

**30th Session of the Asia and Pacific Plant Protection Commission (APPPC)
20-24 November 2017
Rotorua, New Zealand**

Executive Summary

Nineteen (19) of the 24 active participants of the Commission attended.

The main objectives of this meeting were:

- to strengthen relationships with key plant protection decision-makers within Asian and Pacific trading partners;
- to report of the APPPC work programme of the last biennium;
- to plan a worthwhile work programme of the Commission with budget for the next biennium;
- and to exhibit aspects of the host country's horticultural production and certification systems.

For the first time, the opportunity was taken to hold discussions on the development of commodity standards. As usual, bilateral talks on market access issues between Asian country NPPO officials were held.

All APPPC member countries attending the meeting, plus Japan (a non-member) presented their country reports. These reports provide a useful background to the phytosanitary status of the region. The APPPC Executive Secretary reported on the activities of the Secretariat along with the Chairpersons of the three Standing Committees – on Plant Quarantine, Integrated Pest Management and Pesticides Management. All of the planned items had been accomplished apart from a meeting on electronic phytosanitary certification (ePhyto) that was changed to an international symposium and will be held in January 2018 in Kuala Lumpur. The Chairperson of the APPPC Standards Committee reported on the development of a regional standard on the hot water immersion treatment of mangoes for fruit flies. The guideline section of the standard was adopted. The treatment schedules will be added at a later date.

The recommended and adopted work programme planned for the next biennium includes:

- two surveillance training workshops;
- a workshop on the use of international standard for phytosanitary measures (ISPM) 32;
- a workshop on the application of irradiation procedures on produce;
- two regional workshops on draft ISPMs;
- two workshops on South American leaf blight (SALB) of rubber;
- two workshops on ePhyto;
- a working group on the development of a regional standard for phytosanitary measures (RSPM) on seed certification procedures;
- a working group on the development of an RSPM on a commodity standard for mango fruits;
- two meetings of APPPC country officials prior to the annual meetings of the Commission on Phytosanitary Measures;
- Integrated Pest Management (IPM) workshops on the management of fruit flies on mangoes, emerging pests and pests of palms;

- workshops on pesticide quality and residue detection and Prior Informed Consent (PIC) and pesticide disposal information exchange;
- and meetings of the Planning group and APPPC Standards Committee.

This programme is primarily funded by the mandatory financial contributions supplied by APPPC member countries. A budget for the work programme was proposed and accepted. An increase of 5% in the level of mandatory contributions from contributing contracting parties was proposed and agreed to.

The field day included visits to a kiwifruit orchard, a fruit packing facility, and a research station. The field visits were a great success with many questions asked and discussions held. The form of the New Zealand phytosanitary certification system was clarified.

For the first time at the biennial meetings, New Zealand arranged a technical session and held discussions on commodity standards. As there has been a recent international commodity standard developed for seed, speakers from the International Seed Federation (ISF), and the related seed organizations from the United States and Australia contributed to the meeting discussions. The ISF commodity seed/pest database was a useful example for the discussions. The meeting participants agreed to draft a regional commodity standard for the next commission meeting to examine. The working group will be led by New Zealand and Pakistan. Also arranged was a short session on NPPO relationships with industry through contributions from Mr Greg Fraser, CEO of Plant Health Australia and Dr Stephanie Bloem, Executive Officer of the North American Plant Protection Organization. The Session illustrated some of the benefits of cooperation with industry bodies.

Discussions relating to market access were held by officials from China, India, Nepal, New Zealand, the Republic of Korea, Samoa, Sri Lanka, and Thailand (not included in the full report).



**Report of the 30th Session of the Asia and Pacific Plant Protection Commission (APPPC)
20-24 November 2017
Rotorua, New Zealand**

Opening of session

Introductory remarks by the Chair of the Local Organizing Committee

The 30th Session of the APPPC started with the introductory remarks by the Chairperson of Local Organizing Committee. Dr. John Hedley expressed his pleasure at finally being able to welcome the delegates to New Zealand after being hosted in many other APPPC member countries.

Opening remarks by the Chair of the 29th Session

Dr Antarjo Dikin, Indonesia, Chairperson of the 29th Session, thanked the delegates of APPPC and welcomed delegates to the 30th Session APPPC Commission meeting at Novotel, Rotorua, New Zealand. He congratulated New Zealand in facilitating this event and providing the opportunity for the APPPC members to discuss the work plan for next two years, share experiences and information on plant health issues of our region.

Dr Dikin noted the importance of the application of WTO-SPS and WTO-Trade Facilitation agreement to enhance economic partnership among countries in the region. Each country has to make a sustained effort in addressing plant health issues as a high priority without causing undue restrictions on the movement of goods in global trade. He observed that this is not an easy task in the complex environment and encouraged members to be proactive in this area. This meeting would provide the opportunity to share information and discuss plant health issues to ensure the development of a good strategic work plan for our region. Dr Dikin ended his speech by thanking Dr. Piao and his team for their commitment and hard work in coordinating APPPC activities in region.

Welcome address by FAO

Dr Piao Yongfan addressed the meeting on behalf of the Assistant Director-General and Regional Representative for Asia and Pacific, Food and Agriculture Organization of the United Nations, Ms Kundhavi Kadiresan. He welcomed the delegates to Rotorua, New Zealand for this 30th biennial Asia and Pacific Plant Protection Commission (APPPC) session meeting and thanked the Government of New Zealand and Mr Bryan Wilson, Deputy Director-General, Regulation and Assurance, Ministry for Primary Industries, New Zealand for hosting this session. He also expressed his sincere thanks to the APPPC member countries as well as cooperating countries, international and national organizations associated of plant protection for their steadfast commitment to the APPPC programme which is in its 61st year. Dr Piao took the opportunity to thank the Local Organizing Committee, for their work in organizing the meeting.

Dr Piao stated that the international trade of agro-products are greater than ever before leading to higher risks of pest introductions and outbreaks costing governments, farmers and consumers billions of losses yearly. He informed participants that the APPPC provides a forum for member countries to analyze risks to their national plant resources and use science-based measures to safeguard their cultivated and wild plants. Protecting countries from pest introduction would protect farmers from economically devastating pests, protect ecosystems from loss of viability

and function as a result of pest invasions. In addition it protects industries and consumers from the costs of pest control or eradication.

APPPC is increasing efforts in regional coordination and cooperation in phytosanitary matters, which are essential to prevent plants and plant products from spreading pests. The close collaboration between APPPC, IPPC and other Regional Plant Protection Organizations has supported numerous joint activities in the current biennium such as APPPC-IPPC joint symposium on ePhyto to be organized in January 2018 and the APPPC training workshop on SALB in Brazil in mid-November 2017. Dr Piao also noted that CPM 12 was hosted by the Republic of Korea in April 2017 and was the first CPM to be held outside Rome, Italy.

Dr Piao remarked that more APPPC member countries are taking ownership of APPPC activities as well as providing funding and supporting the development and implementation of international/regional standards on phytosanitary measures (ISPMs/RSPMs) in line with WTO SPS Agreement and the thematic areas of FAO strategic objective (SO) 2, 4 and 5. Control of plant pests will reduce yield losses in crops and pastures leading to higher productivity. Pest control through ecological approaches will result in reduced pest infestation and pesticide usage for sustainable crop production intensification.

The FAO programme of work and budget (PWB) for the next biennium, as well as the medium term plan 2018-2021, have been designed to align FAO's work with the sustainable development goals (SDGs). FAO's work is projected to contribute to the achievement of 40 targets of 15 SDGs. In the next biennium, FAO intends to increase its technical capacity in the 10 priority areas including sustainable agriculture production. Plant protection is vital to achieving the sustainable development goals. Protecting the health of the world's plants requires sustainable agriculture, climate change resilience, biodiversity protection, and the facilitation of safe trade. It provides us the opportunities that there are for national and regional plant protection organizations to contribute to the future.

Dr Piao reiterated that it was expected that a number of priority recommendations would be made by this Session of the Commission, keeping in mind that plant protection is a special priority in the region within the overall context of achieving sustainable development of agriculture and eradication of hunger. Finally, he urged delegates to initiate the process of endorsing the 1999 amendments to the Plant Protection Agreement for the Asia and Pacific and depositing the instrument of acceptance with the FAO. This will strengthen the function of the APPPC.

Inaugural address by hosting country New Zealand, Mr Bryan Wilson, Deputy Director-General, New Zealand Government Ministry for Primary Industries

Mr Wilson welcomed the delegates to the South West Pacific and New Zealand, expressing how pleased the Ministry for Primary Industries was to be hosting the Commission for the first time in New Zealand.

Mr Wilson outlined the primary sector in New Zealand pointing to a most recent assessment that stated that primary product exports have reached \$38 billion in the year to June 2017. This is a modest annual increase of 1.7%. But, New Zealand's horticulture industry is well on the way to achieving its goal of \$10 billion in annual export earnings by 2020. Kiwifruit and apples are by far the biggest horticultural exports with onions, potatoes and avocados also popular in export markets.

Mr Wilson further noted that a more recent growth area for New Zealand is the export of seed for sowing. Reaching almost \$100 million in export earnings last year, this rapidly growing sector highlights the interconnected nature of today's global production system and the two-way nature of trade. The seed trade relies heavily on the relatively good pest free status and import and export requirements that are science and risk based so they manage the risks without imposing undue cost. He noted we all benefit from rules based trade.

As regulators New Zealand is increasingly operating in a more challenging and complex environment. Mr Wilson highlighted a number of notable challenges and opportunities:

- Demand for fresh, pesticide-free fruits and vegetables is increasing at a much faster pace than industry's ability to develop new pesticide free solutions
- Domestic producers and the public expect higher and higher levels of protection, while at the same time having less tolerance for some critical phytosanitary measures including some very effective pesticides and fumigants like methyl bromide.
- Scientific advances have improved the ability to detect pests at much lower levels and faster than new management options can be developed.
- "Big data" and new analytical tools are providing new opportunities to detect patterns in trade, pests and border non-compliance allowing the more effective targeting of border inspections and pest surveillance.
- The volume and speed of passenger and cargo movements continues to increase, all with the potential to move pests further and faster.
- Direct to consumer supply chains are expanding rapidly with the potential to shift risk products from traditional cargo pathways to courier mail.
- Climate change that will not only alter locations and methods of food production around the world, but will also affect epidemiology and the global distribution and range of pests.

He finished his address acknowledging these challenges and the importance for the APPPC to focus its mission in protecting plant, human and the environment, facilitating trade, and protecting the sustainability of agriculture. He stressed that each National Plant Protection Organizations must play its part.

1. Election of Chairperson, Vice Chairpersons and members of Report Drafting Committee *(Chaired by Chairperson of 29th Session)*

- 1.1 Election of Chairperson and three Vice Chairpersons of 30th Session of APPPC.
New Zealand elected as the Chair. Three Vice Chairs elected were Australia, Korea and Nepal
- 1.2 *(Chaired by newly elected Chairperson)*
Election of Report Drafting Committee Chairperson and committee members. Members elected were New Zealand (Chair), Australia, Korea, Malaysia and Nepal.
- 1.3 Adoption of provisional agenda and timetable
The agenda and timetable were adopted.

2. Secretariat report on actions taken on the implementation of the workplan adopted by the 29th Session of the Commission

Dr Piao Yongfan, Executive Secretary of the APPPC shared his report on the actions taken on implementation of the workplan adopted by the 29th Session of the Commission.

