



Plantwise: A global alliance led by CABI for plant health and sustainable agriculture

Dr Ulli Kuhlmann, Executive Director – Global Operations &
Dr Wade Jenner, Global Director Plant Health Systems Development
5th Meeting of G20 Agriculture Chief Scientists, Xi'an, China, 30-31 May 2016

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CABI works on behalf of 48 member countries



Anguilla*



Australia



Bahamas



Bangladesh



Barbados



Bermuda*



Botswana



British Virgin Islands*



Brunei Darussalam



Burundi



Canada



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Kenya



DPR Korea



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Malaysia



Mauritius



Montserrat*



Myanmar



Netherlands†



Nigeria



Pakistan



Papua New Guinea



Philippines



Rwanda



Sierra Leone



Solomon Islands



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St Helena*



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Tanzania



Trinidad & Tobago



Uganda



United Kingdom



Vietnam



Zambia



Zimbabwe

* UK Overseas Territories. **Associate Member

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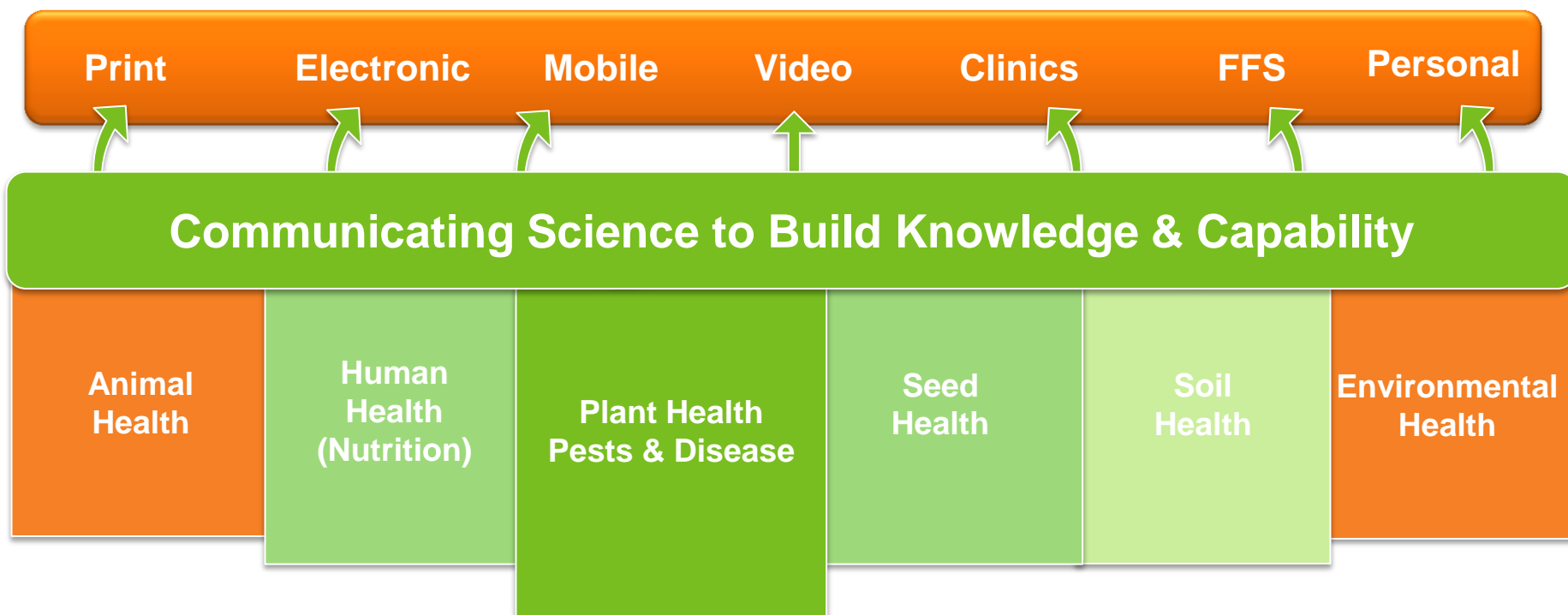




CABI's mission

CABI is a not-for-profit international organization that improves people's lives by providing information and applying scientific expertise to solve problems in agriculture and the environment

CABI's capacity to build knowledge and capability



Mandate to develop Plantwise

- In 2009, the member countries gave CABI a mandate to develop a global programme to address the challenge of feeding a growing population
- Approximately 800 million people have inadequate access to food
- In 2011, the Plantwise programme was launched to help countries lose less and feed more, contributing to SDGs 1, 2, 12, 15 and 17
- Reducing crop losses by just 1% would feed millions more



*Associate member



What is Plantwise?

