



CAB International (CABI)

Roger Day

31st Technical Consultation among Regional Plant Protection Organisations

Abuja, 21-25 October 2019



what is CABI?

CABI is a not-for-profit science-based development and information organization

We improve people's lives by providing information and applying scientific expertise to solve problems in agriculture and the environment



Afghanistan



Anguilla



Australia



Bahamas



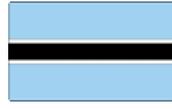
Bangladesh



Barbados



Bermuda



Botswana



British Virgin Islands



Brunei Darussalam



Burundi



Canada



Chile



China



Colombia



Cote d'Ivoire



Cyprus



DPR Korea



Gambia



Ghana



Grenada



Guyana



India



Jamaica



Kenya



Malawi



Malaysia



Mauritius



Montserrat



Myanmar



Nigeria



Pakistan



Papua New Guinea



Philippines



Rwanda



Sierra Leone



Solomon Islands



South Africa



Sri Lanka



St Helena*



Switzerland



Tanzania



The Netherlands



Trinidad & Tobago



Uganda



United Kingdom



Vietnam



Zambia



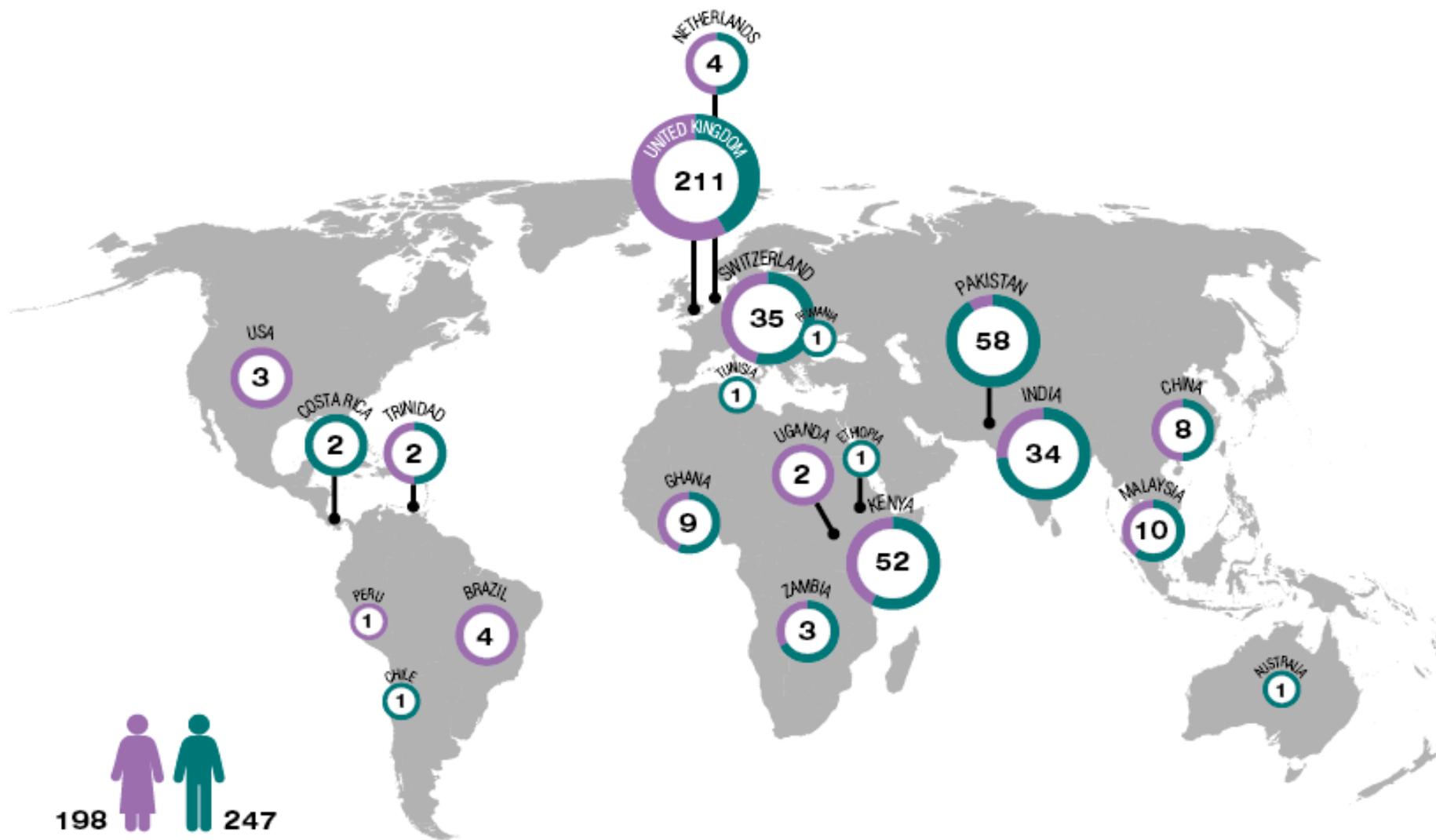
Zimbabwe

we work on behalf of 49 member countries

CABI governance



Global reach We have 480+ staff across 21 locations worldwide





what are CABI's activities?

- international development and research
- publishing
- bioscience services



our activities

Publishing

CABI publishes **high quality scientific resources** within the applied life sciences:

- bibliographic databases, including CAB Abstracts and Global Health
- full text electronic resources
- multimedia compendia
- books and eBooks
- SciDev.Net



our activities

Bioscience Services

CABI offers a range of microbial and diagnostic services:

- microorganism supply
 - 30,000 cultures of fungi, bacteria
- testing and consultancy services
