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Recognising the importance of plant health in today's world

Protecting plants is protecting life

Plants are the source of the oxygen we breathe and most of the food we eat, as almost all our food is directly or indirectly plant-based. We need plants for medical reasons and the medicinal components of many plant species are either directly used for human medication or serve as a blueprint for producing pharmaceutical drugs. Plants provide building materials for shelter and supply us with energy for heat and transportation.¹

Nevertheless, plant health is often overlooked by policymakers and the public. Between 2000 and 2016, international agricultural trade increased more than three-fold in value.² With increasing trade, opportunities for plant pests and diseases to move around the world have grown exponentially. International travel and the movement of people have also fundamentally increased over the past decades, bringing fresh pathways for pest and disease introduction and spread. New pests and diseases appear now in territories where they had never before been encountered, with negative consequences on local ecosystems, agriculture and food security. Pests and diseases are responsible for losses of between 20% and 40% of global food production and for trade losses in agricultural products exceeding USD220 billion every year. What is more, once established in a new area, plant pests are often impossible to eradicate.

This situation is worsened by climate change, the impact of which on plant health is incontrovertible and affects plant pests' epidemiology, distribution and impact. Due to global warming, it is observed that more pests are not only appearing earlier in the season, but rising temperatures also create new pathways for pests and diseases to thrive and spread. Climate change influences the movement of pests and threatens both the quality and quantity of crops. Balancing the impact of climate change on pest and disease occurrences and food production is an unprecedented global challenge for the scientific community because we need to produce more food with fewer resources and soils that are being degraded in order to feed the nine billion people on earth by 2050.

Urgent action is needed to protect plants

Protecting plants from pests and diseases and keeping them healthy is more important than ever to secure food for a growing world population of humans and domestic stock. By protecting plants, we thus also protect the key components of our diets and those of the animals we eat.

Much still needs to be done to secure plant health worldwide. Plant pest and disease outbreaks and their increasing incidences pose new challenges for the global phytosanitary community. Being aware of the risks and taking responsible actions when travelling and purchasing plants and plant products online could help to secure plant health worldwide. Driving innovation in the plant health domain, private sector businesses also have a key role to play as they can contribute to the development of global plant health standards and help to implement them.

Currently, plant pests and diseases such as *Spodoptera frugiperda*, *Schistocerca gregaria*, *Rhynchophorus ferrugineus* and *Xylella fastidiosa* are just some of the many that raise serious challenges across borders and, indeed, across regions and continents.

The role of the International Plant Protection Convention

Going by the ancient adage 'prevention is better than cure', by protecting plants from the spread and introduction of pests and diseases, governments, farmers, and other actors can help preserve natural biodiversity at local and national levels, contribute to the saving of billions of dollars and ensure access to sufficient and safe food for all. The application of solid, science-based normative instruments, such as the International Standards for Phytosanitary Measures (ISPMs) of the International Plant Protection Convention (IPPC), helps to achieve sustainable and fair trade globally, thus facilitating market access, particularly for developing countries. Farmers, especially smallholders, and small businesses may acquire better opportunities when such normative tools are implemented in a harmonised and coordinated manner. The mission of the IPPC is to protect the world's plant resources from pests and diseases while facilitating the safe trade of plants and plant products.

Plant health and One Health

Health debates have dominated since COVID-19 became a pandemic, emphasising the importance of preventive health measures. In fact, human health has always been, rightly, a priority on the international agenda. Given the absolute necessity of saving as many human lives as possible, international organisations and their members also have the duty to preserve and continue to improve life in the widest possible sense: from everyday life to the wider natural environment.

In fact, when considering the matter of 'health', what comes to mind is usually the health of humans or, at most, the health of animals. It is seldom that one thinks about the health of plants or that of the environment except in their relation to human health. Plants may appear healthy to untrained eyes, yet plants also get sick. While applying sanitary precautions, procedures, and treatments to tackle the threat of COVID-19 are paramount, we should nevertheless remember that our own health depends on plants while the health of plants depends on us. Therefore, we need to lower the risk of transmitting plant pests and diseases through our actions.

Plant pests and diseases are introduced through similar mechanisms that we are observing with the tragic spread of COVID-19. This is why the prevention advocated by international regulations, such as the ISPMs of the IPPC, approved through participatory methods and based on scientific evidence, becomes even more essential.



The International Year of Plant Health

Given the increasing threats to plant health and the impact on food security, the environment, and safe trade, for more than 5 years, the government of Finland, in collaboration with the Secretariat of the IPPC, has engaged to bring this issue to the notice of the general public. The proclamation of the International Year of Plant Health (IYPH) by the UN General Assembly is the result of this essential work.³ The year 2020, therefore, is the opportunity for the global phytosanitary community to present its work to an audience broader than only disciplinary experts or institutional offices.

