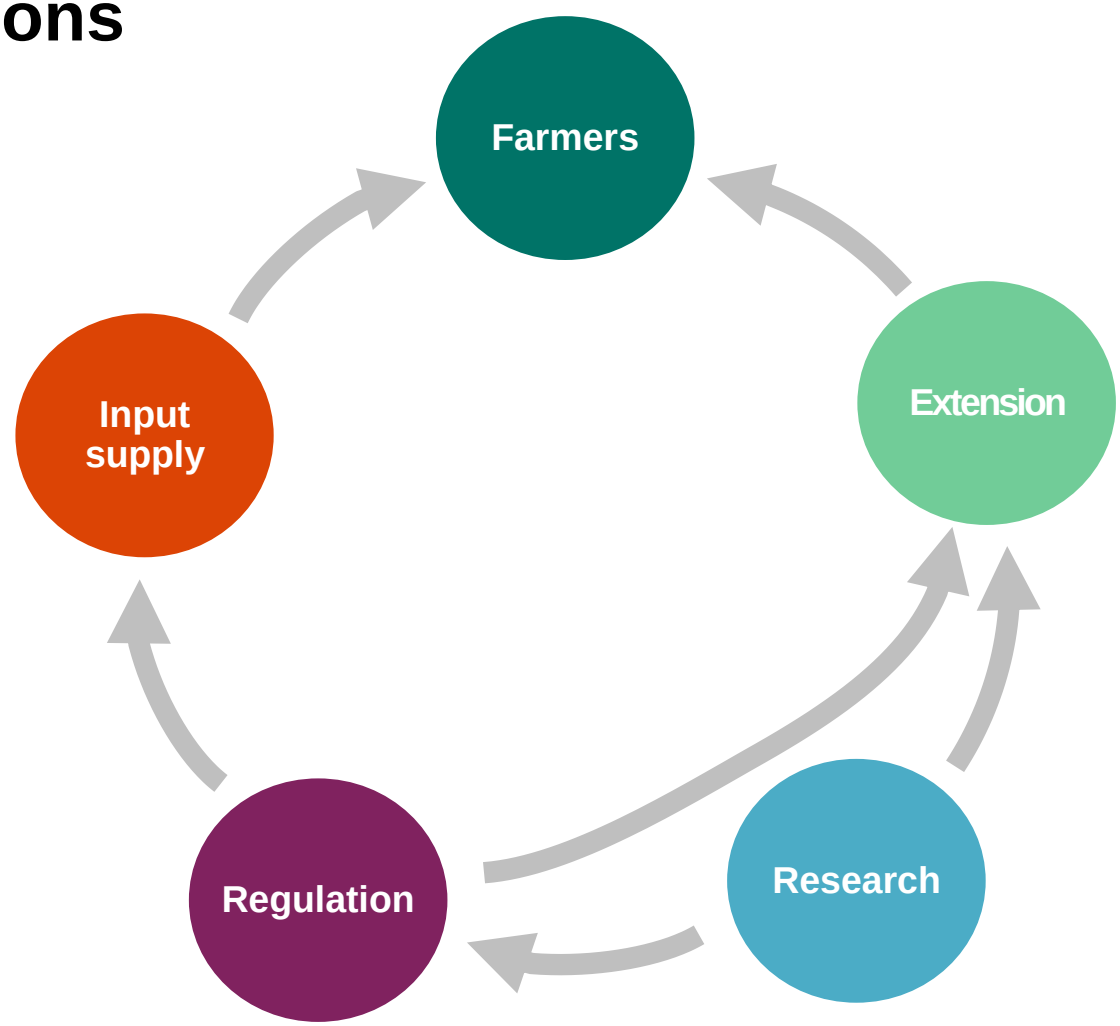
25%
of Plantwise plant doctors **are female**

