



CABI Quarterly Update

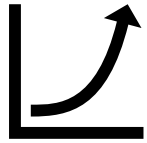
Member Country Briefing

12 June 2024

Headlines



Continuing expansion of **project & product portfolio**



PlantwisePlus scale-up phase funded and underway



CABI Digital Library now a 'one-stop shop' for content



Expanding team with new **key hires** including **CFO**



Member Country engagement on **next phase of strategy**

CABI receives FAO Partnership Award



Today's agenda



Introduction & future strategy – Daniel Elger



Regional focus – Africa – Daniel Karanja & Monica Kansiime



Regional focus – Europe and Americas – Richard Shaw



Space technology in agriculture – Bryony Taylor

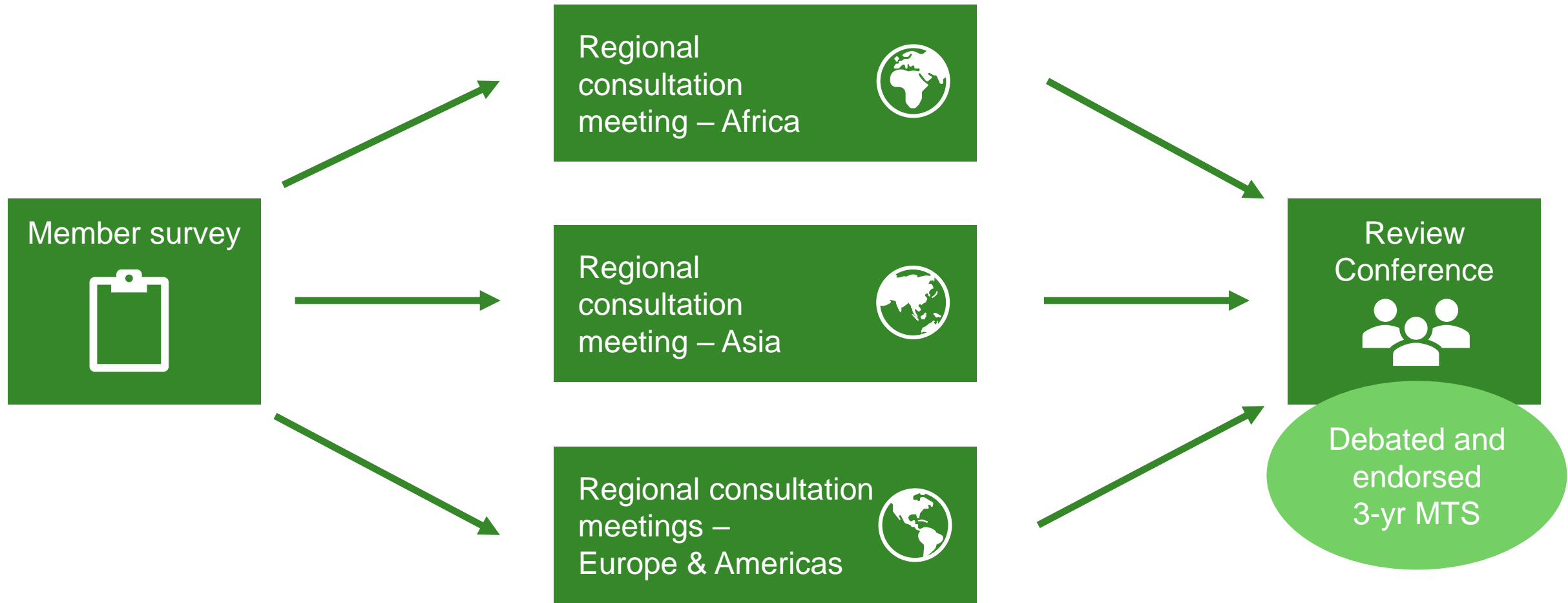


Finance update – Leo Kimutai



Closing comments – Daniel Elger

Prior approach to strategy development







Improve the food security and livelihoods of smallholder communities

1



Help communities adapt to the impacts of climate change

2



Reduce inequality through better opportunities for rural women and youth

3



Safeguard biodiversity and support the sustainable use of natural resources

4



Increase the reach, application and impact of science in agriculture and the environment

5



Proposed approach for 2025-2028

‘Action-focused’ regional consultations and review conference

Consultations in 2025

Review conference in early 2026

‘Refresh’ of MTS agreed in 2025 (after consultations)



Collaboration on projects and programme development to deliver MTS



Agreeing and delivering joint action plans to meet Member needs



Contribution of Member fees to support CABI's mission



Hosting and working with CABI Centres and project offices



Discussions to optimise future strategy

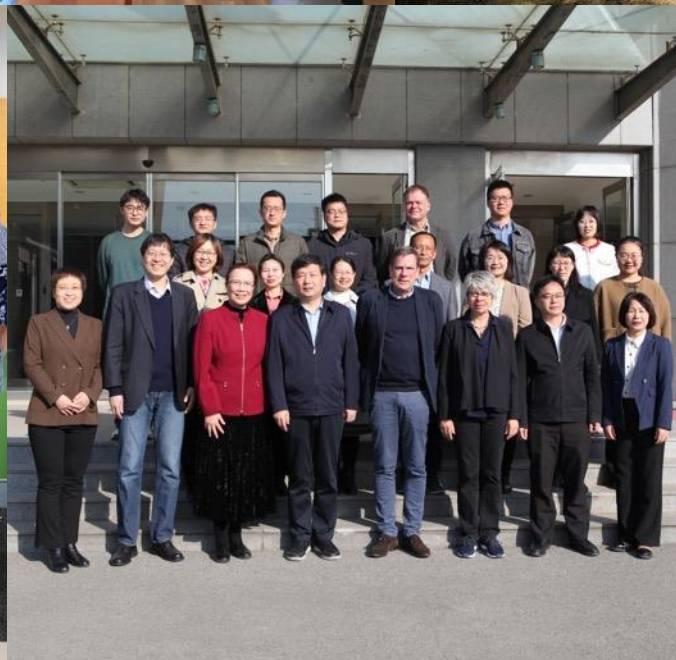
Major support as donors

Member-member collaborations involving CABI

Participation in CABI's governance structures

Hosting delegations, visits and meetings; sharing insights and contacts

Publishing in CABI journals





CABI in Africa

Dr Daniel Karanja & Dr Monica Kansiime

12 June 2024

Regional Pest Risk Analysis in Africa

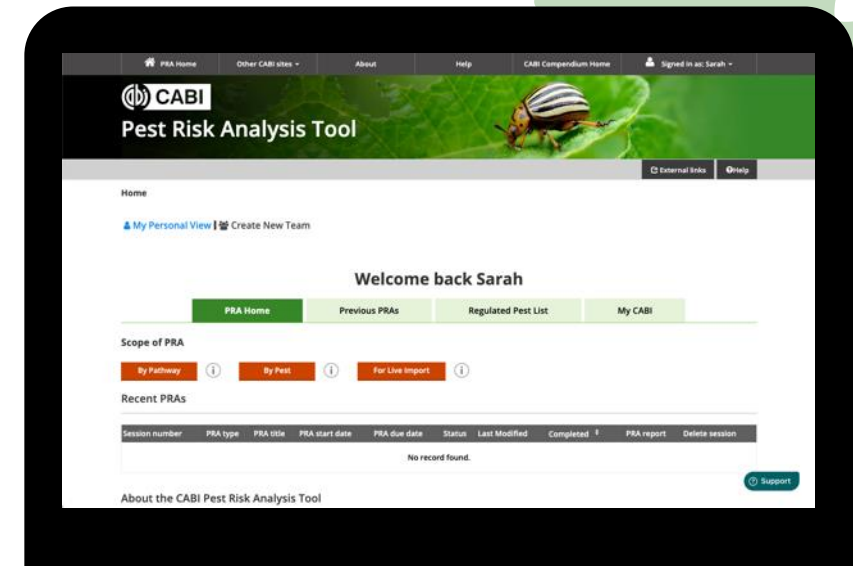
CABI in partnership with the RECs; East Africa Community (EAC), Economic Community for West African States (ECOWAS) and Southern Africa Development Community (SADC) collaborating on regional pest risk analysis

