



Making trade safe by **harmonizing electronic data exchange**

International trade has expanded the global economy and has brought prosperity, but it has also acted as a pathway for the introduction and spread of plant pests.

Plant pests carried across borders have caused significant pest outbreaks and devastated widely traded crops such as maize, coffee, olives and bananas. This impacts food production chains, food security, biodiversity and the global economy.

Exported consignments require phytosanitary certificates to attest that they meet phytosanitary import requirements of the importing country. But paper certificates can be problematic to process, causing delays and are exposed to fraud that increases the risk of plant pests moving across borders.



About the International Plant Protection Convention (IPPC)

The IPPC is a multilateral treaty established to protect the world's plants, agricultural products and natural resources from plant pests. Established in 1951, IPPC is ratified by 185 countries.

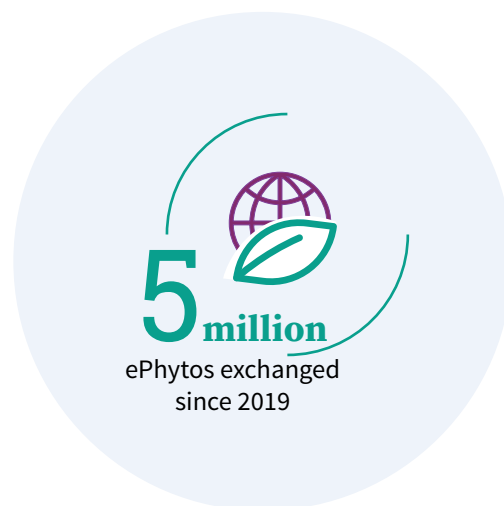
The IPPC Secretariat and community are focusing on eight **development agenda items (DAIs)** to achieve the objectives in the [IPPC Strategic Framework 2020-2030](#).

These agenda items, in various stages of implementation, are:

1. harmonization of electronic data exchange;
2. commodity- and pathway-specific International standard phytosanitary measures (ISPMs);
3. management of e-commerce and postal and courier pathways;
4. developing guidance on the use of third-party entities;
5. strengthening pest outbreak alert and response systems (POARS);
6. assessment and management of climate change impacts on plant health;
7. global phytosanitary research coordination; and
8. diagnostic laboratory networking.

Challenges

- » Plant pests disrupt international trade. Up to USD 220 billion in trade is lost annually from the global economy due to pests. They impact trade especially when importing countries reject pest-infested consignments.
- » Using paper phytosanitary certificates is costly and prone to delays, losses, damages and fraud.
- » Trade disruptions come at a high cost to the shipping industry. For example, clean up and treatment of sea containers contaminated with plant pests are expensive, including huge fines and trade losses due to delayed shipments.
- » While some countries have digitized their systems in line with the IPPC and relevant international standards for phytosanitary measures, most countries find it costly to establish and maintain bilateral digital exchanges with all trading partners.



Solution

In 2014, the International Plant Protection Convention (IPPC) developed the **IPPC ePhyto Solution**, a global online system that enables countries to exchange the electronic equivalent of paper phytosanitary certificates. Countries send or receive ePhytos through a centralized exchange system called the Hub that avoids the need for bilateral negotiations for establishing digital relationships.

Once a country is connected to the Hub, it can technically exchange ePhytos with all other countries which are also connected and ePhytos may be issued where accepted by the national plant protection organization (NPPO) of the importing country. Countries without a purpose-built system can use the Generic ePhyto National System (GeNS), a centralized web-based system to create, send and receive ePhytos. The Hub and GeNS, both components of the IPPC ePhyto Solution, also provide harmonized information, thus reducing interceptions due to documentation non-compliance.



have adopted the IPPC ePhyto Solution since 2019 with **88** going live (*actively exchanging ePhytos*), **31** testing and **8** registered.

By 2030, IPPC aims to have 193 FAO member countries on board.

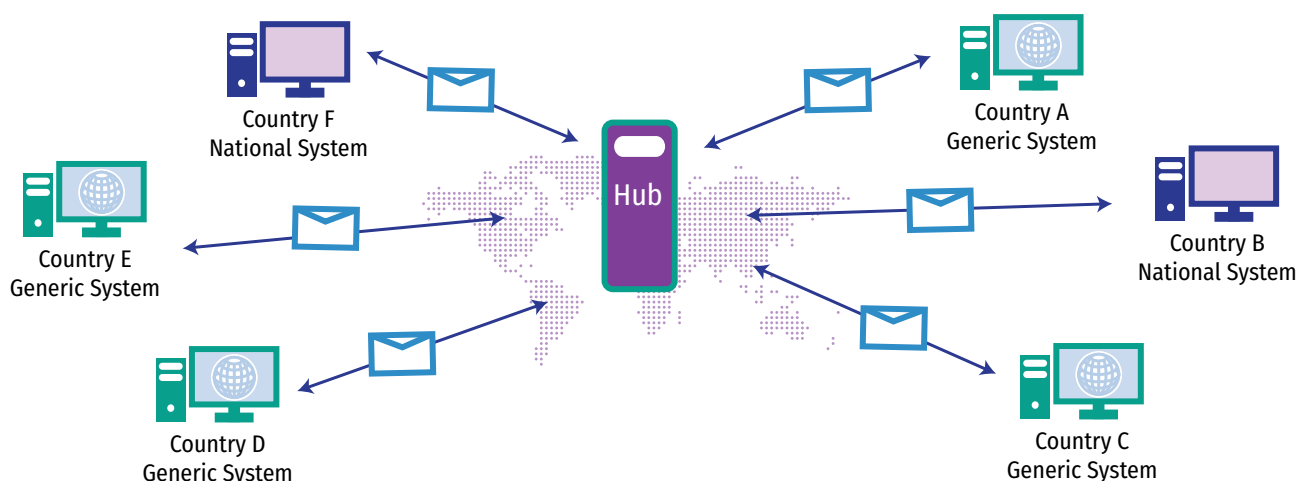


Figure 1. The Hub allows countries to exchange electronic certificates with other countries connected to the Hub via a generic web-based or an existing national system containing harmonized rules for participation.

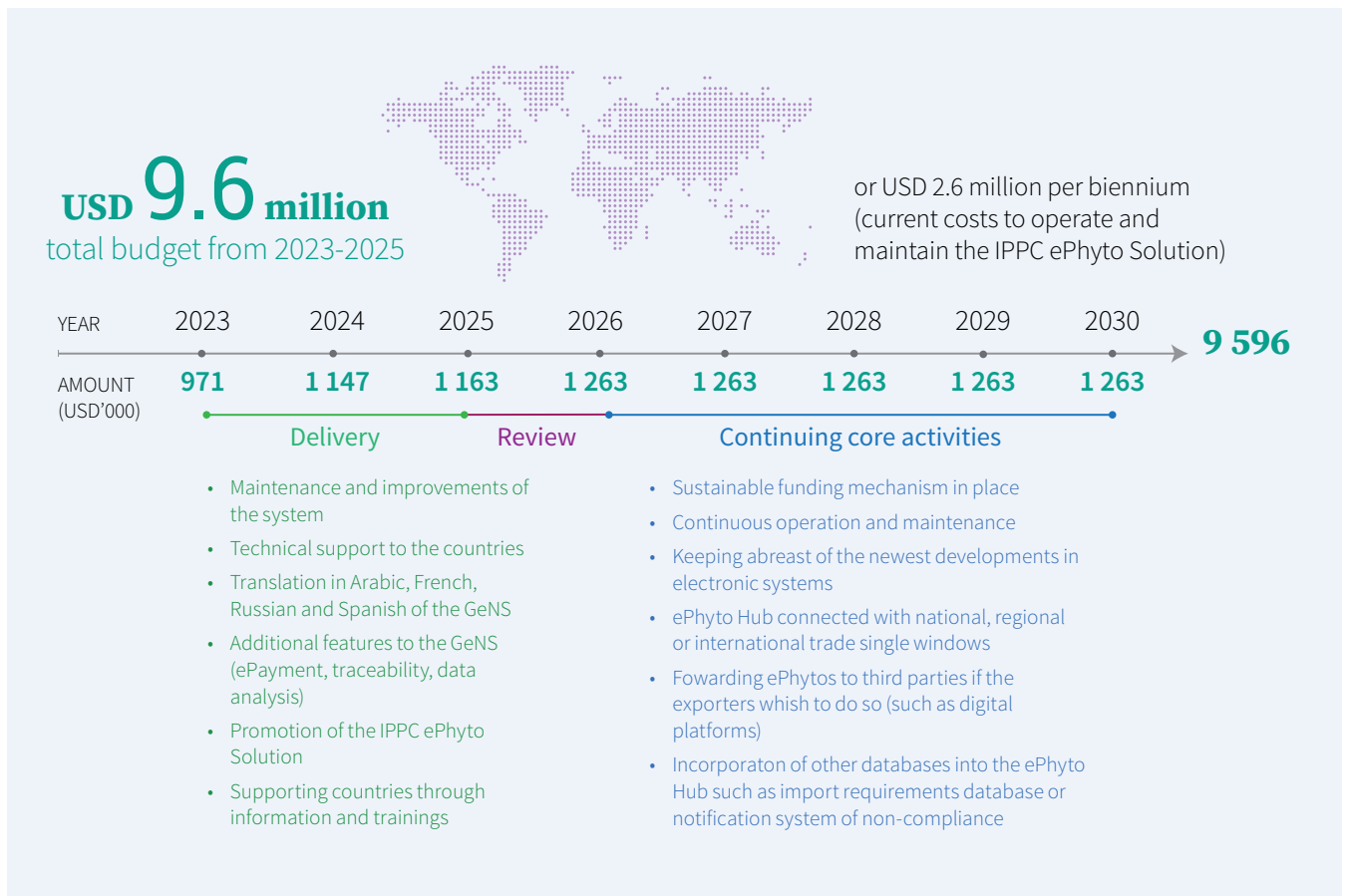
Benefits

- » Simplifies trade
- » Reduces business transaction costs
- » Expedites clearance of compliant products
- » Eliminates fraud thus reduces risks of spreading pests
- » Significant savings on time and cost. For example, in Morocco – USD 37.4 million and USD 43.2 million of savings were generated in 2020 and 2021 respectively.¹
- » Developing countries that could not afford to build electronic exchange systems can exchange ePhytos using the GeNS.