Plantwise is a global programme, led by **CABI**, to improve farmers' access to practical knowledge at local level and help them increase food security and food safety

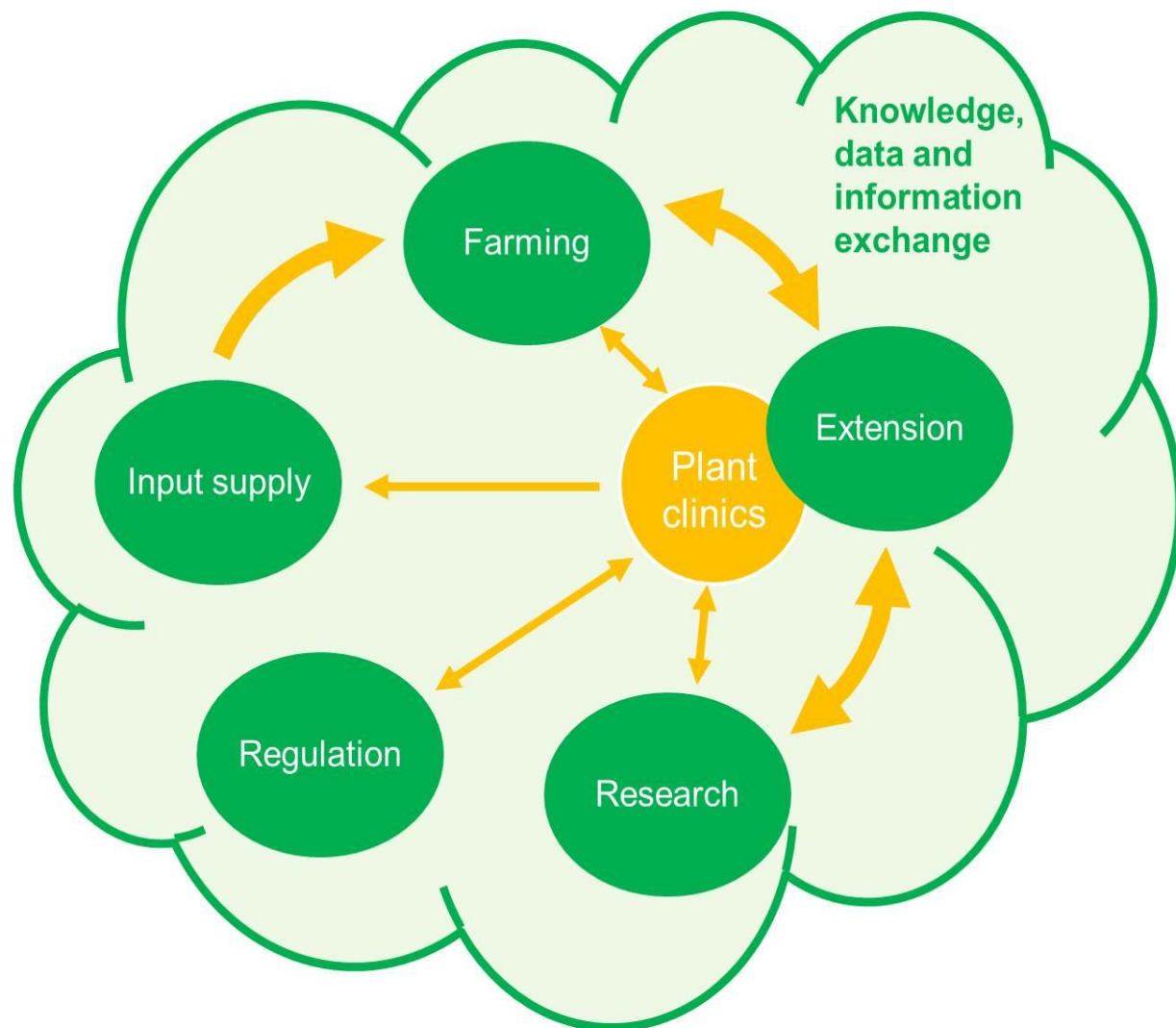


Partnerships

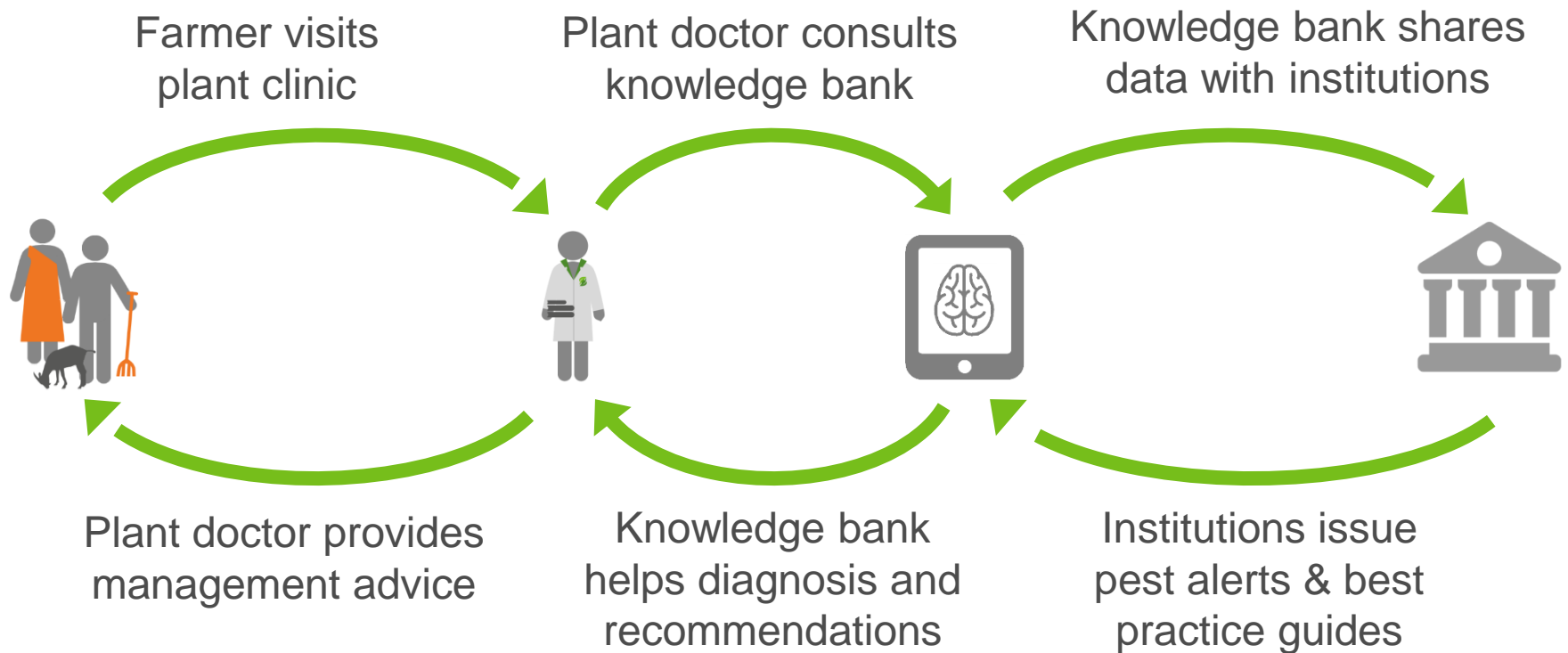
- The success of Plantwise is dependent on **national, regional** and **global** partnerships
- Plantwise strengthens plant health systems and facilitates institutional change through linkages with **national** entities (extension, research & education, regulation, agro-input supply, etc.) as well as **international organisations** (FAO, IPPC, CGIAR, AIRCA, etc.)
- Plantwise policies align with relevant international conventions and standards

