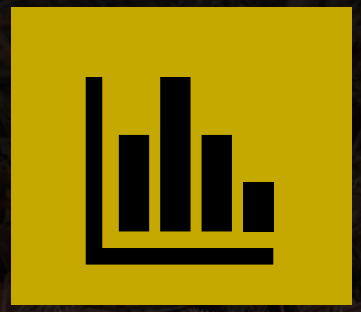


Invasive Species (IS)

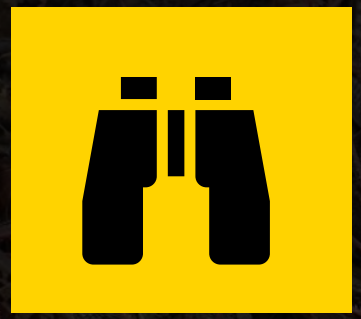
Regional Consultation, Trinidad & Tobago, September 2025

CABI's Invasive Species work

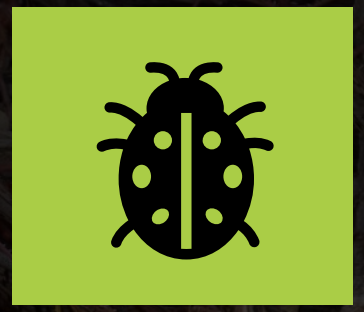
Total of 80-85 different IS targeted



Quantification of impacts and awareness raising



Prediction and prevention



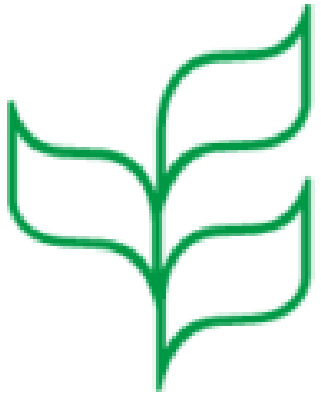
Control

Policies, strategies and action plans

International Conventions

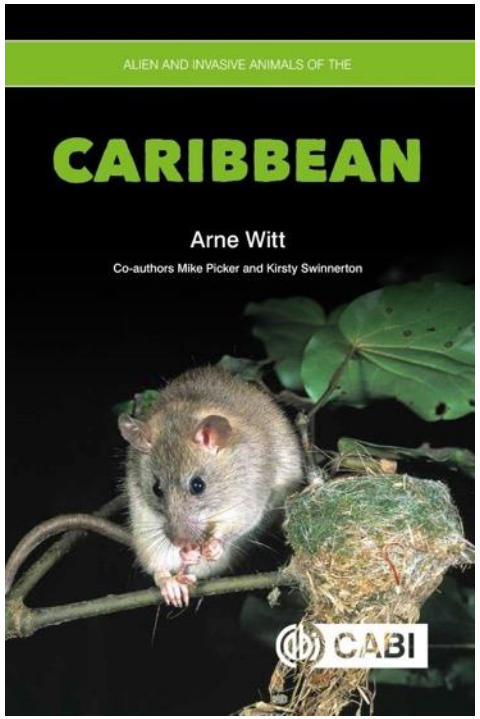
185 contracting parties

193 contracting parties



Quantification of impacts and awareness raising

A literature review and online survey revealed that economic costs of invasive alien species to African crop and livestock production alone amounts to an estimated $65 Bn USD annually



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CABI Agriculture and Bioscience

RESEARCH Open Access

Towards estimating the economic cost of invasive alien species to African crop and livestock production

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Impacts of Prosopis, an invasive tree in Eastern Africa

