

## **Written reports from international organizations (agenda item 21.3): CABI**

### **Overview**

1. CABI is an international, not-for-profit organization that improves people's lives by providing information and applying scientific expertise to solve problems in agriculture and the environment. It is owned and run by its 48 Member Countries.
2. CABI's work contributes to the objectives of the IPPC through its thematic areas of plant health, value chains and trade, invasive species prevention and management, communication and extension, digital development and publishing. Much work contributes to IPPC's core activity of implementation and capacity development, but contributions are also reported in relation to several of IPPC's Development Agenda items, as well as other emerging topics such as One Health.
3. Work reported under projects and programmes was undertaken in collaboration with multiple local, national and regional partners in the public and private sectors. National and Regional Plant Protection Organisations are partners in many of the activities. CABI's PlantwisePlus programme includes activities directly contributing to the purpose of the IPPC, as well as other areas such as pesticide risk reduction.
4. Internationally CABI co-operates with organisations whose objectives also support the IPPC. CABI is a member of the CBD's Inter-Agency Liaison Group (IALG) on Invasive Species which facilitates cooperation among relevant organizations including IPPC to support measures to prevent the introduction and mitigate the impacts of invasive species. In 2024 CABI hosted the IALG meeting at its headquarters, and at CBD COP16 participated in an IALG side-event with IUCN, IPPC and others, presenting its databases and tools supporting risk assessment and management of invasives.
5. FAO and CABI have a Memorandum of Understanding (MoU) with the aim of consolidating, developing and strengthening cooperation toward common objectives of plant production and protection for sustainable crop production systems. The MoU work plan includes a section on co-operation between CABI and IPPC.
6. A new strategy for CABI's SPS work has been developed. The strategy has three core focal areas: Increased synergies and collaboration with and amongst public and private stakeholders; improved regional and national SPS institutional capacity using best practices and knowledge products supporting risk-based approaches; strengthened research and education.

### **Phytosanitary capacity development**

7. The IPPC's Africa Phytosanitary Programme (APP) aims to strengthen the resilience of Africa's phytosanitary systems to pests of regulatory, economic and environmental significance. Discussions have been held with the Secretariat on collaboration between APP and CABI's PlantwisePlus programme, particularly in countries where both programmes operate. CABI is a member of the APP Technical Working Group (TWG).
8. CABI is supporting the African Union's Inter-African Phytosanitary Council (AU-IAPSC) to implement the Plant Health Strategy for Africa, with financial support from the US Department of Agriculture's Foreign Agricultural Service (USDA-FAS). The Implementation Plan for the strategy has been finalised and was launched by the AU Commissioner, Agriculture, Rural Development, Blue Economy, and Sustainable Environment. IPPC, STDF and FAO participated in the launch.
9. Activities under the support to IAPSC include work to harmonise registration and management of plant protection products in Africa, capacity building and harmonization of risk-based phytosanitary measures for intra-regional trade, promoting ePhyto adoption, and support to CPM participation. At IAPSC's 2024 International Day of Plant Health celebration CABI presented a paper on "Plant health, safe trade and digital technology".
10. CABI has supported COLEAD in the development of the FAO e-learning training toolkit on plant health legislation. The toolkit aims to enhance knowledge and awareness of plant health legislation's key components, and its vital role in ensuring sustainable agri-food systems.
11. In Bangladesh CABI is leading a project under the Feed the Future Sanitary and Phytosanitary (SPS) System Trade Capacity Building Program aimed at enhancing the institutional capacity of the National Plant Protection Organisation (NPPO) to fulfil its phytosanitary obligations in

accordance with the WTO SPS Agreement. The project also aims to strengthen the Government of Bangladesh's ability to formulate and implement biopesticide regulations. Also in Bangladesh CABI is assisting a Netherlands-led capacity-building initiative on e-certification.

12. With partners from Australia, a scoping study and assessment of the plant health system has been undertaken in Timor-Leste in relation to vegetable production. Challenges and plant biosecurity issues have been identified, and actions proposed to improve the plant health system for vegetable growers that will reduce food loss and increase income and food security.
13. A scoping study of plant biosecurity capacity development, particularly by institutions of higher education, is being undertaken in East and Southern Africa with support from Australia. This includes an evaluation of a previous ACIAR-funded plant biosecurity capacity building project in the region, an assessment of current tertiary-level plant biosecurity training, and identification of gaps and opportunities for strengthening plant biosecurity training including through e-learning. Discussions are continuing with the Secretariat to ensure coordination of activities under the IPPC Plant Health Campus and the CABI Academy.