2.1. Status of Plant Protection Agreement for Asia and the Pacific

Presently, twenty-five countries are contracting parties to the Plant Protection Agreement for Asia and the Pacific. These countries are Australia, Bangladesh, Cambodia, China, DPRK, Fiji, France, India, Indonesia, Lao PDR, Malaysia, Myanmar, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Samoa, Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Tonga and Viet Nam.

In 1999 the FAO Council adopted two sets of amendments to the Agreement. One set of amendments was designed to align the Agreement with the new revised text of the International Plant Protection Convention (IPPC) and the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement). The second set of amendments provided for the deletion from the Agreement of measures to exclude the “*South American Leaf Blight of Hevea*” from the Region. On 31 August 2017, the Government of New Zealand deposited with the Director-General an instrument of acceptance of both sets of amendments. At present, seven Contracting Governments (Australia, the Lao People’s Democratic Republic, New Zealand, Philippines, the Republic of Korea, Timor-Leste and Viet Nam) have accepted the first set of amendments adopted in 1999, while four (Australia, New Zealand, The Republic of Korea and Timor-Leste) have accepted the second set. As these amendments do not entail new obligations, they shall come into force as from the thirtieth day after acceptance by two thirds of the Contracting Governments. Therefore, none of the 1999 amendments have entered into force.

Since the entry into force of APPPC’s 1983 amendment on financial mandatory contribution on 4 September 2009, 18 countries have become financial mandatory contributors. These are Australia, Bangladesh, Cambodia, China, DPRK, Fiji, India, Indonesia, Lao PDR, Malaysia, New Zealand, Pakistan, Philippines, Republic of Korea, Sri Lanka, Thailand, Timor-Leste and Viet Nam.

2.2. Implementation of APPPC strategic plan and work plan (2016-2017) of APPPC

One of flagship programmes being implemented is APPPC surveillance work plan (2016-2021). The workshops have been organized in Thailand in 2016 and 2017 respectively. The workshop in 2016 aimed to strengthen regional surveillance capabilities, specifically in the implementation of international and regional surveillance standards (ISPM4, ISPM6, ISPM26 and RSPM No.3) by providing technical training, reference manuals, online learning resources and surveillance tools. This will strengthen the management of regional plant pest risks, support members’ plant pest status, enhance pest risk intelligence analysis and facilitate information sharing amongst the APPPC member countries. The workshop in 2017 aimed to strengthen regional surveillance capabilities in the planning and design surveillance programme and prioritization of surveillance activities (priority pests, commodities, risk pathways and market access priorities). It also included the coordination of emergency response surveillance activities (including delimitation and trace back surveillance), the fundamentals of operational planning and resourcing, and the practical delivery of field surveillance activities.

The prevention of the introduction of the disease of rubber plants, South American Leaf Blight (SALB) for rubber remains as one of major concerns for those rubber growing countries of

APPPC. APPPC is committed to support the prevention of introduction utilizing the various approaches. A regional workshop on “Mitigation of potential risk of SALB in the region” was convened in October 2016 in collaboration with the Department of Agriculture, Ministry of Agriculture, Malaysia. This workshop helped participants to improve their knowledge of SALB and the implementation of ISPMs 6, 8, 17, 4, 10 and 29. In addition, the workshop enabled participants to better understand aspects of rubber plantation production and the spread of SALB, the potential risk of introduction of SALB and possible facilitation of safe trade. The standard operation procedure (SOP) on SALB PFA was drafted and discussed by participants. In addition, a hands-on training on the detection and diagnosis of SALB for Asia and Pacific NPPO experts was convened in Brazil in November 2017 in collaboration with NPPO of Brazil, the Malaysia Rubber Board (MRB) and International Rubber Board (IRB). This would improve the diagnostic SALB capabilities and enable the participants to train other NPPO officers in their countries.

A new draft RSPM-“Guidelines for the hot water immersion treatment (HWIT) for fruit flies in mangoes” has been developed by the taskforce group led by Australia in close collaboration with New Zealand, Pakistan and Thailand. The APPPC Standards Committee reviewed the draft guidelines and agreed to start country consultations followed by consolidations and submission to the 30th Session for further discussion and potential adoption. This regional standard may contribute to facilitation of mango trade with a recognized phytosanitary measure.

The contribution of APPPC to the development of ISPMs through provision of regional inputs as well as assisting member countries to develop or/and consolidate their country inputs to the draft ISPMs have continued during 2016-2017. The Republic of Korea has provided continual financial support to the APPPC for organizing the regional workshop on review of draft ISPMs since 2006.

Potential risk of introduction and spread of regulated pest through the sea container pathway has become a global concern. APPPC member countries such as New Zealand and China contributed expertise in depth to CPM and IPPC working group and task force discussions. A sea container scientific session held at CPM 11 and a note on the success of the Sea Container Hygiene System was presented by New Zealand at CPM 12. China also presented the results of a survey of intercepted pest. Also, at CPM 12 discussions were held on the sea container task force and arrangements were made to set it up. China hosted the taskforce meeting in Shanghai in November 2017 with an APPPC representative (Dr Sima Waghorn, New Zealand) attending the meeting on behalf of RPPOs. The 18th APPPC regional workshop on review of draft ISPMs held in Korea in September 2017 also arranged a special session. New Zealand shared material on the sea container inspection systems used in New Zealand and on the methodology used in the sea container contamination survey, while China also presented data of the survey.

The risk reduction of pest outbreaks and pesticides to human health, animal health and eco-health through promotion of IPM and the implementation of the Code of Conduct Distribution Use of Pesticides as well as international treaties concerned are important parts of APPPC core functions in addition to the use of phytosanitary measures. With FAO’s continual assistance and support, most countries in the Asia and Pacific region have promulgated their national IPM policies to support development of IPM, pesticide risk reduction and sustainable crop production intensification. IPM and the promotion of good agriculture practices continue to play a key role in national efforts to achieve food security and nutrition, poverty alleviation and food safety. National Integrated Pest Management Programmes in most APPPC member countries support the reduction of poverty, ensure food security, minimize the use of hazardous chemical pesticides, and promote biological control and environment protection in a sustainable way.

IPM programmes have raised awareness and built capacity for conservation and sustainable use of agro-biodiversity through multiple ecosystem goods and services provided by healthy agro-ecosystems. A number of countries in the region have increased public investment and collaboration with local government and civil society organizations to support IPM as part of sustainable crop production intensification efforts, and Farmers Field Schools (FFS) have played active roles in capacity building for spread prevention and management of invasive crop pests.

FAO continued the support of pesticide policy reform and the strengthening of the regulatory control of pesticides and pesticide risk reduction training through various field projects. One of the regional programmes- "*Toward a non-toxic environment in Southeast Asia*" aims at reduction of health and environmental risks by strengthening capacity for management of industrial and agricultural chemicals in Southeast Asia and has had strong impacts on regulatory management in GMS countries.

FAO has developed a pesticide registration toolkit to support pesticide regulators in countries with limited capacity in pesticide registration. The Toolkit can be considered as a decision support system for registration authorities in developing countries. APPPC organized a regional workshop on the application of the FAO pesticide registration toolkit in June 2017 in Beijing, China, in collaboration with the Institute for the Control of Agrochemicals of the Ministry of Agriculture (ICAMA). The training would enable registration authority of participating countries to improve the capacity of regulatory management through registration enhancement. Participants considered that the toolkit will enable countries especially for least capacity countries in regulatory management of pesticides to apply the analogy strategy by bridging assessment methods in pesticide registration process and make appropriate decision by consideration of feasibility of the local situation. Also, experts from China shared with the other participating countries their knowledge and experience in regulating highly hazardous pesticides, and demonstrated methods and procedures for human health risk assessment and environmental risk assessment. China's operator risk assessment model (COP-Risk) and fate model for paddy field (TOP-RICE model) were also introduced to the participants. Upon requests from Myanmar and Viet Nam, training workshops in both countries on application of the toolkit were organized with assistance of FAO.

In addition, the collaboration between the Rotterdam Convention Secretariat and APPPC has evolved from information exchange, awareness raising to synergetic approach in work planning and concrete joint activities. A joint sub-regional training workshop with focus on notifications for new DNAs was convened in Indonesia in March 2017 and a number of follow-up activities have been taken place including provision of technical assistance to country DNAs on preparation and submission of notifications, import responses and collection of data on highly hazardous pesticide formulations, etc. through country based extensive trainings (e.g. China and Laos) and communications. As a result, a number of import responses and notifications have been submitted by several countries, such as China, Malaysia, Japan, Pakistan, Sri Lanka, Thailand and Viet Nam.

During 2016-2017 the APPPC administration system has been strengthened through significant increase of ownerships of member countries and enhanced collaborations by development of relevant bilateral or multilateral arrangements. It has been reflected in the mobilization of financial resources for the Commission's activities, efficient management of resources, coordination of information exchange and provision of appropriate secretariat services and the

implementation of the work plan adopted by the 29th Session in coordination of standing committees as well as management of emerging plant health issues.

A number of follow-up activities have been facilitated to implement the work plan (2016-2017) adopted by the 29th Session of APPPC. Fourteen action plans out of 15 actions planned have been implemented. One activity - ePhyto workshop has been changed from a regional workshop into an international symposium, which will be convened in January 2018.

2.3. Capacity development

The prevention and reduction of risks of transboundary pest threats to food production, health and the environment is one of the focus areas of FAO, as it is a key requirement for achieving the goals set out in the FAO strategic framework especially Strategic Objective 2, 4 & 5. It is to be achieved by promoting, developing and re-enforcing policy and regulatory frameworks for food, agriculture, fisheries and forestry. It encompasses all policy and regulatory frameworks to manage risks associated with food and agriculture, including relevant environmental risks.

A large number of field projects funded by FAO TCP or other FAO programmes with financial support from donor countries have been implemented in several member/non-member countries in the region, which contributed to improvement of capacity in various areas.

2.4. Challenges--emerging pest

The survey on emerging plant health issues was undertaken in August 2017 and feedback from 19 countries analysed. The results indicated that high incursion pests through increased volume of trade and digital trading are the major challenge, and the emergence of endemic pests causing severe losses to the crops are the main concerns for countries. The increase in trade volume for plant and plant products has increased the potential of pest introduction. Lack of expertise in inspection and insufficient equipment are among the reasons of higher introduction of pests into the region. The movement of plants and plant products through the digital marketing exposed risks of spread of pest, while the products escape inspection at entry points. In addition surveillance is considered as the core activity for effective and efficient control decision of pests.

2.5. APPPC planning for 2018-2019

An APPPC planning workshop was held in Bangkok, Thailand, in May 2017 to review the status of implementation of the work plan adopted by the 29th Session and to prepare recommendations for the 2018-2019 biennium work programme. The Chair and Vice Chair of the 29th Session, the Chairs of the three standing committees, and the APPPC Standard Committee members attended the planning workshop. The recommendations prepared by the meeting were presented to the 30th Session for further discussion and adoption. The detailed outputs of the meeting are presented under Agenda item 11.2.

Members thanked the Planning Group for the work plan as they found it extremely helpful. As an observer, Japan reiterated its wishes to continue participation in these activities.

The Chair acknowledged the tremendous effort and work of the FAO to deliver on all of the programmes and initiatives from the 2015-2016 biennium work programme.