¹ Based on the increase in the number of phytosanitary certificates issued in one country, according to a 2023 study by the Global Alliance for Trade Facilitation.



Current status and opportunity to invest



The IPPC ePhyto Solution will help reduce transaction costs and expedite clearance of compliant products, however, adoption and usage remain low. The system must match international plant trade volumes and ensure movement of healthy plants.

To get more countries on board, the IPPC intends to:

- » conduct in person/online trainings and webinars on the IPPC ePhyto Solution in various languages;

- » convene a biennial conference to increase awareness among NPPOs and industry actors, to share successes and lessons, find solutions to challenges and discuss improvements in the IPPC ePhyto solution; and
- » originally available in English and already translated in Arabic and French, translate the GeNS platform also to Russian and Spanish to enable more countries to use the system; and
- » maintain and enhance the ePhyto Hub and GeNS.

Why your investment matters

- » When sustainably financed, the countries using the IPPC ePhyto solution will have greater reassurance that it will continue to be available in the long term.
- » The Solution streamlines processes that will significantly save time and resources, eliminate fraud and reduce the risk of introduction or spread of plant pests.
- » By investing in ePhyto, you will help IPPC support safe international trade, including promoting International Standards for Phytosanitary Measures (ISPMs).



© FAO/Ezequiel Becerra



© AdobeStock/Blue Planet Studio

Funding mechanism

Contact us on how you can contribute financially or in kind by sending an email to ippc-dai@fao.org.

For other inquiries, please email Sarah Brunel at sarah.brunel@fao.org.

Invest in the IPPC ePhyto Solution today and help make international trade safe.

CONTACT US

Food and Agriculture Organization
of the United Nations

IPPC Secretariat

Viale delle Terme di Caracalla, 00153 Rome, Italy
Tel: +39 06 5705 4812 | Email: ippc@fao.org

MORE RESOURCES

Web:

<https://www.ephytoexchange.org/landing/>

Video:

<https://www.youtube.com/watch?v=gjDz7aOv-Ys>



Some rights reserved. This work is available under a CC BY-NC-SA 3.0 IGO licence.



Easing market access through **commodity-specific plant health standards**

Globally traded commodities such as wheat, grain and fruits help feed the world. International Standards for Phytosanitary Measures (ISPMs), when applied in the trade of agricultural crops and plants, help prevent plant pests from spreading or entering new areas, thus protecting food security and international trade.

ISPM 46 *Commodity-specific standards for phytosanitary measures* provides guidance on the phytosanitary requirements for importing countries. Commodity standards help countries determine the quality and value of particular commodities, hence facilitating smooth domestic and international trade and promoting market efficiency.



About the International Plant Protection Convention (IPPC)

The IPPC is a multilateral treaty established to protect the world's plants, agricultural products and natural resources from plant pests. Established in 1951, IPPC is ratified by 185 countries.

The IPPC Secretariat and community are focusing on eight **development agenda items** (DAIs) to achieve the objectives in the [IPPC Strategic Framework 2020-2030](#).

These agenda items, in various stages of implementation, are:

1. harmonization of electronic data exchange;
2. commodity- and pathway-specific International Standard for Phytosanitary Measures (ISPMs);
3. management of e-commerce and postal and courier pathways;
4. developing guidance on the use of third-party entities;
5. strengthening pest outbreak alert and response systems (POARS);
6. assessment and management of climate change impacts on plant health;
7. global phytosanitary research coordination; and
8. diagnostic laboratory networking.

Challenges

- » Lack of uniformity in phytosanitary measures or diagnostic protocols to manage the threat of plant pests hinders the trade of plants and agricultural commodities.
- » The absence of harmonized phytosanitary measures reduces trade efficiency and market access, especially for countries with limited capacity to implement and comply with the International Plant Protection Convention (IPPC) and standards.

Solution

The IPPC, the only standard-setting global entity for plant health, is developing new ISPMs to empower countries to protect internationally traded commodities through better monitoring, prevention, detection and response to threats from plant pest. New standards will also aid in addressing import regulation challenges and other phytosanitary issues. All commodity-specific standards will be included as annexes to ISPM 46, under the oversight of the IPPC Standards Committee and direct coordination of the IPPC Technical Panel on Commodity Standards, with worldwide top experts.

Benefits

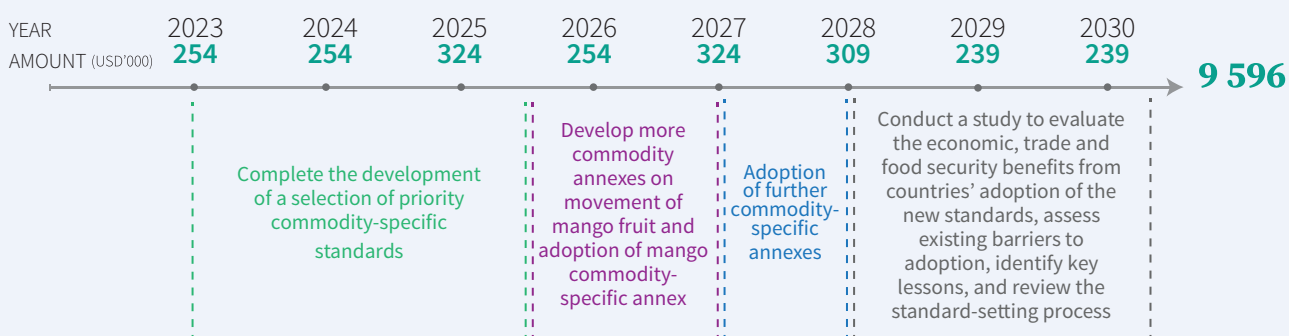
Commodity-specific standards will:

- » facilitate market access, simplify and accelerate trade negotiations, create market opportunities and simplify safe trade in plants and plant products;
- » promote harmonized and technically justified phytosanitary measures and import requirements among IPPC contracting parties;
- » allow developing countries will be able to trade more quickly since harmonized phytosanitary measures will limit restrictions on importation;
- » help national plant protection organizations (NPPOs) optimize the use of their resources;
- » identify and increase awareness of the measures available to manage the pest risk associated with the movement of commodities in international trade; and
- » identify and increase awareness of the commodity-associated pests that are commonly managed by NPPOs.

Current status and opportunity to invest

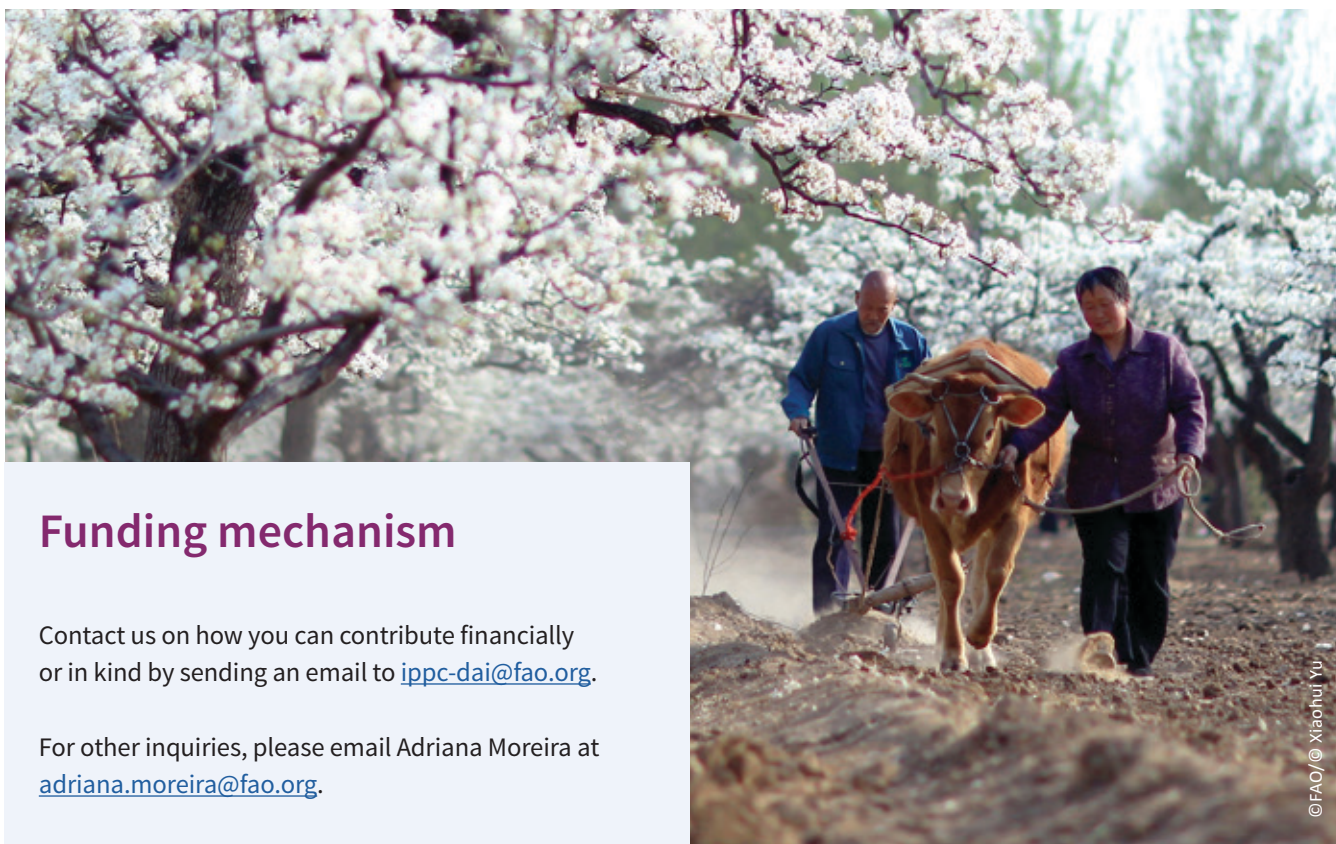


USD 2.2 million
total budget from 2023-2030



Why your investment matters

- » Your support to the financial and human capital resource requirements in developing and adopting a new standard will greatly impact the process and outcomes of its implementation. Standards setting, which takes two years on average, involves multiple rounds of consultation among countries and regions, with expert working groups and technical panels researching and ensuring the scientific quality of ISPMs. This window provides an opportunity for contracting parties, development partners and donors to support the process.
- » Once the standards are developed, countries may also need support in capacity development to effectively implement the standards.
- » Developing and implementing commodity standards strengthens IPPC's responsiveness to the needs of its contracting parties and the plant health community. It demonstrates the IPPC's significance and legitimacy to current international trade policies and practices.
- » Getting greater market access will help boost economies, especially of developing and least developed countries. This will support achievement of the Sustainable Development Goals (SDGs), particularly SDG 8 economic growth, while safeguarding food security and contributing to reduce hunger and poverty.