### **Preparedness and risk-based approaches**

14. CABI is working closely with NPPOs and regional organizations to improve the usability and application of the Pest Risk Analysis (PRA) and Horizon Scanning Tools. The linked pest information in the CABI Compendium is continuously updated. Free access to these tools continues to be available to the NPPOs of over 100 low- and middle-income countries.
15. CABI participated in IPPC's webinar series on Climate Change and Phytosanitary Measures with a presentation on horizon scanning for plant pest risk prioritisation. The approach presented has previously been used by NPPOs in several countries, and in this reporting period support was provided to implement the approach in Burundi, Pakistan, Rwanda and Uganda. Regional prioritisation of pest risks was also undertaken with the East African Community under PlantwisePlus, and with NPPOs of West and Central Africa supported by FAO.
16. In India CABI collaborated with the National Institute of Plant Health Management (NIPHM), Hyderabad to conduct a regional training workshop on pest risk analysis. The event brought together NPPOs from India, Bangladesh, Sri Lanka, Nepal and Bhutan, with SAARC Agricultural Research Centre (SAC) also participating. During a separate training by NIPHM, CABI presented the risk analysis tools to members of the Uzbekistan NPPO.
17. CABI has been appointed as Technical Secretariat to the Task Force on an ASEAN Pest Database (TF-APD) established by ASEAN's Expert Working Group on Harmonisation of Phytosanitary Measures. The TF-APD aims to conduct PRAs for regionally prioritised quarantine pests and to enhance ASEAN Member States' preparedness and emergency response capability. With Malaysia's NPPO, a regional workshop was convened to develop an action plan for implementing the task force's objectives.
18. Collaboration with the European Food Safety Authority (EFSA) and WHO's Epidemic Intelligence from Open Sources (EIOS) initiative has continued, to develop processes to utilise the EIOS system for plant pest horizon scanning. A machine learning model has been built to filter the most relevant information items, and this is now used to produce Pest Risk Monitoring reports for NPPOs in several PlantwisePlus countries where pest risk prioritisation processes have already been implemented. This approach is being discussed with the IPPC's Pest Outbreak Alert and Response System (POARS) Steering Group, in which CABI participates. The aim is to develop a plant health community within the EIOS system.
19. Following on from pest risk prioritisation work, as well as new pest reports, NPPOs have been supported to undertake detection and delimiting surveys for high-risk pests in several countries. In Zambia a detection survey was undertaken for wheat blast, and in Uganda a delimiting survey for mango mealy bug found spread is still limited. In Ghana surveillance for Banana Bunchy Top Virus (BBTV) and Citrus Huanglongbing (HLB) has been undertaken. In Bangladesh, surveillance was conducted on three pests identified as high risk, the coconut hispine beetle (*Brontispa longissima*), tobacco thrips (*Thrips parvispinus*) and grey pineapple mealybug (*Dysmicoccus neobrevipes*), with none found to be present. In Pakistan detection surveys for spiralling whitefly (*Aleurodicus dispersus*) and woolly whitefly (*Aleurothrixus floccosus*) also found no evidence of their presence.

20. With NPPOs of the East African Community (EAC) a plan has been developed to restrict further spread of the invasive mango mealybug (*Rastrococcus invadens*), and for those areas where it is still absent, to prepare for possible outbreaks. The response plan includes harmonized guidelines on what NPPOs in collaboration with relevant stakeholders need to do to prevent the introduction, detect, contain, eradicate or manage the pest. Ecological niche modelling was also undertaken to determine the potential distribution of the pest in the EAC. CABI will collaborate with FAO and other agencies working on the pest (AU-IAPSC, IITA, icipe) in implementing the plan, depending on the stage of invasion in each country.
21. FAO has published a “Baseline survey on emerging plant pests in Eastern Africa” to support the establishment of an Eastern African emerging pests early warning, preparedness and response system”. The publication is based on an assessment conducted by CABI covering Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan and Uganda (<https://doi.org/10.4060/cc2751en>).
22. CABI is a partner in the EU Horizon-Europe project “EUFAWREADY: Enhancing Europe’s readiness for managing fall armyworm, an invasive pest threat”, which starts in 2025.