3 regional PRA workshops undertaken for EAC, ECOWAS and SADC. Benefitted all CABI member countries in Africa who belong to these RECs

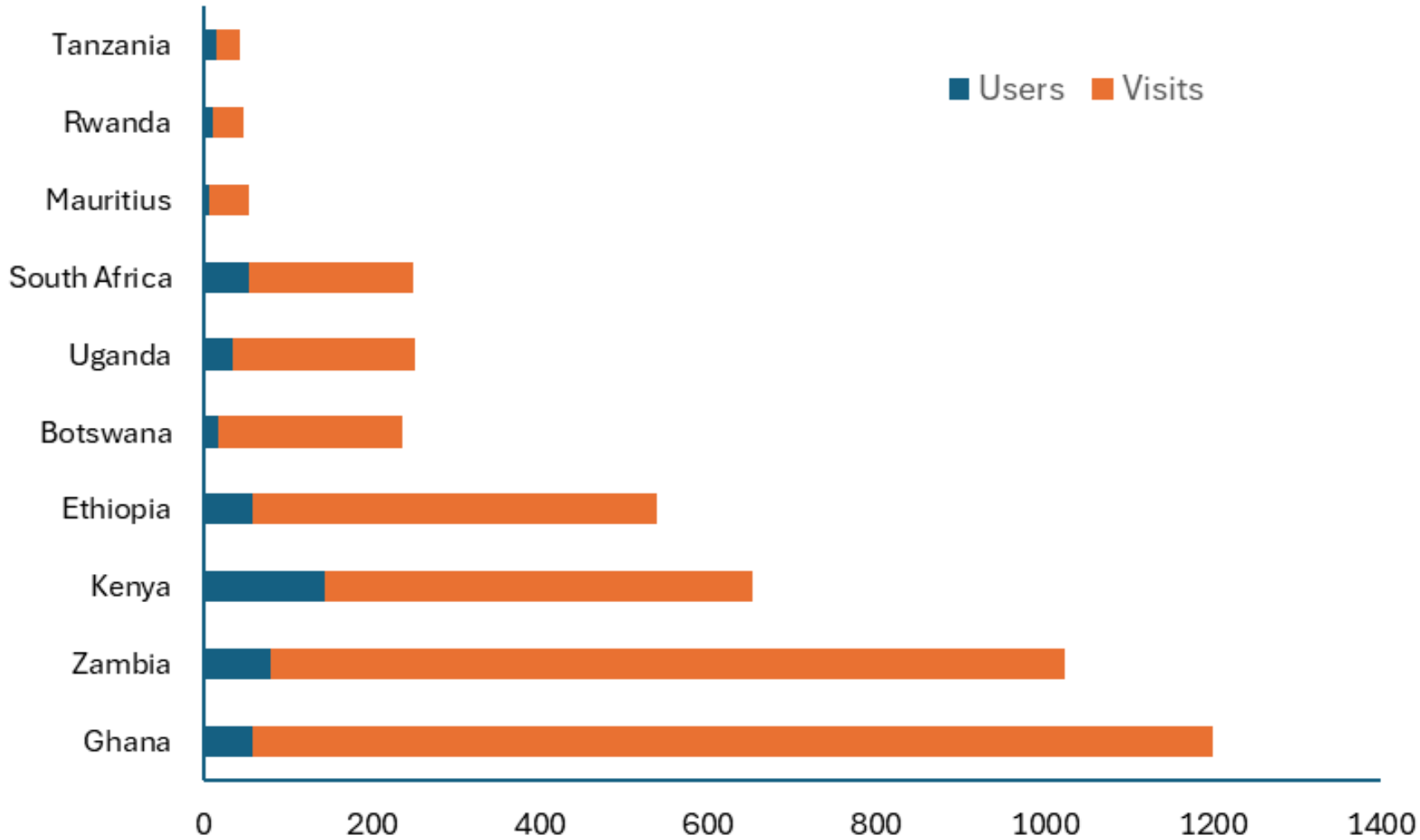
The regional approach to pest-initiated PRA informs surveillance for the highest risk threats

Great interest by AU-IAPSC, AfCFTA and FAO to collaborate in this regional initiative

At least 34 NPPO officials from the 17 CABI member countries reached with this initiative



Impact of CABI's Regional PRA Initiative



CABI member countries are utilizing the PRA Tool for risk assessment in increasing numbers

Generally, top ten users of the PRA Tool among CABI member countries visited at least 25 times

The French version of the PRA Tool launched in 2023 has increased usage



Cassava Brown Streak Disease – Zambia

CABI in partnership with ZARI, DMMU - Office of the Vice President, SCCI and Itabwa investment collaborating in managing CBSD and building a sustainable seed system

146,126 households reached with information on CBSD prevention & management; 39 key media personnel trained in science reporting, 15+ key stakeholders engaged on mitigation

CABI distributed clean cassava planting materials to 516 farmers in high CBSD prevalence areas to curb disease spread



Cassava Brown Streak Disease – Zambia

14 CABI trained cassava seed growers granted field inspection certificates, pending grower certification by SCCI

Farmers actively mobilizing into cooperatives to foster continued seed production.

Itabwa providing market for CABI-trained farmers, upscaling clean cuttings distribution in high CBSD region, targeting 2,000 farmers



Papaya mealybug biocontrol in East Africa

CABI collaborating with KALRO, NMK, KEPHIS, PPFSD (Kenya) and NARO, MAAIF (Uganda) to manage the papaya mealybug.

Acerophagus papayae released at Mombasa, Kilifi, Kwale, Embu, Tharaka Nithi, Machakos and Baringo to manage the pest. Parasitoid has become established, parasitism rates up to 72%

Nearly 85% of farmers view the release of the biological control agent to manage the papaya mealybug positively



Papaya mealybug biocontrol in East Africa

In Uganda, parasitoid has spread at least 50km from release sites; present at Buikwe, Mukono, Luwero, Kayunga and Wakiso

Nearly 100% of all sites at Wakiso; and 53-83% of sites in other survey districts now have the agent

In both countries, the pest is managed; visible decline in pesticide use and yield has increased by nearly 50%



Strengthening National Soil Information Services

Developing Soil Information Systems (SISs) to make soil data available to users

Aim: Enable informed decisions to improve soil health & livelihoods

CABI collaborating with ISRIC - World Soil Information and local partners

Reviewed state-of-the-art technology options for soil information systems



Strengthening National Soil Information Services

Interviewed 9 countries on their SIS development
(**Uganda, Lesotho, Ghana, Rwanda, Ethiopia, Tanzania**, USA, New Zealand, Australia)