Economic

invades grazing areas and crop land

Environmental

reduces biodiversity and displaces native vegetation

Social

Drives conflict between communities

Ecosystem services

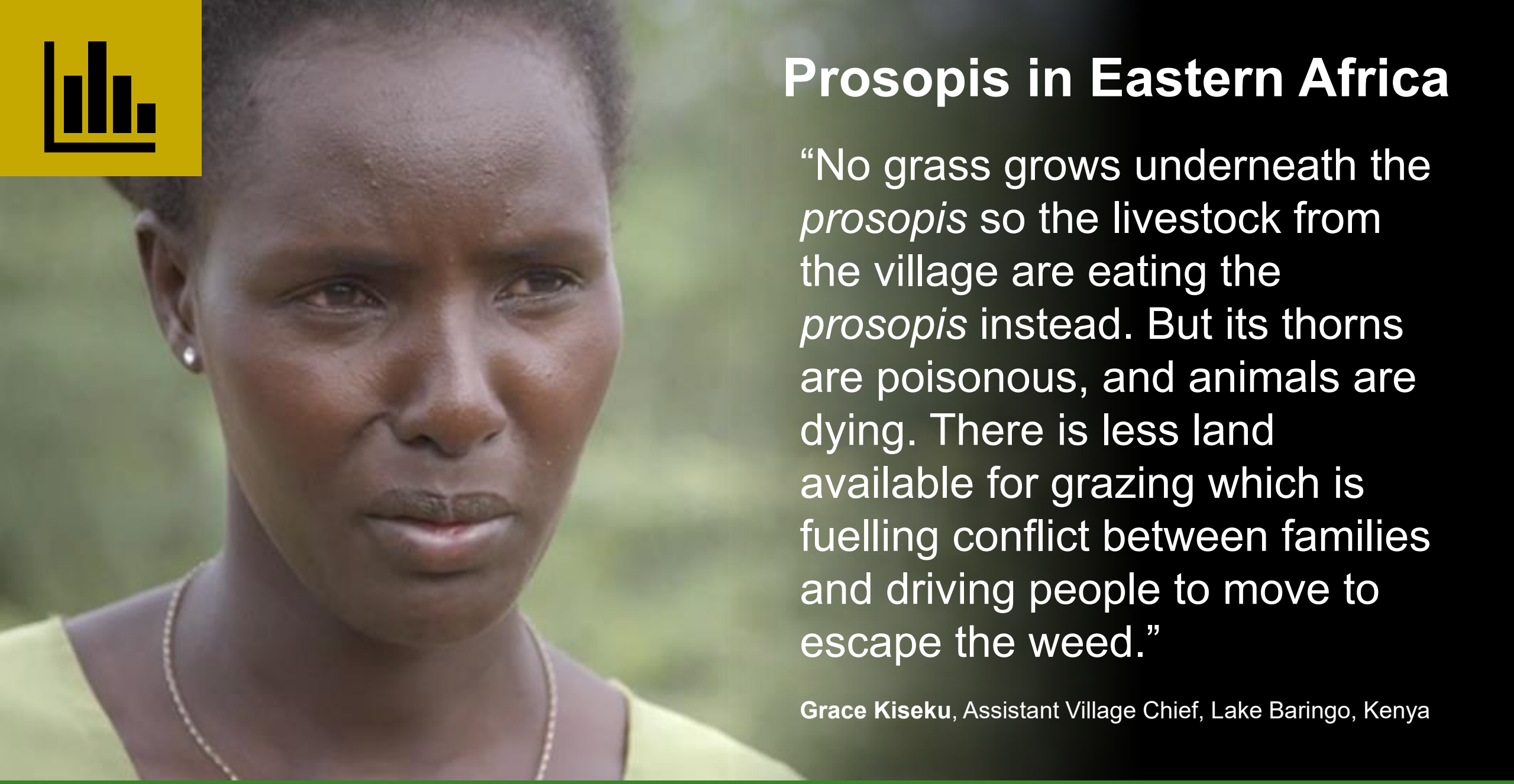
can consume equivalent of up to 50% of rainfall in invaded areas

Human health

inflicts physical injuries and increases incidence of human disease vectors (e.g. malaria)

Animal health

inflicts physical injuries through thorns and digestive problems



Prosopis in Eastern Africa

"No grass grows underneath the *prosopis* so the livestock from the village are eating the *prosopis* instead. But its thorns are poisonous, and animals are dying. There is less land available for grazing which is fuelling conflict between families and driving people to move to escape the weed."

Grace Kiseku, Assistant Village Chief, Lake Baringo, Kenya

Quantification of impacts and awareness raising – Parthenium in Pakistan

Farmer training programmes reached **438 villages**

Weeding week reached **24 villages**

Documentary and Six Public Service Messages (PSMs) developed

PSMs were broadcasted on Radio FM 107 in Sheikhupura and FM 99.4 in Islamabad/Rawalpindi for one month