3. Country reports of significant changes and developments since 2015 from member countries:

Australia

The department's name has been amended to include the water portfolio and is now *Department of Agriculture and Water Resources*. Mr Daryl Quinlivan is the current Secretary of the department.

The Biosecurity Act 2015 came into effect on 16 June 2016. The new Act replaces the Quarantine Act 1908 and represents a comprehensive modernisation of Australian biosecurity legislation for the twenty first century. As part of a wider initiative to strengthen agricultural exports and market access, the department is now improving the current agricultural export legislative framework. The draft legislation will consolidate export certification-related requirements from a number of Acts (including the Export Control Act 1982 and the Australian Meat and Live-stock Industry Act 1997) and legislative instruments (such as Regulations and Orders) that make up the current agricultural export legislation framework. A single Export Control Bill and Export Control Rules will be created. Improvements to the export legislative framework will make it easier to understand, administer and use, and to safeguard Australia's reputation as a reliable, high-quality source of exports for our trading partners.

The department continues to progress key initiatives under the Agricultural Competitiveness White Paper in relation to plant biosecurity and surveillance. This includes implementing new programmes and funding to enhance our biosecurity surveillance system and conduct new and additional surveillance activities offshore in near neighbour countries.

The department also continues to advance a four-year project to review all 369 existing plant import condition cases by July 2019. The review defines the biosecurity outcome for each import case, including definition of biosecurity risks and risk management assumptions applied to each and a set of review triggers to direct intelligence collection, collation, analysis and action. As part of this review, the department is conducting an extensive review of the existing import conditions for seeds from four major vegetable families (Apiaceae, Brassicaceae, Cucurbitaceae and Solanaceae).

The Emergency Plant Pest Response Deed (EPPPRD) and National Environmental Biosecurity Response Agreement (NEBRA) continue to cover the management and funding of eradication responses to designated emergency plant pests in Australia. Some recent incursions managed under the national arrangements include tomato potato psyllid in western Australia and red imported fire ants in Queensland.

The Australian Pesticides and Veterinary Medicines Authority (APVMA) remains the independent statutory authority responsible for the assessment, registration and regulation of agricultural and veterinary chemicals (generally referred to as pesticides and veterinary medicines) in Australia. The APVMA commenced assessment of 1,312 applications in the March quarter in 2017, including 708 new applications for product registration, active approval and permits.

Bangladesh

The plant protection activities of Bangladesh at national level are implemented by two separate

wings of Department of Agriculture Extension (DAE) i.e. Plant Protection Wing and Plant Quarantine Wing. Each of this wing is headed by a Director. The Plant Protection Wing design an annual work planned in safe keeping cultivated areas from disease and pest infestation. It provides surveillance and forecasting service for field crops for pest management decision making, providing technical advices and control measures at farms level through field level extension workers. This Wing also implements and establishes integrated pest management (IPM) that led to better preservation of the environment. This Wing also control registration and issuance of licenses for different types of agricultural pesticide (AP) and public health products (PHP) as well as regulating the production and marketing to ensure quality production, safe distribution and judicious use of pesticides. The Plant Quarantine Wing was established to strengthen the plant quarantine activities in Bangladesh. The Wing inspected 10.5 million metric tons of plants and plant products annually for import and 0.8 million metric tons of agricultural commodities for export involving the issuance of 38,000 phytosanitary certificates.

Bangladesh has undertaken two projects to strengthen the adoption of International Standards on Phytosanitary Measures (ISPMs). The first project strengthened the capacity of plant quarantine officers in phytosanitary inspection, pest diagnosis as well as building infrastructure for laboratory and inspection relevant activities. The Plant Quarantine Wing is also in the process of automation on the issuance of phytosanitary certification with DAE signing an agreement with Bangladesh Investment Climate Fund (Part of the International Finance Corporation (IFC) project) to assist in the implementation of e-Phyto system in Bangladesh. The existing plant quarantine legislation known as “Destructive Insects and Pests Rules, 1966 (plant quarantine)” has been replaced with the Plant Quarantine Act, 2011 which has been approved by the Parliament in April, 2011. The Plant Quarantine rule 2017 that operationalized the Act has been prepared and sent to the Law Ministry for approval.

The infestation of wheat blast, rice blast and eriophyid mites were reported to be high during the 2015-2017 period. Beside the above infestation, *Parthenium* weed and tomato leafminer *Tuta absoluta* incursion were also reported but under controlled level. Preventive and curative measures are being practiced to control these infestations using the IPM approaches. In view of the importance of IPM in Bangladesh, a national IPM policy has also been developed. Research institutions have developed several new IPM technologies including promoting bio-control and bio-pesticides for pest management. Meanwhile 18 bio-pesticides have been registered in the country. Private sectors have also conducted mass rearing and marketing of parasitoids and predators.

A total of 248 generic pesticides have been registered consisting of 172 for agriculture use, 73 in public health and 18 bio-pesticides. Total of 3,307 pesticides trade name of agricultural and public health have been registered. The Pesticide Technical Advisory Committee headed by the Executive Chairman of Bangladesh Agricultural Research Council (BARC), Ministry of Agriculture control the approval of the pesticide registration This Advisory has banned nine pesticide compounds under WHO class 1a and 1b for agricultural purposes.

Cambodia

The Plant Protection, Sanitary, and Phytosanitary Department (PPSPS) is given the key role in plant protection issues and acts as the Cambodian NPPO with the main responsibilities for the issuance of certificates in relation to the phytosanitary regulations of the importing countries for consignments of plants, plant products and other related articles. Likewise, the Cambodia's National IPM Programme is responsible for the development and implementation of sustainable

IPM with the aim of making IPM the standard approach to crop management in Cambodia and to facilitate coordination of all IPM activities in Cambodia irrespective of donor agencies and crops involved to improve productivity, promote food security and safety. The Department of Agriculture Legislation (DAL) acts as regulatory authority in charge of pesticide registration, licensing, inspection in cooperation with other responsible institutions such as PPSPS which plays a role as technical adviser in field evaluation of pesticides and the National Agricultural Laboratory of the GDA who conduct laboratory analysis of pesticides quality.

The key activities related to plant quarantine implemented during the past 2 years were focusing on monitoring pest infestations; new pest invasions and take actions to control and eliminate it; establishing the plant protection unit under at subnational levels and capacity building for providing more effective actions in plant health monitoring and management; and creating regional branch offices under PPSPSD for quick emergency response and creating regional/domestic PQ for trade facilitation of plant products. Other important activities are the revision of the quarantine pest list, development of the pest list of potential crops for export, and identification of new pest such as tapioca mealy bug and citrus greening and implementing special eliminating program. Finally, the Law on Plant Protection and Quarantine is being developed which will replace the sub decree on phytosanitary inspection.

With regard to IPM the main activities implemented include FFS on rice, vegetable, climate smart agriculture, seed production and business oriented crop production; refresher courses and pesticide health hazards. In addition technical farmer congresses; system of rice intensification; study tours and exchange visits; workshops and meetings; field experiments; organic agriculture and chemical-free vegetable production were also conducted. For better health and farm ecology, biological control agents such as parasitoids, pathogens and predators, and botanical pesticides were also introduced and promoted in IPM-FFS as to provide farmers with alternatives to chemical pesticides. IPM/FFS activities in Cambodia have resulted in significantly increase farmer yield and incomes and considerably reduced the amount of pesticide usage. As a result this can lead to more sustainable, environmentally friendly, and cost-effective production.

The pesticide management work was mainly focusing development of new regulations on procedure of the primary inspection; the application of model paper for business of biological control agent; and a guideline for the pesticide label & model of labels and for the pesticide containers disposals. Other important tasks were to continue upgrading awareness of rules and regulations, procedures and management of agricultural inputs business; development of booklets and guideline for inspectors and building capacity of inspectors to impose proper pesticide inspection; and survey on available pesticides with focus on banned, restricted, substandard, and counterfeit pesticides. Several missions were organized to monitor and control the imported products; warehouse and status for registration; and the production chain of formulation and repacking of pesticides to make sure good pesticide management.

China

Plant quarantine

- In 2016, 6,288 pests were intercepted for 1,208,926 times, including 116,867 times for 362 quarantine pests and 1,092,059 times for 5,926 non-quarantine pests.
- Ministry of Agriculture (MOA) strengthened its control on quarantine pests. Comprehensive prevention and control demonstration areas were established.
- The pinewood nematode was eradicated in 14 infested zones.

- Sugarbeet cyst nematode (*Heterodera schachtii* Schmidt) was detected for the first time in 2015, a series of stringent measures such as destruction of infected crops, spraying of pesticides, treatment of soil and disinfection of transportation vehicles were taken.

Pest surveillance

- The forecasting methods for major crop pests had been categorized and unified.
- More than 5,000 pest warnings and alerts were issued annually and broadcasted widely through media such as the internet, television, radio, newsletter etc.

Pest management

- Integrative management actions were used widely for controlling migratory pests and epidemic diseases.
- Biological and ecological control measures such as using microorganisms and reclaiming locust habitats were extensively promoted in recent years.

Pesticide management

- In February 2015, MOA issued the action plan of zero growth in pesticide use by 2020, pursuing the goal of zero growth in the total use of chemical pesticides by 2020, to reduce pesticide usage, and in the meantime to increase effect, though enhancement pesticide service efficiency.
- Designed a science-based and appropriate bio-pesticide registration policy. Three (3) HHPs were banned and 8 HHPs were strictly restricted. In 2015-2016, China earmarked budget for the registration and management of pesticides for specialty/minor crops.

International Cooperation of Plant Quarantine hosted the following meetings:

- IPPC CPM Bureau and finance meeting.
- APPPC national report obligation training workshop.
- The CCPR annual sessions for 2015 and 2016.
- The seminar of pesticide risk assessment and highly hazardous pesticide elimination and management of Asia and the Pacific.
- The 9th FAO/WHO joint meeting on pesticide management.
- The 11th Session of the FAO panel of experts on pesticide management.
- Regional workshop on application of the FAO pesticide registration toolkit.
- The FAO workshop on bio-pesticide registration in Asia and the Pacific countries.
- The Asian-Pacific region workshop on palm pests and invasive forestry decayed pests control.

Fiji

The Biosecurity Authority of Fiji (BAF) was established via the enactment of the Biosecurity Act on 17 December 2008. Formerly known as the Quarantine and Inspection Division, BAF is one of the newly established statutory bodies under the government's public-sector reform policy. BAF is mandated under the Biosecurity Act 2008 to:

- Protect Fiji's agriculture sector from the introduction and spread of animal and plant pests and diseases
- Facilitate access to viable ago-export market
- Ensure compliance of Fiji's ago-exports to market requirements

The Act is the primary legislation that provides for the regulation and control of the movement of animal and plants into, out of and within Fiji. Inherent in this primary legislation are the powers to give effect to the relevant conventions of the WTO, IPPC and OIE, the provision of land and buildings for quarantine purposes, and the power to make secondary legislation, particularly the biosecurity regulations.

The pesticide registration is the mandate of the Ministry of Agriculture (MOA). The MOA has developed the 2020 agricultural policy that provides the guidance for the sustainable agriculture farming practices inclusive of the integrated pest and disease management. There is also active pest surveillance programme implemented against the quarantine pest in the interest of both exporting and detection of possible exotic pests.

The country has very strong border and post border (domestic) quarantine for timely detection of biosecurity risk and secondly to prevent movement of quarantine pest within the country. Where needed, the emergency declaration is put in place to strengthen the strategies.

