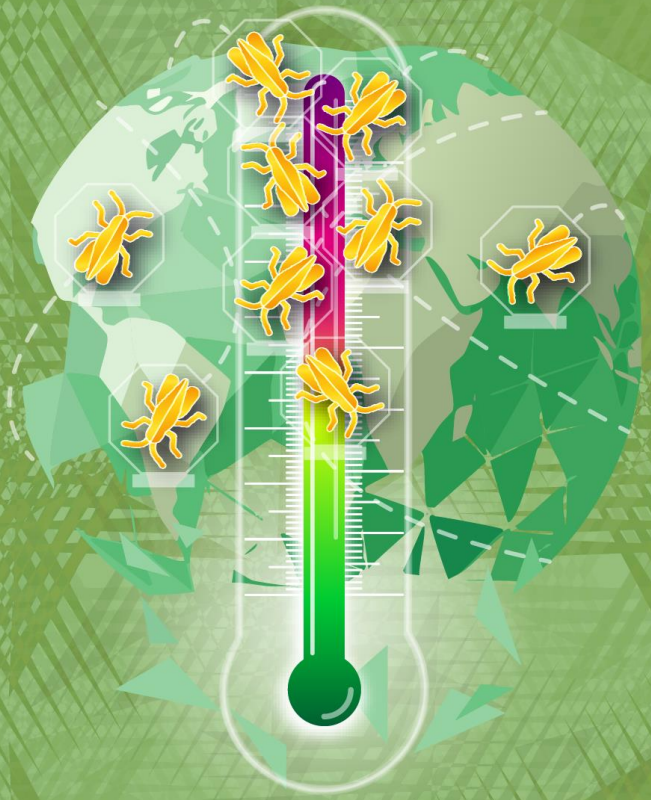
Food and Agriculture Organization of the United Nations

International Plant Protection Convention

IPPC Webinar Series

Climate Change and Phytosanitary Issues

1–2 October 2025 | 14:00–16:00 CEST



From Frameworks to Action: Strengthening Phytosanitary Preparedness and Response under Climate Change

Camilo Beltran Montoya, Agricultural Officer FAO/IPPC Secretariat

Setting the Stage: Climate Change & Plant Health

- Climate shifting conditions affect pest distribution & phenology.
- Climatic shifts alter when & where pests appear, complicating ISPM 6 surveillance.
- PRA remains the cornerstone but must now integrate climate parameters.
- Pests once considered “unsuitable” may soon establish, calling for enhanced preparedness.