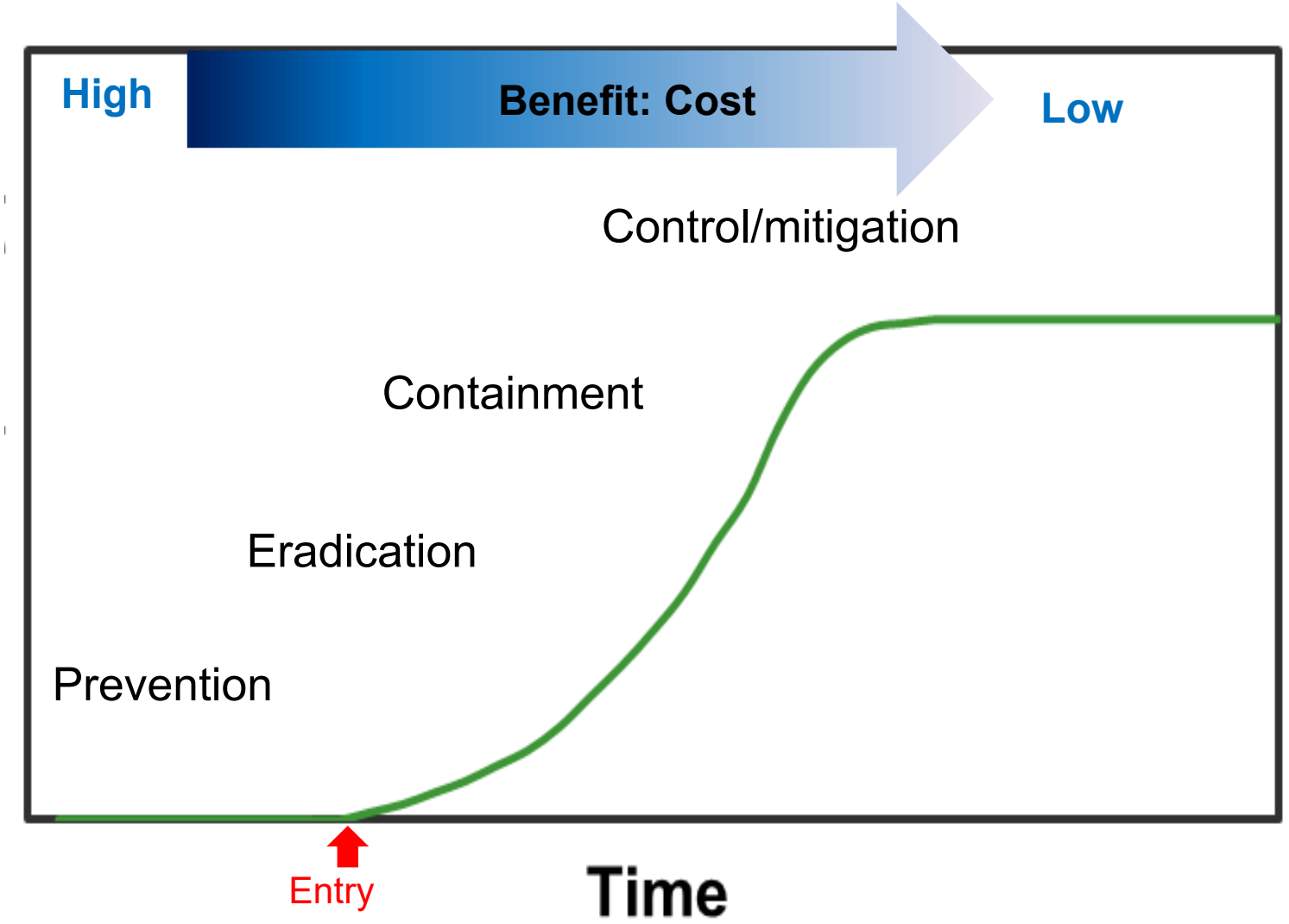
PSMs aired through National TV channels i.e. Geo News, Express News & ARY News during prime time

Documentary and PSMs were also broadcast through local cable network in Sheikhupura at seven locations

Quantification of impacts and awareness raising – Parthenium in Pakistan

Estimated reach of over 2 million people through all channels

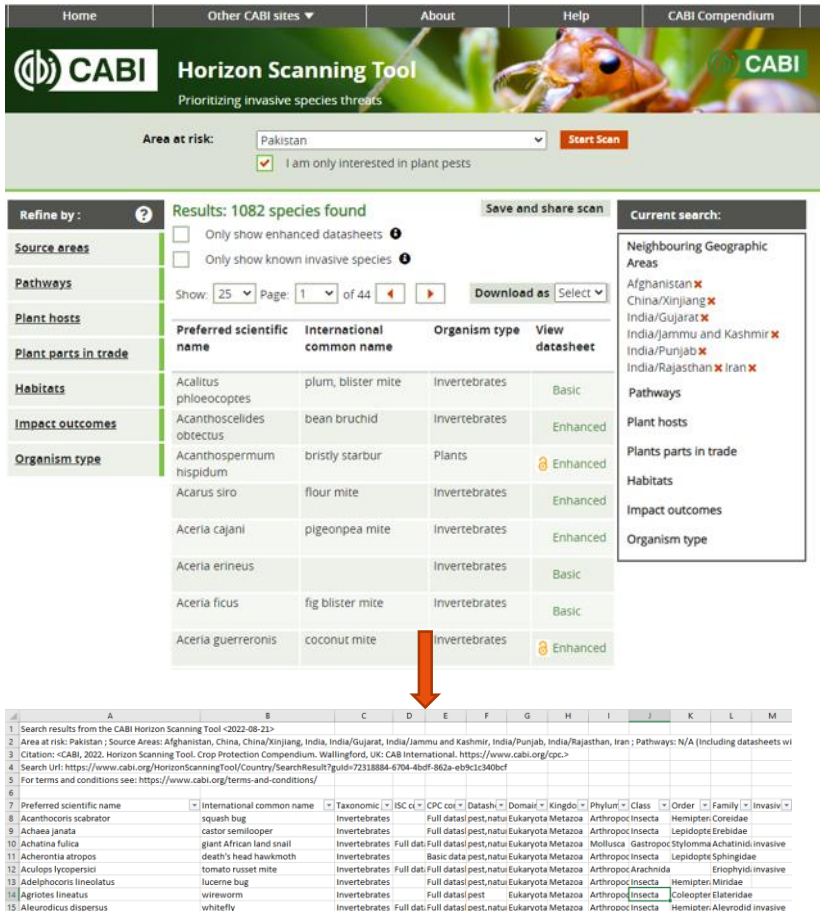
Strategies for Managing Invasives



Adapted from Western Australian Agriculture Authority (2015)