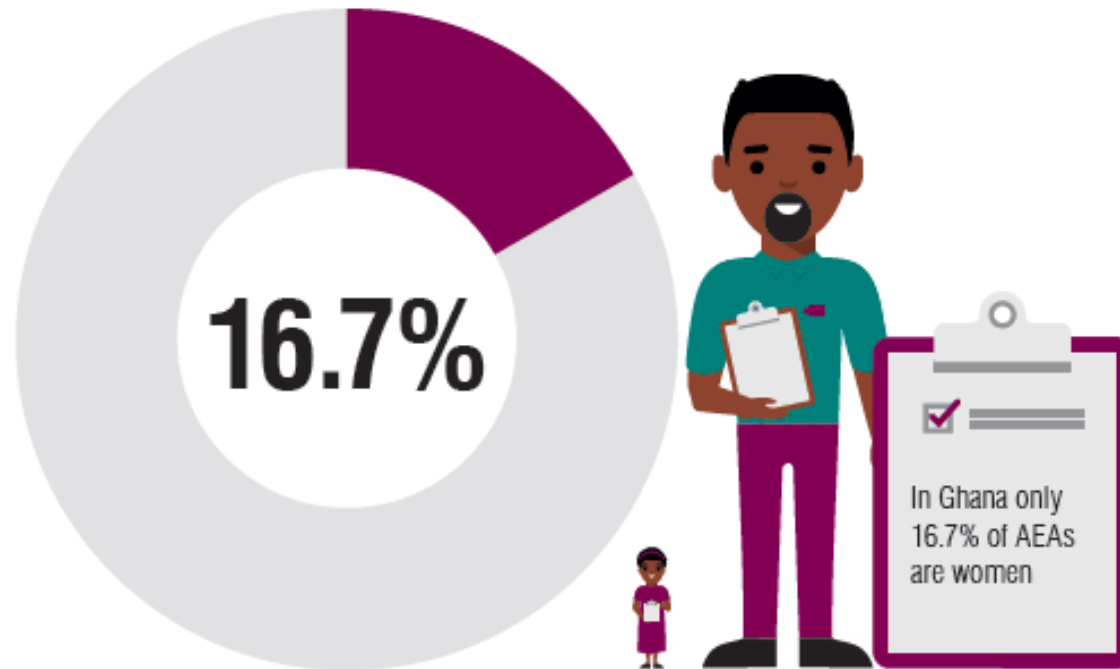
Defined typical characteristics of countries that determine SIS design choices (Archetypes)

Developed a framework for national, sustainable & user-focused SIS design e.g. ZamSIS co-developed with FAO, ZARI, UNZA. Extending to **Kenya** and **Ghana**

Gender and Rural Advisory Services

Ghana study (2022) identified gap in delivery of extension advisory service

CABI working to improve this through Social and behavioural change campaigns



Gender and Rural Advisory Services

Positive change now being reported:

- Policy Planning, Monitoring and Evaluation Directorate (PPMED) of Ministry of Food and Agriculture - anchored gender mainstreaming in the revised Agriculture Sector policy (PFJ 2.0)
- Departments of Agriculture (Regions and Districts) – Pay more attention to needs of women farmers, promote women-friendly crops and agri-businesses

Gender and Rural Advisory Services

Positive change now being reported:

- **PPRSD** - established a gender desk to monitor and ensure gender considerations Directorate's programmes and decisions
- **Esoko** - revised personnel recruitment policy to give more opportunities to women



Agribusiness opportunities for youth, women, and men

Training youth, women, and men to provide producer-oriented agricultural services, with attention to creating income-generating opportunities

Linking service providers to farmers, business development services, and local government initiatives for sustainability



Agribusiness opportunities for youth, women, and men

>600 trained as spray service providers, farmer service centers, IPM champions, plant health advisors, etc.

Trained service providers already generating profit ranging between \$113 in Uganda to \$200 in Kenya per month

Countries: Uganda, Kenya, Zambia

A man wearing a red shirt and a green cap is crouching in a greenhouse, holding a wooden tray filled with young green plants. He is looking down at the plants. The background shows the structure of the greenhouse and other plants.

CABI in Europe & The Americas

Richard Shaw (Senior Regional Director)

Yelitza Colmenarez, Wade Jenner, Naitram Ramnanan

Projects for Canada (2023-24)

Biological control research and scientific exchange on 15 invasive weed species affecting various regions of Canada

- For three of them(Russian olive, ox-eye daisy, flowering rush), new biological control agents have been introduced to Canada for the first time in the past 12 months

Projects for Canada (2023-24)

Biological control research and scientific exchange on 6 invasive insect species affecting agriculture and the environment (e.g. box tree moth, diamondback moth)

Hosting Canadian students as research assistants for seasonal biological control project work (>115 students from 21 universities from 1995-2023)

Projects for Switzerland (2023-24)

Biological control research and scientific exchange on 2 invasive insect species affecting agriculture and the environment

Initial releases of a biological control agent for one of these (spotted wing drosophila fruit fly)

Monitoring and ecological research on the invasive Asian hornet

Research and implementation of grassland restoration in the Jura

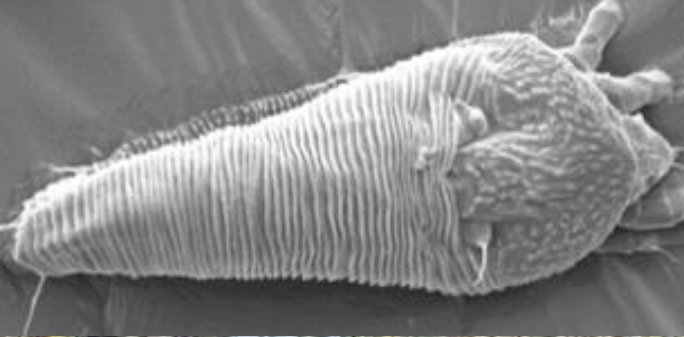
Projects for Switzerland (2023-24)

Education activities on biodiversity, invasive species and biological control for students and general public in Canton Jura

Hosting Swiss students as research assistants for seasonal biological control project work (3 in 2023; 83 from 2001-2023)

Swiss Centre is a major contributor to global projects

Projects for the Netherlands



- *Crassula hemsii* – safety testing complete and released in UK (2011-2018). NL Water Boards supporting research towards a 2024 petition including UK-funded data.
- Floating Pennywort (*Hydrocotyle ranunculoides*) – after R&D (2010–2021) and release at 19 sites in UK, Dutch funding proved invasive population susceptible. Plants collected for further safety testing and petition also planned for 2024

Work in UK

- Running over 100 projects in and ex-country
- Increasing support from FCDO on non-PlantwisePlus projects and services, e.g UK-CGIAR Centre launched successfully
- Growing portfolio of Digital Development/ Data Science/Modelling projects and growing team
- Microbiology shift from commercial services to partnership projects going very well especially microbiome-related
- Moving the UK Centre from Egham to Imperial College Q1 2025



CABI Library's digital home

- Journals – 1,100m of linear shelf space. Over 3,000 titles from 1797
- 24,000 books, dating back to 1700
- 150,000 Mycology reprints
- No suitable location found for relocation
- www.InternetArchive.org have agreed to scan the entire collection and make it available to the world for free
- Over 1,000 items are already available in the digital [Cabi Library](#)



Caribbean & Latin America

- Caribbean Biosecurity Interceptions System in use to support SPS
- Risk assessments conducted for the pet and aquaria trade; horticulture trade; international trade (used equipment and vehicles, wood and wood products; agricultural commodities; and international passenger luggage)
- CABI chairs the Regional Pest Prioritization that focuses resources on emerging issues in a proactive way



Caribbean & Latin America

- Updated the regional Invasive Alien Species strategy in Barbados and the OECS that directly benefits Barbados and Grenada and the wider Caribbean;
- Monkey Management Strategy developed in St. Kitts and Nevis, shared with Anguilla and Barbados
- Increased uptake of Publishing products and use of free identification service

Biological control of Croton Scale in Grenada

Croton Scale highlighted by national partners as a key invasive species affecting agricultural production

Integrated Pest Management (IPM) practices were reviewed and 3 workshops conducted with 23 specialists to review the establishment of an IPM program at national level

Biological control of Croton Scale in Grenada

Two field visits conducted to review the current status of the pest in Grenada and the natural enemies attacking the pest at the field level.