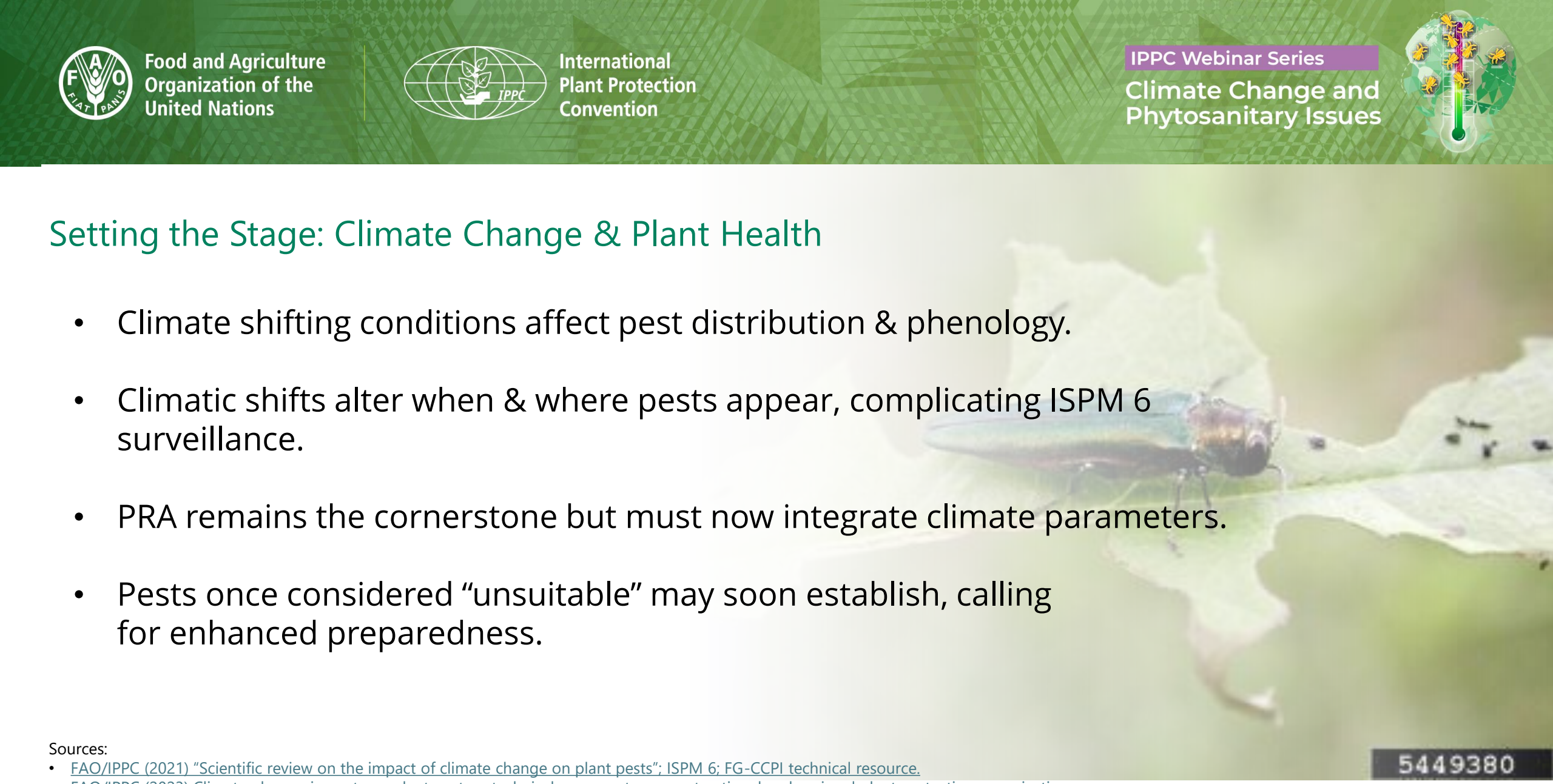


Photo: Debbie Miller, USDA Forest Service, Bugwood.org

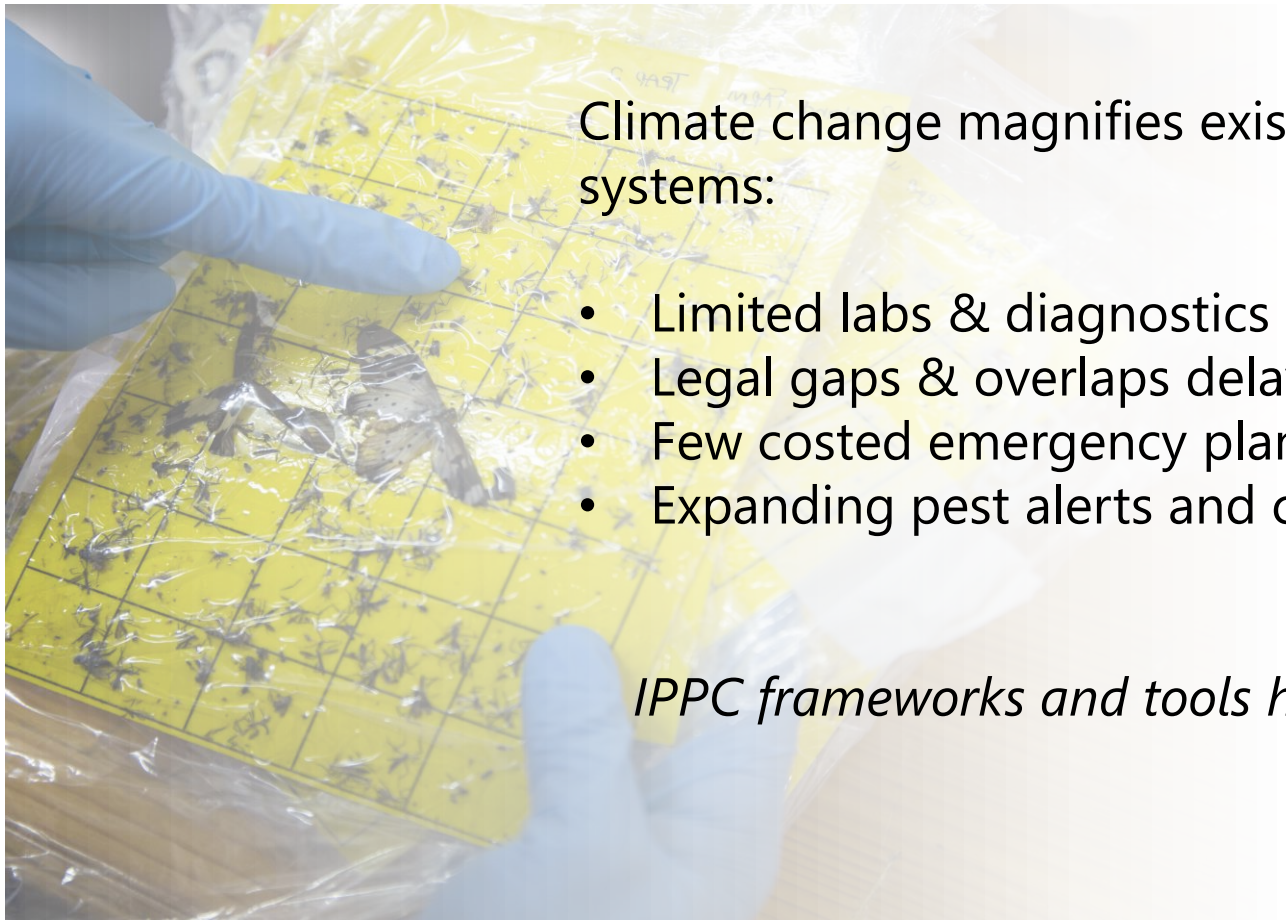
Sources:
- FAO/IPPC (2021) “Scientific review on the impact of climate change on plant pests”; ISPM 6; FG-CCPI technical resource.
- FAO/IPPC (2023) Climate-change impacts on plant pests: a technical resource to support national and regional plant protection organizations

Impacts on societies and economies

Fall Armyworm (*Spodoptera frugiperda*) in Africa
Impact: Fall armyworm (FAW) has caused substantial maize yield losses across sub-Saharan Africa. In Kenya and Ethiopia, average annual maize yield losses due to FAW are estimated at 33% and 36%, respectively. Across the region, total economic damages are projected at up to US$13 billion annually (Sisay et al., 2023; Overton et al., 2021).

***Fusarium oxysporum* f. sp. *cubense* Tropical Race 4 Threat to Bananas**
Impact: Tropical Race 4 (TR4) is one of the most destructive threats to global banana production. Its continued spread could severely impact the livelihoods and food security of around 400 million people who depend on bananas and plantains as staples (FAO, 2024).

Why prevention and preparedness are critical



Climate change magnifies existing vulnerabilities in national plant health systems:

- Limited labs & diagnostics slow outbreak confirmation.
- Legal gaps & overlaps delay coordinated action.
- Few costed emergency plans → improvised responses.
- Expanding pest alerts and climate events exceed staff & resources.

IPPC frameworks and tools help countries to develop resilient phytosanitary capacity.

International Plant Protection Convention's community

Recognized as a standard-setting organization for plant health by the WTO SPS Agreement, along with *Codex Alimentarius* and WOAH ("SPS sisters").