Funding mechanism

Contact us on how you can contribute financially or in kind by sending an email to ippc-dai@fao.org.

For other inquiries, please email Adriana Moreira at adriana.moreira@fao.org.

Invest in new commodity standards today and help ease market access and facilitate safe trade.

CONTACT US

Food and Agriculture Organization
of the United Nations

IPPC Secretariat

Viale delle Terme di Caracalla, 00153 Rome, Italy
Tel: +39 06 5705 4812 | Email: ippc@fao.org

FIND OUT MORE

[ISPM 46: Commodity-specific standards for phytosanitary measures](#)

[IPPC Technical Panel on Commodity Standards](#)



Some rights reserved. This work is available under a [CC BY-NC-SA 3.0 IGO licence](#).



Protecting plant health by managing e-commerce and postal and courier pathways

The growing trade in cross-border e-commerce has revolutionized the way businesses and private individuals market, sell and purchase goods. The internet has become a convenient means of promoting, selling and distributing products and has resulted in a major shift in retail buying and distribution patterns. It has also opened global economic opportunities in terms of providing wider access to overseas markets. Consequently, e-commerce is an increasing component of economic growth, particularly in developing countries.

However, the exponential increase in buying and selling goods over the internet has resulted in a surge in small parcels moving on postal and courier pathways. Parcels containing plants, plant products and other regulated articles may be a pathway for the introduction and spread of plant pests, particularly if they do not meet the phytosanitary requirements of the destination country. These pests may threaten cultivated and wild plants, disrupt international trade and impact food production chains.

National plant protection organizations (NPPOs) need to address the challenges posed by e-commerce in ways that will facilitate trade of goods moving on the postal and courier pathways while protecting plant health by preventing the introduction and spread of pests.

About the International Plant Protection Convention (IPPC)

The IPPC is a multilateral treaty established to protect the world's plants, agricultural products and natural resources from plant pests. Established in 1951, IPPC is ratified by 185 countries.

The IPPC Secretariat and community are focusing on eight **development agenda items (DAIs)** to achieve the objectives in the [IPPC Strategic Framework 2020-2030](#),

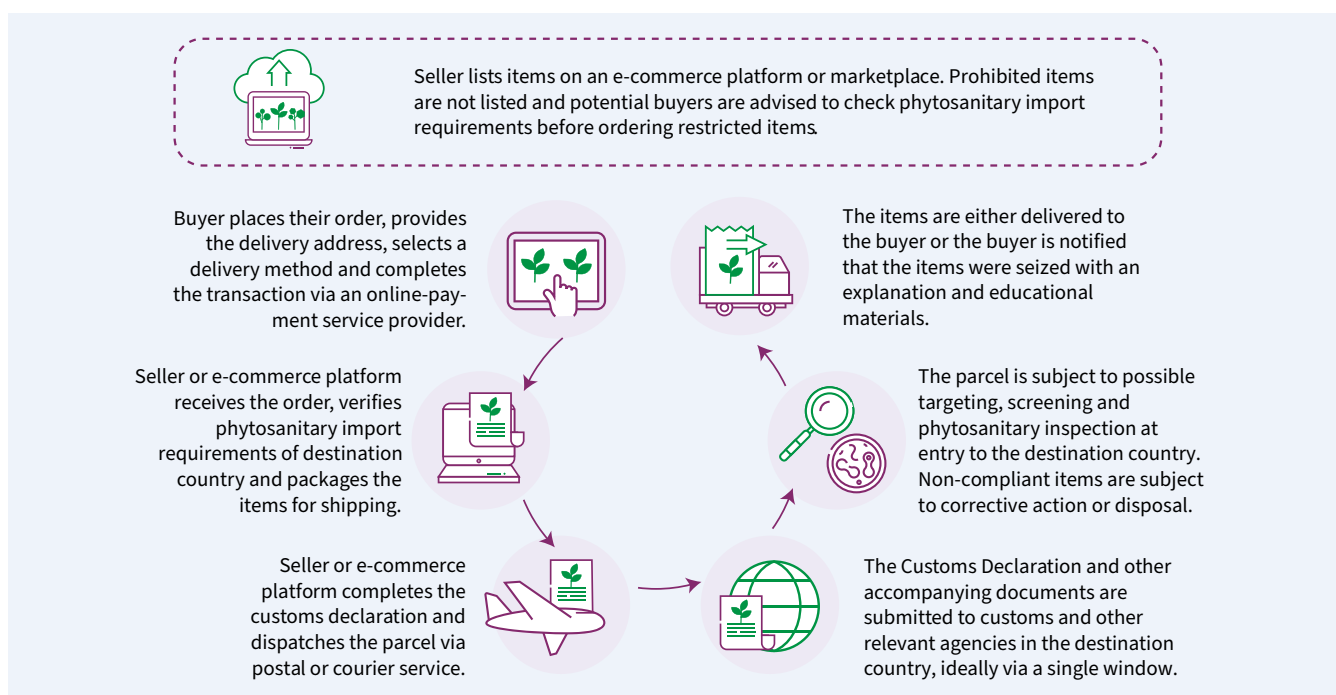
These agenda items, in various stages of implementation, are:

1. harmonization of electronic data exchange;
2. commodity- and pathway-specific International standard phytosanitary measures (ISPMs);
3. management of e-commerce and postal and courier pathways;
4. developing guidance on the use of third-party entities;
5. strengthening pest outbreak alert and response systems (POARS);
6. assessment and management of climate change impacts on plant health;
7. global phytosanitary research coordination; and
8. diagnostic laboratory networking.

Challenges

- » Buying, selling, and trading products over the internet has resulted in an enormous increase in the number of parcels moving through the postal and courier pathways. This increase, coupled with demands from industry and consumers for rapid delivery, puts pressure on the normal components of national phytosanitary export and import systems.
- » Rapid changes in digital technology may have outpaced the ability of countries to adopt the legislation, training and tools needed to effectively regulate e-commerce trade.
- » NPPOs may not have strong collaborative arrangements with their national customs administration and other government agencies, to address the pest risk associated with e-commerce trade.
- » Single-window and electronic-advance-data systems may not be in place to facilitate communication and data sharing between relevant parties involved in e-commerce supply.
- » Sellers and buyers may not comply with the phytosanitary import requirements of the destination country, either intentionally or because they are unaware of these requirements.
- » It is difficult to detect regulated articles in small parcels entering a country on postal and courier pathways, particularly if they are not declared.

Below is an example of a typical e-commerce supply chain with suggested actions to mitigate the pest risk at each step.



Solution

The International Plant Protection Convention (IPPC) is focusing on key opportunities for improving the management of e-commerce of plants and other regulated articles moving on the postal and courier pathways. The approach highlights the importance of detecting and intercepting small parcels containing regulated articles that do not comply with import requirements, while expediting the clearance and release of low-risk goods and goods that meet import requirements. Effective management of e-commerce is built on the following key pillars:

- » promoting compliance by raising awareness among stakeholders about potential pest risks
- » ensuring that the national legislative framework and national procedures are appropriate and effective and sufficient for addressing the challenges posed e-commerce
- » encouraging enhanced collaboration with customs and other government agencies to implement procedures to manage pest risk both offshore and at the border
- » strengthening coordination with national postal operators and couriers and with e-commerce marketplaces and platforms
- » establishing procedures to analyse, investigate and prevent illicit cross-border e-commerce activities



Benefits

- » Plants, plant products and other regulated articles sold through e-commerce and shipped via postal or courier services will meet the phytosanitary import requirements of the destination country.
- » NPPOs will be aware of the pest risk associated with e-commerce trade, particularly by business-to-consumer and person-to-person transactions.
- » Contracting parties will update their legislation and authorities to address e-commerce challenges, considering digital innovations, available technologies and new business models.
- » NPPOs will prepare and maintain lists of regulated articles and ensure these are available to all relevant e-commerce stakeholders, including other government departments and stakeholders in other countries.
- » NPPOs will identify key stakeholders and establish communication, education and outreach programmes to make online buyers, sellers, e-commerce platforms and marketplaces, and others involved in the e-commerce supply chain aware of the regulatory requirements, risks and responsibilities associated with transactions involving regulated articles.
- » Contracting parties will apply risk management measures to identify and intercept e-commerce consignments that have an unacceptable risk of non-compliance, while facilitating legitimate e-commerce trade (e.g. by use of electronic advance data, screening methods and non-intrusive inspection methods).
- » NPPOs will share information, cooperate, and collaborate with their national customs administration, postal operators and courier services to address pest risk associated with e-commerce trade.
- » NPPOs will gather data and monitor non-compliances, inspections and regulatory activities in collaboration with their national customs administration and will be able to demonstrate a measurable reduction in non-compliance associated with postal and courier pathways.