### Response to Outbreaks

23. CABI assists NPPOs in responding to pest outbreaks (both recently detected populations as well as significant increases in established populations). In such situations synthetic pesticides are often used, and CABI undertakes a range of activities aimed at increasing the use of biological approaches to population suppression. These include supporting adoption of appropriate regulatory processes, providing information on available methods and products, and research and development on biological control agents for invasive pests.
24. With FAO, CBD and IOBC, CABI co-organised a meeting in Rome to inform the Commission on Genetic Resources for Food and Agriculture’s intergovernmental Technical Working Group (TWG) on Microorganisms and Invertebrate Genetic Resources for Food and Agriculture. Papers were presented on approaches to promoting the sustainable use of microbial and invertebrate biological agents, the cost-effectiveness and safety of biological control, and practical application of the Nagoya Protocol on Access and Benefit-sharing in biological control.
25. Uptake of biological control is promoted through the BioProtection Portal (<https://bioprotectionportal.com/>), a free, searchable directory of nationally registered biocontrol and biopesticide products. It now covers 48 countries, with Egypt, Saudi Arabia, Vietnam, Barbados, the Philippines, and South Africa added during 2024. Twelve new members joined the Portal network including the Minor Use Foundation, COLEAD, Agriculture and Agri-Food Canada, STDF, IICA, APAARI, AARINENA and others.
26. With ICEGB, CropLife Africa Middle East, USDA FAS, STDF, and AU IAPSC, a workshop was held in South Africa on Advances in Regulatory Harmonization and Biopesticide Innovation in Africa. The workshop brought together over 250 face-to-face and virtual participants from 23 countries to share experiences and opportunities in biopesticide initiatives in Africa and beyond.
27. In collaboration with the International Maize and Wheat Improvement Centre (CIMMYT), through the OneCGIAR - Plant Health Initiative, a Farmers’ Biopesticide approach for fall armyworm management was deployed in Kenya and Zambia. The approach has been developed in Zambia with support from ACIAR. Field demonstration trials, plant health rallies, farmer field days and trainings have been conducted with the Ministries of Agriculture, and a study on farmers knowledge and perception of biocontrol revealed farmers’ willingness to adopt the approach.
28. Working with Pakistan’s Department of Plant Protection and international partners, new regulations for the registration of biopesticides have been introduced. In Kenya the NPPO has been supported in revising the protocol for introducing classical biological control agents that would enable fast-track release of agents as part of emergency response, including pre-emptive biocontrol.
29. Classical biological control programmes are in progress for many plant pests, following the guidelines in ISPM3. Support has been provided to Kenya, Uganda and South Sudan to release *Acerophagus papayae*, a biological control agent of papaya mealybug, *Paracoccus marginatus*. The first releases of *Eiphosoma laphygmae*, a specific parasitoid of fall armyworm from the Americas, have been made by Ghana and Zambia. Following its successful establishment in East Africa, CABI is collaborating with icipe to introduce the parasitoid *Dolichogenidea gelechiidivoris*

to other countries in Africa for control of *Phthorimaea (Tuta) absoluta*. *Ganaspis kimorum*, a parasitoid of the spotted-wing drosophila *Drosophila suzukii*, has been released in Switzerland, and shipments made to other countries in Europe, America and Africa.

30. The endemic forests of St Helena underpin a unique ecosystem on the island. Recent research by CABI, funded by UK's Foreign, Commonwealth and Development Office (FCDO), has identified the root pathogen *Phytophthora kelmanii* as the primary cause of the decline of at least one of the primary forest species. To address this issue, CABI provided training for plant protection officers in St Helena to independently detect and monitor the spread of the pathogen using a molecular-based LAMP system.

### Market Access

31. CABI supports countries to meet sanitary and phytosanitary requirements for maintaining market access. In a project on managing scale insects in fresh fruits in East Africa to enhance market access (STDF/PG/807), field surveys have been undertaken in Burundi, Kenya and Uganda to identify the species affecting papaya, mango, avocado and citrus. Training curricula for agronomists and farmers targeting the international export market have been developed, and training content for fruit tree nurseries for certification of clean planting materials has also been developed. Training will take place in 2025.
32. CABI is supporting 12 countries in Eastern and Southern Africa to address the challenge of potato cyst nematodes and other pests (*Pectobacterium* and *Dickeya spp.*) (STDF/PG/809). The project is being implemented in partnership with FAO, icipe, IITA, CIP and KEPHIS, and personnel from 12 countries have been trained on conducting pest surveys and identification. The project has developed protocols on diagnostics and phytosanitary measures for application in trade and production of potato.
33. The European Union is supporting a new project aimed at improving SPS controls in Uganda's fresh fruit and vegetable sector. The project will strengthen the capacity of the competent authority's service provision and support for private sector organizations to comply with SPS measures for domestic and export markets, with a focus on EU plant health and food safety regulations. The project will be implemented in collaboration with COLEAD, together with the NPPO, HortiFresh and the Ministry of Agriculture Animal Industry and Fisheries.
34. An FAO-funded project led by CABI aims to promote the safe trade and use of quality seeds, including building capacity in relation to ISPM38. In collaboration with the International Seed Federation, a webinar series was organized, including presentations from the NPPOs of India and Philippines on their experience of implementing ISPM38. Participants came from 20 countries.
35. Under a framework contract with COLEAD, CABI undertook Training of Trainers on good sanitary and phytosanitary practices for the avocado value chain, based on the avocado good practice guide (GPG).