- 185 NPPOs (countries)
- 10 RPPOs (regions)
- Global partners

International Plant Protection Convention's ecosystem

46 international standards – foundation for safe trade

Capacity Development: PCE, Plant Health Campus, ePhyto, Guides and training , Guides and training materials

- PCE identifies gaps & strategies
- Campus builds skills & shares knowledge

Action (POARS, Climate Change and Phytosanitary Issues, and other DAIs)

- POARS: Horizon scanning, pest alerts, expert groups, rapid response

IPPC Development Agenda Items (2020–2030)

- Harmonization of electronic data exchange (ePhyto)
- Commodity- and pathway-specific ISPMs
- Management of e-commerce and courier pathways
- Guidance on use of third-party entities
- **Strengthening pest outbreak alert and response systems (POARS)**
- **Climate change impacts on plant health**
- Global phytosanitary research coordination
- Diagnostic laboratory networking

Spotlight

Climate Change DAI → raising awareness, integrating climate models into PRA & surveillance, mainstreaming phytosanitary issues in global climate debate.

POARS DAI → developing global alert and response systems for emerging pests.

UN 2030 Sustainable Development Goals

PCE: Developing Capacity for Preparedness

Phytosanitary Capacity Evaluation (PCE)

Structured, country-led tool used by NPPOs and governments.

Identifies institutional, technical, and legal gaps in national phytosanitary systems.

Supports the development of national strategies, ultimately strengthening prevention, preparedness, response, and economic growth

PCE links directly to POARS: by showing where systems are weak, it helps countries develop resilience *before* emergencies happen.

SPOTLIGHT: Building a resilient plant health system in Senegal

South-South Cooperation: End of project heralds positive changes for plant health in Cambodia and Sri Lanka

POARS: Framework into Practice

From NPPO reports (NROs) and early-warning "horizon scanning" of global data, potential threats are systematically reviewed to identify emerging pests.

Pest Alerts raise awareness and enable countries to prepare before new pests spread

Tools boxes for emerging pests (diagnostics, surveillance, treatments, others)

Pest-specific Expert Working Groups will guide harmonized prevention, preparedness, and response measures.

About POARS | IPPC Pest Alerts | Emerging Pests

First confirmed report of Clavibacter nebraskensis outside North America (03/03/2025)

First confirmed report of *Clavibacter nebraskensis* outside North America

Date of Issue: 03/03/2025

Trigger alert event:

NRO: Pest report: *Clavibacter nebraskensis* (Goss's wilt of maize) has been detected in four provinces in South Africa

Distribution:

Africa: South Africa.
North America: Canada, Mexico, United States of America (EPPO Global Database).

Major economic host:

Maize (Eichenlaub, R., & Gartemann, 2011; Lang *et al.*, 2017).

Current impact:

Severe infections have been documented to cause yield losses of up to 50% in susceptible maize varieties, especially under favorable environmental conditions such as high humidity and warm temperatures (Jackson-Ziems *et al.*, 2014). Between 2012 and 2015, estimated total yield losses due to Goss's Wilt in the U.S. and Canada exceeded 1.27 million tonnes, making it one of the most destructive maize diseases in the northern U.S. and Ontario (Wise *et al.*, 2019).

Environmental conditions favoring spread:

The pathogen thrives in warm temperatures and high humidity, which are common in maize-growing regions (Wise *et al.*, 2019).

Possible pathways of spread for *Clavibacter nebraskensis*:

The pathogen spreads through both natural and human-mediated

Clavibacter nebraskensis causing Goss's wilt of maize, 2024

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IPPC PLANT HEALTH CAMPUS

Growing the skills of the global plant health community

IPPC Plant Health Campus – a key milestone in plant health capacity development

- Convenient one-stop portal to all IPPC e-learning courses, IPPC guides, and other training materials
- Free, certified e-learning courses
- Developed with technical support from global plant health experts
- Downloadable materials, available anytime, anywhere!
- Better knowledge = better compliance and stronger biosecurity

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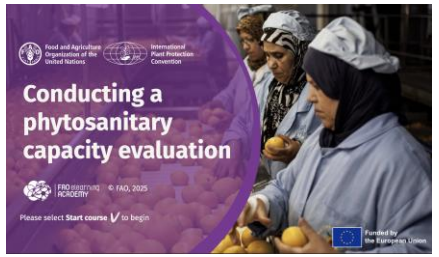