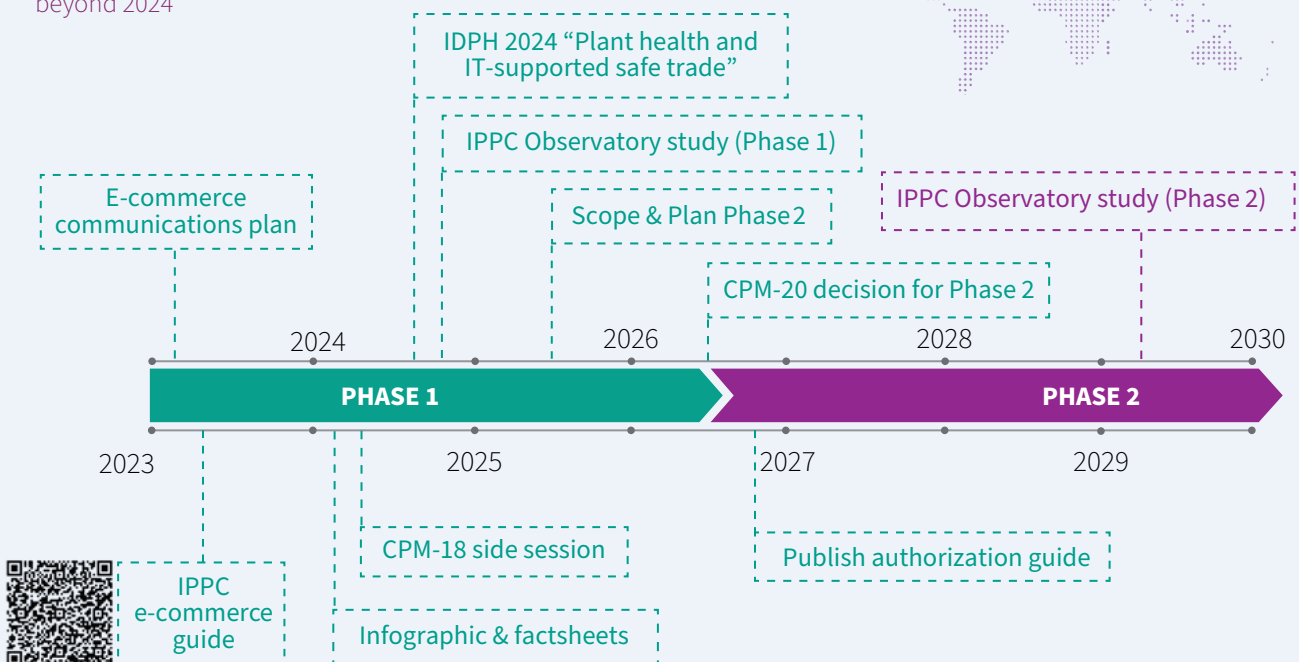


© Chris Steele-Perkins/Magnum Photos for FAO

Current status and opportunity to invest

USD 234 000

are needed to continue implementing the IPPC e-commerce programme beyond 2024



The following materials have been developed and can be accessed from the International Phytosanitary Portal:

- » [IPPC E-commerce guide: E-commerce - A guide to managing the pest risk posed by goods ordered online and distributed through postal and courier pathways](#) provides NPPOs with easy-to-understand technical information about e-commerce and serves as reference for enhancing national legislation, policies and procedures.
- » [IPPC infographic video: Managing the pest risk posed by e-commerce](#), raises the global visibility of this issue and provides NPPOs with a video and harmonized messages that they may use at a national level.

The first phase of an IPPC Observatory study on e-commerce will be launched in 2024 to establish a baseline for measuring key e-commerce outcomes, as specified in the Strategic Framework. The study

will characterize the current phytosanitary risks associated with e-commerce trade and identify gaps.

The development of the IPPC guide, infographic factsheet, and communications plan for e-commerce were developed thanks to in-kind and financial support from Canada. Canada has also provided support to launch an IPPC Observatory study on e-commerce in 2024.

Additional financial resources are required to facilitate active engagement with other international organizations on the topic of e-commerce and joint initiatives. They would also support additional awareness-raising and capacity development activities and allow the second IPPC Observatory study to be launched in 2029. In addition, partners are needed to support translating the new IPPC e-commerce guide to all FAO languages.

Why your investment matters

- » Joint initiatives with key international organizations that share an interest in e-commerce will create synergies and help to address the pest risks associated with e-commerce and goods moving on the courier and postal pathways.
- » By effectively addressing the challenges posed by e-commerce, NPPOs can facilitate the movement of goods on the mail and courier pathways while safeguarding plant health and preventing the introduction and spread of pests.
- » Education and communication are powerful tools that may be used to promote compliance and mitigate pest risk. A comprehensive and inclusive approach is vital since sellers, e-commerce platforms and marketplaces, buyers, and postal and courier services all play key roles in ensuring compliant trade.

Funding mechanism

Contact us on how you can contribute financially or in kind by sending an email to ippc-dai@fao.org.

For other inquiries, please email Barbara Peterson at Barbara.peterson@fao.org.

Invest in enhancing the management of e-commerce and postal and courier pathways to protect plant health today.

CONTACT US

Food and Agriculture Organization
of the United Nations

IPPC Secretariat

Viale delle Terme di Caracalla, 00153 Rome, Italy
Tel: +39 06 5705 4812 | Email: ippc@fao.org

MORE RESOURCES

- » Web: [IPPC and e-commerce](#)
- » IPPC Guide: [E-commerce: A guide to managing the pest risk posed by goods ordered online and distributed through postal and courier pathways](#)
- » Video: [Managing the pest risk posed by e-commerce](#)



Some rights reserved. This work is available under a CC BY-NC-SA 3.0 IGO licence.



Developing guidance on the use of third-party entities

The International Plant Protection Convention (IPPC) provides clear provisions for national plant protection organizations (NPPOs) to authorize entities to undertake phytosanitary actions, such as inspection, testing, surveillance, pest diagnosis, treatment and auditing. Because the NPPO is responsible for the outcome of activities undertaken by third-party entities on its behalf, the decision to use third-party entities is a voluntary one and lies with the NPPO.

Using third-party entities can help NPPOs to effectively allocate resources, deliver phytosanitary activities in an efficient and timely manner, share costs and responsibilities, and implement systems approaches to support market access. In some cases, third-party entities may provide a mechanism for NPPOs to access specialized expertise or equipment that would otherwise be unavailable to them.

However, in the absence of harmonized guidance, NPPOs have used a variety of systems for authorizing third-party entities and widely varying levels of oversight, control and verification take place. This variation could contribute to a reduced confidence in the reliability of actions undertaken by the third-party entities.

This in turn could lead to trade difficulties where importing countries impose additional import requirements to increase their confidence in the safety of the import.

About the International Plant Protection Convention (IPPC)

The IPPC is a multilateral treaty established to protect the world's plants, agricultural products and natural resources from plant pests. Established in 1951, IPPC is ratified by 185 countries.

The IPPC Secretariat and community are focusing on eight **development agenda items** (DAIs) to achieve the objectives in the [IPPC Strategic Framework 2020-2030](#).

These agenda items, in various stages of implementation, are:

1. harmonization of electronic data exchange;
2. commodity- and pathway-specific International standard phytosanitary measures (ISPMs);
3. management of e-commerce and postal and courier pathways;
4. developing guidance on the use of third-party entities;
5. strengthening pest outbreak alert and response systems (POARS);
6. assessment and management of climate change impacts on plant health;
7. global phytosanitary research coordination; and
8. diagnostic laboratory networking.

Challenges

- » **Legal framework.** Some countries may not have the necessary legal framework in place to implement an authorization programme.
- » **Implementation resources.** There is a lack of guidance available to NPPOs and contracting parties to support implementation of ISPM 45 and ISPM 47. The availability of adequate guides and training materials will be critical for developing authorization programmes and for maintaining the integrity of such programmes.
- » **Capacity development.** There is a need to consider the level of implementation capacity and the availability of resources in developing countries. For example, there may be a lack of entities authorized to conduct audits

Solution

ISPM 45: Requirements for national plant protection organizations if authorizing entities to perform phytosanitary actions was adopted at the 15th session of CPM in 2021. Several other ISPMs include references to the authorization of entities by NPPOs to perform a range of phytosanitary activities and guidance on authorization is available in several IPPC guides. However, there is currently a lack of comprehensive guidance available on this topic. IPPC Guides and training materials will support NPPOs wishing to establish programmes to authorize third-party entities to perform phytosanitary actions and carry out phytosanitary audits. The guides will be developed by working groups

Benefits

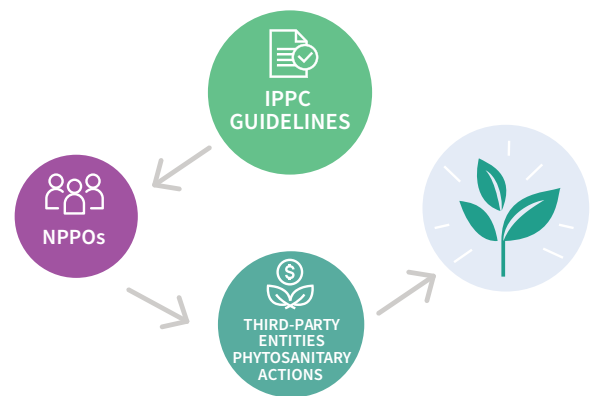
- » Countries who wish to authorize third parties will have access to comprehensive implementation and capacity development resources.
- » Guidance on the use of third-party entities will ensure that phytosanitary actions are carried out to the same standard and level of phytosanitary security as those done by the national plant protection organization (NPPO).
- » NPPOs that choose to authorize third-parties to carry



or a lack of technical capacity within the NPPO. In some countries, there may be a lack of entities with the experience and knowledge required to perform phytosanitary actions or a lack of NPPO capacity to provide training to those entities.

- » **Conflict of interest.** It will be important to define and articulate potential conflicts of interest and transparently explain how they are managed when implementing an authorization programme.
- » **Other issues.** There may be resistance on the part of users to change and to apply complex processes, meaning they would not accept authorized entities to perform certain actions.

comprised of selected international experts, under the auspices of the IPPC Secretariat, and with the oversight of the Implementation and Capacity Development Committee (IC).