Specimens were sent to CABI – UK for identification.

Follow up to CEO visit to Region



- SRD followed up earlier this year (Chile, Costa Rica, Trinidad, Guyana & Barbados).
- Resources allocated to:
 - Colombia Member Country support
 - Jamaica HLB & Broad Mite
 - Guyana Paddy Rice Bug & Biopesticides
 - Caribbean IAS Trust fund development
 - Support for 2 students from region for CAS ICM

A man with a beard, wearing a dark blue polo shirt and a dark baseball cap with a logo, is bent over in a tomato field. He is examining the plants, which have green tomatoes. The background shows more rows of tomato plants and wooden stakes.

Integrated Pest management of Broad Mite and HLB in Jamaica

After the CEO visit to the Caribbean a prioritization of the key pests and diseases was done in collaboration with the national partners from RADA and the Ministry of Agriculture.


Broad Mite and HLB were selected.

A man wearing a dark blue polo shirt and a dark baseball cap with a logo is working in a tomato field. He is leaning over a dense row of green tomato plants, which have many small, unripe green tomatoes. The background shows more rows of similar plants and wooden stakes supporting them. The scene is brightly lit, suggesting a sunny day.

Integrated Pest management of Broad Mite and HLB in Jamaica

Two workshops were conducted remotely with the participation of 37 specialists from Jamaica, Barbados and Trinidad and Tobago, reviewing some of the Integrated Pest Management practices to sustainably control these two phytosanitary problems.

A field visit and a Face-to-face workshop will be conducted



Using Earth Observation to improve decision support in pest management

PRISE: Charlotte Day, Jon Styles, Andy Shaw, Henry Mibei, MaryLucy Oronje, Duncan Chacha, Makaiko Khonje, Tim Beale, Alyssa Lowry, Josephine Mahoney, Joe Beeken, Lizzie King, William Holland

EO4Ag/Wheat Blast: Pascale Bodevin, Jon Styles, Andy Shaw, Darren Kriticos, Tim Beale, Libertad Sanchez-Presa, Gerardo Lopez Saldana, Alex Cornelius, Michelle Hamilton, Luke Abbot, Matthew Payne, Kevin Tansey, Lizzie King, William Holland

GBCL: Anna Szyniszewska, Daniel Bebbber, Salar Mahmood, Gaby Oliver, Nicola Pounder, Alice Milne, Molly Brown, Kai Sonder, Cambria Finegold

Presented by: Bryony Taylor. Head of Data Sciences and Modelling, CABI. b.taylor@cabi.org



What is Earth Observation (EO) data?

Many different satellite missions launched globally (both private and public)

Sensors capture data relating to the chemical physical and biological systems on earth

Optical and radar sensors



What is Earth Observation (EO) data?

We can estimate indices such as greenness of vegetation, leaf area, irrigation/water use, soil moisture, satellite support weather data

Many different spatial and temporal resolutions

Many different applications derived from EO data



The problems we are addressing

Globally, pests (invertebrates, vertebrates, pathogens, weeds) can cause estimated annual losses of between 20- 40%

Can be invasive (biosecurity), eruptive (e.g. locusts) or indigenous



The problems we are addressing

Impact on livelihoods and biodiversity

Once you see a problem it may be too late to prevent losses

Climate change is affecting when and where pest outbreaks occur as well as severity

How can EO data be used to address these issues?



Direct detection of pests /pest damage



Understand the ecosystem: Quality/quantity of habitats and breeding sites, favourable conditions/soils



Satellite supported weather observations where ground network of observations are poor for integration with pest modelling e.g. temperature, humidity, more complex parameters like leaf wetness



Biosecurity- mapping and predicting transboundary problems multiple layers of risk information – where is it now, where could it go, what are the pathways, who needs to know, how can we slow it down/prevent it?



How do we make a difference
with these data?

We work globally ...



We convene multi-stakeholder partnerships



Day et al. 2024



Actionable information and impact

Partnerships

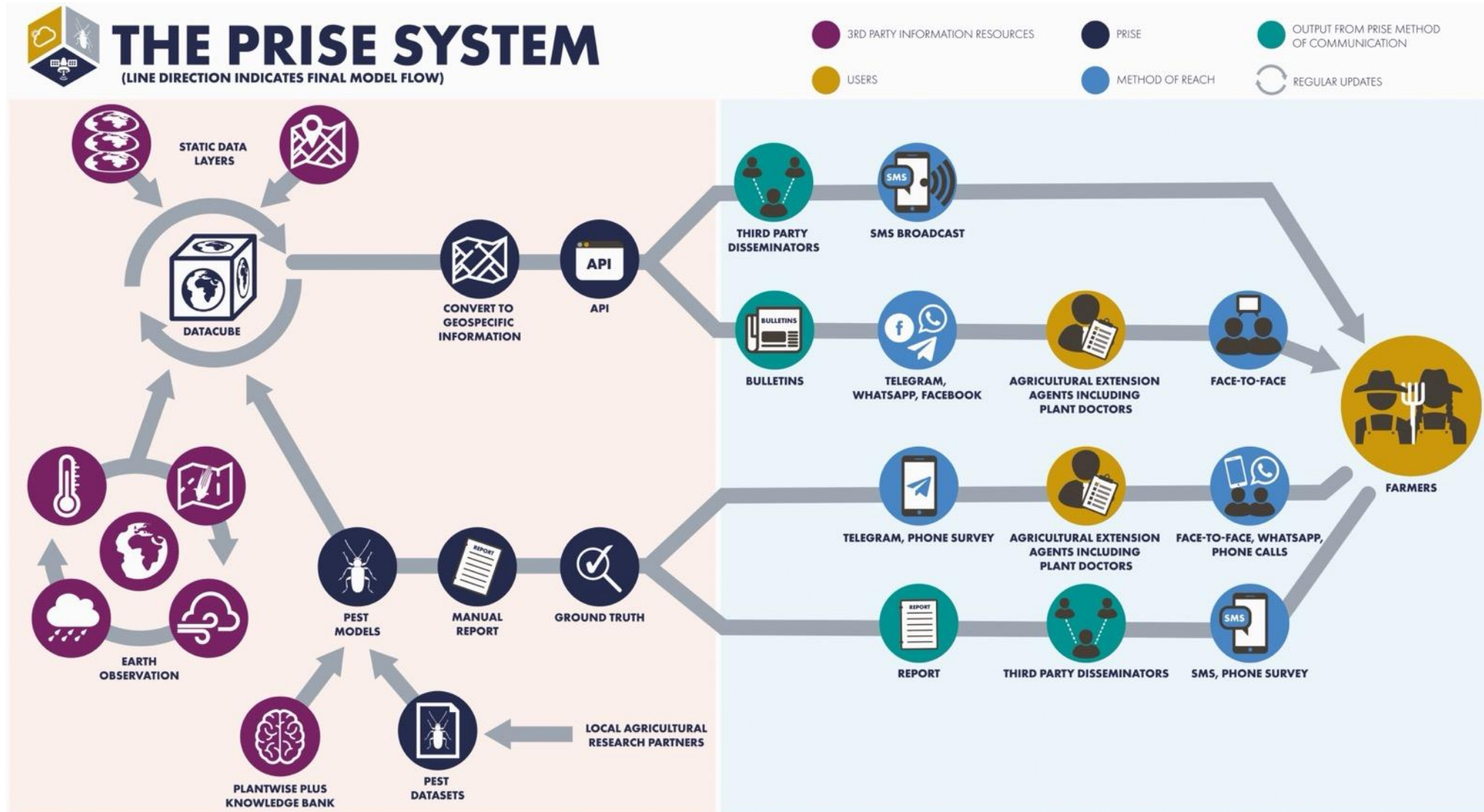
Data Sources





Examples use cases

When is the best time to act?



