FAO

Topic: **“Strengthening Global Agricultural Resilience Against Emerging Plant Diseases and Pests”.**

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Writer’s note:

Welcome delegates to the FAO committee. As your committee Dais we are looking forward to listening to your proposals on how to solve these problems, as well as your way of engaging in harsh situations of debate. As this is a new committee following international MUN procedures, you will be provided with a guide to help you throughout this process. Keep in mind that a position paper is not required, instead you will be writing opening speeches.

As your committee Dais, we will work to keep the committees running as smoothly as possible. We will do our best to help you understand the procedures and to ensure that the perspectives of all delegates are heard and respected. If you have any questions that are not found in the guide, be sure to ask us. Once again welcome delegates and good luck.

I. COMMITTEE BACKGROUND

The Food and Agriculture Organization (FAO) is a specialized agency of the United Nations dedicated to defeating world hunger, achieving food security, and driving sustainable agricultural development across its 194 members—comprising 193 countries and the European Union—working in over 130 countries worldwide. Focused on ensuring everyone has regular access to enough high-quality food to lead active, healthy lives, the FAO modernizes practices across agriculture, forestry, and fisheries. As a neutral forum for international policy negotiations, the organization provides technical assistance to developing nations, collects and analyzes global production data, and builds resilient food systems equipped to withstand climate change, pests, and economic shocks.

II. History of the topic

a. Introduction to the topic

Plant health is a vital foundation for global food security, economic stability, and rural livelihoods, as plants supply more than 80 percent of the food humans eat. However, emerging plant diseases and invasive agricultural pests currently destroy as much as 40 percent of global crop production each year, causing economic damage of more than

$220 billion USD. The fast emergence of these threats is driven by climate change and increased global trade and travel. Outbreaks of high-consequence pests and pathogens, such as Xylella fastidiosa, Desert Locusts, and Fall Armyworm, have a disproportionate impact on smallholder farmers in developing countries who do not have advanced surveillance and mitigation tools. To protect global food supply chains, the Food and Agriculture Organization (FAO) must guide member states toward integrated phytosanitary standards, early-warning surveillance networks, eco-friendly pest management, and climate-resilient crop practices.

b. Evolution of the topic

Nearly a billion people currently suffer from inadequate nutrition, despite the tremendous increases of food production in recent decades. The numbers of hungry people, as well as the proportion of the world population that is not adequately nourished, are now rising after decades of impressive decline. Whether or not there is a range to increase food production in many areas, it is critically important to secure the harvest of existing actual and potential crop yields. Thus there is increasing global interest in improving food security by reducing loss and waste.

Crop losses due to pests and diseases are substantial, taking a toll on global and local food security. An estimated 16% of arable crops are lost due to disease. While this news is problematic, it is clear that pest and disease losses disproportionately affect people in tropical environments, who can least afford the losses and consequent food insecurity. Disease pressure for both people and their crops is higher in tropical environments than it is in temperate ones. This combination of lower resources and higher disease pressures puts tropical farmers at a general disadvantage for using resource-intensive disease management strategies such as the heavy use of agrochemicals.

Some of the factors that influence crop disease intensity and losses, such as weather and climate change and pathogen migration, are largely outside the control of farmers and the research and extension services that strive to support them. Other factors are managed at the farm and landscape level, such as agricultural inputs that either reduce or increase pathogen pressure, other agronomic practices that influence microclimate and propagule dispersion, and species and varietal diversity in time and space.

As mentioned before, weather is a major driver of crop disease. While the overall and local effects may be difficult to predict, weather perturbations associated with climate change are putting new disease pressures on farmers in many parts of the world. Insect pest losses are expected to rise with global climate change. The conditions most likely to drive increased losses are expected to occur principally in temperate regions, which currently host the highest levels of crop production. Climate change interacts with virus

diseases in complex ways, via effects on plant growth, vector abundance and biology, and virus biology. The overall changes in temperature and rainfall are likely to shift the patterns of disease incidence and severity in a given place, and the increased variability in weather and weather-related events are likely to increase the range of disease problems with which farmers are obliged to contend.

c. Relevant events

Fall Armyworm identified in Africa

The Fall Armyworm (Spodoptera frugiperda), which is native to the Americas, was identified in Central and Western Africa in early 2016. The pest quickly expanded throughout the continent and became an important transboundary pest problem, since it can attack many different crops like maize, rice, sorghum, and millet. This incident highlighted the need for international surveillance, early detection, and cooperation when dealing with the pest problems.

International Year of Plant Health

December 2018 saw the announcement by the United Nations General Assembly that 2020 would be the International Year of Plant Health (IYPH), under the leadership of FAO and the IPPC. It brought attention to the global significance of crop protection against pest and disease threats through prevention, early warning systems, sustainable pest management practices, and the interdependence of plant health and food security. Originally intended for 2020, IYPH activities were extended until July 2021 due to the COVID-19 pandemic.

The Desert Locust upsurge in East Africa and adjoining areas

Starting from early 2020, a significant upsurge of the Desert Locust has occurred in Eastern Africa, Southwest Asia, and adjacent Red Sea area. Suitable conditions enabled fast development of the population, posing danger for local crops and livelihoods. FAO regarded the situation as one of its top priorities and assisted authorities in monitoring populations and implementing control measures.