### One health

36. UK's FCDO is supporting CABI to manage a knowledge, learning and evidence platform focused on One Health to facilitate learning and evidence synthesis. The One Health Hub will engage with stakeholders to identify research gaps and promote evidence-informed research and policy decision making in One Health. The Juno Evidence Alliance will lead the One Health Hub's work to synthesize evidence on One Health issues. The hub will work closely with the FAO One Health Knowledge Nexus and engage with the One Health Quadripartite and One Health High Level Expert Panel.
37. In the area of antimicrobial resistance (AMR) and antimicrobial use, CABI is represented in the Quadripartite technical group on AMU/R Integrated Surveillance (QTG/AIS) and the AMR-OHPRA Quadripartite Technical Core Team. Expert input was made to: FAO's publication "How to use antimicrobials effectively and responsibly in plant production for the sake of human and plant health (<https://doi.org/10.4060/cc8064en>); the Quadripartite's "One Health Priority Research Agenda for AMR" (<https://www.who.int/publications/i/item/9789240075924>); "Bracing for Superbugs: Strengthening environmental action in the One Health response to antimicrobial resistance" (<https://www.unep.org/resources/superbugs/environmental-action>).

38. CABI led the publication of a paper on “Biological control for One Health”, highlighting the global contribution of biological control to all dimensions of One Health (<https://doi.org/10.1016/j.scitotenv.2024.175800>).

### Research

39. Under the EUPHRESKO III project, funded by the EU to promote global cooperation in phytosanitary research, CABI is the regional champion for Africa. NPPOs and research institutions have been surveyed to gather information on current and planned phytosanitary research areas, and a regional consultation in 2025 will develop continental phytosanitary research priorities.
40. CABI leads the Global Burden of Crop Loss initiative to develop a robust evidence base on crop loss. Together with partners, models are being developed to estimate losses in different value chains and geographies, and the main causes and drivers of these losses, allowing policymakers and other stakeholders to make evidence-based decisions on priorities. With funding from FCDO and Gates Foundation initial analyses can now be extended to produce comprehensive data on losses in wheat, maize and rice globally; cassava and cowpea in West Africa; and banana in South America. Case studies in Kenya, Ghana, Ethiopia and India will explore specific value chains in more depth at a local level, and a dedicated gender work package will focus on analysing the gendered impacts of crop loss. Results will be disseminated via scientific papers, an open-access dashboard, and a variety of policy briefs and other engagement materials.
41. The Juno Evidence Alliance (<https://www.cabidigitallibrary.org/product/jk>) published “A machine-driven bibliometric analysis of current and emerging plant health challenges” (<https://www.cabidigitallibrary.org/doi/10.1079/junoreports.2024.0003>). In addition to the research needs for specific plant health issues, general areas where there appear to be research gaps include: agricultural education, knowledge creation and farmer access to information and extension services; integrated pest management (rather than the individual control technologies); losses due to pests and how this varies by region, crop or pest (see previous paragraph); and the relationship between plant nutrition, plant health and susceptibility to pest damage.
42. CABI is active in the International Pest Risk Research Group (IPPRG) and at the annual meeting in 2024 organised a session bringing together earth observation (EO) researchers and pest risk analysts to consider how EO can contribute to and improve models supporting risk analysis. CABI made presentations on how EO is being used to create and enhance datasets on irrigated areas, protected agriculture and canopy temperature. Ongoing work using remote sensing techniques to detect and monitor what blast was also presented. CABI is coordinating preparation of a paper arising from the session on how EO can help fill data gaps in pest risk models. CABI is also participating in a Euphresco research project on “Quantitative horizon scanning using climatic modeling to identify species with the potential to become plant pests”.
43. A study is being undertaken to assess the potential for using Self-Organising Maps (SOMs) as part of the PRA and Horizon Scanning tools. The tools generate a long list of potential quarantine pests for an endangered area, and SOMs afford the possibility of rapidly ranking the list. An analysis using 779 geographical areas and 8,198 pests has been undertaken, and a preliminary comparison made with expert assessments from the national pest risk prioritisation activities reported above. Further work is required on this part of the analysis before a decision can be made on whether to implement the approach in the tools.