- diagnostics and identifications
- preservation & patenting
- collection screening



our activities

International Development

CABI researches and supports implementation of solutions to problems in agriculture and the environment:

- Value chains, trade, commodities
- Invasive species
- Development communication and extension
- Knowledge management and digital development



Some programmes and projects



Action on Invasives

Strengthening system capacity

- Cross-sectoral cooperation and coordination
- National & regional policies, plans, regulations
 - Links to “Strengthening Pest Outbreak Alert and Response Systems”

Species focus

- As a focus for strengthening system capacity
 - Fall armyworm
 - Parthenium weed
 - Tomato leaf miner

Countries

- Initially Ghana, Kenya, Pakistan, Zambia
- 2019/2020: Burkina Faso, Rwanda, Bangladesh
- Building on Plantwise programme
- Some regional activities

Aol Programme Components

1. Stakeholder engagement

Strengthening linkages and partnerships between different stakeholders to inform policy and plans, and ensure effective response locally, nationally, regionally

2. Best practice solutions

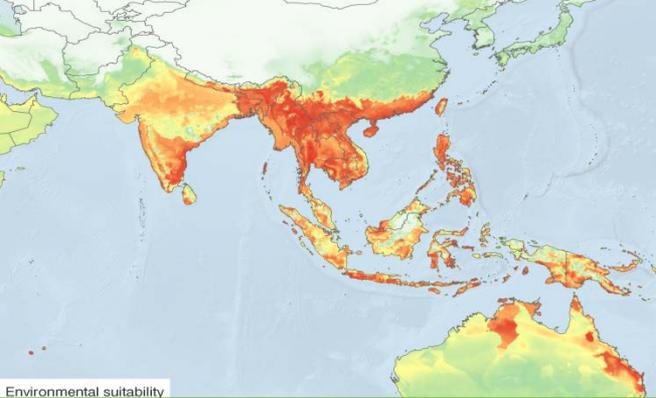
Identifying and validating technical solutions with partners, for prevention, early detection, control and restoration

3. Community Action

Delivering impact at scale – improved rural livelihoods

4. Knowledge and data

Resources for practical decision support, meeting a wide range of user needs



Aol: Stakeholder Engagement

Policy informed by evidence of impacts

- Extensive use of FAW Evidence note
 - Update included modelled suitability in Asia
- Evidence notes on Tuta (Africa) and Parthenium (CWA)
- Side event on Invasive plants, land degradation and restoration at the Global Landscapes Forum, Nairobi