When is the best time to act?

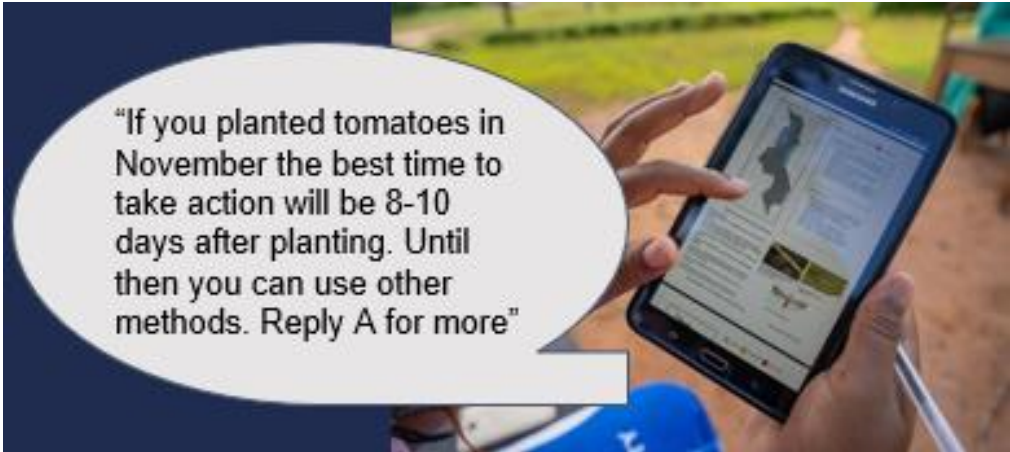


Zambia Update 17/03/21

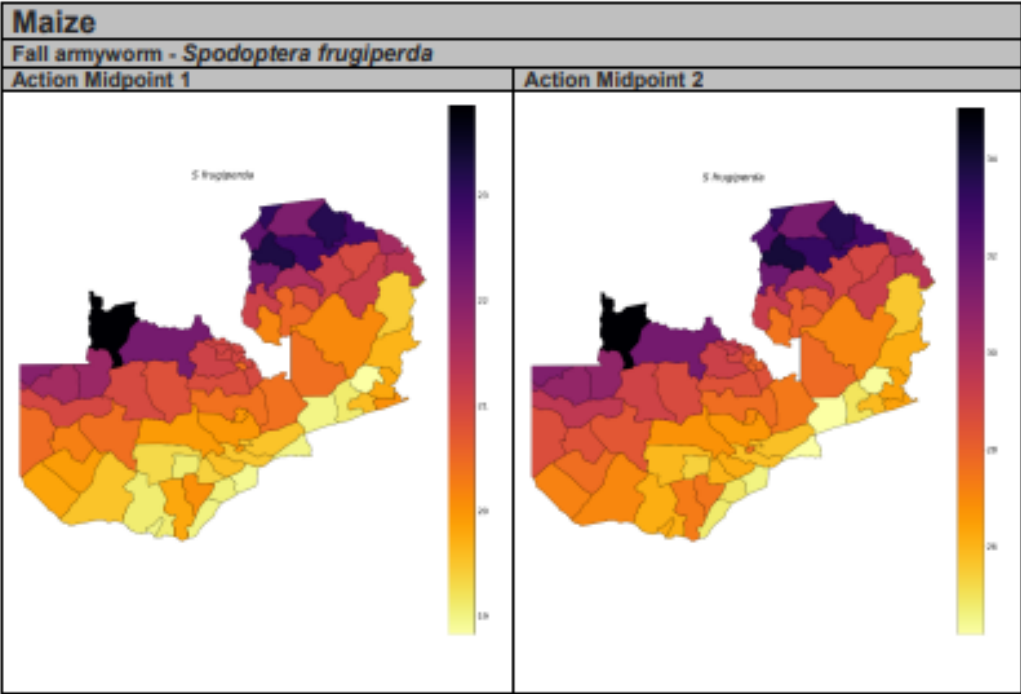


The Pest Risk Information Service (PRISE) bulletin service provides pest information focusing on some of the most damaging pests of maize, tomato and bean crops.

The IPM advice contained in this document has been approved and validated by in-country experts. Always check for these pests in the field before alerting farmers.



"If you planted tomatoes in November the best time to take action will be 8-10 days after planting. Until then you can use other methods. Reply A for more"





Dissemination and impact



- Over 1.8 million **smallholder farmers** reached in Sub-Saharan Africa since 2017
- **13% increase** in yields compared to control group farmers
- One study on fall armyworm found that **59% of farmers** who received the service changed their practices

Scan for a published
PRISE paper





Dissemination and impact



- Khonje et al (in prep) found that provision of early warning pest alerts relating to tomato leafminer management increased tomato yield by 45% and income by 62% in Kenya
- Studies show the benefit of receiving information eg **increased Integrated Pest Management uptake**

Scan for a published
PRISE paper





Biosecurity preparedness

The problem:

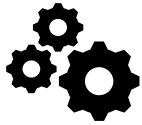
- Wheat Blast is a **disease** of global concern
- Threatening **crop production** and **biosecurity**
- Heavy **yield losses**
- **Limited** control options
- Threat to **global food security**



Wheat Blast

What is CABI doing?

Goal: Disease risk mapping and remote detection of pathogen outbreaks



OBJECTIVES

Map presence of Wheat Blast



Model potential distribution of Wheat Blast



Stakeholder consultation for:
– management strategies
– pathways to communicate risks



DATA

Climate data



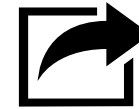
Earth Observation data



Drone data



Biological data



OUTPUTS

Spatio-temporal crop phenology model



Pathogen potential distribution model



Wheat Blast spectral signature



Desk study dispersal pathways



OUTCOMES

Risk maps for Wheat Blast incorporating:
- pathogen biology
- host presence and phenology



Methodology for remote anomaly detection in crops



Understanding how to communicate for maximum impact

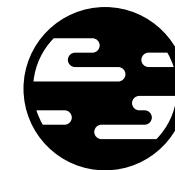




Improving data used in models

What is CABI doing?

- Developing a dynamic approach to detecting ‘unnatural’ habitats using data derived from EO sources
- Testing improvements against existing pest models
- Enhancing three critical modelling datasets:
 - Irrigation
 - Protected agriculture
 - Canopy temperature



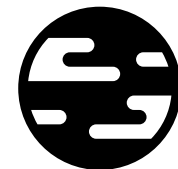
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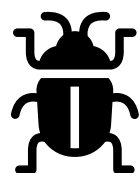


Improving datasets used in models

Why?