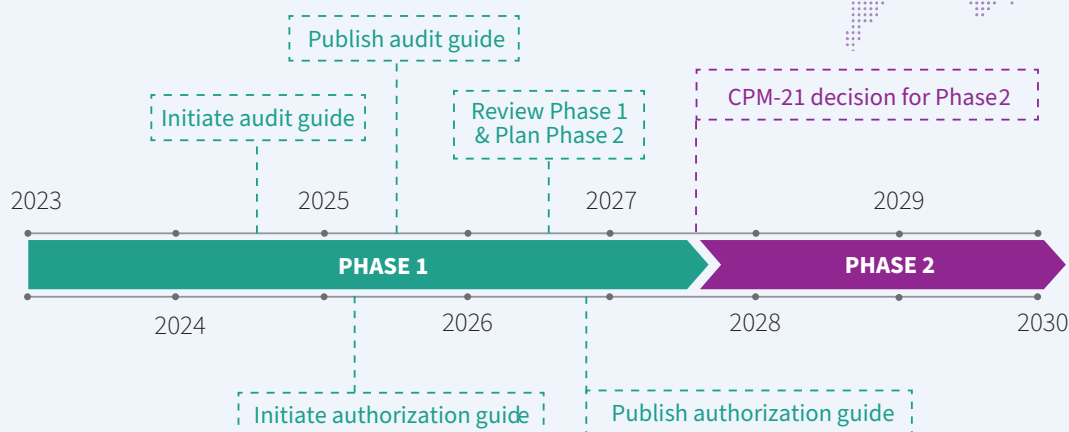
out phytosanitary actions will understand their responsibilities and comply with the relevant international standards.

- » Countries will have a better understanding and acceptance of the use of third-parties by other contracting parties.
- » NPPOs will be aware of the costs and benefits associated with establishing authorization programmes.
- » Authorization of entities to perform phytosanitary actions may:
 - help the NPPO to allocate limited resources more effectively;
 - support efficient and timely delivery of phytosanitary activities;
 - provide the NPPO with access to specialized expertise or equipment;
 - allow the costs and responsibilities of specific phytosanitary actions to be shared with national partners in the public or private sector; and
 - allow the NPPO to use systems approaches to support market access.

Current status and opportunity to invest

USD 200 000

total budget from 2023-2030



The following IPPC guidelines were adopted by the Commission on Phytosanitary Measures (CPM):

- » ISPM 45: *Requirements for national plant protection organizations if authorizing entities to perform phytosanitary actions* (adopted at the 15th session of CPM in 2021); and
- » ISPM 47: *Audit in the phytosanitary context* (adopted at the 16th session of CPM in 2022).

Canada has provided financial resources to support the development, publication and promotion of the IPPC Guide to phytosanitary audits (2021-009).

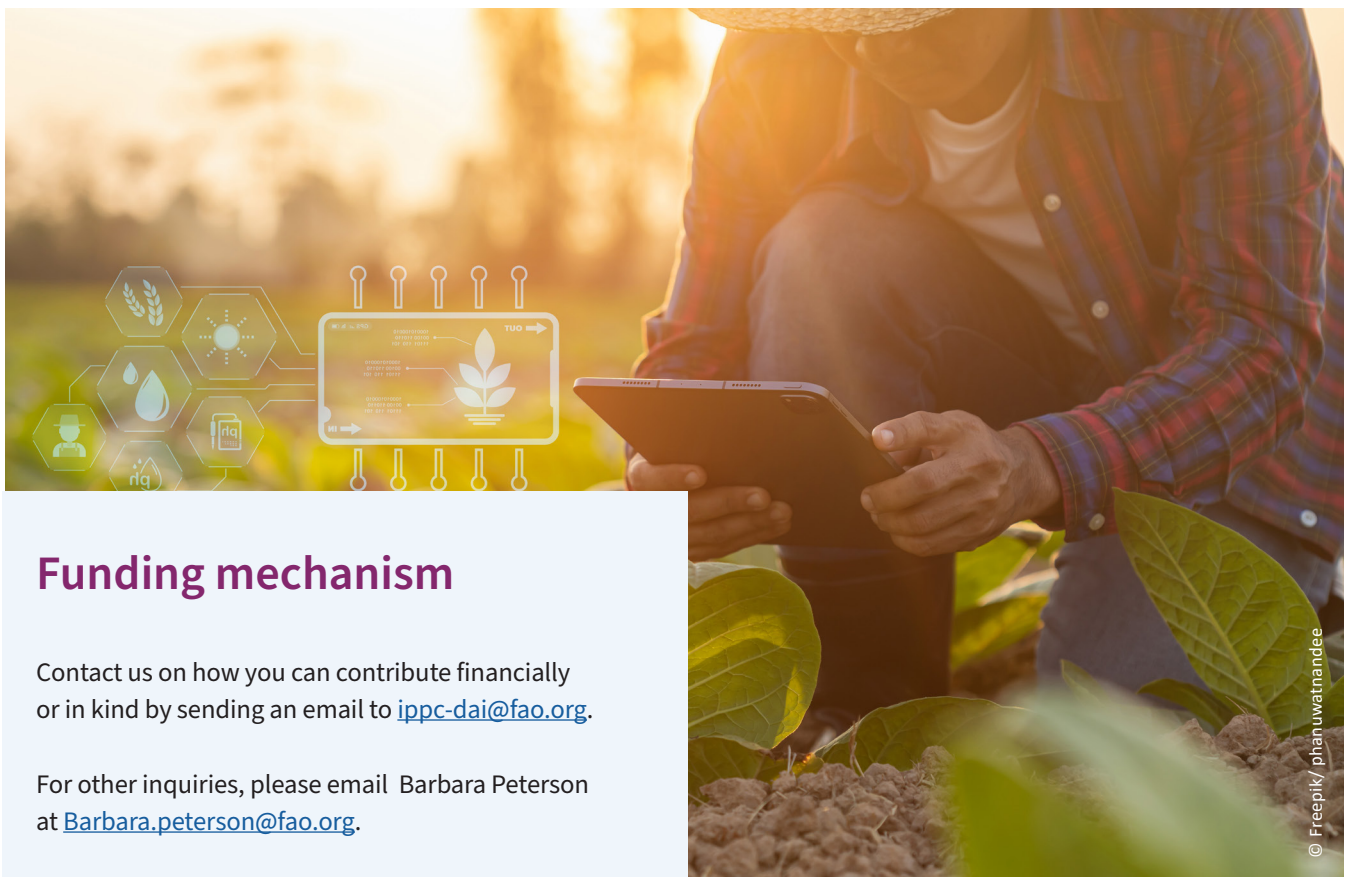
Financial resources are required to hire a consultant to work as a member of the IPPC Secretariat staff (0.5 of a full-time equivalent) to lead this work programme. Funding is needed to develop, publish and promote the IPPC Guide to authorizing entities to perform phytosanitary actions (2018-040). Resources are also required to develop awareness-raising and advocacy materials, develop an e-learning course, deliver other capacity development activities and monitor the implementation of ISPM 47, after the two guides are published.



Why your investment matters

Developing guidance on the use of third-party entities is expected to result in the following key outcomes:

- » Countries wanting to authorize third parties will have access to harmonized resources to support them to do this effectively with the necessary management processes and controls.
- » Activities by authorized entities will be carried out to the same standard and level of phytosanitary security as those done by NPPO.
- » Increased acceptance of the use of authorized third-party entities among contracting parties, even those that choose not to authorize third-parties.



Funding mechanism

Contact us on how you can contribute financially or in kind by sending an email to ippc-dai@fao.org.

For other inquiries, please email Barbara Peterson at Barbara.peterson@fao.org.

Invest in developing guidance to support NPPOs that wish to authorize third-party entities to carry out phytosanitary actions.

CONTACT US

Food and Agriculture Organization
of the United Nations

IPPC Secretariat

Viale delle Terme di Caracalla, 00153 Rome, Italy
Tel: +39 06 5705 4812 | Email: ippc@fao.org



Some rights reserved. This work is available under a CC BY-NC-SA 3.0 IGO licence.



© FAO/Petterik Wiggers

IPPC Plant health emergency response: Investing in a sustainable future

Plant pest outbreaks can cause devastation comparable to the impacts of natural disasters, pandemics, or even financial crises.

Early detection and rapid response to plant pest outbreaks are key to avoiding or limiting their impact. The IPPC community expects to have a plant health emergency response system in place by 2030, ready to facilitate timely action against pest incursions and support countries with emergency response systems tools and knowledge.

About the International Plant Protection Convention (IPPC)

The IPPC is a multilateral treaty established to protect the world's plants, agricultural products and natural resources from plant pests. Established in 1951, IPPC is ratified by 185 countries.

The IPPC Secretariat and community are focusing on eight **development agenda items** (DAIs) to achieve the objectives in the [IPPC Strategic Framework 2020-2030](#).

These agenda items, in various stages of implementation, are:

1. harmonization of electronic data exchange;
2. commodity- and pathway-specific International Standard for Phytosanitary Measures (ISPMs);
3. management of e-commerce and postal and courier pathways;
4. developing guidance on the use of third-party entities;
5. strengthening pest outbreak alert and response systems (POARS);
6. assessment and management of climate change impacts on plant health;
7. global phytosanitary research coordination; and
8. diagnostic laboratory networking.



© FAO/Giulio Napolitano

Challenges

- » The lack of reporting changes in the condition of quarantine pests reduces understanding of their distribution and increases the risk of introduction and establishment.
- » When NPPOs do not receive quarantine pest risk alerts on time, it impedes the implementation of essential prevention, preparedness, and response measures.
- » Limited adaptation of phytosanitary systems to change pests' condition results in unnecessary threats to food security, the environment, and trade.



Solution

Making operational a feasible global mechanism for a Pest Outbreak Alert and Response System (POARS) to address pests of global concern and improving the National Reporting Obligations (NROs) by:

- » Evaluating and ranking emerging plant pests.
- » Developing surveillance and response tools.
- » Developing national pest reporting, including the design of a horizon scanning system for collecting information.
- » Establishing a system for communicating alerts.

Benefits

- » Strengthening countries' capacity to prevent, prepare, detect, and respond to outbreaks, leading to a more efficient and effective response to pest emergencies.
- » Preventing the spread of pests across different regions and reducing their economic, environmental, and social impact to preserve biodiversity and food security.
- » Global and regional collaboration will aid Contracting Parties (CPs) and NPPOs to act timelier during pest outbreaks and new pest incursions.



Why your investment matters

Your investment will directly impact the operationalization of the Pest Outbreak Alert and Response System (POARS) and will contribute to improve the National Reporting Obligation, which, in turn, will help preserve biodiversity and food security.