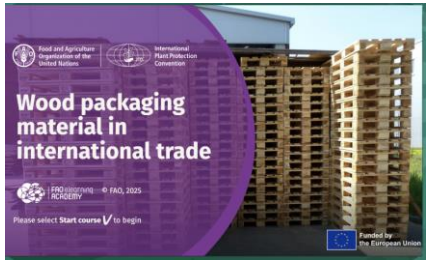

IPPC Plant Health Campus: A growing library of learning: a rich selection of e-learning courses

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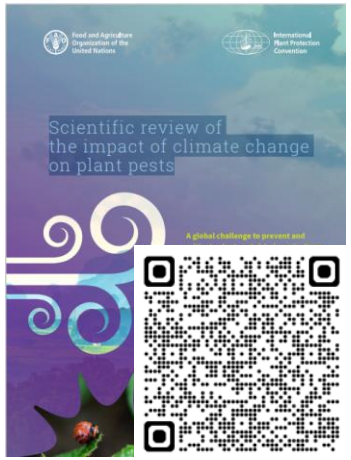
FG-CCPI: Advancing Climate Change Preparedness in Plant Health

Focus Group (FG-CCPI) established (2021) with all 7 FAO regions represented

Technical Resource on Climate Change & Plant Pests (2024) – guiding NPPOs and RPPOs worldwide

Webinar series in 2024 and 2025 – showcasing tools, case studies, and innovations for preparedness

The journey from frameworks to action is underway – and the FG-CCPI has been instrumental in putting climate change at the center of IPPC's preparedness agenda.



This technical resource can help RPPOs and NPPOs address climate change impacts

FG-CCPI: Advancing Climate Change Preparedness in Plant Health

Webpage on the IPP: Impacts of climate change on plant health

Technical inputs to the resource mobilization flyer supporting the IPPC's work on climate change and phytosanitary issues

Participation at national, regional and international meetings

Climate change demands preparedness, not reaction

- IPPC provides a coherent system: ISPMs + PCE + POARS + Plant Health Campus
- Practical tools in use today: pest alerts, expert groups, guides, and training
- Global collaboration: 185 NPPOs + 10 RPPOs + partners = no country faces outbreaks alone
- FG-CCPI milestones: set climate change as an IPPC priority, delivered the Technical Resources and launched this webinar series to move the agenda forward

Climate change makes pest outbreaks inevitable, but their impacts are not.

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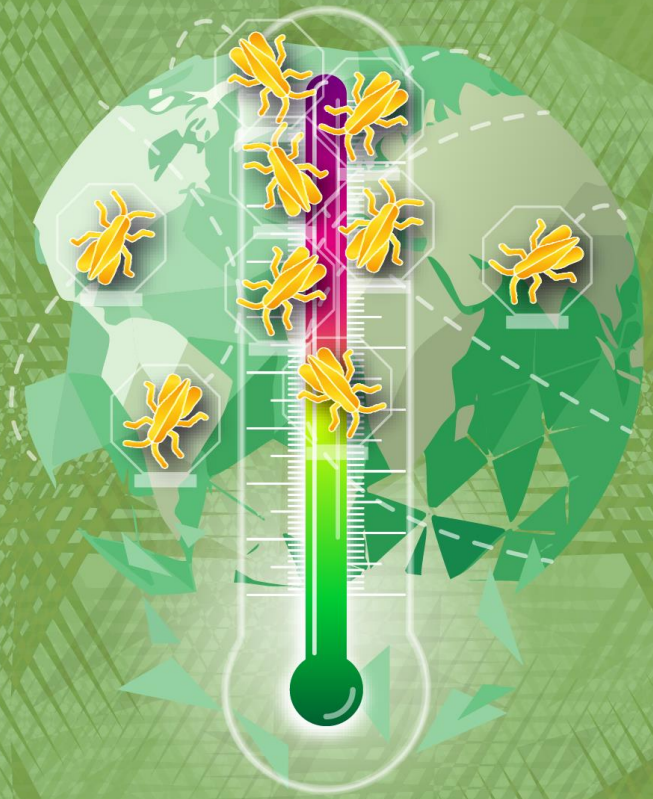

Thank you