Strategies implemented

- National Invasive Species Strategy and Action Plan drafted in Ghana
- Africa strategy in development (IITA/icipe/CABI)

COMMERCIAL INVOICE

TO IMPORTER:

CABI Kenya
Canary Bird 673
Limuru Rd
Mulhanga, Nairobi, Kenya

DATE: 16th October 2018

INVOICE NUMBER: 101618

Contact: Dr. Ivan Rwomushana
Email: I.Rwomushana@cabi.org



Aol: Stakeholder Engagement

Biological based solutions approved for use

- Facilitating registration of low-risk products
- AgBiTech, Provivi in FAW trials

Stakeholder engagement in IS management

- National plans for FAW (Ghana) and Parthenium (Pakistan) reviewed/adopted by stakeholders
 - Broader lessons
- Aol added to mandate/agenda of PW Steering Committees (Ghana, Kenya, Zambia)
- Assessing national “responsiveness” (Kenya)





Aol: Best Practice Solutions

Solutions for priority species

Prevention, early detection

- Horizon scanning for 120 threats in Kenya
 - Follow on activities for high priorities
- Tuta, FAW surveillance in Pakistan

Control : Parthenium in Pakistan

- Redistributed existing agent (*Zygogramma*)
 - Testing breaking diapause for early season
- Imported another agent (*Listronotus*) into quarantine; host specificity testing commenced



Aol: Best Practice Solutions

Control: Fall armyworm (FAW)

- Trials on biopesticides, traditional methods
 - Sand, ash not promising
 - Botanicals show potential
 - Trials with Fawligen, mating disruption
- 12 parasitoids found attacking FAW in Africa
 - Include *Telenomus remus*, used in S America
- Nematodes attacking FAW isolated in Rwanda
- Surveys in Latin America found candidate agents
 - 2 species now in quarantine in CABI-CH
 - Sending to IITA soon





Aol: Community Action

Men, women, youth with knowledge on invasives

- Parthenium communication campaign, Pakistan
 - TV 2.2m, others 63k
- FAW communication campaigns, Africa
 - 577k (radio, SMS, video, print)
- Evaluations in progress
- Guides, manuals (with FAO, CIMMYT etc)

Community management plans/actions

- Work on FAW area-wide management plans
- Project on scaling out Tuta IPM with Koppert