Current status and opportunity to invest



The projected budget for the period 2024-2030 to implement the solution is estimated to be USD 3.24 million.



Funding mechanism

Contact us on how you can contribute financially or in kind by sending an email to ippc-dai@fao.org.

For other inquiries, please email Sarah Brunel at sarah.brunel@fao.org.

Make a difference by supporting countries to prevent, prepare and respond to plant pest outbreaks. Invest in POARS, invest in a sustainable future!

CONTACT US

Food and Agriculture Organization
of the United Nations

IPPC Secretariat

Viale delle Terme di Caracalla, 00153 Rome, Italy
Tel: +39 06 5705 4812 | Email: ippc@fao.org



Some rights reserved. This work is available under a CC BY-NC-SA 3.0 IGO licence.



© Brent Stirton/Getty Images for FAO

Assessing and managing climate change impacts on plant health

Climate change is having an increasing impact on the health of plants and agricultural crops. **With every degree that the world warms, up to 15 percent of global yield from staple crops are lost** including wheat, rice and maize. This impacts millions of people who depend on these for food, nutrition and livelihoods.

Rising temperatures have enabled plant pests to establish in previously uninhabitable areas. In new areas of establishment, the pests can be damaging to crops, forests and other native plants **impacting the diversity of plant life** in the area.



© Freepik

About the International Plant Protection Convention (IPPC)

The IPPC is a multilateral treaty established to protect the world's plants, agricultural products and natural resources from plant pests. Established in 1951, IPPC is ratified by 185 countries.

The IPPC Secretariat and community are focusing on eight **development agenda items (DAIs)** to achieve the objectives in the [IPPC Strategic Framework 2020-2030](#),

These agenda items, in various stages of implementation, are:

1. harmonization of electronic data exchange;
2. commodity- and pathway-specific International standard phytosanitary measures (ISPMs);
3. management of e-commerce and postal and courier pathways;
4. developing guidance on the use of third-party entities;
5. strengthening pest outbreak alert and response systems (POARS);
6. assessment and management of climate change impacts on plant health;
7. global phytosanitary research coordination; and
8. diagnostic laboratory networking.

Challenges

- » A warming world and inconsistent weather patterns leads to shift in the life cycle, epidemiological characteristics and spread of plant pests and diseases.
- » Changing weather conditions can impact upon the physiology and structure of plants, making them more vulnerable to pests.
- » Plant pests spreading or entering new territories affect the production of agricultural crops, plants and plant products. They disrupt international trade through movement of pest-contaminated commodities and articles such as sea containers. If pests become established in importing countries, they can cause a trickle-down effect on local flora and fauna, livelihoods and economy.

Why your investment matters

- » Enhancing how the risks of climate change to plant health are assessed and managed will boost countries' knowledge and resilience.
- » Highlighting plant health risks in the international debate on climate change will elevate advocacy towards putting more financial and technical resources on plant protection against climate change impacts.
- » Generating science-based knowledge will support advocacy for national policies and systems towards better plant protection.
- » Raising awareness among the public and key stakeholders will rally greater support to protect plant health from the impacts of climate change.

Solution

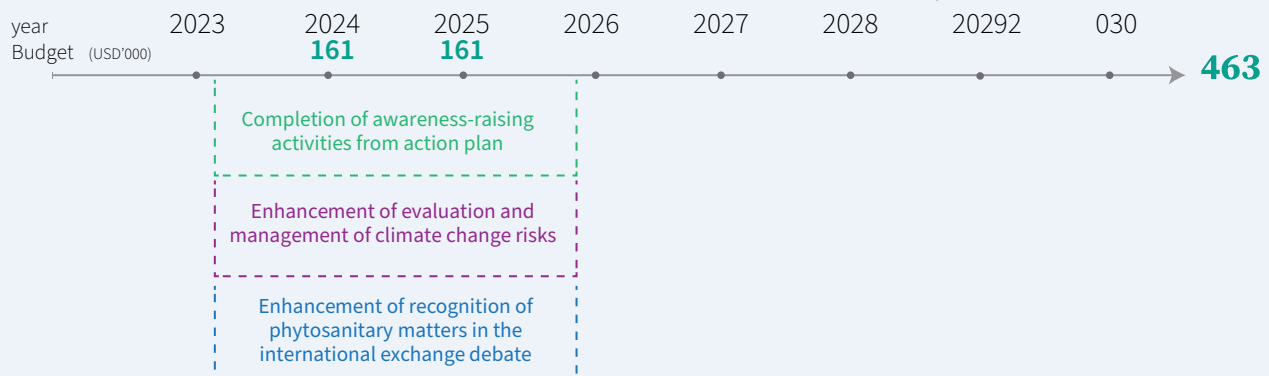
The International Plant Protection Convention (IPPC) has jump-started **an initiative to assess and manage the impacts of climate change on plant health and the international trade** of plants and plant products. The Commission on Phytosanitary Measures (CPM), the governing body of the IPPC, has established a focus group of experts from around the world with the IPPC Secretariat on this initiative.



Current status and opportunity to invest

USD 322 000

total budget from 2023-2030



To **raise awareness** of the impacts of climate change on plant health, the following activities will be undertaken:

- » Convene and participate in meetings and side events related to the impact of climate change on plant health such as the UN Climate Change Conference Forums.
- » Raise awareness through cultural and social media, develop a climate change webpage on the International Phytosanitary Portal, and engage with stakeholders through surveys and by other means to gather information on the topic.

- » Facilitate discussions within IPPC subsidiary bodies, regional workshops as well as other IPPC technical groups and the Commission on Phytosanitary Measures (CPM), the IPPC's governing body.
- » Assist NPPOs to meet their national reporting obligations established by IPPC. The national reporting system could be enhanced to further share information on changes to pest distributions, host range, and adaptability of pests and host plants.



To **enhance the evaluation and management of climate change risks to plant health**, the following will be carried out:

- » Support countries to collect, analyse and use climate change impact-related information in decision-making.
- » Review existing use of climate change considerations in pest risk analysis and surveillance. Provide advice on climate change models, assessment and tools, and develop guidance on incorporating climate change assessments in pest risk analysis, surveillance and risk management.
- » Create Regional climate hubs e.g., USDA Climate Hubs that provide science-based information to agricultural and natural resource managers to help address the effects of climate change.
- » Review linkages to the safe provision of food aid.

- » Develop, review and promote tools to enhance the preparedness and response of Agricultural Extension Agents, farmers and other relevant stakeholders to the impacts of climate change on plant health.
- » Incorporate climate change references and technical resources into IPPC guidance materials.
- » Incorporate 'climate change impacts on plant health' criteria into the template for draft 'standard' specifications, draft guidance material specifications, and into the assessment criteria for the upcoming IPPC Call for topics.
- » Develop an IPPC guide to assist in identifying cultural and social impacts of climate change on plant health, including island communities under threat of rising sea levels.

To **enhance the recognition of phytosanitary matters in the international climate change debate**, the following will be carried out:

- » Strengthen collaboration with relevant organisations, such as the Intergovernmental Panel on Climate Change (IPCC) and the Secretariat of the Convention of Biological Diversity.
- » Facilitate, promote and support phytosanitary issue-related policy dialogue at the global level through mainstreaming phytosanitary policies into the climate change debate.



Funding mechanism

Contact us on how you can contribute financially or in kind by sending an email to ippc-dai@fao.org.

For other inquiries, please email Arop Deng at arop.deng@fao.org.

Your investment in managing climate change impacts on plant health will make a difference in protecting the world's plants and natural resources.

CONTACT US

Food and Agriculture Organization
of the United Nations

IPPC Secretariat

Viale delle Terme di Caracalla, 00153 Rome, Italy
Tel: +39 06 5705 4812 | Email: ippc@fao.org

MORE RESOURCES

- » Brochure: [Plant health and climate change](#)
- » Report: [Scientific review of the impact of climate change on plant pests](#)
- » Video: [Plant Health and Climate Change](#)
- » Web: [Plant Health and Environmental Protection](#)



Some rights reserved. This work is available under a [CC BY-NC-SA 3.0 IGO licence](#).



Establishing global phytosanitary research coordination

Research is a vital component in advancing the science of plant protection. International research collaboration among countries, institutions and disciplines leads to higher scientific quality, efficient resource use, better outcomes and wider adoption of results.

The benefits of collaborating can be realized through mutual interest and common goals, effective leadership, facilitation of processes and structure and funding for both research and collaboration. Synergistic collaboration can be achieved by balancing both strategic and applied research.



About the International Plant Protection Convention (IPPC)

The IPPC is a multilateral treaty established to protect the world's plants, agricultural products and natural resources from plant pests. Established in 1951, IPPC is ratified by 185 countries.

The IPPC Secretariat and community are focusing on eight **development agenda items** (DAIs) to achieve the objectives in the [IPPC Strategic Framework 2020-2030](#).

These agenda items, in various stages of implementation, are:

1. harmonization of electronic data exchange;
2. commodity- and pathway-specific International Standard for Phytosanitary Measures (ISPMs);
3. management of e-commerce and postal and courier pathways;
4. developing guidance on the use of third-party entities;
5. strengthening pest outbreak alert and response systems (POARS);
6. assessment and management of climate change impacts on plant health;
7. global phytosanitary research coordination; and
8. diagnostic laboratory networking.

Challenges

- » Plant health issues are complex, encompassing issues such as forecasting, early warning and prevention and management of plant pests. A well-coordinated, harmonized and multi-actor response is needed.
- » The sensitivity of trade-related issues at national levels hinders communication and transparency among plant health authorities and other stakeholders call for a harmonized phytosanitary research and shared information.

Solution

The International Plant Protection Convention (IPPC) intends to establish a global phytosanitary research coordination mechanism that will avoid overlap in research activities, rapid and regular identification of common priorities and commissioning of projects and use research resources more efficiently to advance plant health more quickly.