Partnerships for implementation

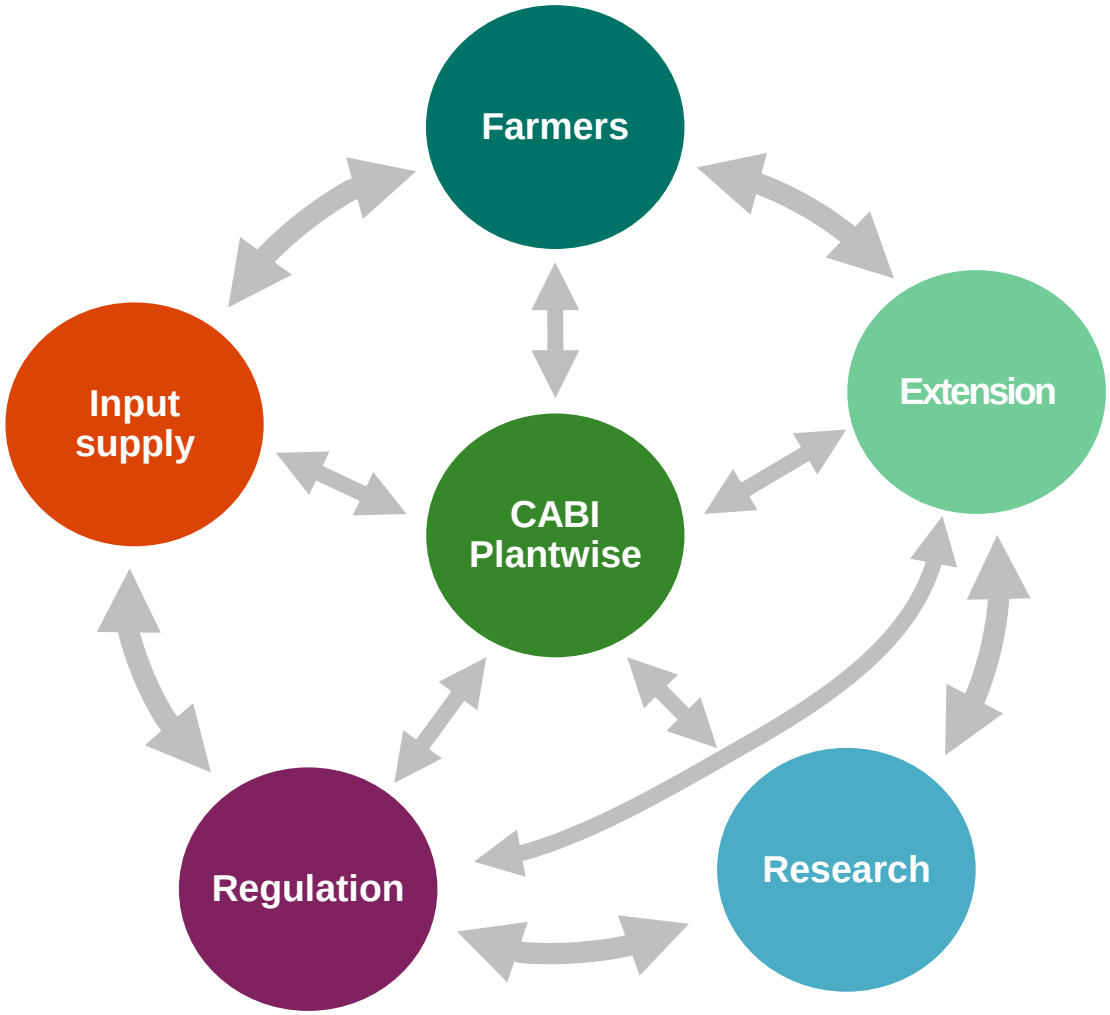
Plantwise achieves its goals by working with multiple actors to strengthen partnerships among **plant health stakeholders** such as:

- advisory services
- research institutions/organizations
- national/ and local governments
- diagnostic service providers
- agro-input suppliers
- farmers and farmer-based organisations
- universities and colleges
- NGOs