Aol: Knowledge and Data

Re-launched Invasive Species Compendium www.cabi.org/ISC

Includes species portals eg FAW

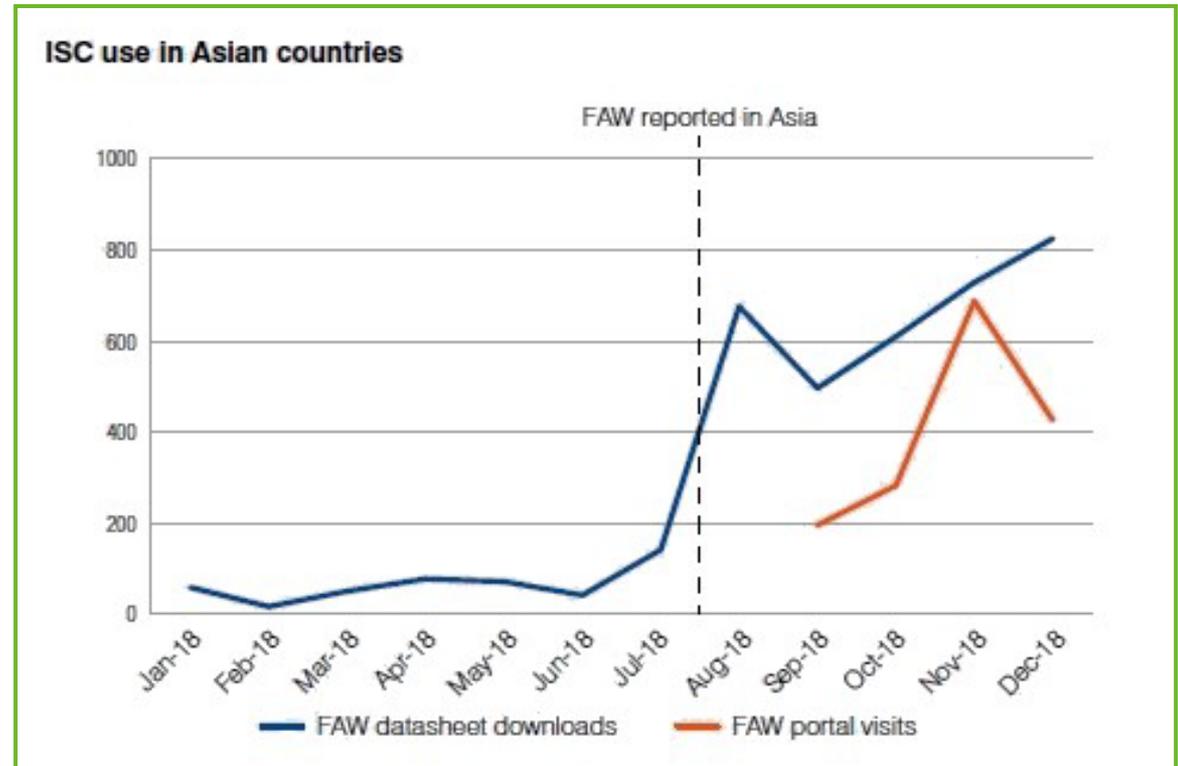
Visits



New materials



Use of FAW resources in Asia



Aol: Knowledge and Data



Pest Risk Analysis Tool (beta)