Benefits

Improved international coordination of plant health research will help to:

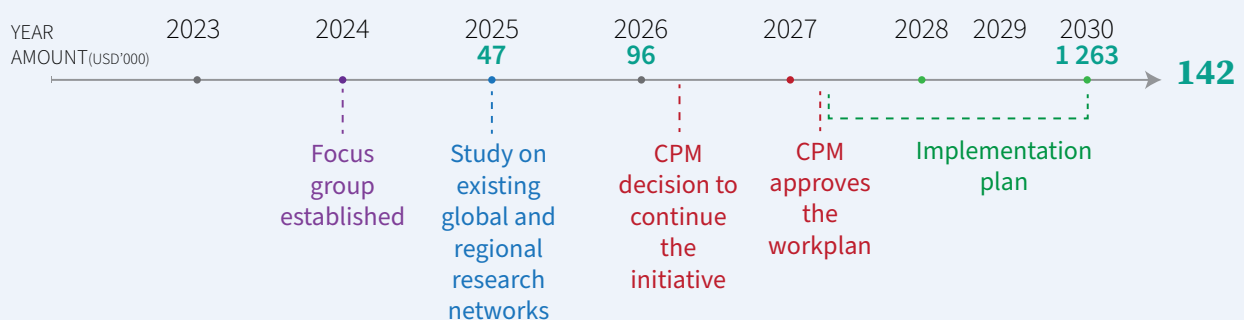
- » avoid overlap in research activities, advance plant health research more quickly, and utilize research resources in the most efficient and effective manner;
 - » identify important issues around plant health and form the basis for generating more attention and resources towards plant protection;
 - » avoid fragmentation and duplication of research activities;
 - » ensure rapid and regular identification of common priorities, allocation of funds and commissioning of projects, especially when emergencies occur;
- » provide a means to empower national organizations and funding systems by taking advantage of transnational and global research on regulated plant pests;
 - » narrow the divide between high- and low-income countries with regards to research investments and allow them to optimize resources to manage the increasing risks to plant health.
 - » use human and financial resources more efficiently and effectively;
 - » bring various players to collaborate more closely, break national isolation and reduce the discipline boundaries that have traditionally dominated the plant health sector; and
 - » a global network would require an IT infrastructure that ensures that information is accessible to all members of the global network.





Current status and opportunity to invest

USD 142 000
total budget from 2023-2030



To understand the benefits of developing a global phytosanitary research coordination structure, a study will be carried out to explore current international and regional phytosanitary research structures.

The Commission on Phytosanitary Measures (CPM), the IPPC's governing body, will establish a CPM Focus Group to determine if a gap needs to be filled or an improved mechanism should be established.

The Focus Group will start by 2024 and its continuation would be subject to a CPM decision against the following key performance indicators:

- » Investigation of existing networks and presentation of an update or final report (proposal for research coordination) for CPM decision by March/April 2026
- » Approve the proposed implementation plan for global phytosanitary research coordination by April 2027.

Why your investment matters

Supporting the scoping study on international and regional phytosanitary structures and areas of study will help reveal any gaps and determine whether a global coordination structure will provide value.

Funding mechanism

Contact us on how you can contribute financially or in kind by sending an email to ippc-dai@fao.org.

For other inquiries, please email Arop Deng at arop.deng@fao.org.



© Adobe Stock

**Invest in the global phytosanitary research
coordination mechanism today.**

CONTACT US

Food and Agriculture Organization
of the United Nations

IPPC Secretariat

Viale delle Terme di Caracalla, 00153 Rome, Italy
Tel: +39 06 5705 4812 | Email: ippc@fao.org

FIND OUT MORE

[Science diplomacy for plant health](#)
(published in the journal *Nature Plants*)



Some rights reserved. This work is available
under a CC BY-NC-SA 3.0 IGO licence.



Establishing a diagnostic laboratory network

When countries trade plants, plant products and agricultural commodities, part of their responsibility is to ensure that these are pest-free or are at an acceptable level of protection. Access to diagnostic services and expertise is thus essential for importing countries to effectively detect pests in commodities that enter their borders.

This will prevent the entry and introduction of pests that could potentially harm agricultural production and the environment, or disrupt international trade. It is known that accurate and rapid pest diagnosis underpins phytosanitary certification, import inspections and the application of appropriate phytosanitary measures. Moreover, early detection and accurate diagnosis can minimize the risk and impact of a pest outbreak as it gives basis for successful pest outbreak containment or control strategies.



About the International Plant Protection Convention (IPPC)

The IPPC is a multilateral treaty established to protect the world's plants, agricultural products and natural resources from plant pests. Established in 1951, IPPC is ratified by 185 countries.

The IPPC Secretariat and community are focusing on eight **development agenda items (DAIs)** to achieve the objectives in the [IPPC Strategic Framework 2020-2030](#).

These agenda items, in various stages of implementation, are:

1. harmonization of electronic data exchange;
2. commodity- and pathway-specific International standard phytosanitary measures (ISPMs);
3. management of e-commerce and postal and courier pathways;
4. developing guidance on the use of third-party entities;
5. strengthening pest outbreak alert and response systems (POARS);
6. assessment and management of climate change impacts on plant health;
7. global phytosanitary research coordination; and
8. diagnostic laboratory networking.

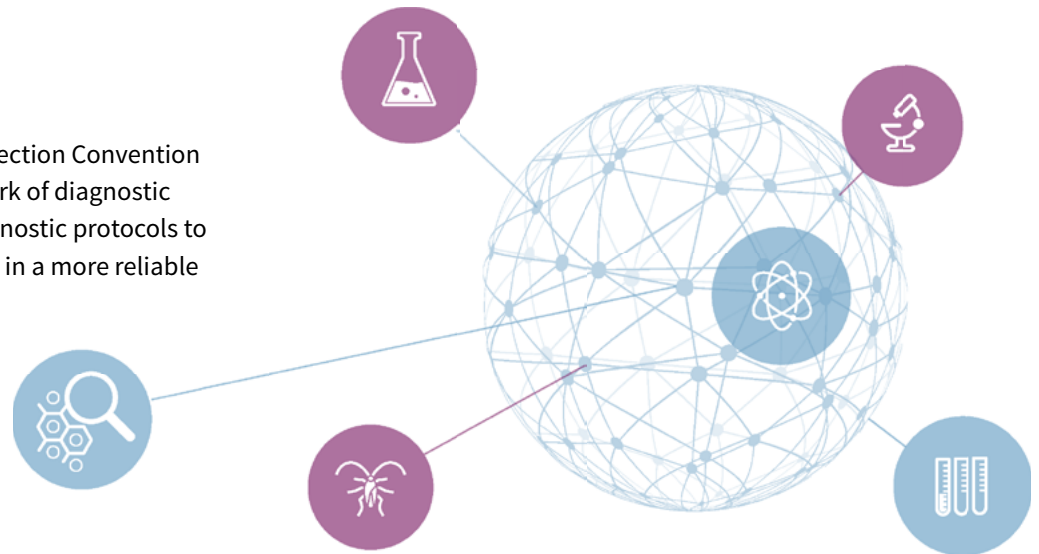
Challenges

- » Diagnostic services and expertise are severely restricted in many countries due to limited structural capacity and trained personnel.
- » Establishing world-class diagnostic laboratories and keeping up with advances in diagnostic technology is extremely costly.
- » For many countries, the only viable option to access high-end diagnostic services will be through international cooperation to access diagnostic capacity at an international, regional or subregional level.



Solution

The International Plant Protection Convention (IPPC) will establish a network of diagnostic laboratory services and diagnostic protocols to help countries identify pests in a more reliable and timely manner.



Current status and opportunity to invest

USD 1 478

total budget from 2023-2030



To date, a small amount of work has been commissioned to the CPM Focus Group to examine the current state of diagnostic capability in NPPOs and to establish a diagnostic laboratory network. No other scoping or planning has been done other than by this CPM Focus Group just established in 2023 to make an approximate budget provision, scope and an action plan.

This DAI has the potential to be a very large and complex programme, however it will tackle one of the most fundamental activities of a national plant protection organization services: pest diagnostics. The CPM recommended that the Scope and Plan phase should commence soon (2024) with the establishment of a focus

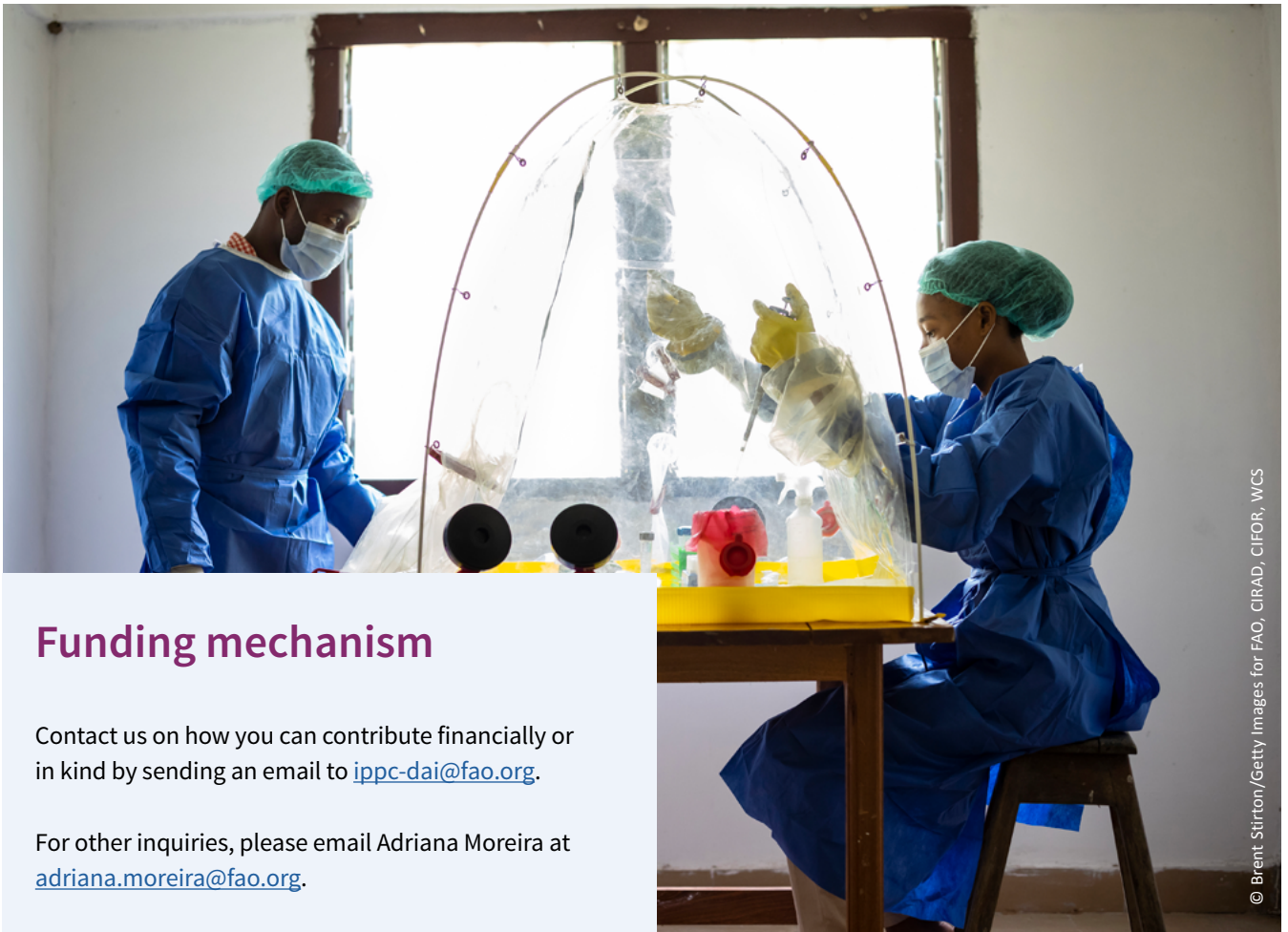
group to work with the IPPC Secretariat and Bureau. It is expected that discussions take place on approaches to maintain an IPPC laboratory diagnostic network including aspects on timely diagnosis of samples and communication of results.