Plant health systems often have weak, one-way interactions



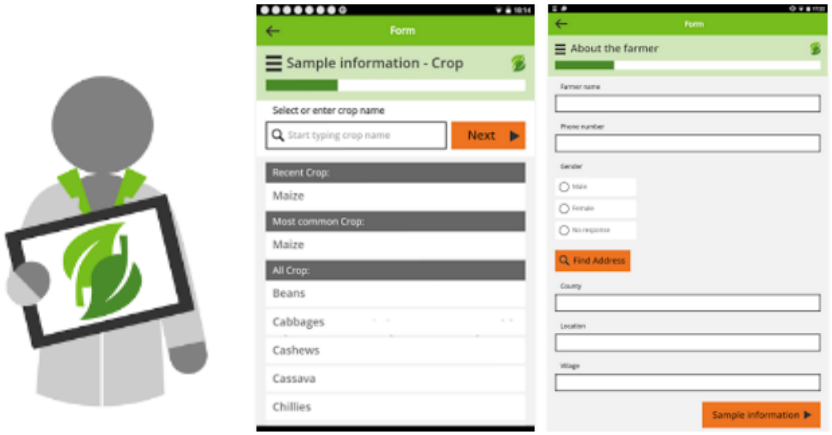
Plantwise stimulates greater two-way information flow



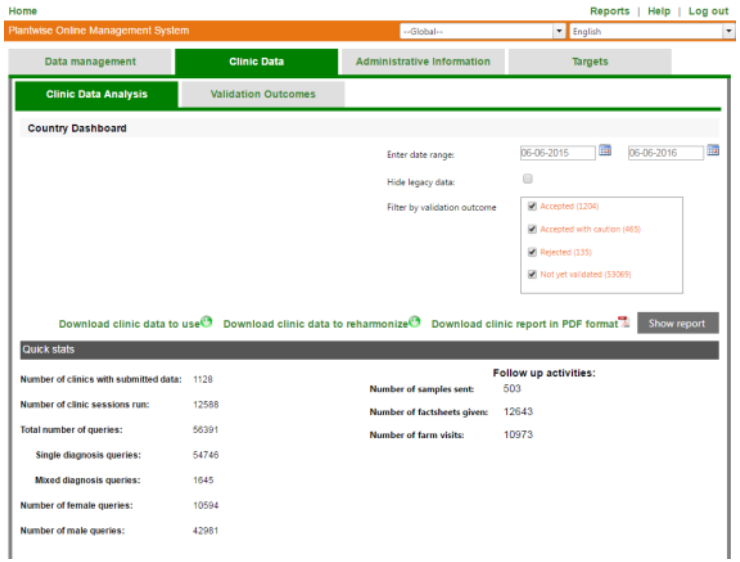
ICT innovations

PULL

- **Data collection** from plant clinics
  - Tablets replacing paper forms
  - Data collection app for Android



- **Data analysis**
  - Plantwise Online Management System (POMS):
    - Built-in tools facilitate the harmonisation, validation and analysis of data.
    - Access control systems allow only in-country partners to view their own data.



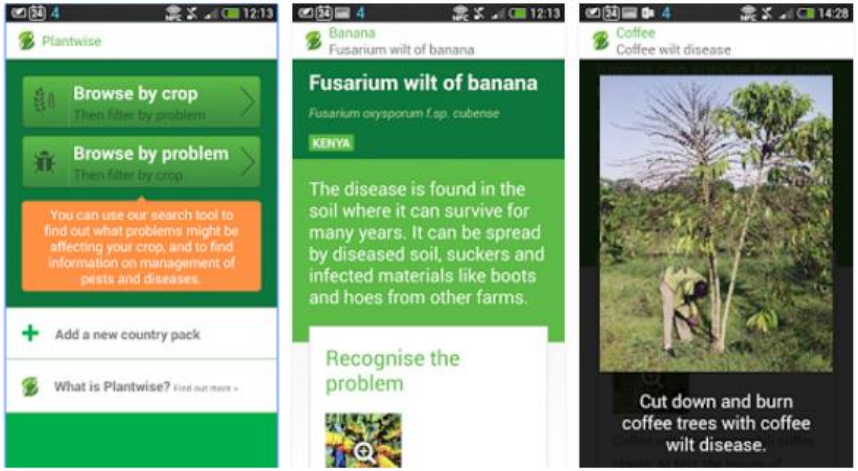
ICT innovations

PUSH

- **Plantwise Knowledge Bank**
  - available online and offline; e.g. via Factsheet Library app on Android