The NPPO continues to implement the new standards adopted by the IPPC with the effort the safeguard the biodiversity and the agricultural sector from biosecurity threat through international trade.

India

The Directorate of Plant Protection, Quarantine and Storage (DPPQ&S) under Department of Agriculture, Cooperation and Farmers' Welfare is the National Plant Protection Organization (NPPO). The headquarters of DPPQ&S is located at Faridabad (Haryana) with operational offices all over the country. Joint Secretary (Plant Protection), Ministry of Agriculture and Farmers' Welfare is the official contact point for IPPC and APPPC. The DPPQ&S is headed by the Plant Protection Adviser and responsible for the implementation of policies and programmes related to plant protection.

The DPPQ&S is the nodal agency of the Government of India in the sphere of plant protection in agriculture. The major activities of DPPQ&S implemented through two major central sector schemes *viz.*, Strengthening and modernization of plant quarantine facilities in India and Strengthening and modernization of pest management approach in India.

The major activities of NPPO include quarantine inspection of imported agricultural commodities; phytosanitary certification to enable export of plants and plant products; technical facilitation to gain market access for agricultural commodities; bilateral negotiations to promote safe import and export of agricultural commodities; containment and eradication of exotic pests. Further, the NPPO works in tandem with research institutions and state governments to fulfil its mandate. Plant quarantine regulatory measure derive legal sanctity from the Destructive Insects and Pests Act, 1914 (DIP Act). The Plant Quarantine (Regulation of Import into India) Order, 2003 notified under the said DIP Act, elucidates details of regulatory framework for all aspects related to import of agricultural commodities. The commodities are notified after carrying out pest risk analysis and categorized into various schedules based on the risk posed by the pests of concern to India. All regulatory provisions for import of plants and plant materials into India are available at NPPO's official website <http://plantquarantineindia.nic.in>.

There are 6 regional plant quarantine stations (RPQS), 30 plant quarantine stations and 26 extension / camp offices operative at various seaports, airports and land borders. India being a

contracting party to IPPC, a phytosanitary certification system has been established. The RPQs are strengthened with human expertise in various agricultural fields and latest modern infrastructure facilities to carry out plant quarantine activities. The NPPO uses the expertise of more than 182 plant protection specialists from national and state governments to issue phytosanitary certificates, in accordance with the requirements of importing countries and standards laid down by the IPPC. Recently in August 2017 DPPQ&S has introduced issuance of *ephyto*. The centralized PQIS online system of e-governance provides online services to importers and exporters of agricultural commodities. The treatment providers are accredited by NPPO to carry out phytosanitary treatments of import/exportable agricultural commodities to minimize non-compliances or introduction of exotic pests into India. To facilitate safe trade various national standard for phytosanitary measures (NSPMs) and standard operating procedures (SOPs) are brought out by NPPO from time to time.

Major activities of DPPQ&S in plant protection sector include promotion of integrated pest management; surveillance and monitoring of crops for insect pests, diseases and weeds; issuance of advisories to farmers and extension functionaries; control of desert locusts; regulation and quality assurance of pesticides; monitoring of pesticide residues and development of human resource in plant protection. Integrated Pest Management (IPM) programmes based on crop specific Farmers' Field School approach is implemented through 35 central integrated pest management centres (CIPMCs) and IPM centres of all the state Governments. The Government of India has promoted nearly 400 bio-control laboratories for promotion of bio-control agents. IPM packages of practices are revised 85 such IPM packages have been made available to extension functionaries for the benefit of farmers at <http://ppqs.gov.in/ipm-packages>. Locust Warning Organization is responsible for monitoring and controlling desert locust over 200 thousand square km in scheduled desert areas.

India is signatory to FAO's code of conduct on distribution and use of pesticides. The legal provisions for pesticides regulation in India is provided by the 'Insecticides Act, 1968' and being implemented through Insecticides Rule, 1971. The import, manufacture, sale, transport, distribution and use of pesticides is regulated under the Act with objective of ensuring efficacy and safety of the products. The details of registered and banned pesticides are available at <http://www.cibrc.gov.in>. The guidelines for registration are revised from time to time by the Central Insecticides Board & Registration Committee (CIB&RC). The central insecticides laboratory (CIL) carries out pre and post registration verification of properties, performance and hazards associated with pesticides. Ministry of Agriculture and Farmers' Welfare is also implementing 'monitoring of pesticides residue at national level' to determine pesticide residues in agricultural produce and irrigation water.

Indonesia

The Republic of Indonesia with its strong concern on trans-boundary movement of consignment refers to agreements of WTO-Sanitary and Phytosanitary and WTO-trade facilitation to simplify in custom clearance based on plant health. Harmonization of procedures applied by transparency of regulations, accountable in documentation for corrective action for any missing application. During 2016-2017, number of Minister Agricultural Regulation in the phytosanitary measures was taken place to support the mission of simplification of customs clearance with plant health base. List of revised regulation is presented to prevent the incursion of quarantine pests including invasive alliance species. Intercepted pests associated with consignment were *Aphelenchoides besseyi*, *Aphelenchoides fragariae*, *Pseudomonas syringae* pv. *syringae*, *Pseudomonas viridiflava*, *Dickeya chrysanthemi*, *Phytophthora cryptogea*, *Pseudomonas chichorii*,

Clavibacter michiganensis subsp. *Spedonicus*, *Pantoea stewartii* subsp. *Stewartii*, *Panonychus citri*, *Helminthosporium solani*, *Microcylus ulei*'s like, *Tilletia indica*, *Tilletia tritici*, *Dysmicoccus neobrevipes*, and *Tilletia laevis*. Capacity building has been carried out for the strengthening human resources in application of phytosanitary measures in national and regional level. Applied research for phytosanitary treatment succeeded to eradicate pests as target of importing country such as: Sulfuril flouride fumigation, ECO₂ fume fumigation and hot water treatment for mango fruits.

Lao, PDR

The National Plant Protection Organization of Lao PDR has been founded and recognized by International Plant Protection Convention of the Food and Agriculture Organization of the United Nation since 28 February 1955 with ratification the instrument of adherence in 2002. The NPPO has played a role as the main implementing body and responsible for implementing the SPS Agreement based on its technical expertise and information relevant to plant health aiming to facilitate trade of agricultural commodities. The main plant protection goal has clearly defined aiming to promote sustainable agriculture and food security in preventing the plant pest spread to protect crops, biodiversity and environments while trade development through the promotion of harmonized scientific based phytosanitary measures are taken to account. The Plant Protection Authority recognizes the important role of coordinating and participating in activities among their NPPOs in order to promote and achieve the objectives of the IPPC through gathering and disseminate information related to IPPC. The NPPO also arranges and supports the cooperation to the CPM and the IPPC Secretariat in developing and implementing ISPMs and RSPMs.

In term of phytosanitary matters, the new amended Plant Protection and Plant Quarantine Law was approved by majority vote of National Assembly through its promulgation by Country President Act was proclaimed from 16 December 2016 and ongoing dissemination process through provincial level and private sectors, while the preparation of regulations to implement under this law is proceeded. The international check points are updated to be 24 land border check points and 3 international airports. The standard operational procedures (SOPs) to streamline inspection systems was completely developed and its translation from English to conventional Lao language is under process.

The ISPM6, ISPM12, ISPM14, ISPM15, and etc. have been translated into local languages, adopted in the mandate of Plant Protection Center and Plant Quarantine Division for implementation. The initiative survey to establish Pest Free Area, a potential area is focused in DongKhong island in Champasak province, which provides primarily information and still need technical assistance in comply with concerned ISPMs. The phytosanitary capacity development has provided regularly for the technical staffs, namely Plant Protection Center, PAFO, especially pest surveillance, diagnostics, system approaches, PRA and pest list development through market access, etc.

Since 2014, five northern provinces have been faced with serious locust outbreak while the Plant Protection Center also has developed a surveillance system to identify the egg-beds for control management. Recently, surveillance team of PPC found the infested banana plantation by *Fusarium TR4* in the orchards of 3 northern provinces namely, Oudamxay, Borkeo and Luangnamtha provinces and already confirmed as invasive species.

On pesticide management activities, the Lao-Government strongly promotes clean agriculture in GAP and organic production resulted in amendment mandate of DOA on pesticide management

and developed the ability in pesticide quality control and its residual management by providing intensive training for technical staffs, Lab renovation, tools and Lab equipment provision, developed annual pesticide residual surveillance programme which reports to public every two weeks on the result of residual testing in fresh fruits and vegetables from international check point, main markets and producers farm, and regularly updated list of banned pesticides.

The impact of on-going IPM programme showed the development of network of farmer field schools focus on biological control development and application through Save and Grow adoption and adaptation resulted helps farmers to become better farm managers and custodians of agrobiodiversity and ecosystem goods and services.

Malaysia

The function of the National Plant Protection Organization (NPPO) of Malaysia is carried out by the Plant Biosecurity Division (PBD), Department of Agriculture (DOA) in Peninsular Malaysia; DOA Sabah and DOA Sarawak in their respective states. On the other hand, Department of Malaysian Quarantine and Inspection Services (MAQIS) is responsible for inspection at the entry points in Peninsular Malaysia. Since 2015, there have been a few changes in top management level of the Ministry of Agriculture and Agro-based Industry (MOA) and DOA. A new Secretary General to MOA, Datuk Seri Dr Ismail bin Hj. Bakar was appointed in 2015. This was followed by the appointment of Dato' Jamal Harizan bin Yang Razali as the new Deputy Director-General (Operational) of DOA and Mr Mohd Fauzan bin Yunus as the Secretary of Pesticides Board Malaysia.

There are several changes in the import requirement for plants, plant products and regulated articles. This includes the 9 items of dried and processed food/grains and fresh mangosteen. This measure was taken to ensure the products are to avoid the introduction of pest of concerned from the product. Several quarantine procedures have been enhanced to strengthen the import and export of agriculture products. During 2016-2017, DOA has also received auditors from Australia, New Zealand and Singapore for market access.

In the aspect of the phytosanitary capacity development (PCD), Malaysia has conducted a total of 50 PCD programmes in 2015 – 2017 including 9 PCD involving international participants with the assistance of international organizations. Apart from this, PCD were conducted with the assistance of international organizations such as APPPC, FAO, STDF, CABI, AANZFTA Economic Cooperation Work Programme (ECWP), USDA, MPI NZ and JICA. Malaysia leads the ASEAN Regional Diagnostic Network (ARDN) in collaboration with Australia and ASEANET for the purpose of enhancing the capability in identification/diagnosis of plant pests and diseases within the ASEAN region. Currently the ARDN are in the Phase II of its implementation with main objective to enhance the diagnostics capacity and expertise in taxonomy among ASEAN countries.

Surveillance activities were focused on major agricultural commodities such as rice, pineapple, vegetables, flowers, oil palm and rubber. Through the surveillance activities, indicates that there are no serious infestation of pest pests and diseases in all other main crop; except for rice where brown plant hoppers and bacterial leaf blight disease do infest quite a significant hectares of paddy areas. Surveillance on the South American Leaf Blight (SALB) conducted in cooperation with Malaysia Rubber Board (MRB) and mango seed weevil by DOA shows that Malaysia is free from both pests. Activities on containment towards eradication of several invasive species such as papaya dieback, banana bacterial wilt, red palm weevil and *Salvinia* weed (*Salvinia*

molesta) have been conducted successfully in reducing the infestation. Integrated pest management (IPM) is adopted as the main approach in pest control under Malaysian agro food policy which include the use of biological control agent besides using a large amount of pesticides. This approach has been implemented in several projects throughout Malaysia.