Prediction and prevention

- **Horizon Scanning Tool** to identify potential invasive species that are not present in a country/region followed by rapid risk analysis
- So far HS workshops conducted in 9 countries, followed by a prioritization exercise
- Ideally subsequent establishment of Risk Registers to allow NPPOs to identify high risk pests for early detection and surveillance
- In Nepal, the exercise was also used to update the list of regulated pests
- Three regional workshops conducted, and one in planning together with CAHFSA



Premium access for CABI Compendium subscribers

www.cabi.org/HorizonScanningTool

Asian Citrus Psyllid and HLB – Ghana

Asian Citrus Psyllid (ACP) – *Diaphorina citri* an important pest of citrus; vector of the bacterial disease Huanglongbing (HLB)

2019-2020

Horizon scanning in Ghana identified ACP having a high-risk score

2022

Pest Risk Analysis done on both ACP and HLB

2023

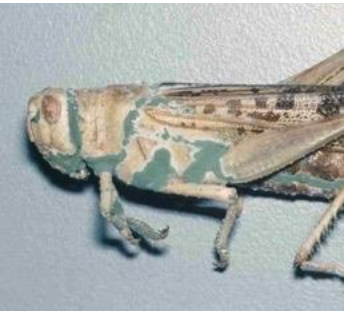
Response plan developed for both to manage the risk

2024

Surveillance for HLB and ACP undertaken; detected ACP in southeastern Ghana, HLB absent

2025

Inspection protocol developed for detection of HLB

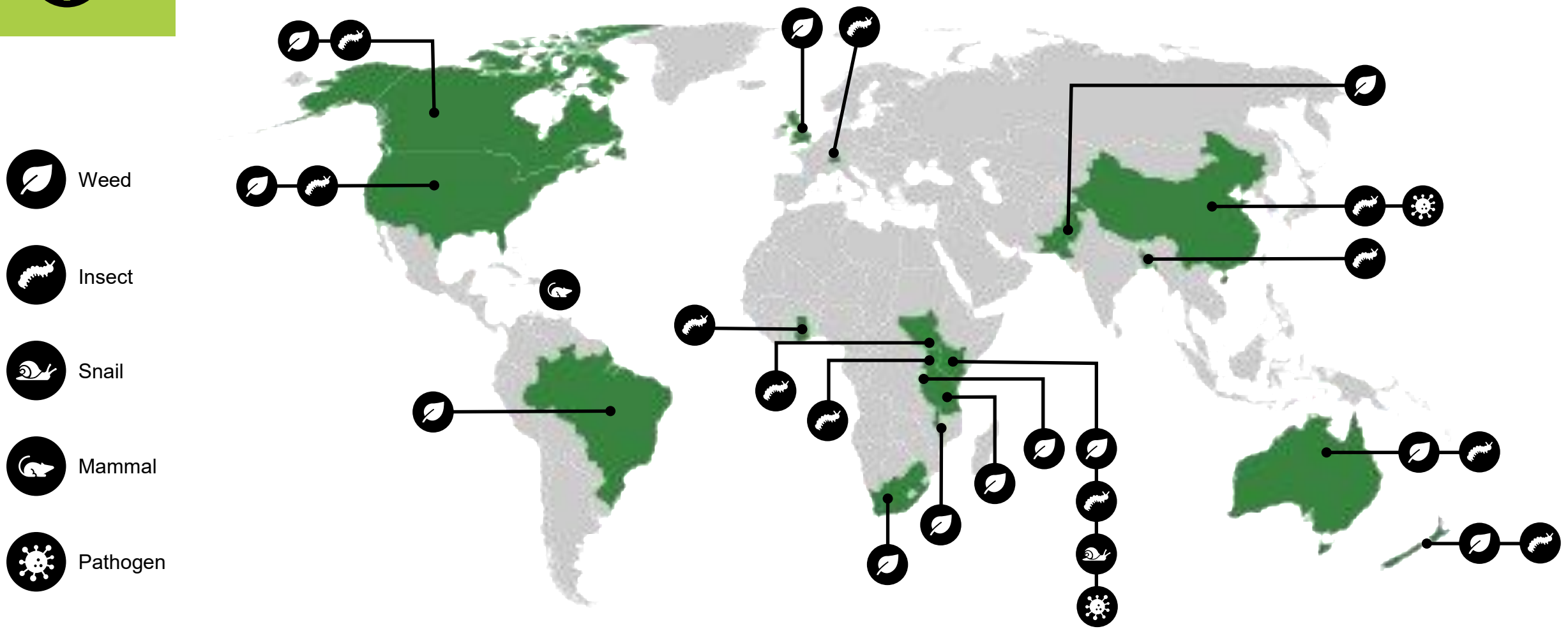


Control

CABI is a world leader in **biological control (BC)** solutions and also integrates BC with conventional control methods for **Integrated Pest Management**