CPC/PRA free
for 97 countries

www.cabi.org/PRA-Tool/



Horizon Scanning Tool

Prioritizing invasive species threats



6,600 visits
160 countries

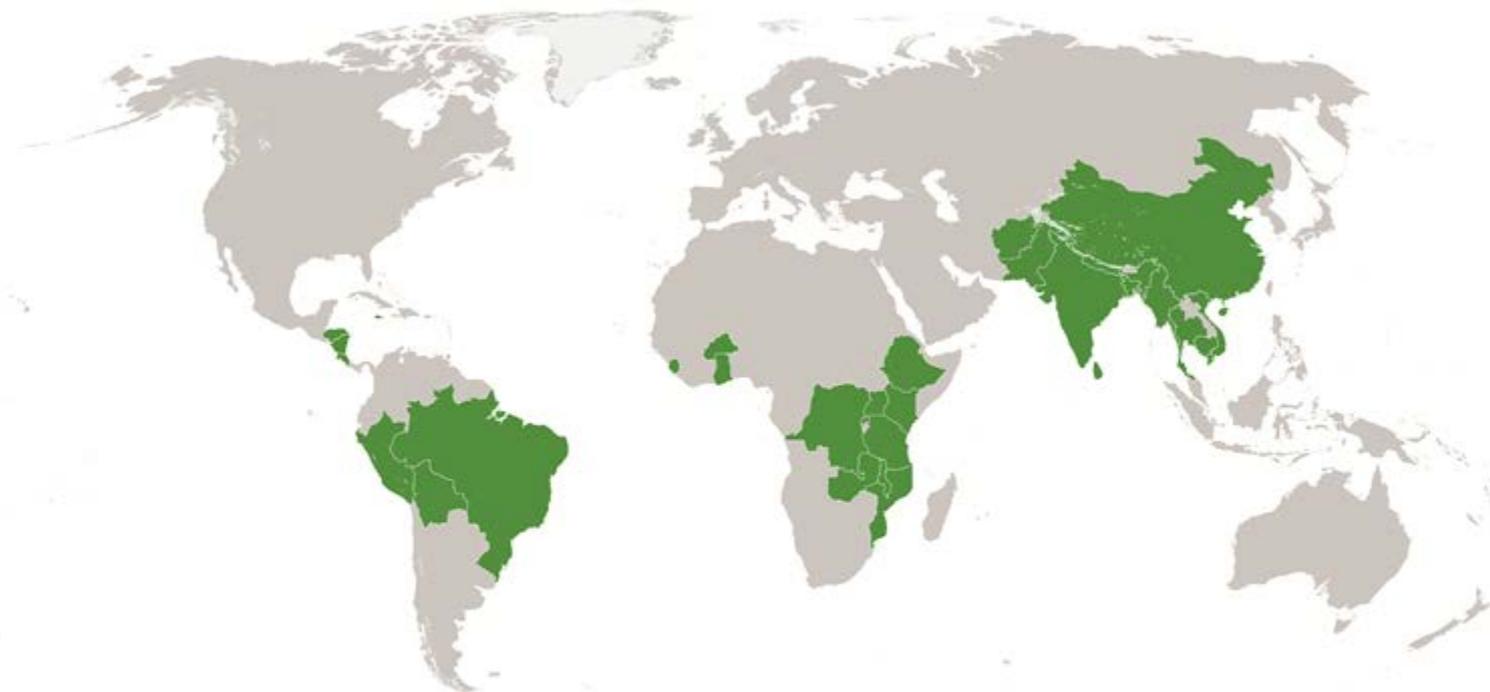
www.cabi.org/horizonscanningtool



Plantwise

A global programme to increase food security and improve rural livelihoods by reducing crop losses

Countries



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

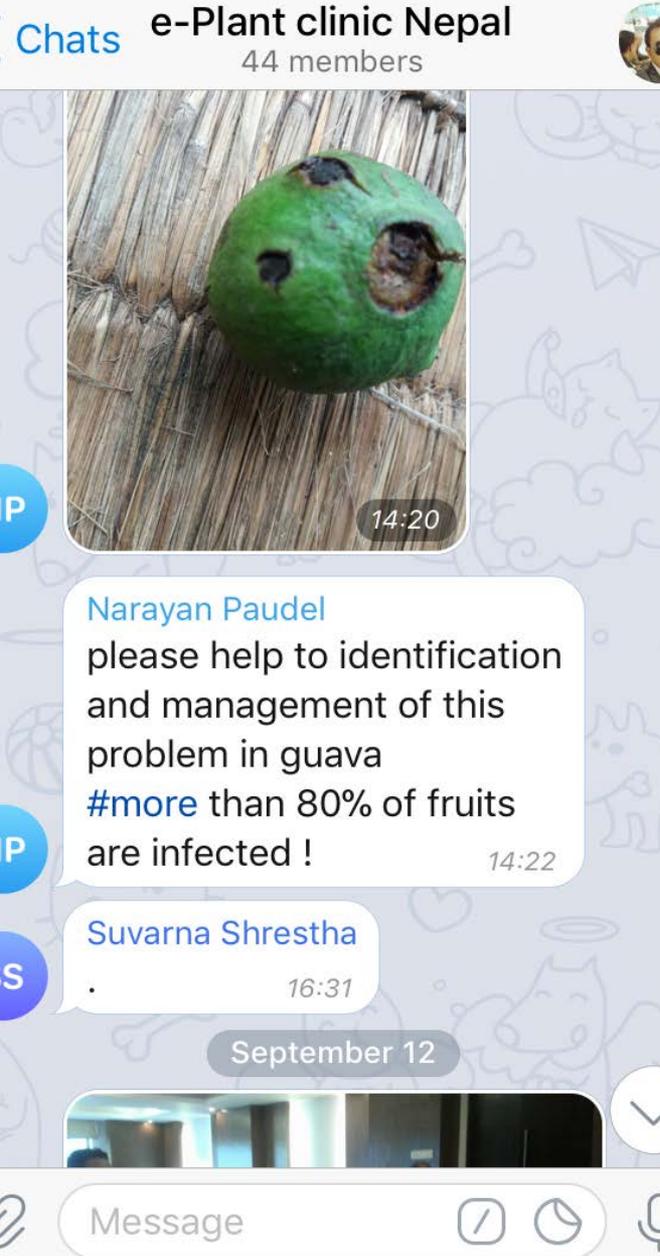
Afghanistan
Bangladesh
Cambodia
China
India
Myanmar