Under pesticide management, a few changes have been made to enhance the implementation and control on the usage of pesticide in Malaysia. In early 2017, Pesticides Board has implemented quota system for paraquat importation. This decision was taken as a control measure to prevent overloading occurrence in the country prior to the banning date in 1st January 2020. There is also a revised guideline on residue data requirement for pesticide registration to harmonize with other ASEAN countries.

Myanmar

Plant Protection Division (PPD), Department of Agriculture, Livestock and Irrigation (MOALI) is one of the fifteen divisions under Department of Agriculture, Ministry of Agriculture, Livestock and Irrigation, established in 1979 with technical and financial assistance from FAO/UNDP. PPD is formed with 13 sections and working with 196 staffs in headquarters, 291 staff in country.

Myanmar is a member of WTO and PPD as National Plant Protection Organization of Myanmar (NPPO-MM) is signatory to IPPC in May 2006. Since then, PPD is taking responsibilities for sanitary and phytosanitary issues following international standards of Codex and ASEAN MRLs for food safety and international standards for phytosanitary measures of IPPC for plant health.

PPD is having two laboratories for food safety; Pesticide analytical laboratory and food safety testing laboratory for agricultural products, analyzing and issuing certificates of pesticide quality, pesticide residues, heavy metals, mycotoxin, quality of edible oil, assisting to pesticide registration and to import endorsement of pesticides. Trainings on laboratory equipment handling and testing for food safety have been conducted by the support of international organizations.

PPD is issuing phytosanitary certificate and import certificate in accordance with related ISPMs. In addition, PPD is implementing ISPMs for pest surveillance, pest risk management and wood packaging materials in international trade. PRA training and drafting new Plant Pest Quarantine Law have been done with the technical assistance of phytosanitary experts from the Netherlands. Diagnostics and identification of pests have been developed with the support of Animal and Plant Quarantine Agency, Korea through GCP/RAS/286/ROK project and Pestpoint project by ACIAR. Equipment for polymerase chain reaction laboratory has been supported by Animal and Plant Quarantine Agency, Korea.

Pest surveys on groundnut and sesame were conducted and pest identification has been carried out. Survey on rice has been conducted. Integrated pest management and good agricultural practices have been applied for food safety and food security.

New Pesticide Law was enacted in January 2016 and new regulation for pesticides was drafted and submitted to MOALI for government approval. Trainings are given to all stakeholders involved with pesticides by PPD staff and international experts from FAO and the Netherlands for pesticide risk reduction.

PPD is working with related ministries and cooperates with international organizations in the field of plant protection and sanitary and phytosanitary. Moreover, PPD is formulating and implementing projects particularly related to sanitary and phytosanitary.

PPD, whenever needed, updates its information in IPP portal. Furthermore, it has developed its own website (www.ppdmyanmar.org) and mobile application for plant protection.

PPD is trying its upmost effort to develop in every perspective. PPD needs staff, finance and technical assistance to build up capacities both in human resource and infrastructure.

Nepal

The Department of Agriculture (DoA) bears overall responsibility for the agricultural growth and development of agriculture sector. Agriculture sector still has got prime role to play in Nepalese economy. This sector plays prime role in the economic development of Nepal. About 65.5% of the population in the country is engaged in the agriculture.

Plant Protection Act 1972 (revised 2007) and Rules 1974 (revised 2010) have been regulated since 1972 and 1974, respectively to comply with the principles of harmonization and equivalence. Plant protection and quarantine laboratories are being equipped to meet the standards set by IPPPC and get accreditation. To comply with WTO requirements, actions are progressing in delineating endangered area, area of low pest prevalence and pest-free area. Quarantine pests are being identified. To establish scientific basis of these zoning activities, pest surveillance and monitoring are being strengthened.

Now NPPO Nepal has officially declared total of 254 Pests of 18 commodities and endorsed 33 different NSPMs and directive on domestic quarantine. Out of 33 NSPMs, Nepal has prepared 31 national standards since last few years. Web based pest information management software has been prepared and manpower from whole country are trained to handle in one phase. Local e-phyto service is going to start immediately from this fiscal year FY72/73.

It is highly imperative to develop the plant protection and quarantine facilities of the country in line with WTO-SPS Agreement and the International Plant Protection Convention (revised text of 1997) established by the FAO with a view to protecting national agro-ecosystem and to facilitate agricultural trades. Different programmes and projects have contributed to the present status of national phytosanitary system in Nepal. Further improvements for effective implementation of sanitary and phytosanitary measures to protect the agriculture and boost trade in agriculture commodities are urgently needed. The involvements of bilateral and multilateral donor agencies including World Bank in uplifting the phytosanitary system in Nepal are well appreciated. However, there is a crucial need for assessment and priority setting as per the international and regional standards in the SPS sector and that is lacking so far. Inadequacy in institutional and operational capacities is major drawback in utilizing available opportunities in national phytosanitary system development in Nepal.

Survey and surveillance programmes undertaken for establishment and maintenance of pest free areas for citrus orchards. Survey protocol for some important pest of citrus are published (fruit flies and some disease of Chinese quarantine concern) and implementing the survey programme throughout the country.

Phytosanitary certification to ensure the product safety is highly regarded in international trade of plant and plant products. Nepal is member of WTO and IPPC. Department of Agriculture, Plant Protection Directorate is national focal point for IPPC. Hence the role of plant protection in managing plant health at national and global level is very much challenging.

In Nepal, there are 160 pesticides importers. Eleven thousands two hundred forty-two license holders are selling the pesticides throughout the country. Nine thousands nine hundred fifty-four resellers have received training on safe use of pesticides and storage management. Two thousands one hundred eighty-six types of pesticides by trade name, one hundred seventeen common names have been registered for use under Pesticides Act 1991 and Rules 1993. According to the latest estimate, the annual imports of pesticides in Nepal is 550 Mt. (a.i.). Use of chemical pesticides in Nepal is very low (396 g a.i./ha). Pesticide use, however, is much more in areas with intensive commercial farming of vegetables, tea, and cotton. About more than 85 percent of pesticides are using only in vegetable crops in Nepal.

The IPM-FFS was initiated in Nepal in 1997 with the support of Food and Agriculture Organization (FAO). It has been an important approach of pest control strategy which encourages applying measures that causes least disruption of agro-ecosystem. Therefore, establishment and functioning of bio-agent rearing laboratory, studies of locally available botanical pesticides and residue study laboratories can exploit locally available natural resources of pest management and substantially help farmers, researchers, and policy makers to implement related acts and regulations effectively.

Nepal has developed project (Prime Minister Agriculture Modernization Project) for ten years with own resources/budget and implementing since last years. Prime Minister's Agriculture Modernization Project lacks enough experience for promoting CASI technologies and approaches although they have money and political will. The government is implementing the project under a private-cooperative-group partnership model. The government has aimed to achieve self-sufficiency in some of important crops within ten years. It is hopping that, through the intervention of this project the agriculture sector of Nepal will be improved.

New Zealand

The Ministry for Primary Industries' (MPI) mandate is very broad and spans biosecurity, food safety, sustainable economic development, trade, forestry, fisheries, agricultural compounds and veterinary medicines approvals, and animal welfare. This broad mandate allows for a wide view of issues and opportunities across the full value chain of primary production – from the paddock, forest or ocean, through to the processing and transportation system, all the way to the market, and ultimately the consumer.

MPI released a refreshed strategy in 2017. MPI's purpose "Growing and Protecting New Zealand" stayed the same. However the strategy refresh introduced an organizational ambition or goal that "New Zealand is the most trusted source of high value natural products in the world". The purpose and ambition are supported by four outcomes that describe the long-term outcomes we're trying to achieve, these outcomes are; growth, sustainability, protection and participation.

In 2017 MPI released the Biosecurity 2025 direction statement covering both plant and animal health. Biosecurity 2025 will guide New Zealand's biosecurity system through to 2025. The direction statement includes a mission for biosecurity, principles to guide the way we work, strategic directions, targets to be achieved by 2025 and initial actions to start implementing the

direction statement. The five strategic directions provide focus and priority areas. These encompass working towards having a collective effort across the country – were every New Zealander becomes a biosecurity risk manager and every business manages their own biosecurity risk (a team of 4.7 million) through to looking at tomorrow's skills and assets to have a capable and sustainable workforce and infrastructure.

MPI has invested in Government Industry Agreements (GIA's) to bring together government and industry groups to manage incursions of pests and diseases. GIA's are focused on readiness and response activities with signatories jointly making decisions, holding responsibilities and sharing costs associated with biosecurity incursions. It is hoped that by working more closely together in this important area industry and government will achieve better biosecurity outcomes.

There continues to be growing pressure on the biosecurity system as trade and travel increases. Having the appropriate tools and systems is critical to helping manage the biosecurity system. Using yesterday's thinking and tools is not sustainable for tomorrow's problems, hence why MPI is investing in its future way of working.

Pakistan

The agriculture sector continues to play a central role in Pakistan's economy. It is second largest sector accounting for over 19.53 percent of GDP and remains by far the largest employer, absorbing 45 percent of the country's total labour force. Nearly 62 percent of the country's population resides in rural areas and is directly or indirectly linked with agriculture for their livelihood. The sector is a primary supplier of raw materials to downstream industry, contributing substantially to Pakistan's exports, on the other, it is a large market for industrial products such as fertilizer, pesticides, tractors and agricultural implements.

Pakistan is signatory to International Plant Protection Convention and to give its effect in Pakistan and to provide for matters connected therewith, Pakistan Plant Quarantine Act 1976 and Pakistan Plant Quarantine Rules 1967 framed thereunder are enacted to regulate import and export of plant and plant products with respect to sanitary and phytosanitary measures.

Pakistan has designated Department of Plant Protection as National Plant Protection Organization under obligation of Article 1 of IPPC which is attached department of Ministry of National Food Security and Research, Govt. of Pakistan. Quarantine division of the Department of Plant Protection regulates transboundary movement of plants, plant products and any regulated articles in accordance with Pakistan Plant Quarantine Act 1976, Rules 1967 and guidelines of IPPC to safeguard agriculture and natural resources of Pakistan against entry, establishment and spread of economically and environmentally significant pests and facilitate the safe trade of agricultural products. Currently, there are 11 entry and exit points including seaports, international air terminals dry ports, and international land borders which are manned by qualified and technical authorized officers of Quarantine Division of the Department of Plant Protection for quarantine inspection and other official procedures to ensure pest free transboundary movement of plant and plant products. release orders, initial and compliance audit of production sites, treatment, storage and processing facilities, pest risk analysis, surveillance, detection, protection of endangered areas, establishment of phytosanitary measures, market access negotiation, signing of protocols, MOUs, work plan with other contracting parties for transboundary movements of plant and plant products, strengthen pest exclusion programme, optimizing pest management and eradication programme, making agricultural trade easy and safe etc.

At present, 34 hot water treatment facilities for mango treatment, 54 pack houses for packing mango fruit and other fruit and vegetables, 17 processing, packing house and cold treatment facilities for citrus treatment, 117 rice processing facilities as Khapra beetle free production sites, 15 rapeseed meal production, storage and packing facilities as pest free facilities, 61 fumigation companies for fumigation of goods, 313 mango orchards with managed pests have been registered by the DPP based on standards and regulatory affairs of the importing countries.

