



Food and Agriculture
Organization of the
United Nations



International
Plant Protection
Convention



Department
for Environment
Food & Rural Affairs

Plant Health and Food Security

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International Plant Health Conference



“In the next 50 years we will need to produce as much food as has been consumed over our entire human history.”

Megan Clark

Former CEO of the Commonwealth Scientific and Industrial Research Organization (CSIRO)
Australia



More



Less



Better

THE 'PERFECT' STORM IN AFRICA AND SOUTH ASIA

- Number of hungry people: now 700+ mil.
mainly in SA and SSA
- 2 billion more people in 2050 mainly in SA and SSA
- Climate change reducing yields, especially in SA and SSA
 - Drought
 - Heat
- +COVID
- + Ukraine war !!!
 - Food Prices
 - Fertilizer cost
 - Energy cost

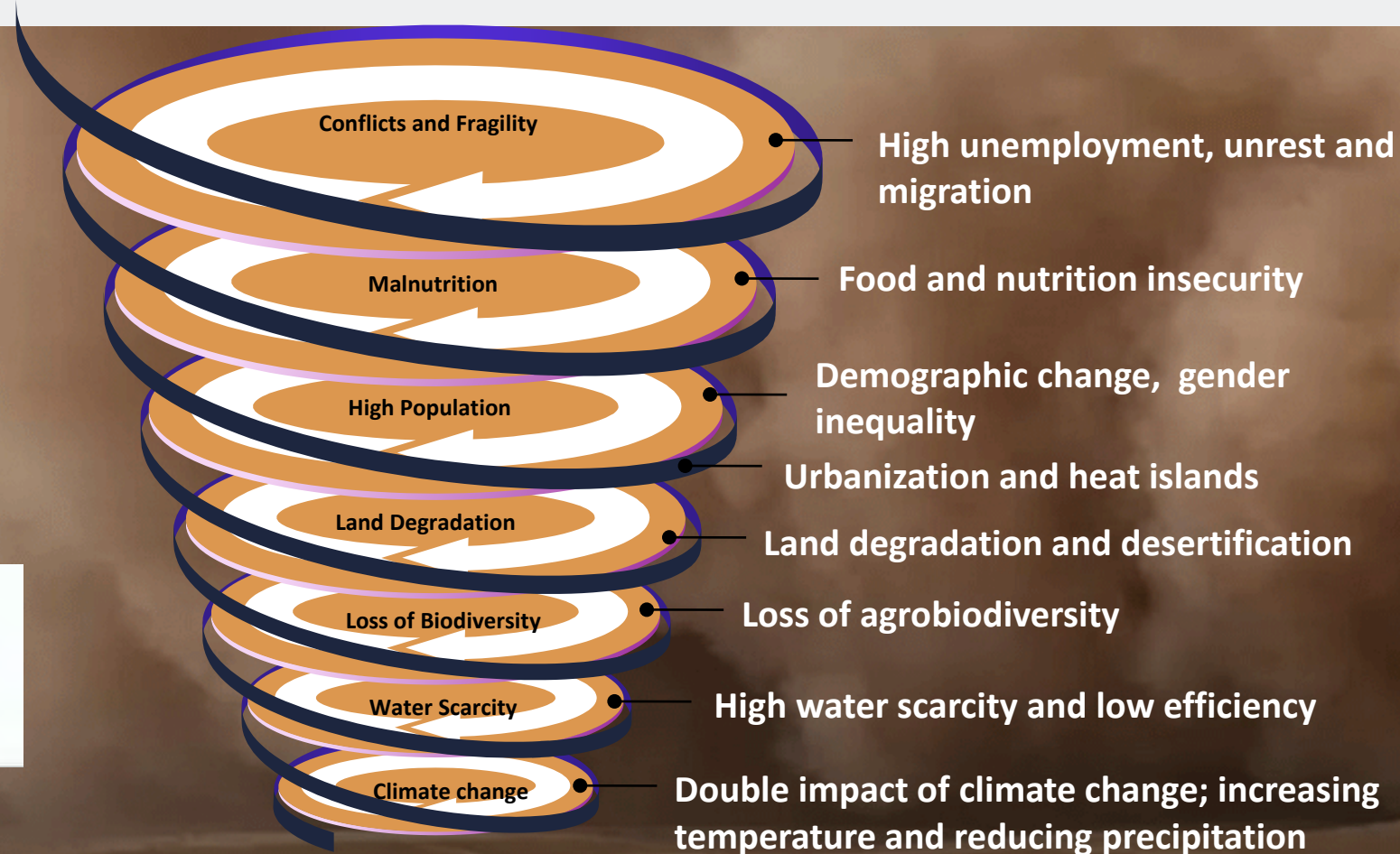


Need Action: CGIAR with partners support innovations at scale

THE PERFECT STORM



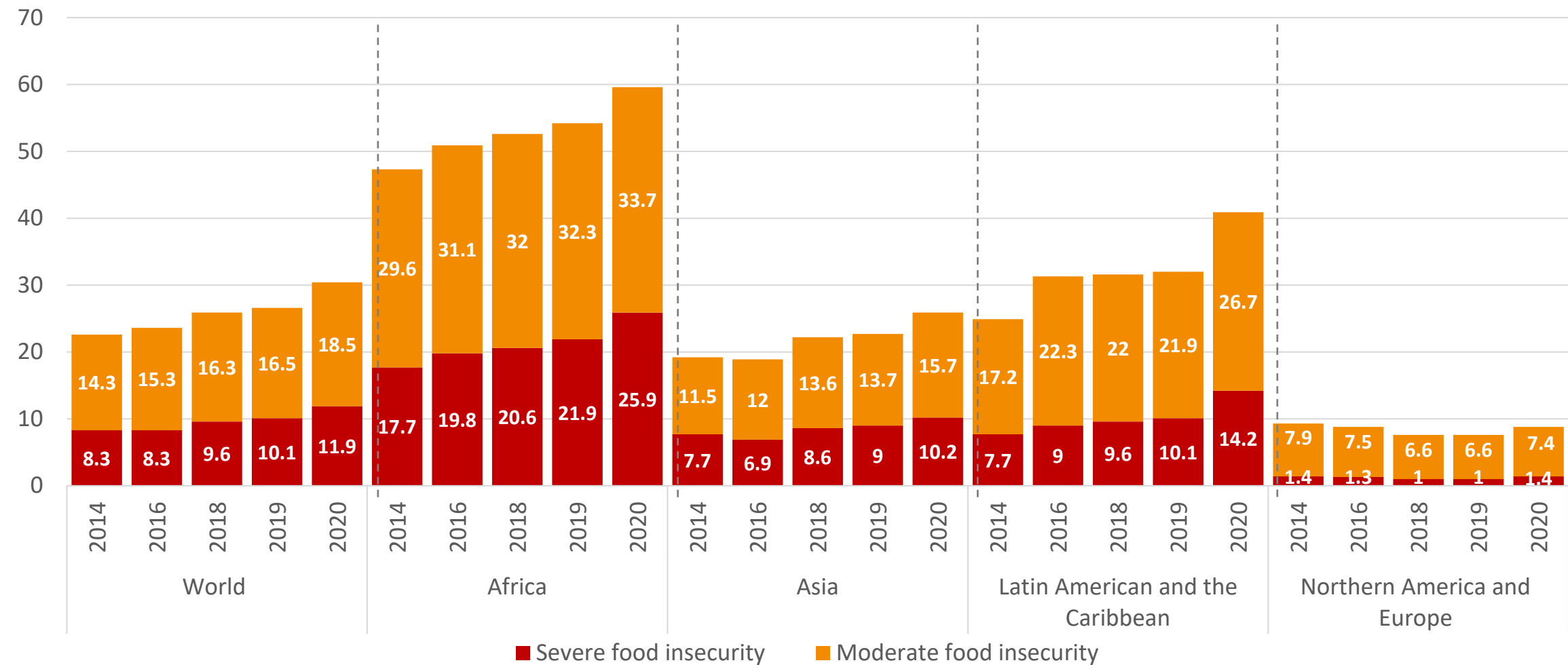
BY 2030



Only nine harvests left: we need to move fast to accomplish our vision of thriving and resilient livelihoods