- Links to **mobile mass messaging**
  - e.g. via CABI's mNutrition and Direct2Farm projects

- **Educational apps**
  - e.g. The Plant Doctor Simulator for Android



Improving nutrition and livelihoods

1. Helping farmers grow more and lose less
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The challenges

- Smallholder farmers grow around 70% of the world's food
- Global food businesses are reshaping food system governance and small-scale agriculture is ill equipped for these changes
- Many smallholders are losing out on opportunities to **"step up**" as they cannot produce to the required quality, quantity, safety and continuity of supply that the market requires
- **Transformation needed from subsistence to enterprise**
- Barriers to market access need to be broken down to encourage smallholder farmers to move beyond subsistence

Boosting coffee productivity in Kenya and Malawi

- Coffee productivity is low with high production costs
- Challenge is to make improved coffee varieties available to smallholder farmers
- CABI is working with partners to adopt tissue culture-based technologies to rapidly produce high numbers of plants
- Upgrading and modernising facilities and training scientists and technicians
- Co-operatives act as focal points with staff being trained in nursery management and distributing improved materials to farmers
- Plus best practice training

Perking up coffee in Ethiopia, Rwanda and Cameroon

- Farmers get a better return from coffee after learning new processing techniques that improve quality
- High demand for coffees produced by the new approach with premiums of over **30%** above the usual prices
- Major constraint to adoption is access to credit
- CABI worked with banks and over 20 co-operatives in each country to improve business skills, financial literacy and marketing
- Participating co-ops have increased productivity and quality resulting in increased incomes and increasing capitalization

Building SPS capacity in cocoa supply chains

- Consumers increasingly aware of food safety
- Policy makers enact consumer legislation to protect us
- Public / private partnership: **www.cocoasafe.org**
- Training for extension staff, agro-dealers, farmer leaders and warehouse staff in best practice at all stages of the cocoa supply chain
- The project improves farmers' access to markets by helping them to produce and trade cocoa that meets international food safety and SPS standards

Improving nutrition and livelihoods

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Australia-Africa Plant Biosecurity Partnership (AAPBP)

- Funded by ACIAR, led by PBCRC and CABI
- Focus on capacity development
  - 10 countries in E & S Africa
  - 15 Senior Fellows (NPPOs)
  - 30 Associates (NPPOs, private sector)
  - 6 week study tour in Australia
  - Series of 4 training workshops
  - Mentoring, building networks