- **Classical biological control**
  Currently targeting **56** invasive plants and insects
- **Augmentative biological control**
  Mass production and application of already present natural enemies
- **Biopesticides**
  Facilitating harmonization of regulations
  Research conducted by CABI, commercialization by private partner, e.g. Green Muscle for Desert Locust control

Invasive Species Targets

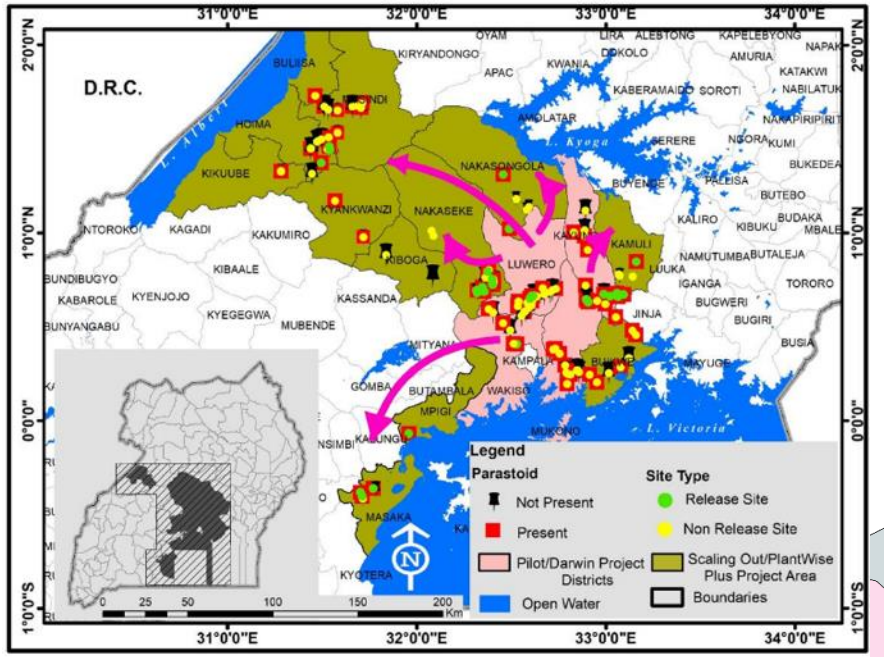


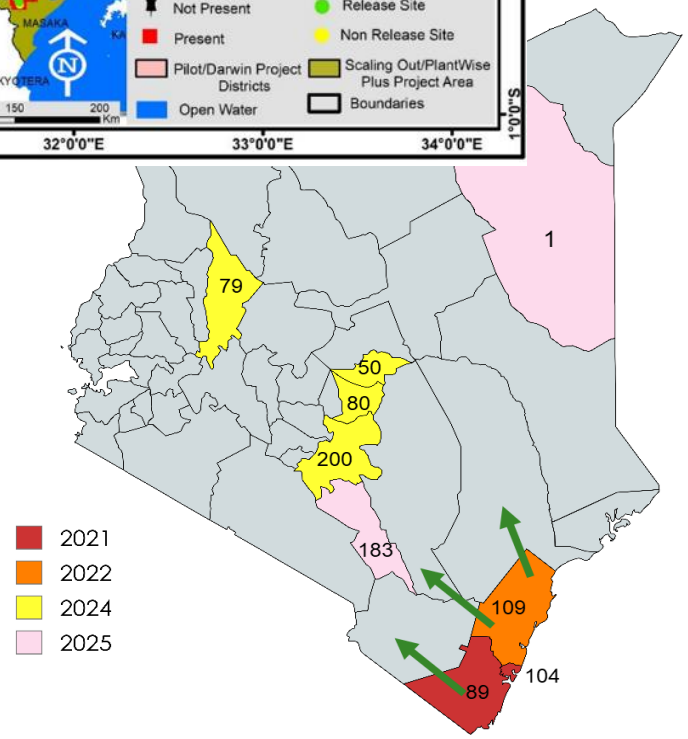
Classical biological control of papaya mealybug (PMB) in East Africa

- PMB has been devastating papaya in East Africa since 2016
- Yield losses of 57%; economic losses at household level of **US$ 30 million** annually.
- In collaboration with National partners, CABI developed a classical biocontrol strategy
- First wasps imported from Ghana to Kenya in 2020
- Since then more than 1 million parasitoid wasps' mass reared and released in Kenya, Uganda and South Sudan

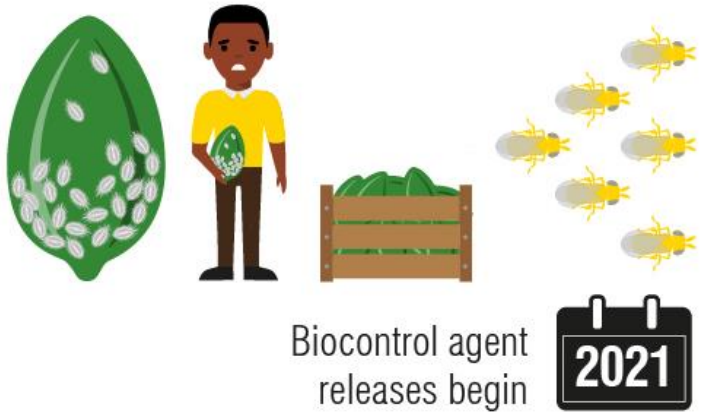
Tracking the wasp's spread in East Africa