Pakistan has either bilateral phytosanitary protocols, or work plans, or MoU's, or MRA mainly with Iran, China, Argentina, USA, Uzbekistan, Chili, Mauritius, Russian Federation, Jordan, South Africa, Japan, South Korea, Indonesia, Australia for export of potato, mango, citrus, rice, rapeseed meal and other fruits and vegetables.

Main imports of Pakistan are oil seed grains, pulses, fruits and vegetables for consumption, flower bulbs (nursery stocks) and cut flower whereas, main exports include mango, citrus, potato, onion, fresh dates and other fresh fruits and vegetables, dried fruits, rice, wheat, cotton, rapeseed meal, tobacco, castor seed, spices, herbs, maize and wooden pallets and material.

Philippines

For the year 2016 and 2017, the Bureau of Plant Industry (BPI) has achieved several milestones as the regulatory arm of the Philippine Department of Agriculture (DA) when it comes to matters of crop protection, import, export, domestic movement as well as market access of plants and plant products.

The Crop Pest Management Division (CPMD) is the agency's arm tasked to administer crop pest management services anchored on optimization of crop harvests for greater food and economic sustainability. It is continuing its mission to provide direction in the establishment of sustainable bio-control agents' production systems in community through integrated pest management; conduct of pest surveillance and monitoring; analysis of pest incidence and issuance of pest advisories and; develop and maintain repository of data to provide national plant health status.

The Plant Product Safety Services Division (PPSSD) is tasked with the characterization of agricultural crops and its by-products as well as monitoring of pesticide formulated products, pesticide residues and other contaminants in foods. The Food Safety Act of 2013 further mandates the BPI-PPSSD to undertake responsibilities relevant to food safety measures in the food supply chain of plant foods, specifically on postharvest stages involving minimal transformation of plant foods. These postharvest handling activities ensure that policies and programmes assuring the safety of primary and postharvest foods, locally produced or imported. Monitoring of the presence of contaminants in plant foods is conducted through chemical and microbiological analyses.

The PPSSD has provided analytical services (pesticide residue, pesticide formulations, physicochemical and microbiological determinations) for both government and private organization by evaluating, analyzing the composition and confirming the quality and safety of more than 5,000 annual samples of raw and processed agricultural products and inputs.

The National Plant Quarantine Services Division (NPQSD) is committed and focused on fulfilling its mandate to prevent the entry of foreign pests into the country, prevent spread of

pests already existing in the country and comply with the phytosanitary requirements of the trading partners to guarantee the acceptance of the Philippines' agricultural export commodities.

With the implementation of the rationalization plan of the DA-BPI, NPQSD has increased its physical and financial capability to effectively implement its mandates and functions. The increase in workforce has strengthened and maintained the vigilance of the 23 stations with 47 international and domestic airports, 147 international and domestic seaports, and 76 sub-ports to the phytosanitary risks at the borders and in the country.

To ensure smooth, efficient and effective implementation of NPQSD activities, quick response to reports of pest outbreaks and address contentious issues on quarantine matters, NPQSD has formulated and/or amended plant quarantine (PQ) policies, rules, regulations and protocols for guidance of the implementing agencies, stakeholders and/or the industry. DA Department Circular No. 04 Series of 2016, dated June 9, 2016, *“Guidelines on the importation of plants, planting materials and plant products for commercial purposes”* was issued to rationalize and enhance the requirements and procedures in the importation of plants, planting materials and plant products to the Philippines for commercial purposes. For biotechnology regulation, with the joint efforts of the involved Departments, the Department of Science and Technology (DOST)-Department of Agriculture (DA)-Department of Environment and Natural Resources (DENR)-Department of Health (DOH)-Department of Interior and Local Government (DILG) Joint Department Circular (JDC) No.1, Series of 2016 entitled *“Rules and regulations for the research and development, handling and use, transboundary movement, release into the environment, and management of genetically-modified plant and plant products derived from the use of modern biotechnology”* was formulated and took effect on April 15, 2016.

On trade facilitation and market access issue with trading partners, following the recognition by the US Department of Agriculture (USDA) in 2014, the Australia Department of Agriculture and Water Resources (DAWR) also recognized the Philippines as free of mango seed weevil (MSW) and that mango pulp weevil (MPW) is limited in distribution to the island of Palawan. This recognition signals that export of fresh mangoes to Australia can be sourced from the whole Philippines except Palawan. Also, experts from the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) of China visited the Philippines and conducted evaluation of banana, mango and pineapple enterprises.

Cassava Witches Broom (CWB), a disease caused by a phytoplasma is currently being managed in the province of Bukidnon. DA Special Quarantine Order No.1 series of 2015 was issued placing the province of Bukidnon under quarantine, thereby movement, transfer, or carrying of cassava plants/planting materials from Bukidnon to any other provinces were prohibited. NPQSD also conducted initial study on the application of hot water treatment to check its efficacy in eliminating CWB infection. Several trainings on disease detection in the field and CWB identification using nested polymerase chain reaction (PCR) were conducted for plant quarantine officers. NPQSD spearheaded the testing of cassava plants and those disease-free plants are then selected as starting materials for mass production of clean cassava plants in BPI centers, for distribution to farmers.

Several capability and capacity building trainings were conducted including: Government Partnership for Development (GPDF) training with Australia DAWR, Training on identification of cassava witches' broom (CWB) disease including molecular detection, Training on pest risk analysis (PRA), Training-workshop to strengthen phytosanitary measures in Palawan, Training on diagnosis and identification of emerging and re-emerging diseases of economically important

crops, Orientation training of plant quarantine inspectors on plant quarantine operations and genetically-modified organism (GMO) detection training.

Two upcoming foreign-funded international training sessions are to be conducted by BPI namely: *Training on screening, detection and identification of pests of imported sugarcane varieties* and *South American leaf blight (SALB) awareness training*.

Republic of Korea

General information and phytosanitary matter (plant quarantine)

- The Animal and Plant Quarantine Agency (APQA), Ministry of Agriculture, Food and Rural Affairs (MAFRA) operates Plant Protection Act of Korea; Enforcement Decree of the Act; Enforcement Rule of the Act; and the 152 Notifications
- APQA has been under process to revise Plant Protection Act in order to establish a legal basis for introduction of “Electronic phytosanitary certificate”, inspection on courier, etc. and not only Plant Protection Act but also Enforcement Decree and Rule of the Act are scheduled to be enforced as of 3 December 2017.
- APQA has amended the quarantine pest list which is based on the result of a Pest Risk Analysis (PRA) and in accordance with the provisions of Ministerial Ordinance of the Plant Protection Act and APQA notified to add 33 quarantine pest species in March 2017.

Pest management

- Outbreaks of *Erwinia amylovora* (Fire blight, Ea)
- Enhanced preventive measures for *Solenopsis invicta* (red imported fire ant, RIFA)

International cooperation of plant quarantine

- Hosting the 12th Session of Commission on Phytosanitary Measures (CPM) of the International Plant Protection Convention (IPPC) in April 2017, Incheon Songdo, Korea.
- Hosting APPPC workshops on review of draft international standards for phytosanitary measures (ISPM) since 2006.
- Hosting the 8th IPPC Capacity and Implementation Committee (CDC) in May 2016, Incheon, Korea.
- Hosting the 2nd IPPC global symposium on e-Phyto in November 2015, Incheon Songdo, Korea.
- Hosting Plant quarantine expert training programme for ASEAN countries since 2006
- Keeping cooperation programme for plant quarantine system in Myanmar since 2014

Pesticide management

- Changes/improvements in national strategy, organization, legislation, regulations and registrations since 2015
- National targets, efforts and progress with regard to pesticide risk reduction as well as phasing out highly hazardous pesticides
- Development and application status of bio-pesticides, including botanical pesticides
- Update list of banned/prohibited pesticides
- Banned or prohibited pesticides in Korea (Table 2.)
- Pesticide registration, establishment of labeling and safety standards during 2015-2016
- Newly introduced systems for international harmonization of pesticide management

Samoa

Biosecurity in Samoa is not a single line of defense at the border, rather it is a multi-layer system that begins offshore, incorporates the border and continues post-border into Samoa where it becomes a joint effort between central government, industry, community groups, and all Samoans.

Quarantine division is one of the six divisions within the Ministry of Agriculture and Fisheries. It is managed by one line manager with a total staff of 35 people that includes one principal officer, senior officers, officers and assistant quarantine inspectors.

The role of quarantine is the protection of Samoa from exotic pests and diseases whilst facilitation of safe trade that is in line with our national legislation and international obligations and trade agreements. Moreover, is to control and monitor the importation and use of pesticides in accordance with the Pesticide Regulations and international conventions on pesticide management.

The Quarantine (Biosecurity) Act 2005 and 2011 Pesticide regulations are the two legal instruments for quarantine work for the export/import of plants products and importation of pesticides.

The facilities for carrying out plant quarantine work remains the same from 2015 such as the x-ray equipments, fumigation chamber and the post entry quarantine facility with a new export inspection room that is currently work in progress under the Faleolo international airport project.

Border activity is targeted at ensuring risk goods comply with requirements of IHS, and preventing the entry of pests. Borders are diffuse and do not only include the point of entry. Containers unloaded at ports may be opened and inspected at many other transitional facilities around the country.

Samoa Quarantine has three main areas of focus for intervention tools to mitigate biosecurity risks at the border:

- Voluntary compliance achieved through increasing awareness of requirements, and incentives through avoidance of delays or fines for compliant behavior.
- Anticipating or detecting risk goods and verifying compliance with Import Health Standards (profiling, x-ray screening, etc.)
- Managing risk goods or non-compliant behavior (fines, treatments, post-entry quarantine etc).

Border inspections by Samoa Quarantine operate on a targeted system based on risk profiles. Risk profiles are generated on the basis of many criteria including; risk item pathway, the nature of the item, country of origin and previous history of the person or company sending the item. Items flagged as high risk may be subject to 100 % inspection while low risk items will receive much lower levels of inspection.

Hitchhiker pathways are an aspect that is also taken into consideration and ongoing monitoring is conducted by Samoa Quarantine officers.

It is important to note that a blacklist is currently in place for non-compliant importers. This database enables biosecurity staff to monitor various clients and allows for the seizure of non-compliant goods from re-offenders. Additionally this allows for the application of associated penalties for such clients who knowingly commit such offences.

There is frequent interaction with the plant health and environment laboratory on pest diagnostics on the identification and confirmation of intercepted pests. Collaborative efforts with other agencies and divisions of the ministry are ongoing but challenging at most times especially with regards to updated information surveillance and other aspects of pest management.

Samoa has a pest management system in place to contain or reduce the impact of unwanted pests and diseases that have established here. Pest management of established organisms is a major expense.

It is expected that there is clear and effective national leadership and coordination of pest management activities and that transparent and effective performance measures monitor and forecast the establishment of pest and weed impacts and pathways.

Implementation of international sanitary phytosanitary measures through day to day operations is ongoing such as issuance of phytosanitary certificates of export products and ensuring that wood and wood packaging materials are compliant with standard procedure established.

Risk profiles are generated on the basis of many criteria including; risk item pathway, the nature of the item, country of origin and previous history of the person or company sending the item.

Further to pesticide management, the registrar of pesticides and unit are continually carrying out activities on inspections, issuance of relevant certificates for importation of pesticides as well as notifications of pesticides as per obligations to the Rotterdam Convention as well as collaborative work with the Crops division on the promotion of IPM programmes as alternative to pesticide use.