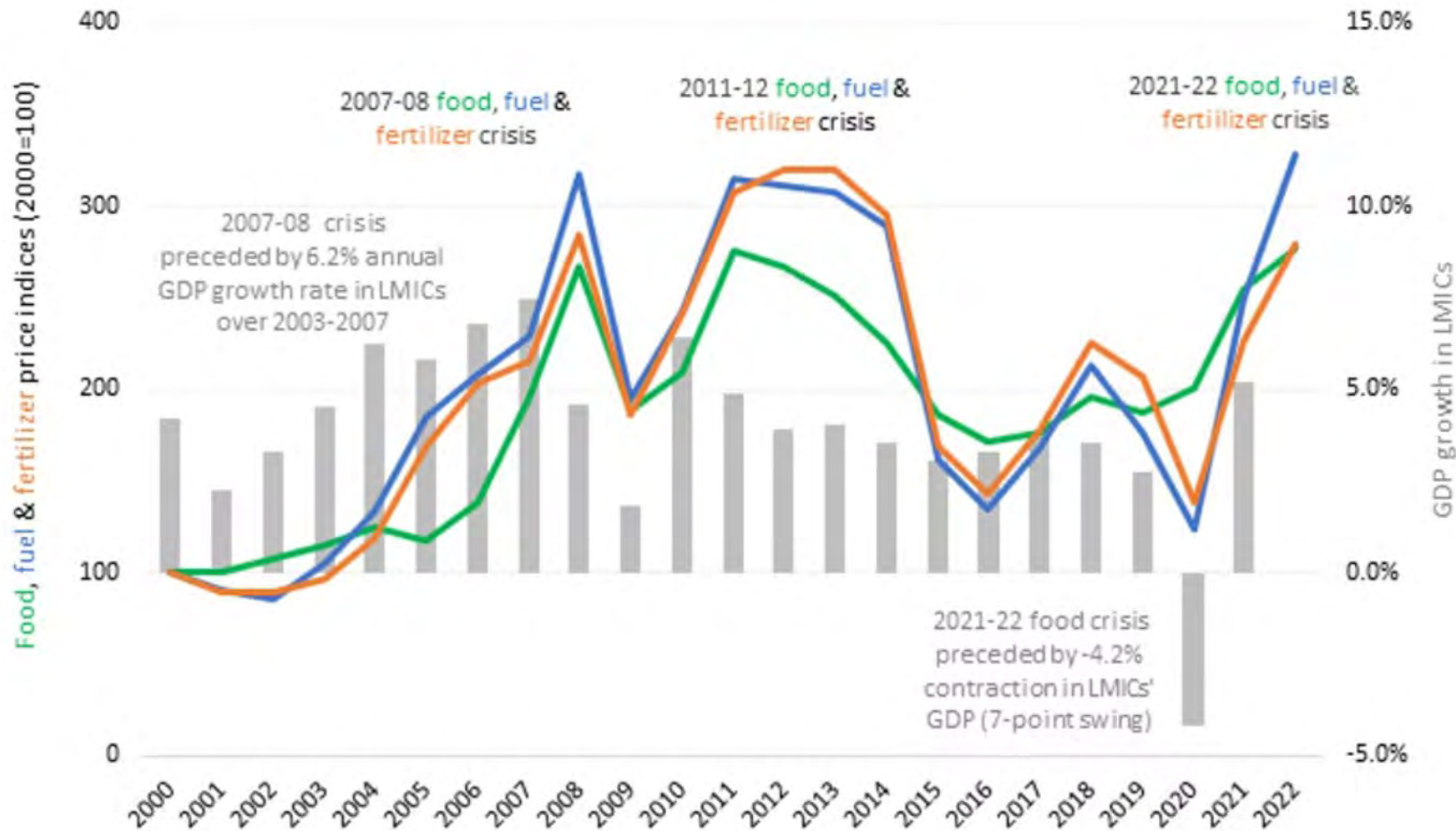
Regional differences in food security

Millions of people facing severe and moderate food insecurity by region



Price shocks “the new normal”?

Food, fuel & fertilizer prices compared with GDP Growth (%)



- Hunger and malnutrition were on the rise
- The poor are still recovering from COVID crisis
- Cash strapped governments have little room to maneuver
- Fertilizer shortages have dynamic effects

Smallholders' Food Security and Livelihoods are deeply impacted by Plant Health Management...