- 66% of sites at 100 km from nearest release site have the parasitoid
- Parasitoids have spread over 150 km from the release sites in 3 years
- 76% papaya mealybug mortality, reduction in pesticide use





Impacts of the papaya mealybug biocontrol strategy



- Number of papaya growers grown by 15% ↑
- Papaya sales increased by 18% ↑
- Increased growers' profits by 118% ↑
- Income gains of up to US$2,144/ha ↑

Tristan’s unique buntings under threat from brown scale invasion

Wilkins’ bunting

Rare and endemic *Nesospiza* buntings on Tristan da Cunha’s group of islands, evolved to feed on fruits from the only native tree, *Phylica arborea*

A highly polyphagous soft brown scale (*Coccus hesperidum*; Coccidae) invades the islands and threatens the survival of these trees

This threat is on top of significant habit losses due to storm damage in recent years

Soft brown scale (*Coccus hesperidum*)

Phylica arborea covered in sooty mould

The solution: A promising control agent

Microterys nietneri, male

One of the most promising biocontrol agents is the tiny parasitic wasp *Microterys nietneri*

Release on all three islands between 2021 and 2023

The wasp established rapidly and reached infestation rates >50% in some places

Phylica stands became free of sooty mould and have started to recover

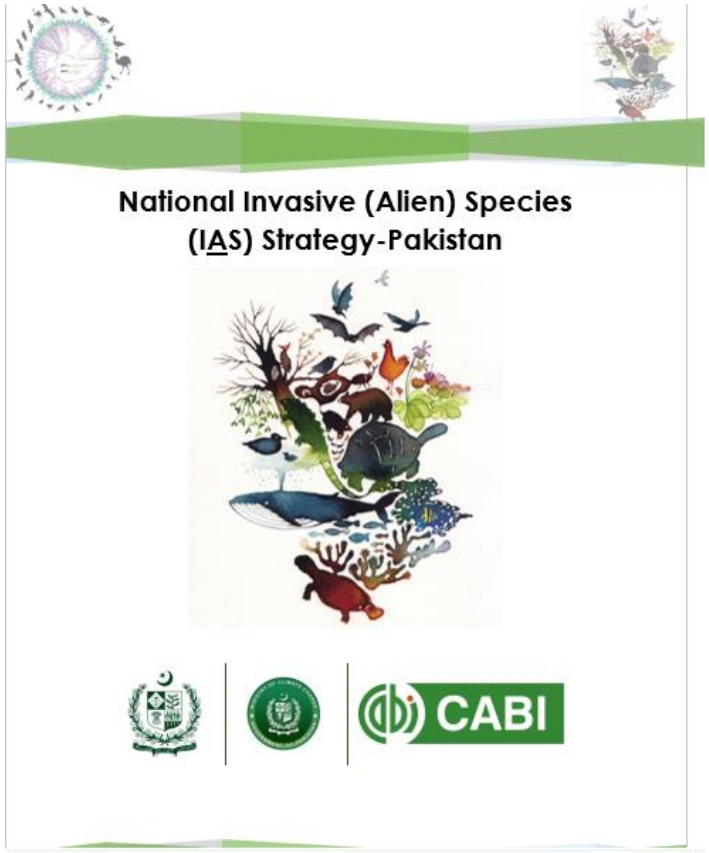
Too early to see effect on the buntings, but monitoring continuing by local collaborators