Linkages

- Innovative linkages between key stakeholders in a plant health system, catalysed by plant clinics embedded in existing structures
- In addition to public sector services, it is important to link with private sector entities for increased impact and sustainability



Process



Reference materials for plant doctors



PEST MANAGEMENT DECISION GUIDE: GREEN AND YELLOW LIST

Tuta absoluta (tomato leaf miner) on Tomato

Tuta absoluta

Prevention	Monitoring	Direct Control	Direct Control	Restrictions
<ul style="list-style-type: none"> Rotate with non-host crops such as maize, beans and cabbages Remove and destroy wild host plants around the farm such as Sodom apple Remove from the farm and burn all infected crop residues Plant clean seedlings free from all stages of the moth Clean all equipment used in transportation of tomatoes such as boxes, crates and trucks using soap and water 	<ul style="list-style-type: none"> Look for: for insect pest damage on leaves, stems and fruits Look out for burnt leaves with irregular mines that have black deposits (frass) Look out for black frass on the stem and holes on the fruit surface leading to tunnels in the fruit Scout for moths in the field/ greenhouse walls. Start control once you notice 1-3 moths or larvae per week 	<ul style="list-style-type: none"> Remove infested leaves Mass trap using water traps with pheromones e.g (Pherodis at 4 packets per acre supplied by Koppert Biological Systems Kenya, Tutrack found at Kenya Biologics) Burying deep (50-100 cm) of infested fruits and foliage Use black sticky traps (at 24 pcs/acre supplied by Koppert Biological Systems) placed at 15-20 cm above the ground to capture the adults Use screen vents in roofs and on the sides of the greenhouse to reduce insect pest migration 	<ul style="list-style-type: none"> The pest is still new in the country and trials on pesticides are still ongoing Drench with imidacloprid at the recommended rates Neonicotinoid, IRAC 4A Systemic insecticide with translaminar activity and with contact and stomach action Spray abamectin at the recommended rates. Translaminar properties; limited systemic activity as well as contact and stomach action. IRAC 6 Spray bifenthrin at the recommended rates. Non-systemic with contact stomach action. Pyrethroid; IRAC 3A 	<ul style="list-style-type: none"> Not classified by WHO. PHI 7 days WHO class II (Moderately hazardous). PHI 3 days. MRL-0.2



Kenya

CREATED/UPDATED: August 2014

AUTHOR(S): Miriam Otupa (KALRO), Paul Kilge (MOALF), Eunice Ringera (KEPHIS), Philip Wendot (UON) and Benson Masinde (MOA), Peninah Munyao (MOALF), Judith Oyoo (KALRO), Wilson Nabakwe (MOALF)

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Plantwise is a CABI-led global initiative www.plantwise.org

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Digital technologies for plant doctors

- Tablets improve data collection at plant clinics



5x faster



Delivery of plant clinic data

4x more



Number of plant clinic prescriptions delivered
(in Sri Lanka during July–November 2015)

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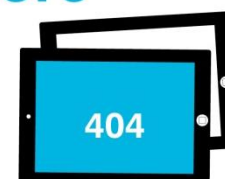
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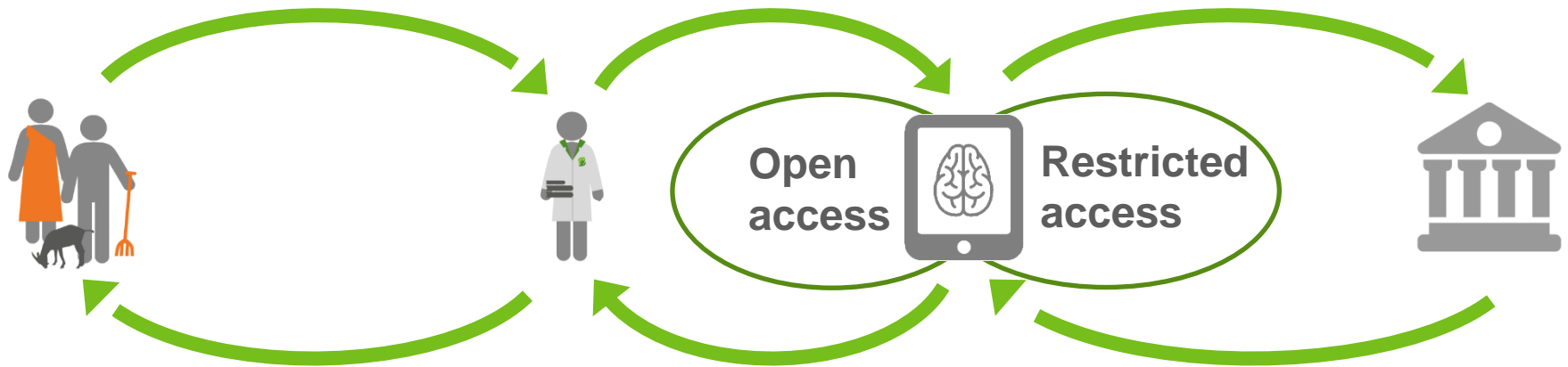
- Plant Doctor Simulator reinforces basic principles of field diagnosis while capturing data to assess decision making performance (available in Google Play Store)