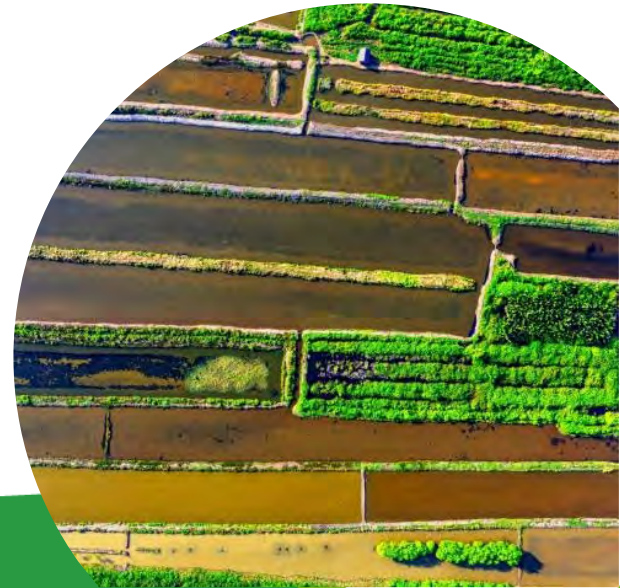
- Around **40%** of the world's food is grown by smallholders.
- **Over 50%** of the people going hungry worldwide work on the smallholders' farms.
- **Practical plant health information to keep crops healthy is vital** for protecting the food and nutritional security, and the livelihoods of millions of smallholders and their families, especially in Africa, Asia and Latin America.



RAFS Overarching Objective

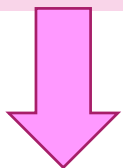
Contribute to regional Agri-Food systems transformation for affordable sufficient and healthy diets produced within planetary boundaries in a climate crisis ...

Plant Health protection is fundamental to allow CGIAR and stakeholders to achieve this objective

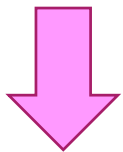


Transboundary Threats to Plant Health

Changing climates +
Human activities +
Market globalization



Devastating Transboundary
Crop Pests and Diseases



Massive economic and
environmental implications

**US\$26.8 billion crop losses
annually**



Fall Armyworm



MLN



Fusarium Wilt
TR4



Ug99
Stem Rust



Tuta absoluta



Potato Purple Top



Wheat
Blast



Tar Spot
Complex

Six devastating epidemics in Africa
alone in the last decade

Plant Disease Diagnostics and Surveillance:

Local-to-Global and Global-to-Local

- Strengthen the diagnostic and surveillance capacity of NPPOs/NARES in LAC, Africa, Asia.
- Facilitate **exchange of knowledge** from **local-to-global/global-to-local**, on research approaches, tools/technologies for detection/characterization and surveillance of prioritized pests and diseases.
- **Surveillance activities** through national partners (NPPOs) in 15-20 target countries for 13 prioritized pests and diseases.

Regional Diagnostic Hubs, leveraging **CGIAR Germplasm Health Units** and **NPPO Networks**