Microterys nietneri, female

larva inside *C. hesperidum*

Policies, Strategies, Action Plans and Guidelines

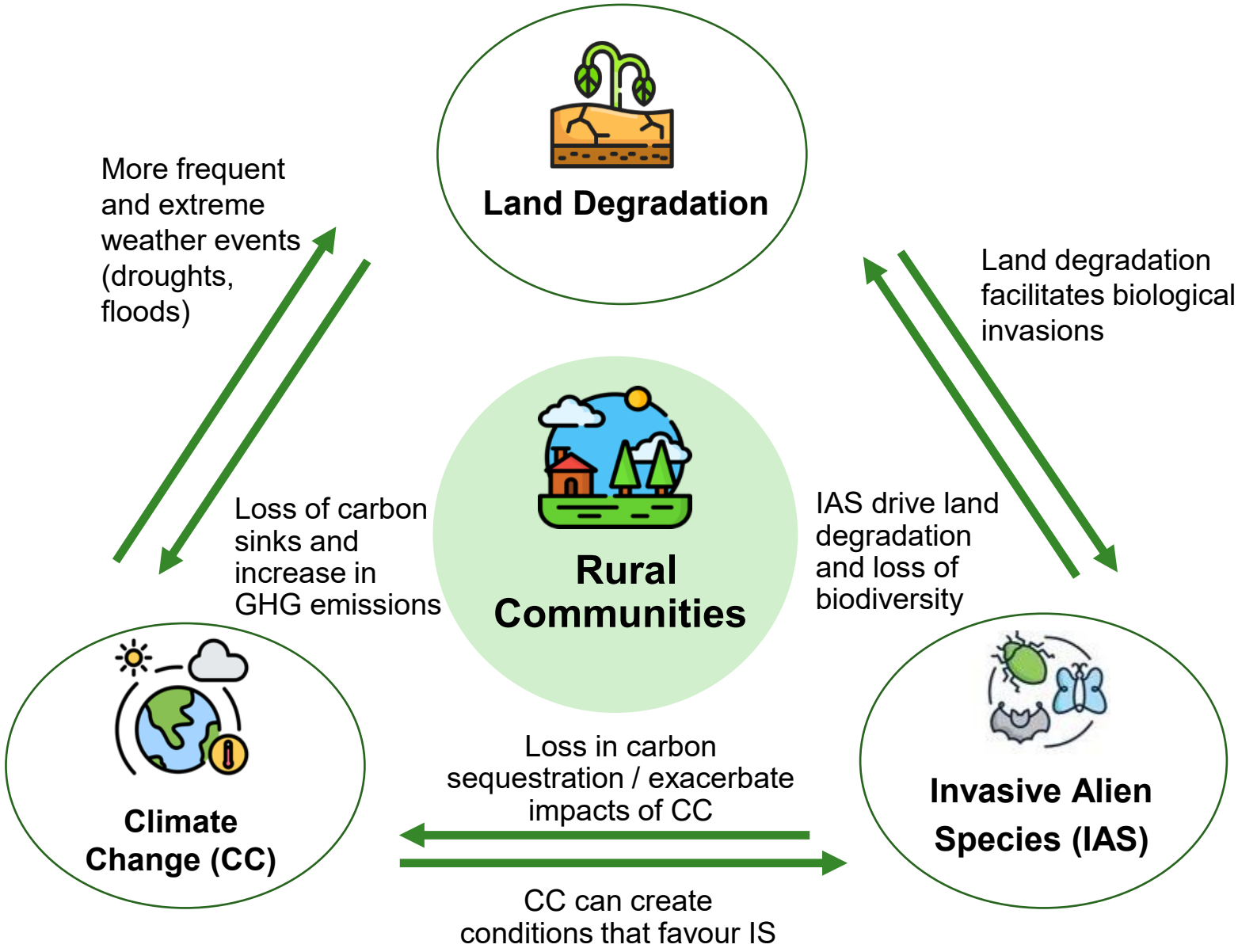
- Facilitate developing National and Regional IS Strategies and Action Plans
- Assist in developing guidelines for import and release of biocontrol agents
- Support harmonization of biopesticide regulations
- Contribute to compliance with and implementation of international protocols (e.g. Nagoya Protocol on ABS)