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 local level

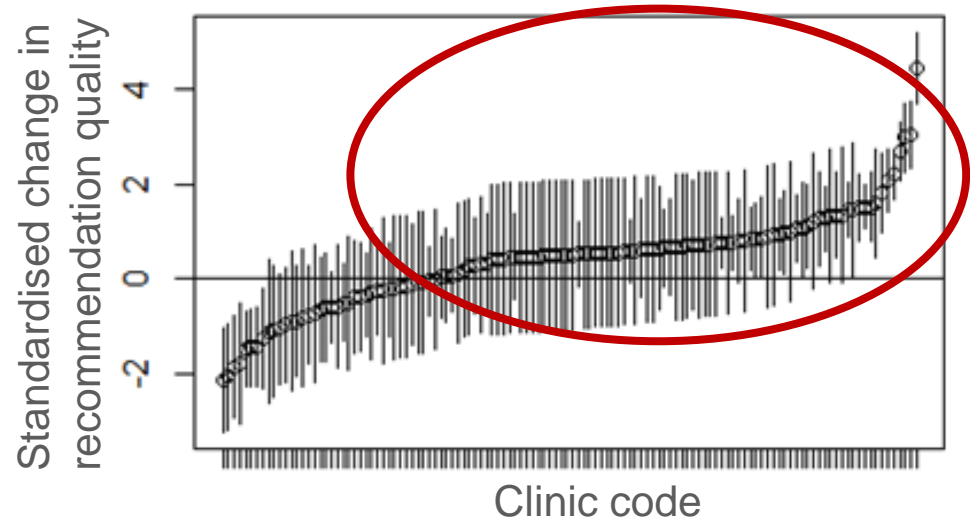
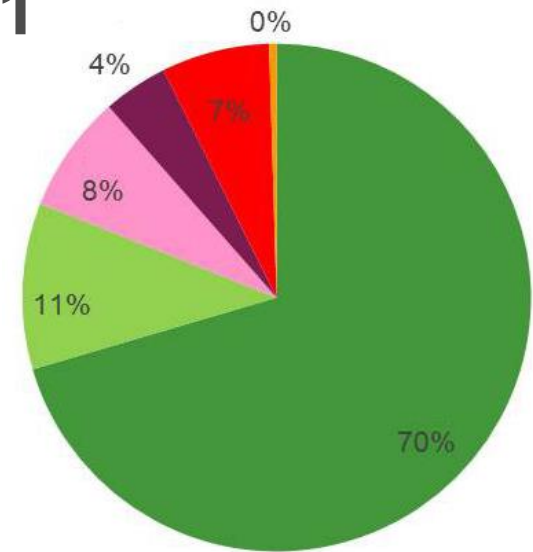
Open versus restricted data



- The Plantwise Online Management System now holds 200,000 plant clinic entries from 30 countries
- 21 countries have signed data sharing agreements with CABI, 12 of which are for open-access sharing