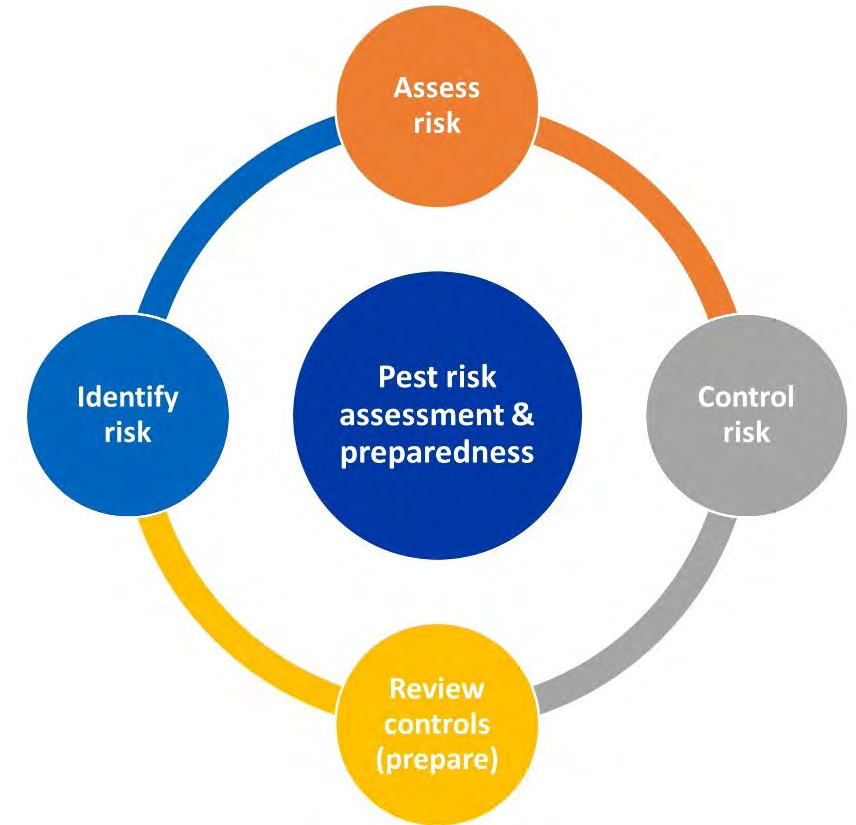


Risk Assessment, Data Management and Guiding Preparedness for Rapid Response

1. Develop/enhance tools and standards for pests and diseases data management, risk assessment and prediction.
2. Facilitate preparedness and response plans against emerging pests and diseases.
3. Guide surveillance, integrated pest and disease management, and mycotoxin control.

Example

Banana disease occurrence data from the **Tumaini mobile app** mapped on the **PestDisPlace platform** → **an early warning system for banana diseases**, especially Banana Bunchy Top and Banana Xanthomonas Wilt.

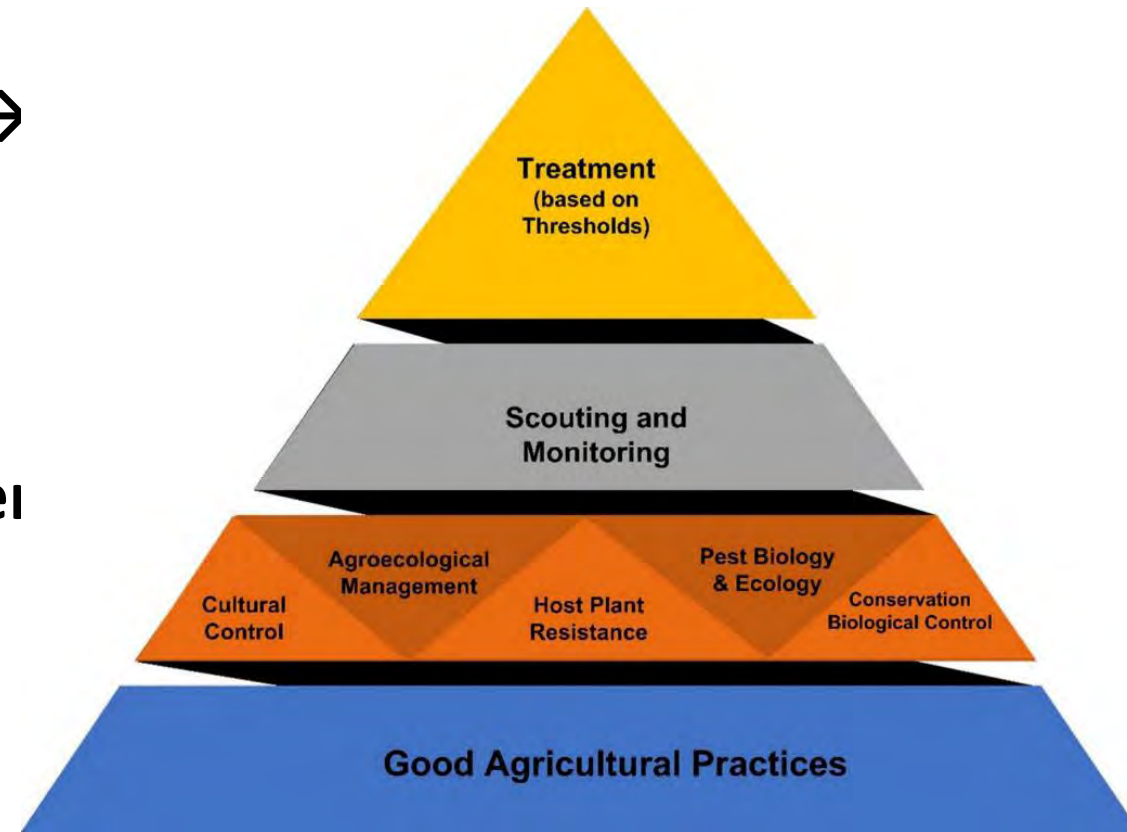


**Anticipate, Predict and Prepare
against Plant Health Risks**



Overcoming IPM Integration & Adoption Barriers

- **Plant Health Innovation Platforms** in targeted countries to cocreate, validate and demonstrate of IPDM Innovation Packages → **bringing together innovations from CGIAR, IARCs, NARES, ARIs, and Private sector**
- **Participatory engagement and collective actions of farming communities, with gender and social inclusion focus**
- **Global Plant Health R4D Consortium**, leveraging existing networks established by CGIAR and partners to tackle different plant health threats