III. CURRENT ISSUES

a. Panorama

The main issue with regard to this problem is the protection of crops all over the world from new or existing plant pests and diseases which affect crop production and may lead to problems for the lives of farmers and international food systems. Plant pests and diseases cause crop losses of around 40% per year and cost over USD 220 billion annually. The problem might be aggravated due to climate change as changing climatic conditions may enable these plant pests and diseases to exist and enter areas where they

were not able to live before. International trade and travel may also expedite the spread of pests.

Therefore, for FAO, the key issue is not the eradication of these pests, but rather the detection of threats, prevention of their spread and food production.

b. Points of view

China

The relevance of China lies in its huge agricultural production base and its collaboration with FAO regarding transboundary pests. In 2026, FAO and the Institute of Plant Protection of the Chinese Academy of Agricultural Sciences partnered to conduct regional collaboration against fall armyworm and other transboundary pests in Asia. The case of China would, thus, present an interesting view regarding regional surveillance, agricultural research and pest management.

Brazil

Brazil is one of the leading agricultural producing and exporting countries in the world. Thus, for Brazil, the issue of plant health is very critical and relevant. Brazil is also relevant to the case of fall armyworm, which is an agricultural pest of American origin that has spread to Africa, Asia and other parts of the world. The perspective presented by Brazil would be that of an agricultural producer facing the issues of pest management and international trade.

India

India has a large agricultural industry, and millions of farmers who make their living off their agricultural products. India plays a key role in debates about smallholder farmers, agricultural risk related to the climate, pest monitoring, and inexpensive agricultural technologies. India is also involved in the larger global system that exists due to IPPC that works on preventing the spread of plant pests.

Italy

Italy is important due to the impact of Xylella fastidiosa on olive trees and other economic crops in southern Europe. FAO considers Xylella to be one of the plant threats whose spreading can be influenced by changes in the environment.

Kenya

Kenya is important due to the relevance of agriculture as the basis of livelihoods and food security in Eastern Africa as well as problems with locusts in the region. FAO has coordinated international monitoring of locusts for many decades.

IV. UN & EXTERNAL ACTIONS

a. UN

FAO focuses on the development of systems that enable nations to detect any threat even before it develops into an agricultural crisis. In the case of pests like desert locusts, early detection and action can help contain the outbreak to some extent. FAO studies the impact of climate change on the incidence and severity of pests and diseases. Higher temperatures and changes in precipitation patterns can create conditions for pests to thrive in new locations, hence, the need for nations to adapt and change their surveillance and farming practices. FAO advocates for practices like IPM, which try to control pests while avoiding unnecessary harm to the environment.

b. External actions

International Plant Protection Convention (IPPC)

The International Plant Protection Convention (IPPC) is the intergovernmental treaty that aims to protect the world's plants, agricultural products and natural resources from plant pests. Ratified by 185 contracting parties, the IPPC develops, adopts and promotes the application of International Standards for Phytosanitary Measures as the main tool to safeguard global food security, facilitate safe trade and protect the environment.. This is an international treaty which specifically deals with the protection of plants from any pests. It creates the international phytosanitary standards and is known within the WTO system of sanitary and phytosanitary measures.

World Trade Organization (WTO)

The World Trade Organization (WTO) is the only global international organization dealing with the rules of trade between nations. At its heart are the WTO agreements, negotiated and signed by the bulk of the world's trading nations and ratified in their parliaments. The goal is to ensure that trade flows as smoothly, predictably and freely as possible.. This institution has importance since agricultural goods cross international borders. The SPS Agreement recognizes the standards of IPPC and has the system through which countries can protect their humans, animals and plants without creating unjustified obstacles to international trade.

AI and Digital Biosecurity:

Scientists are leveraging machine learning, IoT sensors, and cloud-based threat mapping platforms for early detection, virtual landscape modeling ("digital twins"), and real-time tracking of invasive species. Scientists from the Biosciences Department at Durham University have outlined possible new approaches to protecting crops from devastating diseases by finding common weaknesses in the proteins pathogens use to attack plants.

V. CONCLUSION

The emergence of diseases and pests that pose dangers to the health of crops is becoming an increasing threat to food security, agricultural industry, and livelihoods of millions of farmers in the world. While there exist international bodies like the FAO and IPPC that have developed various standards, systems of monitoring, and approaches in dealing with these dangers, global challenges associated with climate change, international trade, and the movement of the pests across national borders present themselves continuously. It is even more difficult to handle these challenges for developing countries and small farmers who lack adequate access to the necessary technology and pest management solutions.

Going forward, countries need to improve international cooperation through development of early warning systems, dissemination of scientific knowledge, investment in research and development in agriculture and technologies, and support to vulnerable farmers. Countries at the same time should develop sustainable pest management approaches that help to sustain agricultural production and the environment. Delegates should think about the steps that the international community can take to switch from response to emergencies in the agriculture sector to creation of resilient and sustainable food systems.

VI. QUESTIONS TO CONSIDER

1. What should agricultural systems do when pests arrive in new areas?
2. How can nations stop the spread of pests through agricultural products while avoiding unnecessary limitations on trade?
3. How can developing nations gain access to the technology and expertise that can detect pest outbreaks in time?
4. Who will pay for surveillance, treatment, and protection against the pests when farmers don't have enough money?
5. How can nations fight pests without causing much environmental damage?
6. Will satellite surveillance, artificial intelligence, gene research, and digital surveillance help in early detection?
7. What happens when a key crop becomes infested with a rapidly spreading pest?
8. How quickly should nations report dangerous pests to other nations?
9. How can agricultural protection avoid harming helpful insects and ecosystems?
10. Should nations switch the crops they grow in areas that are increasingly infested with pests?

VII. REFERENCES

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