

Concept Paper: International Research Collaboration to Tackle Transboundary Plant Pests causing serious damage globally (draft)

I Introduction

Transboundary plant pests^{※1} by definition cross national borders, and they affect G20 and non-G20 countries. In the recent years, they are recognized as an increasing threat to sustainable food production and environmental protection globally. In order to minimize the damage, it is necessary to ensure early detection of pests in affected areas, control them and take necessary measures to prevent their spread or introduction into an area where they are not present.

Since G20 member countries have plant protection technologies such as those for diagnosis, monitoring and control of pests, it is important their research institutes implement effective actions in collaboration with other relevant plant protection stakeholders in the international community including developing countries. Therefore, Japan proposes that G20 members take the opportunity of the next G20 MACS to discuss necessary actions to promote international research collaboration for combatting pests, in view of 2020 being the International Year of Plant Health (IYPH).

II Background and challenges

1. Severe damages caused by transboundary pests

It is reported that damage caused by plant pests is responsible for loss of 20 - 40 % of global food production. In particular, significant damage has been caused globally by transboundary pests against the background of climate change and globalized movement of people and goods. Furthermore, the extension of overwintering areas of pests toward both northern and southern latitudes is observed, due to ongoing global warming. The increasing threat of transboundary pests has become a global issue affecting all countries, and G20 members are well positioned to take a lead in contributing to solving this issue.^{※2}

2. Collecting and sharing information on pest occurrence, spread or outbreaks; and developing improved diagnostic systems

Once pests are established, their eradication is often difficult and it requires a significant effort to control them. Therefore, it is necessary to collect timely information on pest occurrence, spread or outbreaks and to prevent introduction of pests by phytosanitary measures at boundary points, or once it happens, to take prompt and early actions to minimize spread of pests. Some G20 member countries have been implementing research cooperation on diagnostic technologies and detection protocols of source, entry points and pathways of pests in cooperation with the developing countries where pests have emerged.

※1 “Pest” means “any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products” based on the term of the International Plant Protection Convention.

※2 “Plant pests and diseases: FAO in Emergencies” on FAO website lists locusts, armyworms, fruit flies, banana diseases, cassava diseases and wheat rusts as the most destructive transboundary plant pests in the world. Beside these examples, various pests have caused damages in each area/region/country.

The International Plant Protection Convention (IPPC) put Global Phytosanitary Research Coordination and the establishment of a network of diagnostic laboratory services among its priority areas for the IPPC Development Agenda 2020 – 2030 under the new IPPC Strategic Framework 2020-2030. Other platforms for collecting and sharing information on the movement of pests include the Centre for Agriculture Bioscience International (CABI) through its Plantwise global initiative and the International Survey of Herbicide Resistant Weeds, which maintains a database of updated records of herbicide resistant weeds globally.

3. Monitoring technologies in the countries of pest occurrence

Developing countries do not have sufficient technologies and information for monitoring plant pests, and their monitoring systems are often not properly organized. In these countries, opportunities to detect new pests are often found at the farming community level and therefore the role of extension and community-based advisory services to introduce new technologies to the farming community is instrumental.

G20 member countries have useful technologies, for instance, to forecast migration of flying pests such as oriental armyworms using radar analysis; and to monitor insecticide resistance of rice planthoppers. They have valuable information on a large number of pests in their databases, and also need data obtained from countries where pests have emerged to update the databases. It is beneficial for all countries to increase their collaboration in this domain to reduce monitoring costs, increase response capacities, learn from previous pest migrations and so on.

4. Prompt actions to prevent the spread of pests and promote appropriate measures for their control

G20 member countries, in collaboration with countries of pest prevalence, have been implementing research, for instance, for developing and applying agrochemicals; establishing control systems with reduced use of agrochemicals such as biological control including identifying and using natural enemies, cultural control and integrated pest management systems; developing diagnostic technologies using pest genetic characteristics; and breeding resistant varieties to prevent pest damage.

However, several cases of damage have been reported due to newly emerging pests, the emergence of pests affecting varieties that used to be resistant to prevalent pests and that of pests that are resistant to previously effective agrochemicals.

III Proposed actions for international research collaboration at G20 MACS 2019

1. Interested G20 members should organize an international workshop to share the latest information on the occurrence of pests and facilitate research collaboration in order to develop effective measures against major pests such as diagnostic technologies; monitoring technologies; border measures against introduction; and sustainable measures for prevention and control, including plant breeding. Japan proposes holding such a workshop

in Japan in 2019.

2. Interested G20 members should encourage core diagnostic laboratories and research institutes to establish international networks among them, and encourage voluntary interactions inside these networks and with other stakeholders.

3. Interested G20 members should target some major transboundary pests and promote research cooperation on these pests, including implementation of international joint research projects. (For example, Japan recognizes the risk of spread of the wheat blast disease in Asia and would like to invite interested G20 member countries to work with Japan to develop new cultivars resistant to the disease.)

4. Interested G20 members should strengthen collaboration with relevant international organizations and networks such as IPPC, Regional Plant Protection Organizations (RPPOs), FAO, CGIAR, CABI, the International Survey of Herbicide Resistant Weeds and Euphresco network.