Sri Lanka

Three ministries are responsible for implementation of plant protection and phytosanitary matters; namely, Ministry of Agriculture, Ministry of Mahawali Development and Environment, and Ministry of Health and Indigenous Medicine. However, Department of Agriculture in the Ministry of Agriculture plays the major role on plant protection, phytosanitary measures, pesticide and pest management, implementation of Plant Protection and Control of Pesticides Acts in Sri Lanka.

National Plant Quarantine Service (NPQS) in Sri Lanka is being administered by the Seed Certification and Plant Protection Center (SCPPC) which is one of the directorates of the Department of Agriculture (DOA) within the ministry of Agriculture, responsible for all the plant protection activities in Sri Lanka. NPQS is serving as National Plant Protection Organization (NPPO) in Sri Lanka. Furthermore, completion of the regulated pest lists and regulations for Plant Protection Act No. 35 of 1999, improvement of export inspection area at NPQS, new recruitment of plant quarantine officers, supply of pest identification and surveillance equipment, and implementation of capacity building programme for quarantine offices were also carried out

During 2015 -2017, NPQS specifically involved in following activities. A new system to certify entire value chain from farm to export gate, was established. The exit point inspection procedures were strengthened with new inspection equipment, inspection space and other relevant infrastructure including plant quarantine inspectors. New SOPs were developed for the NPQS activities. Sampling procedures and protocols were established for exit point inspection of consignments in line with ISPM 31.

The plant quarantine laboratories were equipped with new technical equipment. Establishment of a new DNA barcoding laboratory is initiated. Incineration facility, Vapour heat treatment facility and a soft X-ray scanner will be re-established within this year. Alternative chemical treatments (for Methyl Bromide) are being tested. Phytosanitary certification - Sri Lanka fully implements ISPM 12 and engaged in pilot scale activities of the establishment of e-phyto system.

Office of the Registrar of Pesticides (ROP) which operates under SCPPC involved in following activities.

Registration of pesticides, re-registration of pesticides (that had been registered six years before require re-test the product for bio-efficacy), registration of companies engage in pesticide business, advertisement for pesticides, stricter vigilance on illegal import of pesticides, actions on pesticide empty container management programme etc. are being implemented by office of the ROP to minimize the risk of pesticides under the Control of Pesticides Act No. 33 of 1980. Pesticides quality and pesticide residue analysis of food product also started after establishment of testing laboratory under registrar of pesticide. The enforcement convention on pesticides is undertaken at a relatively satisfactory level in light of the Control of Pesticides Act No. 33 of 1980 and regulations made thereunder. Over 58 highly toxic pesticides were banned from 1970 to date. Government has given high priority to removal of high risk pesticides from the market. Status management of obsolete pesticides was also shown that there were insignificant stocks of obsolete POP (persistent organic pollutants) pesticides in Sri Lanka; and there are no records of production and/or formulation of POP pesticides in Sri Lanka and hence production discards are almost non-existent.

The Office of the Registrar of Pesticides in collaboration with the Ministry of Mahaweli Development & Environment (MMDE) has initiated a programme to develop strategies to manage empty pesticide containers in the country. The recycling of glass and plastic containers is a well-established private enterprise in the country, which is regulated by the Central Environment Authority (CEA). Currently, there are several projects executed by the CEA to strengthen waste management systems within the industry under the premise of “public-private partnership” programmes.

Biological control programme implemented by plant protection service have gained considerable momentum in the management of several pests mainly for two invasive aquatic weeds such as *Salvinia* and water hyacinth. Farmer and officer training programme on IPM (Integrated Pest Management) and GAP (Good Agricultural Practices) were also carried out during this period.

The implementation of ISPMs has been carried out in stages, depending on the requirement in trade, staff capacity and the degree of complexity. Therefore, NPPO, Sri Lanka identified some ISPM areas with lack of staff such as ISPM6, ISPM10, IPM 26, ISPM 18, ISPM 15e etc. and the country is expecting some implementation assistance such as training, manuals etc.

Kingdom of Thailand

During 2015-2016, Department of Agriculture (DOA), as the National Plant Protection Organization (NPPO) of Thailand, had revised the Plant Quarantine Act B.E. 2507 (1964), (No. 2) B.E. 2542 (1999) and (No. 3) B.E. 2551 (2008) to be in line with IPPC and ISPMs.

DOA has published import requirements justified by pest risk analysis in the Government Gazette on 23 import requirements of 18 kinds of plants and plant products from 10 countries and had issued 328,970 and 347,373 copies of paper Phytosanitary Certificate (PC) respectively in 2015 and 2016. There are 472 registered producers, 329 for HT and 143 for MB which have been certified by DOA and allowed to stamp IPPC mark on treated wood packaging materials. For ePhyto issuance, Thailand has been reviewing Plant Quarantine Act B.E. 2507 (1964), (No. 2) B.E. 2542 (1999) and (No. 3) B.E. 2551 (2008) and developing ePhyto system to comply with ISPM 12.

National Bureau of Agricultural Commodity and Food Standards (ACFS) together with DOA as an official contact point (OCP) has continually updated the country information on the International Phytosanitary Portal (IPP) and APPPC website, which includes: description of NPPO, legislation, map and location of plant quarantine station, pest reporting of coconut black headed caterpillar in Thailand, report of detection survey of mango seed weevil, *Sternonchetus mangiferae* (Fabricius) (Coleoptera: Curculionidae) to confirm that *S. mangiferae* is absent in Thailand, the number of notification of interception during 2015 – 2016, and the signature of PQ officers who have the authorization to sign on the PC.

In 2016, DOA established a new section, the Plant Pest Surveillance, which is responsible for the development of the national plant protection survey programme to support the import, export, and domestic regulatory programs and the improvement of regulated pest lists. Pest surveillance activities that were completed in the last 2 years include the detection survey on *Urocystis cepulae*, *Sclerotinia sclerotiorum*, *Cercospora duggiae*, *Pseudomonas syringae* pv. *syringae* and *Ditylenchus destructor* in shallot plantations, *Cassava mosaic virus* (CMV) and Yellow Spined-bamboo locust (YSBL). The results of these surveys revealed that Thailand is free from these pests.

Since 2016, the coconut black headed caterpillars outbreak has been destroying large area of coconut plantations throughout the country. This covers around 12,632 hectares of coconut grown in 29 provinces. Thailand has stipulated the measures to control the coconut black-headed caterpillars by using the integrated coconut pest management based on area-wide concept and sustainable administration. The cooperation among relevant agencies and local communities in the outbreak area as well as the rigorous implementation of management programmes and regulatory measures are necessary to stop the outbreak.

In the last 2 years, the government has been emphasizing and deliberating the policy on organic agriculture as the national agenda. Comprehensive knowledge on biocontrol crop protection and integrated pest management has been transferring to farmers. 1,764 Community Pest Management Centers (CPMCs), which were established by Department of Agriculture Extension (DOAE), are the important mechanism in transferring technologies on integrated pest management through Farmer Field School (FFS).

Hazardous Substance Act (No. 3) B.E. 2551 (2008) and related ministerial and departmental notifications have been enforced. However, this Act is in the process of reviewing. Since 2016, DOA has been reviewing one of the Notification of Ministry of Agriculture and Cooperatives and

two notifications of Department of Agriculture related to pesticide registration. Until present, the new revisions of these notifications have already been published. During 2015 - 2016, the pesticide surveillance working group suggested to ban dicrotophos and EPN. In addition, the research on carbofuran and methomyl on health and environment is in the process for further regulatory action. The pesticides listed in Annex A of Stockholm Convention are banned in Thailand and their notifications were sent to the Secretariat of Rotterdam Convention. List of the 98 types of banned pesticides was shown in appendix I.

Tonga

- A new CEO appointed in 2016
- The Livestock, Extension and Research Divisions merged and named the Sustainable Development Division.
- The NPPO represented Tonga on SPS issues in trade discussions e.g. PACER plus negotiations, bilateral discussions.
- New export certification system developed for fruit fly host commodities exported to New Zealand.

Pest management/invasives:

Interceptions

- 6 Asian mongoose (*Herpestes javanicus*) in commercial container
- First recorded interception of red- back spiders (*Latrodectus hasselti*). The spiders were discovered on two separate occasions in personal consignments.

There was an outbreak of pink wax scale (*Ceroplastes rubens*) and yellow crazy ant (*Anoplolepis gracilipes*) due to prolonged dry conditions due to prolonged dry conditions.

Pesticide management

Regulations currently being drafted for

- the importation, handling, storage, distribution, use, sale and
- disposal of pesticides;
- the handling and use of pesticides by pesticide users;
- labelling
- fees to be charged under this Act

Observer report: Japan

Japan continues to improve its plant protection systems in conformity with the International Plant Protection Convention, the WTO-SPS Agreement and relevant international standards on phytosanitary measures since the 29th session of the APPPC. In Asian region, Japan also contributes to capacity building in phytosanitary area through some projects and programmes.

The Ministry of Agriculture, Forestry and Fisheries (MAFF) is responsible for plant protection and plant quarantine services to control and prevent the introduction of pests of plants and plant products. In April 2017, MAFF established new offices, International Affairs Office and Plant Protection Office in the Plant Protection Division. The International Affairs Office mainly deals with bilateral and multilateral issues such as implementation of IPPC/ISPM and trust fund and JICA (Japan International Cooperation Agency) projects as a contribution to IPPC and Asian countries while domestic issues including preventing establishment or spread of pests and border activities are handled by the Plant Protection Office. Plant Protection Division also monitors and

analyzes reports collected from various resources. Plant Protection Stations (PPSs) of MAFF consists of 5 head offices, 16 sub stations, 38 branches and more than 900 plant quarantine officers (as of September 2017) who are authorized by the Plant Protection Act to implement appropriate inspection/certification. Twenty-six (26) detector dogs are also deployed to help detect regulated articles imported by passengers at major airports.

The revision of "the Ordinance for Enforcement of the Plant Protection Act" was published in Japanese Official Gazette on 24 May 2016. Revisions of quarantine pest list entered into force after six months from the date of adoption (on 24 November 2016) with some exceptions. MAFF continues to review import regulations including update of quarantine pest list based on PRA and relevant ISPMs.

As a multilateral contribution, Japan is working on a trust fund project on improving capacities of phytosanitary inspection and integrated measures for international movement of seeds in Asian countries. The project has been implemented by the FAO RAP.

Japan will also provide a trust fund for the project of IPPC to support its activities for the purpose of developing the ePhyto and facilitating implementation of the Convention and ISPMs. Under JICA scheme, a training course on thermal treatment for disinfection of fruit flies has been organized since 1988 with about 150 trainees from 41 countries which are affected by fruit fly.

MAFF is working closely with prefectural governments to conduct early warning detection survey, and engage in emergency control, where necessary. The outbreak of *Globodera pallida* in Hokkaido, the northernmost prefecture, occurred in 2016, which is currently under official control. Meanwhile, *Bactrocera dorsalis* species complex, probably blown by wind into islands chain between southwestern Kyushu and northeastern Taiwan from occurrence areas outside of Japan, has been seasonally detected. In 2015, the outbreak of the fly in Amami Oshima Island (an island in southeastern Kyushu) occurred, and the eradication of the fly was completed in July, 2016. Since April 2017, the detection of the fly has been confirmed at several points in the region. MAFF has conducted appropriate phytosanitary actions based on Plant Protection Act and relevant ISPMs.