Also, the practicalities needed for such a system should be considered including legal frameworks, confidentiality, and liability issues. It is forecasted to take two years before a viable proposal with details is presented to CPM for approval, as there is still a need to discuss and agree on the components necessary for an efficient and effective IPPC laboratory diagnostic network, considering the regional differences.



Why your investment matters

- » The capacity of NPPOs to detect and identify pests will be improved through the development of a laboratory network that provides reliable and timely diagnosis. It is expected that NPPOs will have almost instant access to reliable plant pest laboratories or plant health clinics, with a broad range of analytical capacities. This will allow NPPOs to establish technically justified phytosanitary measures, facilitate safe trade, and respond to pest out-breaks more quickly.
- » National laboratories with strong diagnostic functions will offer reliable services within regions or globally, through the lab network, reducing the need for all countries to develop duplicated capacity.
- » IPPC Regional laboratory networks can serve as surveillance sites to monitor “hot spots” for pest spread, which will support activities against emerging pests.



Funding mechanism

Contact us on how you can contribute financially or in kind by sending an email to ippc-dai@fao.org.

For other inquiries, please email Adriana Moreira at adriana.moreira@fao.org.

Invest in plant pest diagnostics and the IPPC laboratory diagnostic network today and help ease market access and facilitate safe trade.

CONTACT US

Food and Agriculture Organization
of the United Nations

IPPC Secretariat

Viale delle Terme di Caracalla, 00153 Rome, Italy
Tel: +39 06 5705 4812 | Email: ippc@fao.org



Some rights reserved. This work is available under a CC BY-NC-SA 3.0 IGO licence.

© Brent Stirton/Getty Images for FAO, CIRAD, CIFOR, WCS



Investing in plant health: **better lives for all**



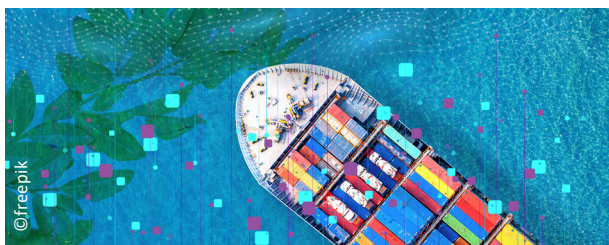
Putting financial and technical resources to protect the world’s plants and natural resources makes sense.

- » **It moves us closer to a zero-hunger world.** Healthy plants and agricultural crops provide food, nutrition and livelihoods especially to food-insecure populations. When we protect global food security, we help alleviate people around the world from poverty and its trickle-down effects.
- » **It protects precious biodiversity.** Protecting ecosystems from plant pests, keeping the diversity in flora and fauna, and maintaining ecological balance provides plants and crops a healthy environment to thrive in.
- » **It promotes safe international trade.** Curbing the movement of plant pests and diseases across international borders not only ensures smooth import and export transactions but also protects economies and livelihoods from trade disruptions.

Contributing to the UN 2030 Sustainable Development Goals



The International Plant Protection Convention (IPPC), a multilateral treaty for the protection of plants and natural resources ratified by 185 countries, is focusing on eight development agenda items (DAIs) or key areas of work on plant protection to support food security, environmental protection and safe trade in the current decade. The DAIs are anchored on the IPPC Strategic Framework 2020-2030 which sets out the overall structure and priority areas of IPPC’s work.



1. Harmonizing electronic data exchange

– connecting countries to the IPPC ePhyto Solution to replace paper phytosanitary certificates with digital ePhyto certificates. This makes trade safer, faster, more cost-effective and eliminates the risk of fraud, delay, damage or loss associated with paper certificates. By 2030, 193 FAO member countries are exchanging ePhytos.

Status: Ongoing
Total budget: USD 9.59 million



3. Managing e-commerce and postal and courier pathways

– an improved system to protect plants and plant products traded through small parcels.

Status: Ongoing
Total budget: USD 2.2 million



5. Strengthening pest outbreak alert and response systems (POARS)

– a more robust system for countries to communicate emerging pest risks. POARS is envisioned to provide countries with regular information on new pest interceptions and alert them on pest outbreaks and changes in status of the most important pests.

Status: To commence in 2024
Total budget: USD 3.24 million



2. Easing market access through commodity

– specific plant health standards - commodity-specific International Standard for Phytosanitary Measures (ISPMs) to facilitate market access, simplify and accelerate trade negotiations, create market opportunities and simplify safe trade in plants and plant products.

Status: Ongoing
Total budget: USD 2.2 million



4. Developing guidance on the use of third-party entities

– provide options for NPPOs to use third-party entities to conduct phytosanitary actions such as inspection, testing, surveillance, pest diagnosis, treatment and auditing.

Status: Ongoing
Total budget: USD 2.2 million



6. Assessing and managing climate change impacts on plant health

– scientific analysis is captured in a published technical resource; phytosanitary issues are elevated in the international debate on climate change.

Status: Ongoing
Total budget: USD 1.288 million
Phase 2 (2026-2028) contingent to CPM review. If approved the provisional annual budget is USD 161,000.



7. Establishing global phytosanitary research coordination – a system to avoid overlap in research activities, advance plant health more quickly and use research resources more efficiently.

Status: To commence in 2024

Total budget: USD 142 000

8. Establishing diagnostic laboratory networking – a lab network that provides reliable and timely diagnoses. It is expected that NPPOs will have almost instant access to reliable plant pest laboratories or plant health clinics, with a broad range of analytical capacities. This will allow NPPOs to establish technically justified phytosanitary measures, facilitate safe trade, and respond to pest outbreaks more quickly.

Status: To commence in 2024

Total budget: Contingent to results of new scoping and planning

Agenda Item	2023	2024	2025	2026	2027	2028	2029	2030
1. Harmonization of electronic data exchange	Delivery		Review	Ongoing core activity				
2. Commodity-specific ISPMs	Delivery					Review	Ongoing core activity	
3. Management of e-commerce and postal and courier pathways	Delivery	Complete & Review	Scope & Plan	CPM Go or Stop decision				
4. Developing guidance on the use of third-party entities	Delivery		Scope & Plan	CPM Go or Stop decision	Delivery			Review
5. Strengthening pest outbreak alert and response systems	Scope & Plan	CPM Go or Stop decision	Delivery				Review	Ongoing core activity
6. Assessment & management of climate change on plant health Delivery	Delivery		Complete & Review	Scope & Plan	CPM Go or Stop decision			
7. Global phytosanitary research coordination	Not Started		Scope & Plan	CPM Go or Stop decision				
8. Diagnostic laboratory networking	Not Started	Scope & Plan	CPM Go or Stop decision	Delivery				

Table 1. Phased implementation plan

Budget Summary	2023 (\$'000)	2024 (\$'000)	2025 (\$'000)	2026 (\$'000)	2027 (\$'000)	2028 (\$'000)	2029 (\$'000)	2030 (\$'000)	Total
1. Harmonisation of electronic data	971	1,147	1,163	1,263	1,263	1,263	1,263	1,263	9,596
2. Commodity and pathway specific ISPMs	254	254	324	254	324	309	239	239	2,197
3. Management of e-commerce and courier pathways	112	122	-	-	-	-	-	-	234
4. Developing guidance on the use of third party entities	-	-	50	81	91	121	111	151	605
5. Strengthening pest outbreak alert and response systems	265	425	425	425	425	425	425	425	3,240
6. Assessment and Management of climate change on plant health	161	161	161	-	-	-	-	-	483
7. Global phytosanitary research coordination	-	-	47	95	-	-	-	-	142
8. Diagnostic laboratory networking	54	54	125	165	285	245	265	285	1,478
Total	1,817	2,163	2,295	2,283	2,388	2,363	2,303	2,363	17,975
Total excl. Electronic Exchange	846	1,016	1,132	1,020	1,125	1,100	1,040	1,100	8,379

Table 2. Summary of proposed implementation budget.



Funding mechanism

Contact us on how you can contribute financially or in kind by sending an email to ippc-dai@fao.org.

**Invest in the IPPC development agenda items today
and help make a better world for all .**

CONTACT US

Food and Agriculture Organization
of the United Nations

IPPC Secretariat

Viale delle Terme di Caracalla, 00153 Rome, Italy

Tel: +39 06 5705 4812 | Email: ippc@fao.org



Some rights reserved. This work is available under a CC BY-NC-SA 3.0 IGO licence.