When first conceived, the plan for the IYPH anticipated many global, regional, and national events being held face-to-face. With the current global pandemic, the programme for the International Year is adapting the global series of initiatives that began with the launch of the IYPH at the FAO headquarters in Rome on 2 December 2019. The launch demonstrated the promise of global participation. However, the current global health crisis prompted the IPPC Secretariat and FAO to postpone other key global events, including the Fifteenth Session of the Commission on Phytosanitary Measures and the First International Plant Health Conference. Many other virtual initiatives have been, and will be organised, at the national level, in which all operators in the agricultural sector and consumers are called upon to participate. Among these, FAO with the Secretariat of the IPPC and *National Geographic* magazine launched a photographic contest to depict healthy plants and diseased plants, an art and drawing competition, and a call for national plant health champions.

The implementation and adherence to IPPC standards represent other important successes. By implementing phytosanitary standards, countries can contribute substantially to a zero-hunger world. ISPMs ensure that pest risks are effectively managed, pests and diseases can be prevented from spreading worldwide and we can ensure that the trade in, and transportation of, plants, seeds, and other agricultural products are safe.

What can we do?

1. Think twice before bringing plants along for the ride

It may be tempting to bring home that exotic flower from your summer holiday, but make sure you are not getting more than you bargained for – foreign plants can carry unseen pests and diseases, therefore make sure that you bring back only certified plant products. Every year, up to 40% of global food crops are lost to plant pests and diseases. As with human health, prevention is key.

The mobility of plants and plant products is subject to ISPMs, so when travelling to and from other countries, refrain from taking plants and plant products with you to ensure that foreign pests and diseases are not accidentally introduced. It would also help if you were careful when ordering plants and plant products online or through postal services because packages can easily bypass the regular phytosanitary controls that are vital for keeping our agricultural industries safe from external threats.

2. Trade safely and according to international standards

Many countries depend on trading plants and plant products to sustain their economies. In fact, the annual trade value of agricultural produce is now USD1.7 trillion! However, trade can quickly spread plant pests and diseases and seriously damage native plants and biodiversity. Government representatives and policymakers should ensure that they have implemented the International Plant Protection Convention (IPPC) standards. The IPPC is a global treaty signed by 184 contracting parties that provides an international framework for protecting plant resources from pests and diseases and promotes safe trade among all countries.

Anyone in the transportation and trade sectors can practise safe trading too. Ensure that your business enforces existing phytosanitary legislation and investigate adopting innovative technologies, such as electronic

phytosanitary certification (ePhyto), when importing or exporting plants and plant products. Ensure that your clients are aware of the risks associated with transporting plants and plant products across borders and are knowledgeable about the best practices to follow.

3. Promote and adopt more sustainable environmentally friendly pest and disease control solutions

Plant pests and diseases are among the main reasons for biodiversity loss and poor plant health. However, we need to deal with pests and diseases in environmentally friendly ways and minimise the use of hazardous pesticides. Pesticides can kill pollinators and beneficial insects which are natural pest enemies and crucial for a healthy environment. Policymakers, as well as farmers, need to take heed of important information on pesticide use and the use of appropriate alternatives where these are available.

More sustainable solutions lie at the heart of Integrated Pest Management, an ecosystem-based approach that focuses on long-term prevention of plant ill-health through a combination of techniques such as biological control, biopesticides, intercropping, physical barriers such as tree cover, insect nets and good airflow, and the use of pest/disease-resistant plant varieties. Other environmentally friendly ways of controlling plant diseases include using pest- and disease-free planting materials, avoiding monoculture systems, and employing crop rotation methods that suppress the accumulation of pests and pathogens and favour biodiversity. Citizens can also support plant health through daily actions such as buying produce from farms that use ecological approaches for pest control, biological fertilisers and biopesticides.

Implementing scientifically based phytosanitary measures is also essential to sustain plant and seed health. Countries should invest more in research and technologies related to plant and seed health and provide incentives for commercial and smallholder farmers to adopt innovative practices and sustainable solutions. Building capacity in a cohort of phytosanitary experts is crucial, as is improving the infrastructural development for seed testing and certification at global and regional levels.

In conclusion, the proclamation of the IYPH 2020 itself marks a key global achievement. It has finally brought to light how protecting plant health can help achieve food security and solve other global challenges. The IYPH is not only a once-in-a-lifetime opportunity to raise global awareness on how protecting plant health can end hunger, reduce poverty, protect the environment, and boost economic development, but also to demonstrate that everyone has a specific role to play in this global action. The private sector, governments, farmers and agribusiness, the scientific community, travellers and citizens can all contribute to this important global goal by taking specific actions. Collaborative global efforts to proclaim an International Day of Plant Health (IDPH) are currently being championed by the government of Zambia as a lasting legacy to espouse the vision and mission of the IYPH.^{4,5}

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