Impact pathway

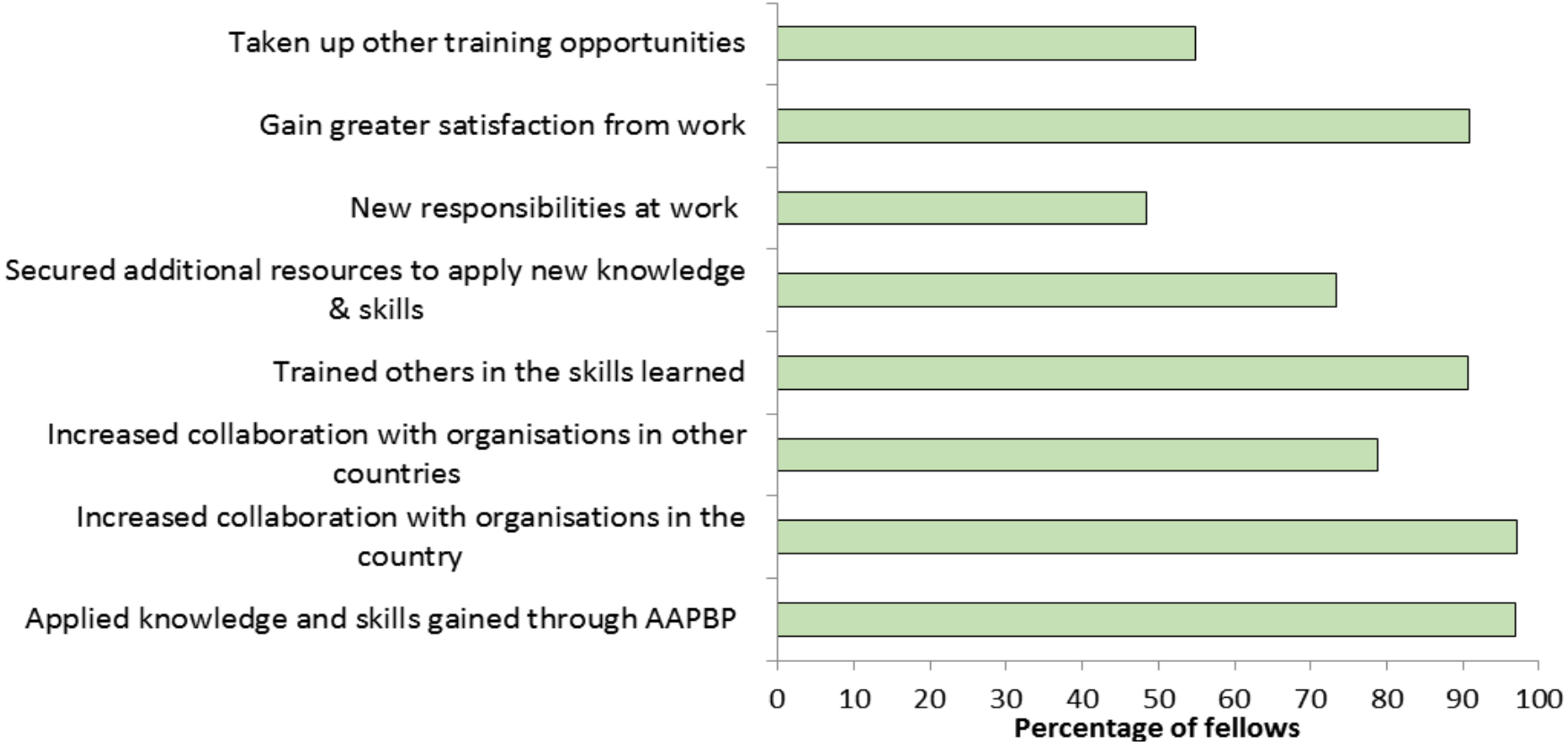
Activities	Outputs	Outcomes	Impacts
Workshops Training courses Mentoring	More knowledge Improved skills More "Capacity"	Using knowledge, skills, capacity New measures Better P-P cooperation	More trade Fewer interceptions More productivity "Development"

Countries covered by AAPBP

- Burundi
- Ethiopia
- Kenya
- Malawi
- Mozambique
- Rwanda
- Tanzania
- Uganda
- Zambia
- Zimbabwe

Outcomes: Fellows' personal performance

Self assessment (post AAPBP)