Nepal
Pakistan
Sri Lanka
Thailand
Vietnam



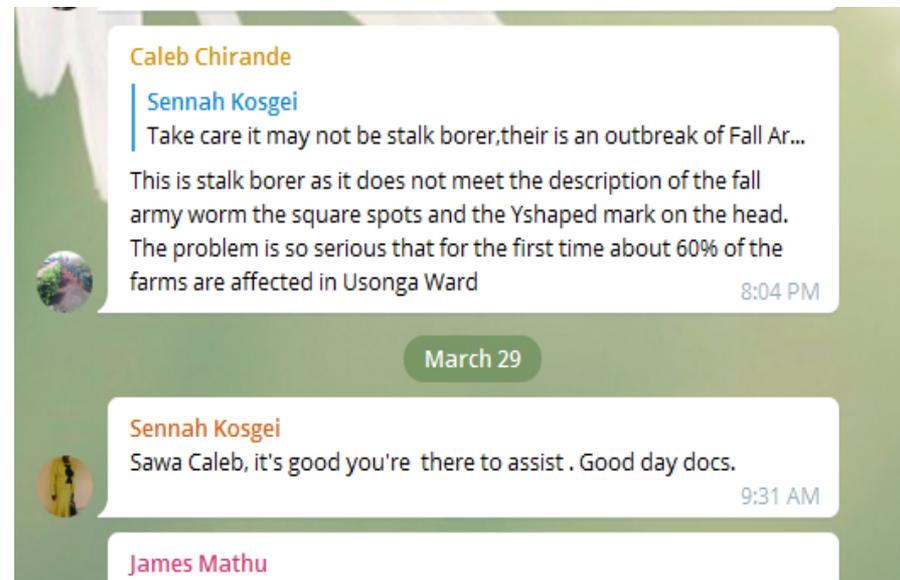
Plant clinics

- **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
 - run by trained “Plant doctors” - extensionists
- **Collect** data
 - Client, problem, diagnosis, recommendation
 - Goes into the knowledge bank
- >3000 clinics
- 11,000 plant doctors



Plantwise digital networks

- Connecting plant doctors to each other, to farmers, and to diagnostic support
- Transformative impact on plant clinic operations & interconnectedness of plant health system
- Image recognition





