

INFORMATION PAPER

Plant health for One Health - Healthy plants for a healthy world

Overview

Plants form **the foundation** of **food security** and **nutrition** and play a **vital role** in **One Health**, an integrated, unifying approach that aims to sustainably balance and optimize the health of people, plants, animals and ecosystems. Outbreaks of plant pests and diseases cause up to **40 percent** of **global production losses each year**, estimated to cost more than **USD 220 billion** in damage. Climate change, along with the increasing trade and global movement of people and goods, is driving more frequent and intense outbreaks.




In response, the Food and Agriculture Organization of the United Nations (FAO) proposes a global programme spanning **50 countries** in Africa, Asia, Eastern Europe, Latin America and the Near East. The initiative aims to reduce annual crop losses by **USD 5 billion** through **reinforced sustainable plant pest management**. The global programme will boost national economies, empower farmers with know-how and tools, reduce pesticide risks and ultimately make agrifood systems more **sustainable** and **resilient**.

FAO is uniquely positioned to lead this effort with its extensive technical expertise, global experience and outstanding results in delivering integrated plant health and One Health programmes. The global programme represents a unique opportunity to achieve a **significant return on investment**, advancing both **global food security** and **nutrition** and **environmental sustainability**.

The challenge in numbers

- **Banana fusarium wilt disease** threatens up to **17 percent** of global banana production, which may generate **USD 10 billion** in annual losses.
- In Africa alone, **fall armyworm** and **Tephritid fruit flies** inflict multi-billion-dollar losses – hampering economic growth and deepening poverty.
- **Wheat fungal diseases** cause more than **USD 4.2 billion in losses per year** across Africa, Asia, Latin America and the Near East.
- **44 percent** of the world's farmers are adversely affected by **inappropriate pesticide use**, while **64 percent** of global farmland is at risk of **pesticide pollution** each year.

The action

- **Strengthen surveillance, monitoring and early warning**
 -  Bolster early detection and rapid response capacities to outpace phytosanitary threats.
 -  Leverage digital tools, including Artificial Intelligence (AI), for rapid detection and real-time diagnostics, spread mapping and data-driven decision-making.
 -  Support forecasting models and pathway analyses for proactive risk mitigation.

➤ **Mainstream Integrated Pest Management (IPM)**

- ✚ Promote integrated pest management approaches including host resistance, sound agronomy, diverse cropping systems and the use of decision support tools.
- ✚ Expand all ecosystem-based practices and tools, including biological control and biopesticides.
- ✚ Minimize pesticide risks, focusing on addressing highly hazardous pesticides and promoting responsible antimicrobial use.

➤ **Reinforce policies and regulations**

- ✚ Revise national plant health policies and integrate them into One Health frameworks.
- ✚ Strengthen national phytosanitary systems and ensure compliance with International Plant Protection Convention (IPPC) standards.
- ✚ Promote policies and incentive mechanisms to minimize pesticide risks and combat Antimicrobial Resistance (AMR).
- ✚ Support adoption and implementation of international frameworks, conventions and treaties.

Programme targets

- **Global biosecurity** is improved through the sustainable prevention and management of at least **ten major plant pests and diseases** in **50 countries**, protecting the livelihoods and food security and nutrition of at least **100 million** people.
- **Phytosanitary systems** strengthened in **50 countries**, including by **integrating plant health** into the national **One Health** frameworks and enhancing regulatory and technical capacities.
- Innovative and evidence-based IPM solutions used on at least **10 million** hectares, reducing **risk** caused by **pesticides** by up to **50 percent**.
- Up to **25 million** farmers empowered to adopt IPM practices.

Expected results

- **Reduced crop losses:** pest-induced losses are significantly lowered in a cost-effective, ecologically-sound and science-based manner.
- **Enhanced phytosanitary capacity:** countries are better equipped to implement internationally agreed phytosanitary standards and measures.
- **Empowered farmers:** farmers are trained and equipped with innovative IPM practices and tools.
- **Resilient agrifood systems:** national and regional agrifood systems are made more sustainable and resilient to plant health threats.

- **Reduced pesticide risks:** pesticide-related risks to human health and the environment are halved.
- **Integrated policy frameworks:** national policies are strengthened by embedding plant health into One Health frameworks, with active engagement of key stakeholders.

Strategic partnerships

The global programme is built on robust multi-sectoral collaboration with: **UN Quadripartite on One Health** – FAO, the United Nations Environment Programme (UNEP), the World Health Organization (WHO) and World Organization for Animal Health (WOAH) – plus the International Atomic Energy Agency (IAEA); **Convention on Biological Diversity (CBD)**; **Commission on Phytosanitary Measures (CPM)**; **Organization for Economic Co-operation and Development (OECD)**; **CGIAR research centers**; regional and national plant protection organizations; national agricultural research and extension systems; the private sector, food value chain actors and international financial institutions.

The required budget, geographic coverage and duration

- USD 100 million
- 50 countries: Africa, Asia, Eastern Europe, Latin America and the Near East
- 5 years

Why invest?

Plant pests and diseases cause **multi-billion-dollar losses annually**, critically undermining food security and nutrition of **billions of people**. **Climate change** is bound to worsen these losses, **jeopardizing** rural livelihoods and national economies, pushing entire communities into poverty. Traditional pesticide-based management of plant pests and diseases accelerates environmental pollution and biodiversity loss and poses serious risks to human health.

To address these challenges, the global programme anchors plant health within the One Health framework, aiming to **transform conventional agrifood systems** into more **productive, sustainable and climate-resilient ones**. It prioritizes strengthening local capacities and enhancing regulatory frameworks, empowering countries to **better monitor, prevent and manage plant health threats** in a coordinated manner.

The global program will enhance national capacities for sustainable plant health management and improve farmers' livelihoods in 50 countries. It will also support countries to directly tackle **the Triple Planetary Crisis — climate change, biodiversity loss and pollution** — fostering cropping systems that further protect human, ecosystem and planetary health.

Case studies and ongoing efforts

- **FAO Global Action on Fall Armyworm (2016-24):** (i) mobilized **USD 30 million** and reached **2.6 million** farmers in more than **65 countries**; (ii) achieved up to **78 percent** reduction of infested areas; reduced pesticide use by **30 percent**; and (iii) increased maize yields by **15 percent** in several countries.
- **Global Desert Locust Programme:** (i) implemented in **32 countries** for more than **70 years**; combines prevention, real-time monitoring and emergency response; (ii) prevented **USD 1.77 billion** in cereal and milk losses (2020-22); and (iii) protected the food security of **41.5 million** people.
- **IPPC Africa Phytosanitary Programme:** strengthens institutional and human capacities in **19 African countries** and enhances national phytosanitary systems to prevent pest spread.
- **Capacity building Programme related to Multilateral Environmental Agreements in African, Caribbean and Pacific countries:** promoted sound pesticide management and mainstreamed agro-ecosystems in **25 countries**.
- **Rotterdam Convention Global Project:** supports **168 parties** to manage hazardous chemicals and covers **57 chemicals** to ensure safe and environmentally sound use.

SDG contribution

SDG 1 – No Poverty; **SDG 2** – Zero Hunger; **SDG 3** – Good Health and Well-being; **SDG 5** – Gender Equality; **SDG 6** – Clean Water and Sanitation; **SDG 12** – Sustainable Consumption and Production; **SDG 13** – Climate Action and **SDG 15** – Life on Land.



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