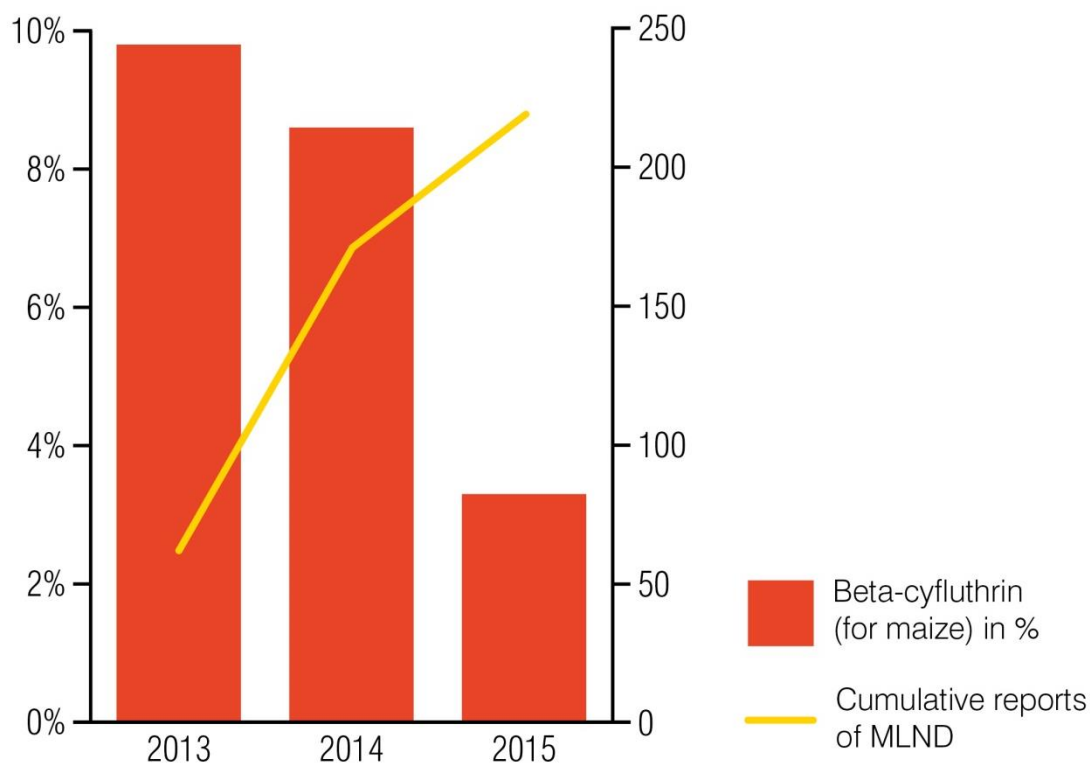
Plant clinic data into use – Example 1

- Validation of diagnoses and recommendations given to farmers
 - Process developed centrally, then transferred to in-country partners
- Recommendations of most (ca. 65%) plant clinics better in 2014 than in 2013
- Such analysis identifies, e.g.:
 - Plant doctors that require additional training
 - Plant doctors that improved exceptionally well



Plant clinic data into use – Example 2

- Analysis of pesticide recommendations: Year-to-year comparisons showed a reduction in recommendations of a hazardous pesticide (WHO Class 1) in some East African countries against maize lethal necrosis disease (MLND)