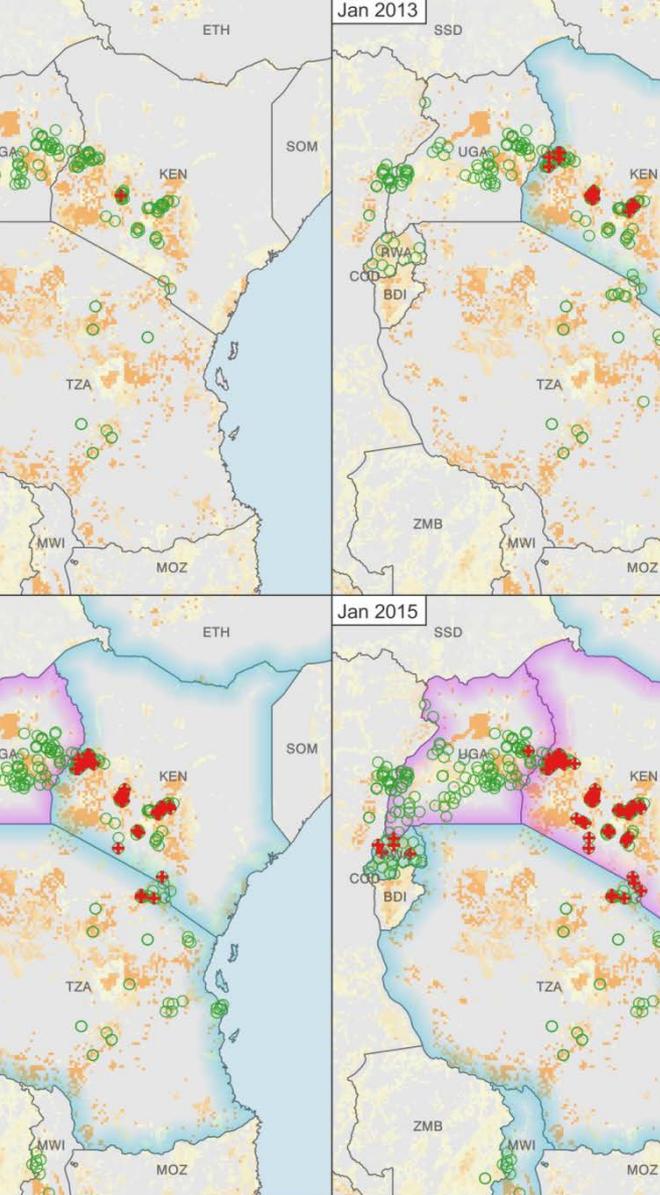
Plantwise Knowledge Bank

Open/restricted access clinic data

- Data sharing agreements with countries
- Summary and analysis functions

Open access internet resource

- 2,500 crop pests in many languages
- >12,500 factsheets to provide practical information on pest management
- Available offline and via apps
- Pest alerts to inform of new pest reports
 - From IPPC, literature



■ Disease reported in scientific literature
■ Disease reported by NPPO to IPPC
■ Host crop area (by production)
 0 25

Clinic data use

- Targeted mass extension campaigns based on clinic reports
- Developing IPM extension materials
- Monitoring staff activities, performance, training needs
- Writing scientific papers, proposals
- Biocontrol subsidy programme (China)
- PRISE (pest forecasting)

www.Plantwise.org



Global Burden of Crop Loss

Overview and aims



A B&MG Grand Challenges Call to Action



Aims to develop systems to provide rigorous, authoritative evidence on **impacts, causes, and risk factors** of crop loss.

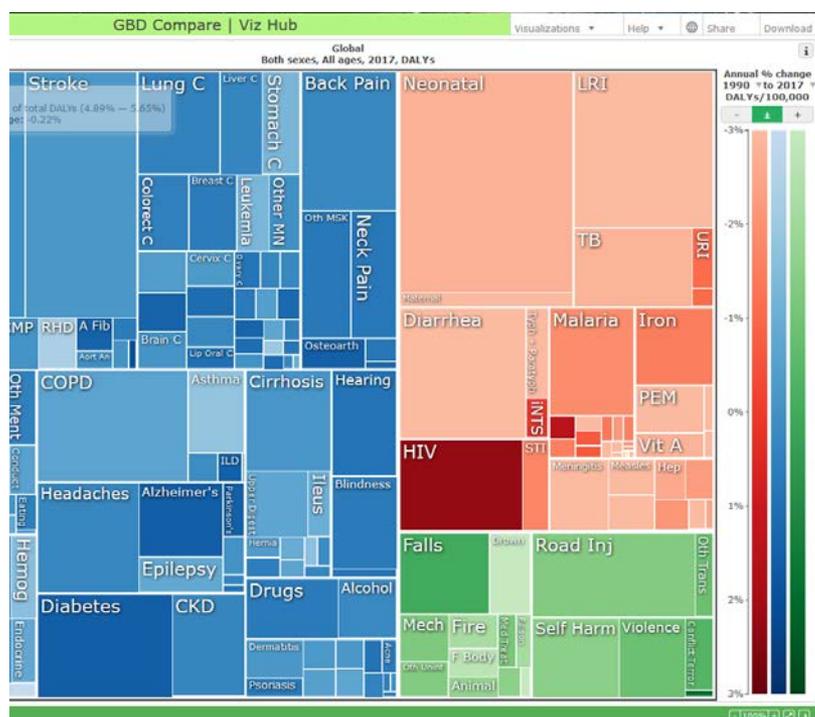
Brings together **people, data, and ideas** to **work collaboratively** on developing data-driven processes to answer pressing questions on the scale, scope and impact of crop loss.