Datasets produced will help to contextualise species distribution data from repositories



Improve the performance of environmental niche models leading to more accurate, high-resolution, and timely information for pest risk assessment

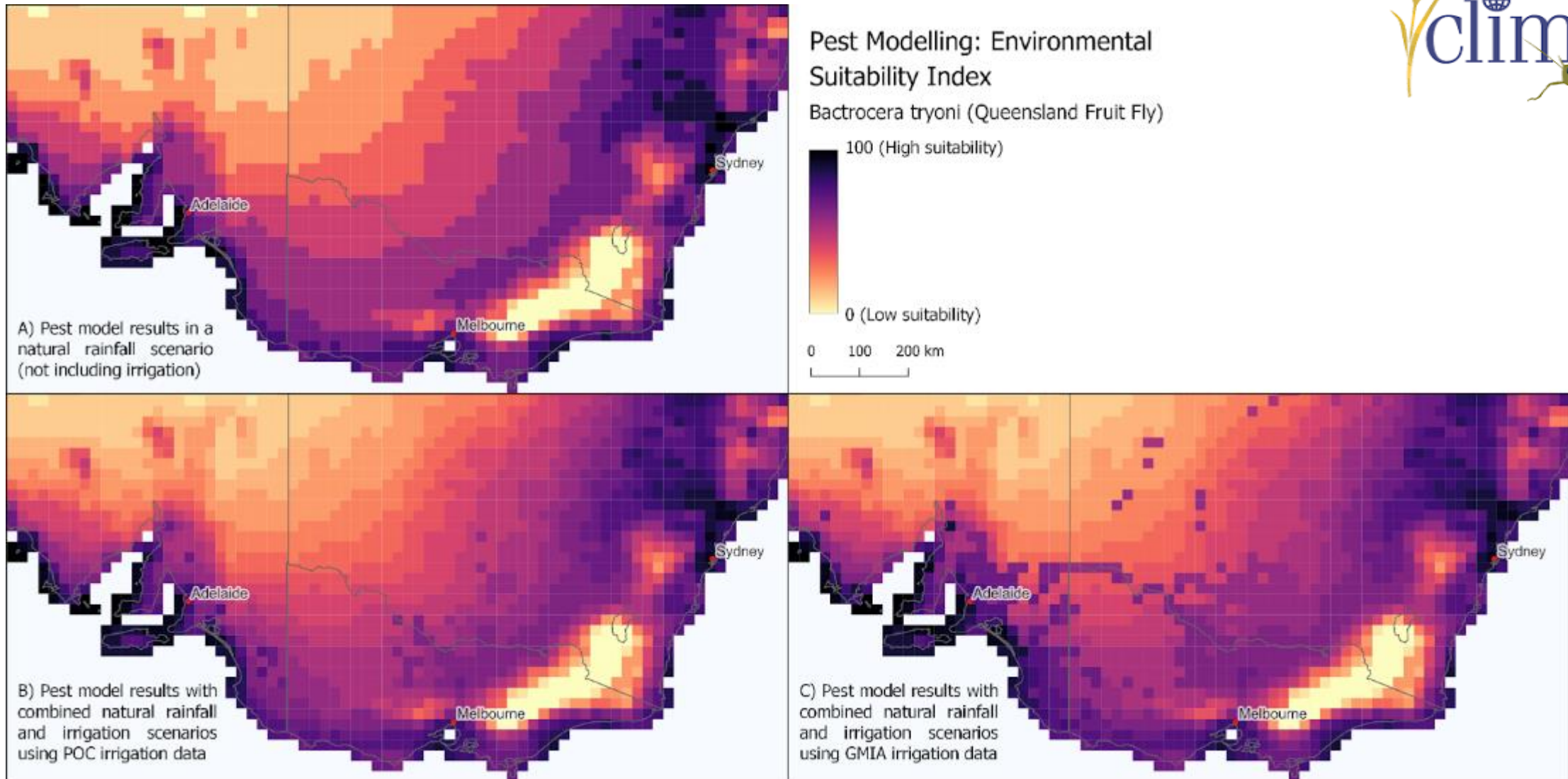


Pest and biocontrol model use cases will be developed to illustrate their scientific, policy or commercial potential application

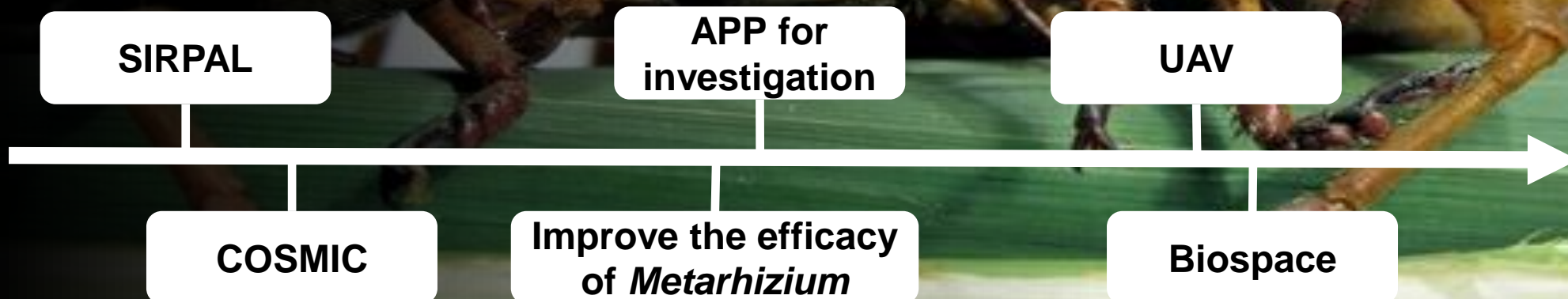


Datasets will be published and promoted to the scientific community to encourage uptake and reuse

EO supported irrigation datasets applied to pest models



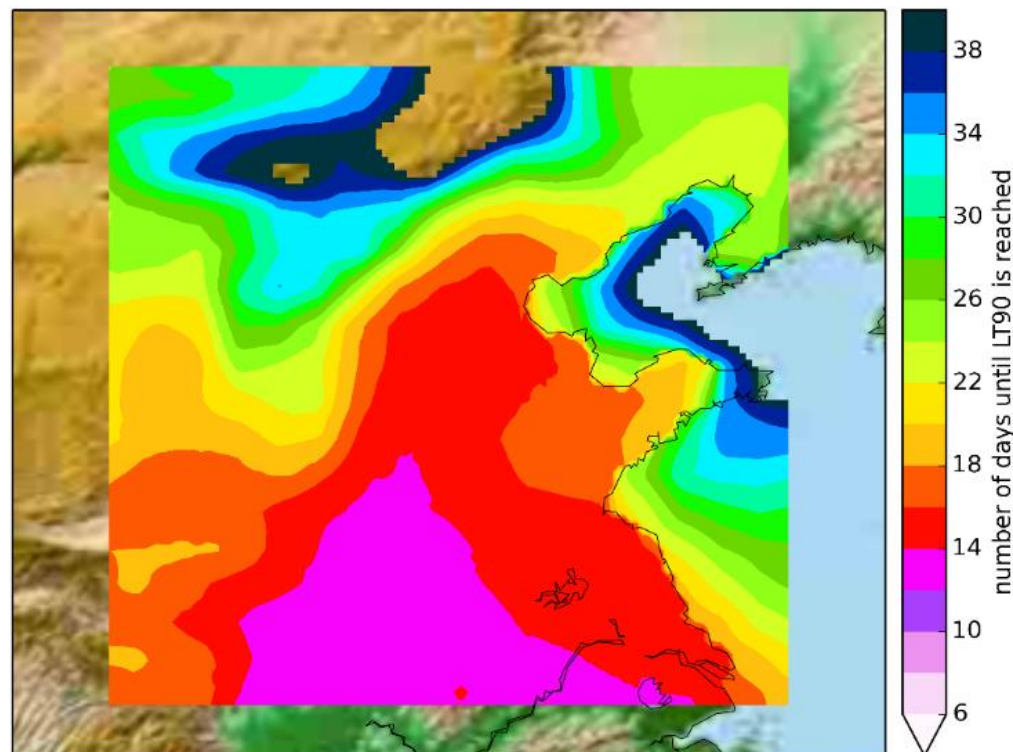
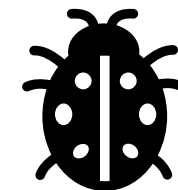
Using biopesticides to control locusts in China