CABI Landscapes Initiative

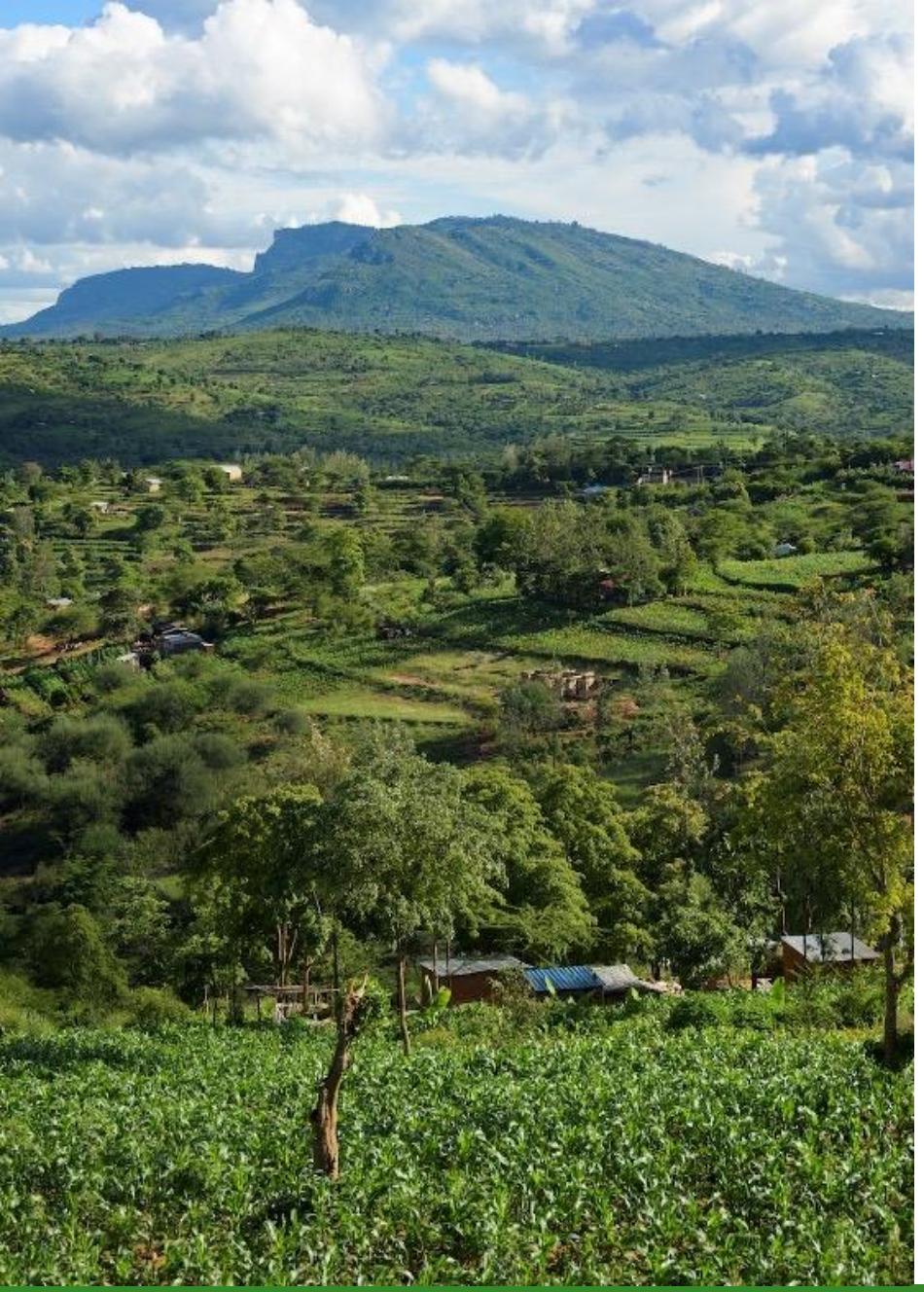
KNOWLEDGE FOR LIFE

CABI



CABI Landscapes Initiative

Tackles these intersecting issues that the rural communities are facing, using an **integrated landscape management (ILM)** approach



CABI Landscapes Initiative – the approach used

CABI identified **Integrated Landscapes Management** (**ILM**) as a viable approach to tackle these complex and tightly interrelated issues

ILM refers to a long-term collaboration among diverse stakeholders to foster natural resource resilience at the landscape level with the aim to provide sustainable livelihoods and conserve ecosystem goods and services

Climate change, land degradation, and **invasive species** are major concerns to our Member Countries

What the Landscapes Initiative will do

1. Strengthening awareness about and knowledge to use ILM approaches
2. Facilitating governance structures that are supportive of ILM approaches.
3. Co-creating and implementing ILM projects through Multi-Stakeholder Forums (MSFs)
4. Developing long-term income sources.

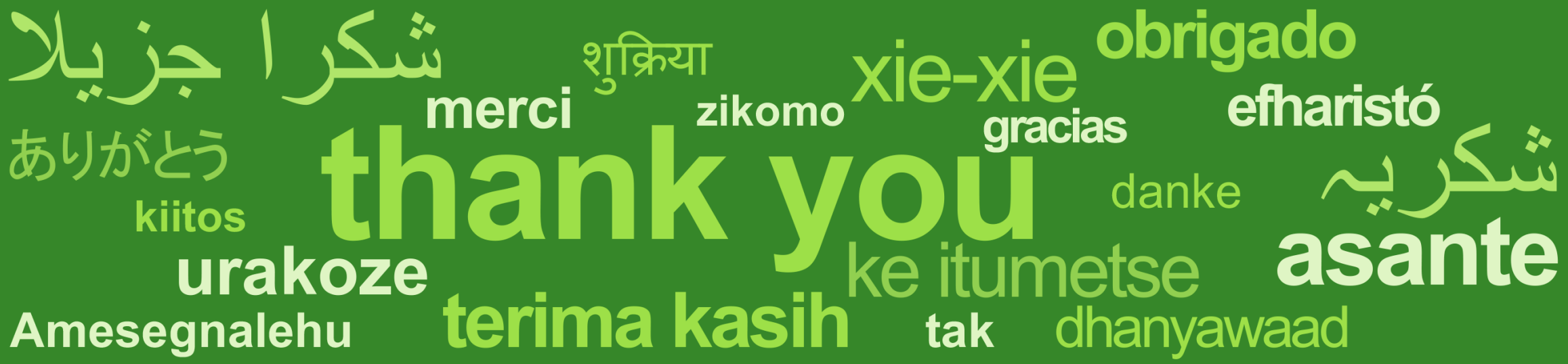
Resilient landscapes that protect **biodiversity** and provide ecosystem services that support **sustainable livelihoods** in the face of a changing climate

Landscapes Initiative – expected impacts

1. Higher food security
2. Improved livelihoods and well-being
3. Strengthened governance systems
4. Increase in the area of land under sustainable climate resilient natural resource management

Source: Cropnuts

We are planning to reach
50 million people in the next 10 years



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.