Evidence on the drivers and impacts of crop loss will help **direct funding, policy, and research** efforts to reduce crop loss at the farm level.



Learning from human health systems ...

Inspired by the Global Burden of Disease for human health



The Global Burden of Disease initiative, led by the Institute for Health Metrics and Evaluation (IHME), has transformed the health agenda over the past 25 years.

The system provides comprehensive, authoritative data on the impact of hundreds of health problems and risk factors.

<http://www.healthdata.org/gbd>



Why is it needed in plant health?

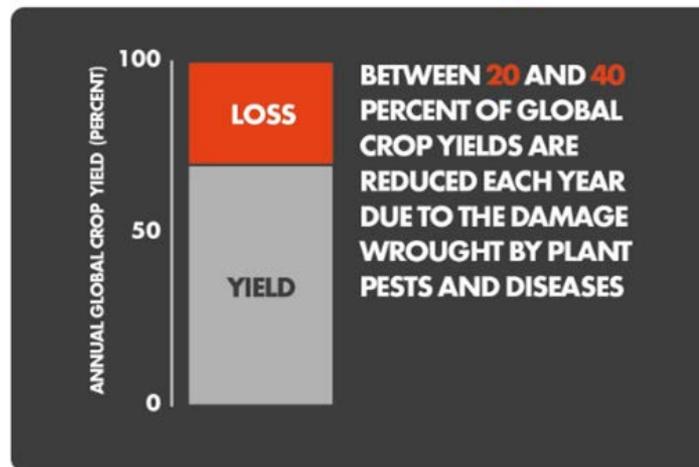
Data on the scale and causes of crop loss are sparse and outdated.

Data and evidence needed to

- Provide accurate and relevant information for decision makers
- Allocate resources, and systematically develop investment in plant health systems
- Improve ability to predict the impact of emerging diseases



Between 20 and 40% of global crop yields are reduced each year due to damage by plant pests and diseases #COAG25 bit.ly/2d3zrvv



7:55 am - 26 Sep 2016

22 Retweets 10 Likes



22



10

From: <https://twitter.com/FAOstatistics/status/780420534786031617>



We are trying to answer...

- How many of the world's crops are lost to insects, disease, weeds or abiotic factors?
- How is this affected by geography, or by crop?
- What is the economic impact of crop loss, and where is it most damaging?

We aim to answer what is the scale of crop loss and how much is due to:



Bacteria



Virus



Fungi



Insects



Abiotic



Weeds

Improved statistics and indicators to answer these questions would put us in a much clearer position to address the most damaging causes of crop loss.



Call to Action project aims

During the initial 18-month Grand Challenges Call to Action project, we aim to:



Build a research and data collection network



Define rigorous metrics, evaluate analytical methods



Assess the data landscape



Develop a community of collaborators, stakeholders and other interested parties



Develop a results dissemination framework



Beyond the Call to Action

Using the outputs from the scoping project, we will:

- Agree on an implementation plan with key stakeholders
- Formally launch as part of the **International Year of Plant Health in 2020**
- Mobilise funds for the first full assessment
- Publish initial estimates in the next 3 to 4 years

Website: www.croploss.org Contact: croploss@cabi.org

We aim to develop a system that can help policy makers and funding bodies identify where investments in plant health should be prioritised

IYPH 2020



Plant Health, Agriculture &
Bioscience Conference

9-11 September 2020
The Hague, Netherlands

Plant Health, Agriculture & Bioscience Conference

Mark your calendar now for the 1st international meeting of
experts and contribute to the shaping of our future.

Join PHAB 2020 on 9-11 September 2020 in The Hague, the
Netherlands.

LEARN MORE

<https://phab2020.com/>



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efharistó
merci
zikomo
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thank you
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urakoze
danke
terima kasih
dhanyawaad

CABI is an international intergovernmental organisation, and we gratefully acknowledge the core financial support from our member countries (and lead agencies) including:



Ministry of Agriculture,
People's Republic of China



 Agriculture and
Agri-Food Canada