Source: Prasanna et al. (2021)

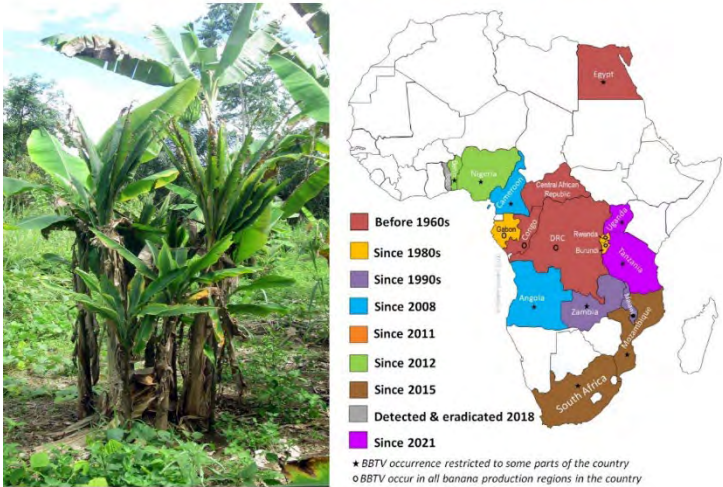


Building on a foundation of work on plant health management by CGIAR & Partners...

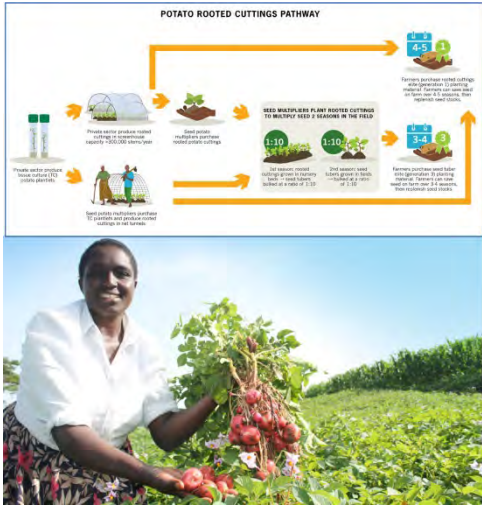
Fall Armyworm (FAW)



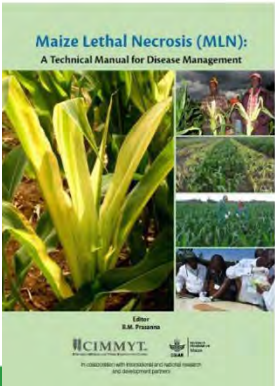
Banana Bunchy Top Virus (BBTV)



Potato Disease Management



Maize Lethal Necrosis (MLN)



Cassava Brown Streak Disease (CBSD)



Protecting Food Chains from Mycotoxin Contamination

- Strengthening local, national & regional capacity to use bioprotectants (e.g., Aflasafe) as a part of integrated mycotoxin management
- Enabling private sector actors to sustainably manufacture and distribute bioprotectants against mycotoxin contamination



Target Countries

- ESA: Kenya, Uganda, Tanzania, Mozambique & Malawi
- WCA: Nigeria, Senegal, Benin, Burkina Faso
- LatAm: Mexico



Equitable and Inclusive Scaling of Plant Health Innovations

Equitable and inclusive innovations need to start by involving women farmers in surveillance and technology development to learning from their rich experiences, observations, and knowledge.



Strong collaboration needed between social and biophysical scientists to address important questions:

- Which farming, ecological and socio-economic conditions do the plant health innovations best fit?
- Whose labour will increase or decrease due to application of the innovation?
- Who has digital literacy and access to ICTs within the community?
- What are the communication methods appropriate for resource-poor women in marginalized/remote communities?



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