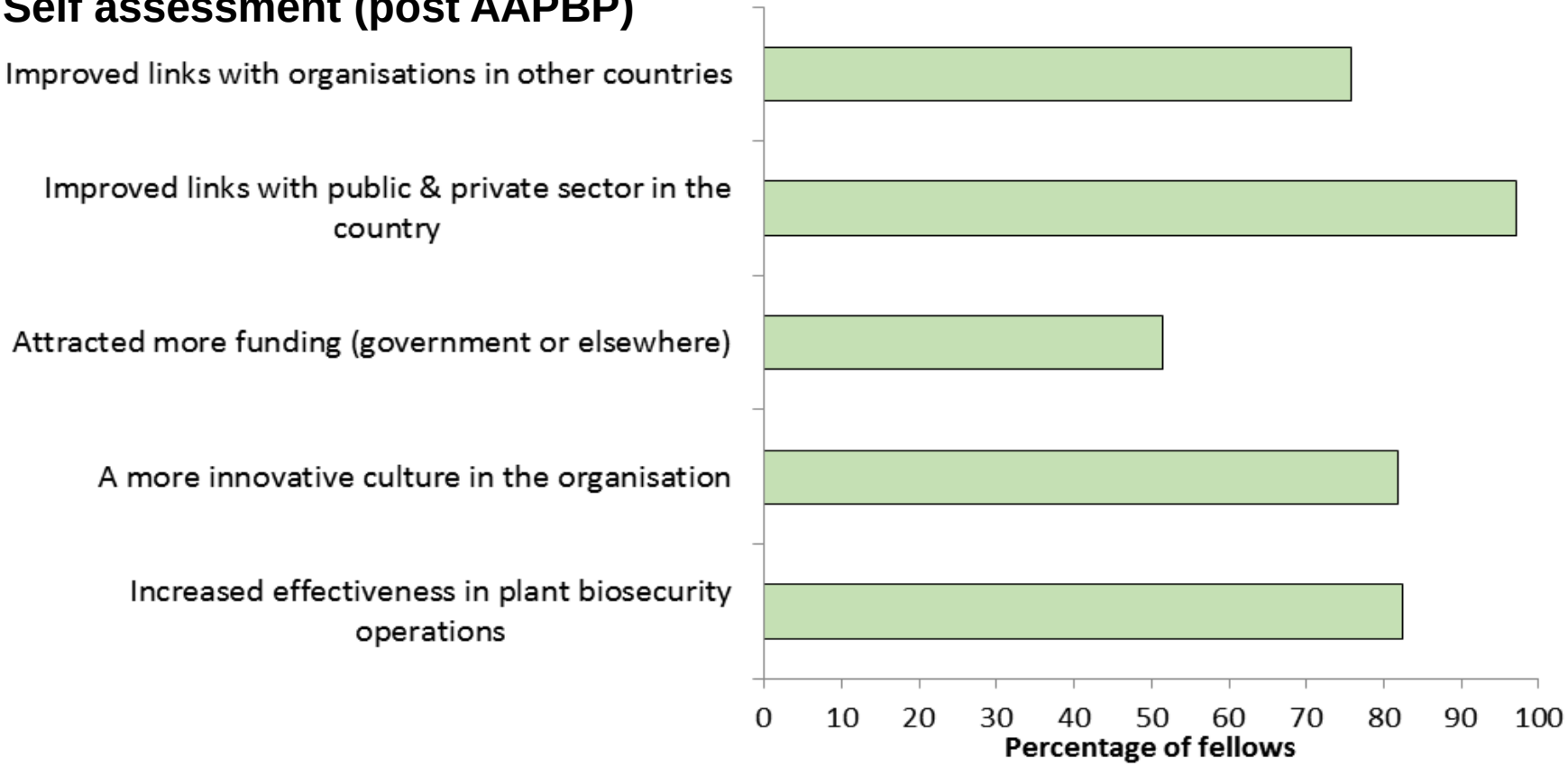


Individual performance

- “Increased confidence; more aggressive in championing plant biosecurity issues, eg share information whenever opportunities arise”. *Mable, Zambia*
- “The AAPBP has been of enormous personal and professional benefit to me. For example I have been able to use novel diagnostic technologies learnt in Australia to improve testing of imported plants”. *George, Kenya*
- “I have built a strong relationship with my mentors back in Australia*”. Katemani, Tanzania*
- “I have been proud and confident to give my expertise in implementation of a project under TMEA support”*. Bellancile, Rwanda*

Outcomes: Fellows' organisations' performance

Self assessment (post AAPBP)



Impacts

Application of new or improved technologies

- Associate Fellow from the Association of Mango Growers (AMAGRO, Tanzania) reports losses to fruit fly have dropped from 50% to > 5%

Opening up and maintaining markets

- Zambia has secured access to South African markets for grapes and bananas
- Kenya has held negotiations with Australia on import conditions for Kenya's flowers, and how the appropriate level of protection can be achieved at a lower cost
- Tanzania has reported achieving market access to Oman and Saudi Arabia for mangoes

The future

- COMESA will take sub-regional coordination role
- ACIAR impact assessment in ~5 years' time

Thank you

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

UKaid from the British people

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