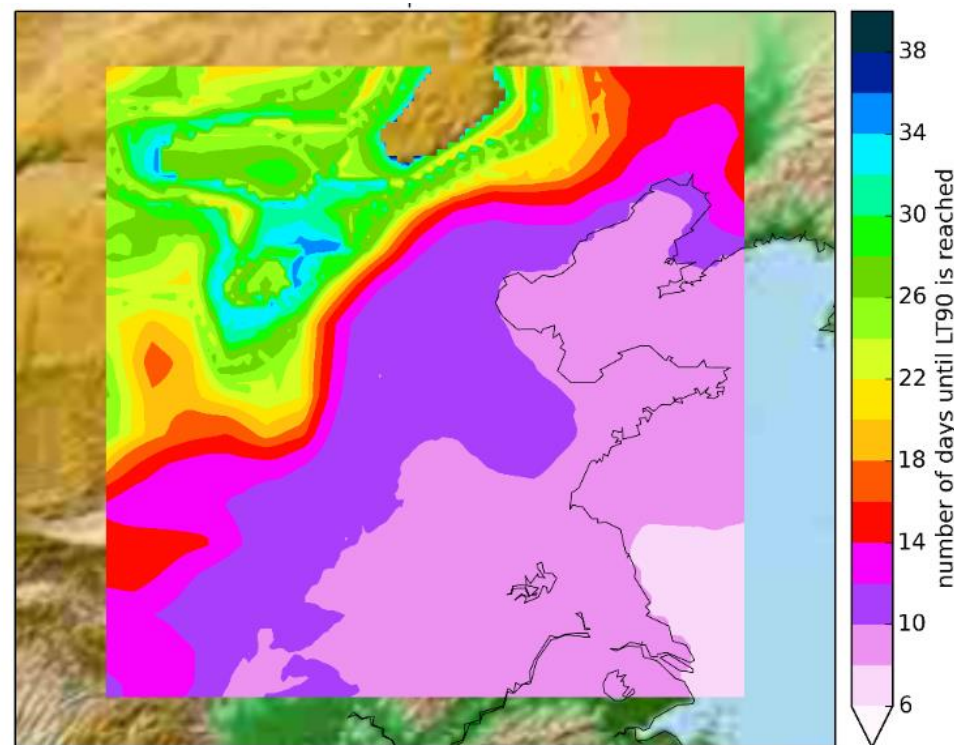
'BioSuccess'

Predictive maps

Assimila



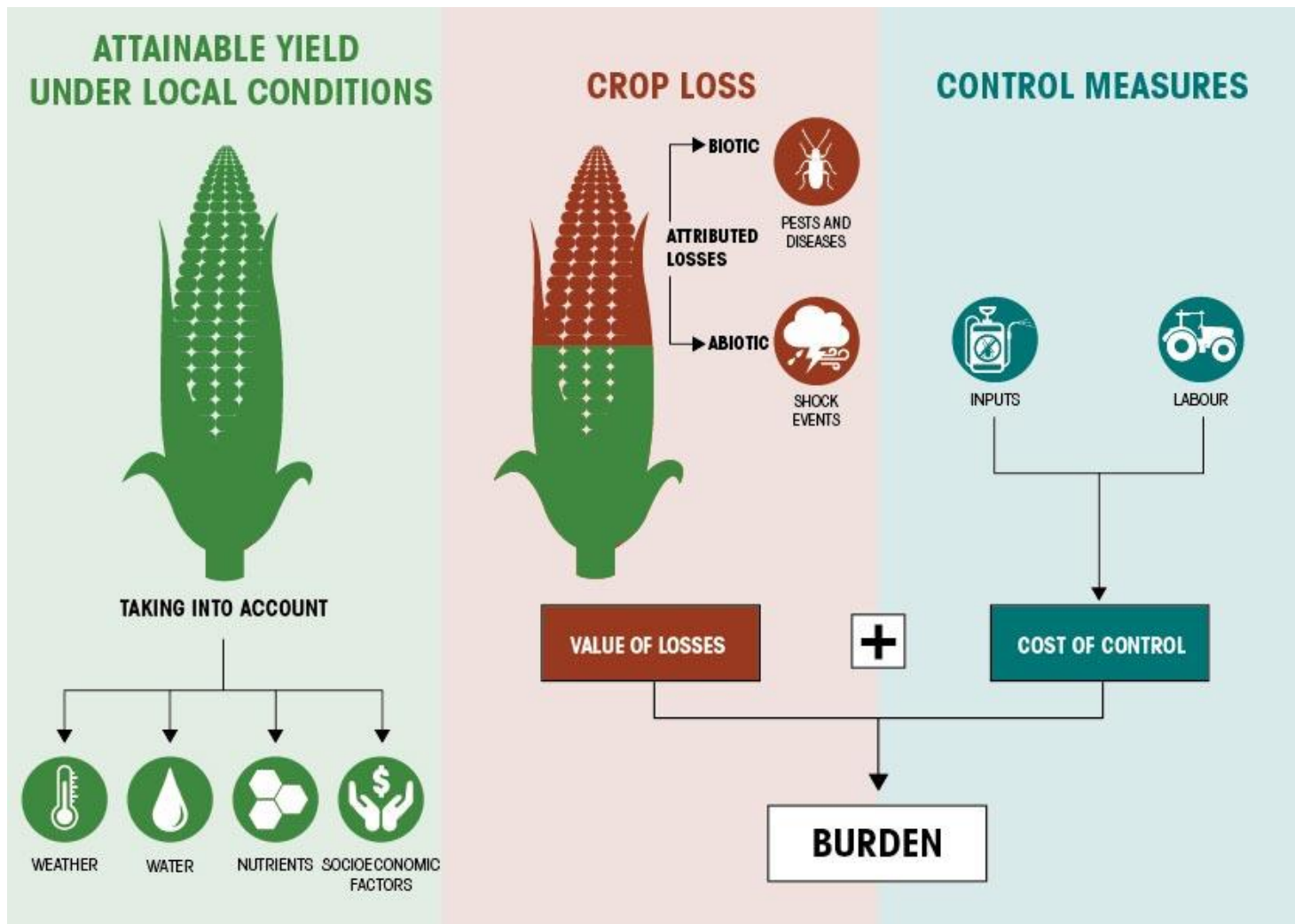
15th April



15th September



Global Burden of Crop Loss





Finance update

Leo Kimutai

A portrait of Leonard Kimutai, a middle-aged Black man with short dark hair and a mustache, wearing a grey suit jacket, a black shirt, and a red patterned tie. He is smiling slightly and looking towards the camera. The background is a gradient of teal and green.