Plant clinic data into use – Example 3

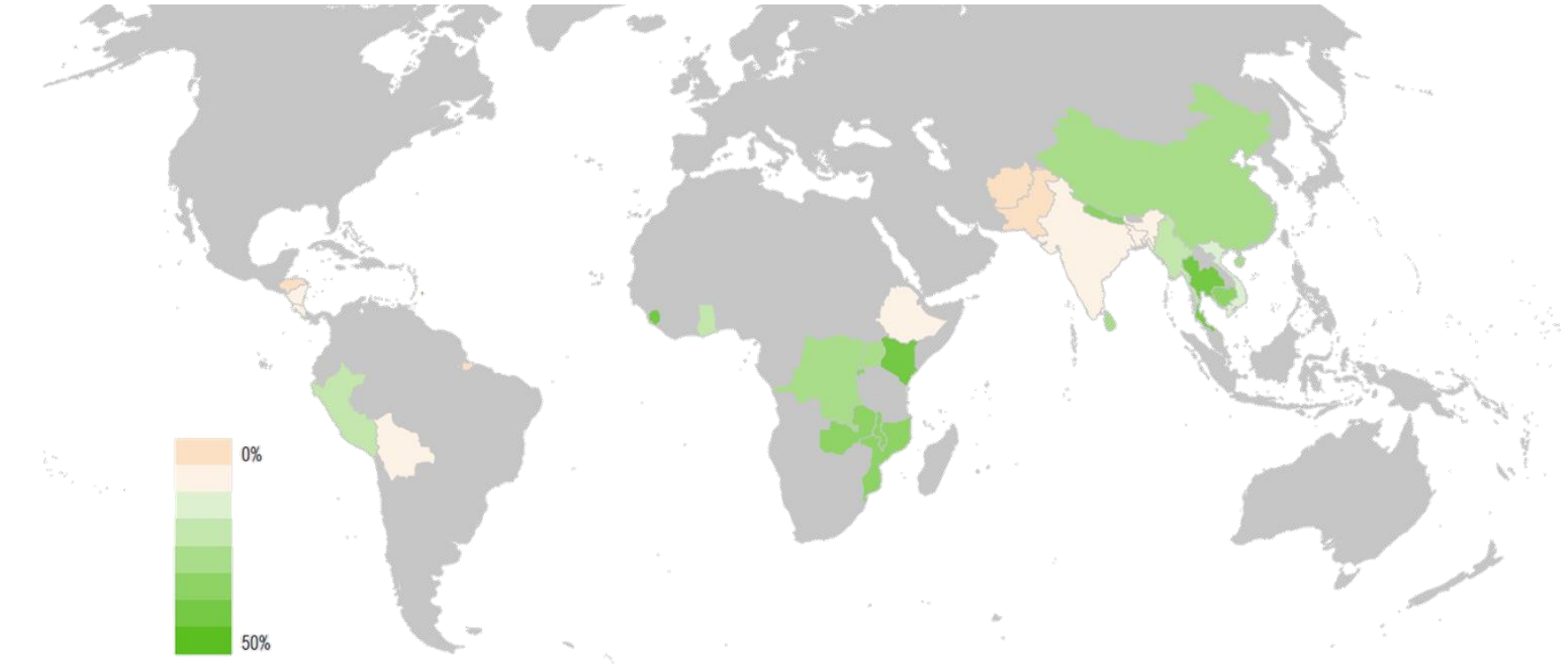
- Comparison of public and private sector plant clinic services, especially when the latter mixes giving advice to selling inputs (conflict of interest)
- China offers an opportunity to study agro-input dealer involvement in plant clinic operations
- Preliminary results show no significant differences between public and private sector-run plant clinics, in terms of number and gender of farmers served, quality of diagnoses and recommendations, IPM-based advice, etc.



Plantwise is being piloted in Beijing area, Guangxi and Sichuan, with currently 43 plant clinics run by 98 plant doctors