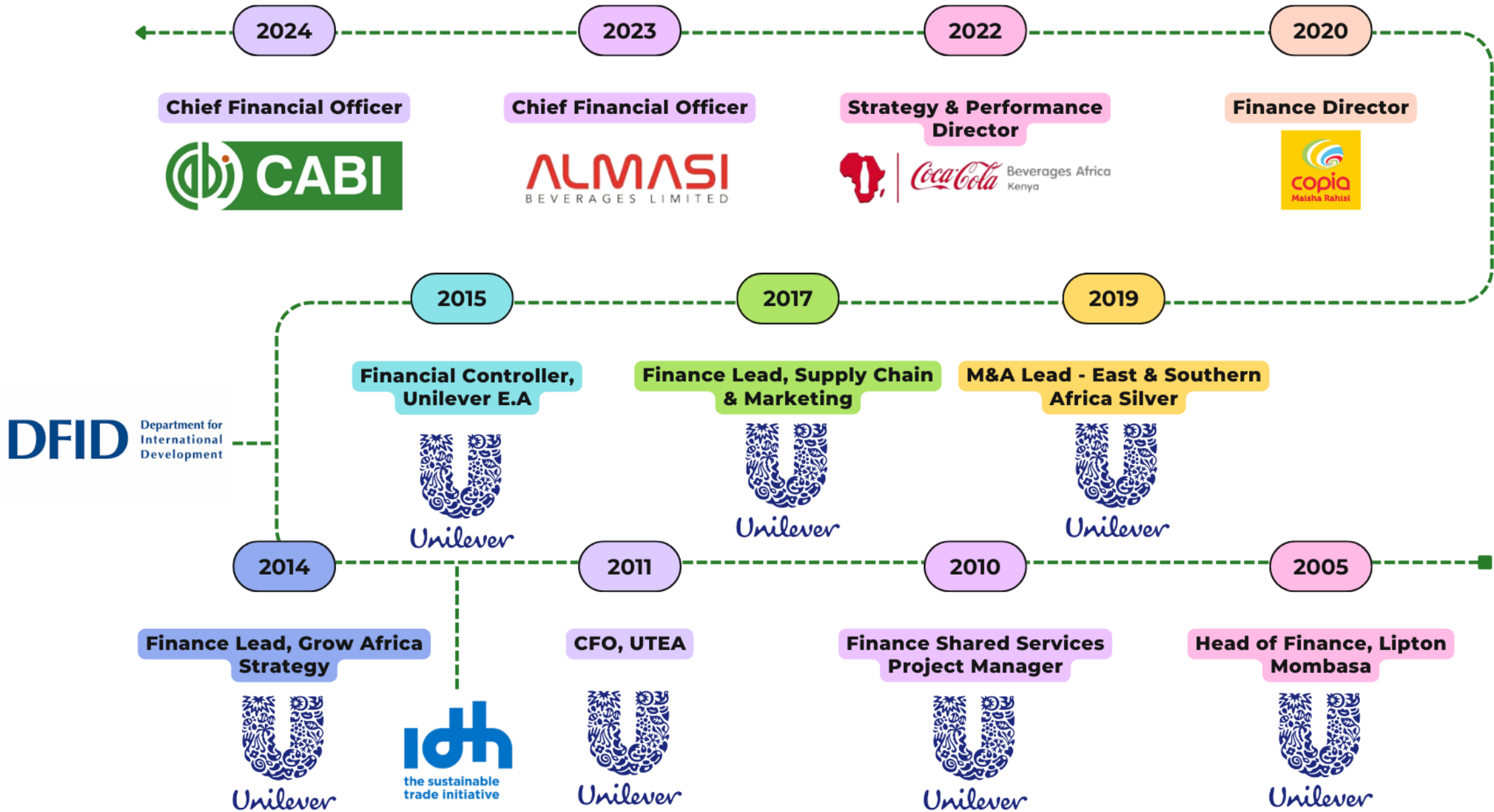
Leonard Kimutai

MBA, B.Comm (UoN), CPA (K)

Member of the Institute of Certified Public Accounts (ICPAK)

Leo is a proud father of three vibrant children and husband to Janet

Professional Journey



Net Revenue Apr 2024

£'000	April Ytd			Budget	
	Actual	Budget Var %	Growth vs 2023 %	Full Year	Growth vs 2023 %
Knowledge Business	3,422	(13)%	(4)%	13,234	9%
International Development	6,884	(4)%	6%	28,478	13%
Corporate	1,390	23%	26%	4,188	2%
Total	11,696	(4)%	5%	45,900	10%

Ytd Revenue 5% above prior year but 4% below budget mainly driven by delay in CAPES deal. Total revenue projected to remain in line with budget.

Operating Surplus Apr 2024

£'000	April Ytd			Budget	
	Actual	Budget Var %	Growth vs 2023 %	Full Year	Growth vs 2023 %
Knowledge Business	1,030	(9)%	(17)%	4,612	(3)%
International Development	(311)	33%	4%	520	3%
Corporate/Central	(1,344)	16%	17%	(5,068)	(3)%
Total	(626)	32%	(6)%	64	(79)%

YTD Operating deficit better than forecast due lower staff costs and CABI tax.

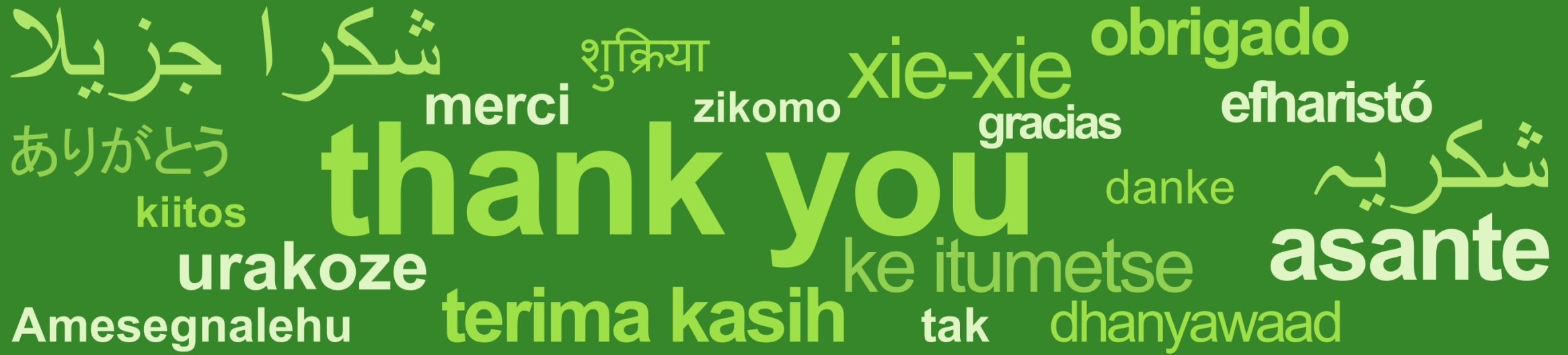
UK Legacy Pension Scheme update 2024

- CABI continues to meet its obligations under the recovery plan
- The new triennial formal valuation process starts in 2024 with completion by end of March 2025
- One key output from that process is an updated recovery plan

Closing Comments & Discussion

Daniel Elger





CABI as an international intergovernmental not-for-profit organization, gratefully acknowledges the generous support received from our many donors, sponsors and partners. In particular we thank our Member Countries for their vital financial and strategic contributions.