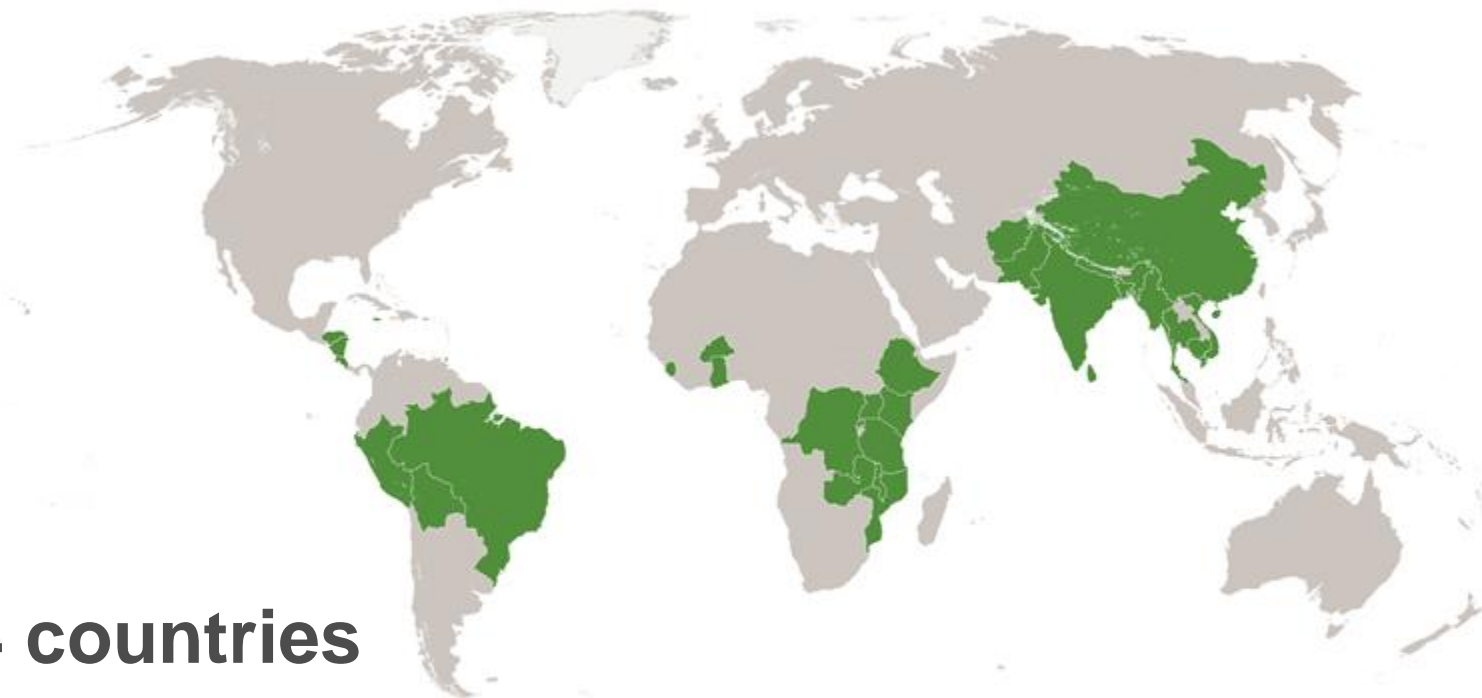
Plant clinic data into use – Example 4

- Analysis of gender-disaggregated data shows clinic usage patterns



- Female plant doctors in Bolivia and Peru are more likely to recommend monitoring and cultural controls, instead of pesticides, than their male counterparts

Scale



34 countries

The Americas

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

Africa

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

Asia

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

Scale



1,800 plant clinics

We've helped establish networks of plant clinics in 34 countries



5,000 plant doctors

We've trained thousands of experts to advise farmers



4.5 million farmers

We've reached millions of smallholder farmers and their families through plant clinics and complementary extension methods (e.g., ICTs)

Outcomes and impact

94%



Farmers satisfied with plant clinics

92%



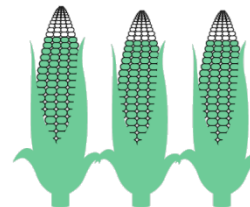
Farmers satisfied with advice given

89%



Farmers applied the advice given

79%



Farmers saw crop yield increased after plant clinic visit

“Plantwise is cost-effective and is gaining the kind of in-country financial leverage that most development projects can only dream of”

(external evaluation report, 2015)

Signs of sustainability

- Responsibilities internalised within partner organisations (e.g., plant doctors, data managers, coordinators)
- Commitment of national/local funds for plant clinic operations (e.g., China, Pakistan, Malawi, Sri Lanka)
- National steering committees show increasing ownership (e.g., Rwanda, Ghana, Afghanistan)
- Integration of Plantwise training content into university and agro-input dealer curricula (e.g., Uganda, Nicaragua, Kenya)

Awards



Winner

**NEF Innovation
Award 2013**



Winner

**Open Data Award for
Social Impact 2014**



Winner

**OECD DAC
Prize 2015**

2013

2014

2015

2016



Shortlisted

**The Queen's Award
for Enterprise 2014**



Shortlisted

**Olam Prize for Innovation
in Food Security 2015**



Thank you

We wish to thank the Department of International Cooperation, Chinese Academy of Agriculture Sciences, Ministry of Agriculture for this opportunity to share and learn

We also 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