For pest management, MAFF has been implementing pest forecasting programme, which is stipulated by Plant Protection Act, under the cooperation of local governments, and promotes pests and diseases control using Integrated Pest Management (IPM) measures. MAFF established the "IPM practice guideline" in 2005, which aims at converting Japanese agriculture to more sustainable one.

With regard to pesticide management, MAFF is the authority responsible for the legislation, registration and regulation of agricultural chemicals in Japan. The entire process from manufacturing, importing to selling, utilizing agricultural chemicals is strictly regulated in accordance with the Agricultural Chemicals Regulation Law, to ensure the safe use of these chemicals.

Chair Summary

The Chair noted that many countries are facing similar challenges, often the same pests are problematic throughout the region, and this offers a significant opportunity to find common areas in the development of the future work plan. The Chair also acknowledged the considerable effort members are making to bring country systems into line with the ISPMs etc. including updating

various legislative areas. He was also encouraged to observe the emphasis that members are placing on the engagement with farmers, community action groups, and industry groups reiterating the importance of working together. Finally he recognized the contribution of many members' support and assistance to fellow APPPC members with technical assistance and capacity development.

4. Update on Commission on Phytosanitary Measures (CPM) and Bureau activities

CPM Bureau member Dr Kyu-Ock Yim presented the report to the meeting. CPM-11 was held in Rome, FAO headquarters 4-8 April 2016. CPM-11 discussed concept of commodity standard and reviewed of Capacity Development Committee to propose a new oversight committee. CPM-11 adopted 2 ISPMs, 2 phytosanitary treatments and 5 diagnostic protocols and adjusted to the IPPC standard setting procedure.

Progress on ePhyto was reported including the pilot hub (10 countries chosen for the pilot) 8 countries have now registered for the hub and generic national system. A global symposium will be held in January 2018 in Malaysia. IPPC communication and advocacy work plan for 2016-2020 was agreed and CPM recommendation on the importance of pest diagnosis was adopted.

In the special topic session on sea containers, CPM-11 recognized the risk of pests and regulated articles associated with sea containers and agreed that the topic on sea containers should be reconsidered in maximum five years to allow for the implementation of the CTU Code and the CPM recommendation. CPM elected a new chairperson, the Bureau, Standard Committee and Subsidiary Body for Dispute Settlement.

CPM-12 was held in Incheon, Rep. of Korea, outside of Rome for the first time in the IPPC's history. The draft of strategic framework for 2020-2030 was presented for discussion and possible options for sustainable funding were discussed. Sea container complementary action plan was endorsed and task force (SCTF) was decided to establish. ToR and RoP were agreed for the Implementation and Capacity Development Committee (IC). Five ISPMs were adopted, 10 phytosanitary treatments and 10 diagnostic protocols were adopted. Progress on implementation pilot on surveillance, especially on 3 selected pests were reported. Envisaged outputs and outcomes for the International Year of Plant Health (IYPH) was approved and adopted by the FAO Conference in July 2017. The UN General Assembly will vote on final approval in November 2018. Various aspects of e-commerce were discussed in the special topic session.

CPM Bureau met 4 times each year including 1 teleconference for further development of CPM decisions. In 2017 the Bureau mainly discussed process in regard to a joint call for topics for both standard setting and implementation/capacity develop tools and guidelines. E-commerce was discussed noting that it is a significant pathway of pests, so it is very important to cooperate with e-commerce industries, mail, courier services, and customs. It was suggested engaging with internet industry by supplying lists of regulated articles to encourage them to enhance awareness to their internet users on the phytosanitary requirements at the point of a risk item.

The issue of sustainable funding options was discussed noting continuing financial constraints. The regular budget remains the same so increased cost put pressure on the budget and even though there was a record high in multi donor trust contributions in 2017 it is not a stable fund that can be relied on. For this reason finding a solution for sustainable funding is still needed. All members are expected to contribute, in-kind donations are encouraged, however more active resource mobilization is required.

IYPH and strategic framework and also selected members for SCTF and IC. CPM-13 agenda was drafted.

It was highlighted that the strategic plan needs to have specific targets, identifying key areas we will be operating in through to 10-15 years time. The Bureau's objective is to have the strategic plan considered and adopted by the next CPM (2018) so that it can enter into force by 2020. Members were encouraged to provide feedback on the draft. Acknowledging growing global risk areas, like sea containers. Also mentioned was the need to prepare for the ePhyto hub in countries operating systems. Looking at how products will be cleared, legislation changes needed, and solutions for integrating it into member's current operating models, training and future capacity development needs. The Bureau member reiterated the importance of exchanging information among members on managing pests to prevent it spreading; this is the value of IPPC community. The Bureau member particularly highlighted the impact of serious incursions such as *Xylella fastidiosa* – noting the need for us to be aware as a global community of future threats, pests and diseases.

5. Developments with the amendments to the Plant Protection Agreement for the Asia and Pacific region – 1983 and 1999

Dr Piao Yongfan presented on the development with the amendments to the Agreement. Presently, twenty-five countries are contracting parties to the Plant Protection Agreement for Asia and the Pacific. These countries are Australia, Bangladesh, Cambodia, China, DPRK, Fiji, France, India, Indonesia, Lao PDR, Malaysia, Myanmar, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Samoa, Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Tonga and Viet Nam.

In 1999 the FAO Council adopted two sets of amendments to the Agreement. One set of amendments was designed to bring the Agreement into line with the new revised text of the International Plant Protection Convention (IPPC) and the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement). The second set of amendments provided for the deletion from the Agreement of measures to exclude the "*South American leaf blight of Hevea*" from the Region. On 31 August 2017, the Government of New Zealand deposited with the Director-General an instrument of acceptance of both sets of amendments. At present, seven Contracting Governments (Australia, the Lao People's Democratic Republic, New Zealand, Philippines, the Republic of Korea, Timor-Leste and Viet Nam) have accepted the first set of amendments adopted in 1999, while four (Australia, New Zealand, The Republic of Korea and Timor-Leste) have accepted the second set. As these amendments do not entail new obligations, they shall come into force as from the thirtieth day after acceptance by two thirds of the Contracting Governments. Therefore, none of the 1999 amendments have entered into force.

Since the entry into force of APPPC's 1983 amendment on financial mandatory contribution on 4 September 2009, 18 countries have become financial mandatory contributors. These are Australia, Bangladesh, Cambodia, China, DPRK, Fiji, India, Indonesia, Lao PDR, Malaysia, New Zealand, Pakistan, Philippines, Republic of Korea, Sri Lanka, Thailand, Timor-Leste and Viet Nam.

New Zealand noted again its parliamentary approval of the 1999 amendments to the agreement and encouraged other members to do the same. Further amendments to the agreement to keep it up to date will be difficult if the 1999 amendments are not in force.

6. Progress report on information exchange within the region

Dr Piao Yongfan, Executive Secretary of the APPPC presented the report. The APPPC information exchange portal provide the platform for member countries to upload information in an effective and efficient manner to increase their transparency in trading of agriculture products. The APPPC portal also links with the IPPC portal that supports the facilitation of agriculture trade through information sharing on pest control and preventing their spread including pesticide management, technical information for decision making and promoting the harmonization of phytosanitary measures. To ease searching and uploading and to be user-friendly, the APPPC portal has been divided into several sections and maintenance regularly by the APPPC Secretariat such as introduction of a simpler data entry form and redesign general layout of the webpages.

A hands-on training workshop on uploading and fulfilling the National Reporting Obligations (NROs) was held in Beijing, China on 5-9 September 2017 attended by 25 countries. Several topics on NRO were discussed and participants presented their new IPP report of their countries and worked on the development of national reporting work plan towards 2020. The workshop also included a hands-on demonstration and training of NROs and APPPC data entry. During this session, participants practiced the upload of their NRO and APPPC reports on the International Phytosanitary Portal (IPP) and APPPC websites.

The 29th Session of APPPC in 2015 in Bali Indonesia developed an information exchange mechanism and template to facilitate information exchange activities among member countries. The group agreed to cover areas of plant quarantine, IPM and pesticide management. They were assigned to Australia (expert roster), Thailand and Nepal (IPM) and Malaysia (pesticide management). The templates for the information exchange have been developed and sent to all member countries in April 2016 and compilation of the information were to be conducted for every 6 months. So far, 9 countries have sent their feedback on the templates to the led country and APPPC secretariat has assisted in requesting all participants to complete these templates when they participated in the NRO training in Beijing, China in September 2016 and Nepal in March 2017.

The National Reporting Obligation Advisory Group (NROAG) has recommended a pest reporting year for 2016 and phytosanitary regulation in 2017 respectively. APPPC member countries have contributed substantial update for both reporting obligations in which 13 countries and 55 reporting was upload for pest reporting and 17 countries with 115 reporting for the phytosanitary regulation respectively. In addition, 17 member countries have also uploaded their description of the NPPO pages in 2017. On the other hand, the APPPC country webpages on non-PQ sections has not been updated since 2015 and most of the information available were uploaded in 2011. APPPC Secretariat would like to encourage APPPC member countries especially the official contact points (OCPs) to revisit their country's webpages and start planning in updating none-PQ sections since some of the information may be outdated. In addition, it was noted that the login statistics for Asia Pacific have indicated that 40 percent of OCPs and 33 percent editors have not logged-in into the website since 2015.

The APPPC Secretariat has started a new initiative in collaboration with the members of the information exchange working group to prepare quarterly newsletter to inform members on the progress of information exchange programmes in the APPPC website, reporting on the activities conducted following the biennium work plan, upcoming activities and brief news on development from IPPC and FAO. The first newsletter was distributed in March 2016 and so far

7 newsletters have been published. Each published newsletter has been emailed to all OCPs of the APPPC countries for sharing the newsletter with their counterparts and colleagues. The newsletters were also uploaded in the APPPC website for easy reference when needed and also able to be downloaded for further dissemination. The newsletter does not mean to dismiss the importance of regular access to APPPC and IPP. However, it provides another option for member countries to highlights important information or events for other member countries to have a quick access to the information.

In strengthening the information exchange between APPPC member countries, the APPPC Secretariat would like to recommend that the 30th APPPC session in Rotorua, New Zealand meeting encourage OCPs to take serious effort in updating the APPPC country's webpages which may be outdated. They could also prepare a biennium work plan by each country to collect and update the webpages, and the Secretariat urges members to complete the templates which have been agreed in the 29th APPPC session in Bali, Indonesia and sent to the respective lead countries. Members are encouraged to provide news on their country activities on plant protection, plant quarantine, pest management and pesticide management for every 6 months to be included in the newsletter.

7. Progress report on plant quarantine in the Asia and Pacific region

7.1 Report by the Chairperson of the Standing Committee on Plant Quarantine

The Chairperson of the Standing Committee reported on the following activities for the 2016-2017 biennium, funded by sponsors and APPPC funds available from the operational funding mechanism. The meetings held included:

- 16th APPPC regional workshop for the review of draft ISPMs, 19-23 October, 2015, Jeju Island, Republic of Korea
- 17th APPPC regional workshop for the review of draft ISPMs, 25-29 July 2016, Suwon-si, Gyeonggi-do, Republic of Korea
- 18th APPPC regional workshop for the review of draft ISPMs, 4-8 September 2017, Busan, Republic of Korea

It was noted that engagement in these workshops have improved over the years. This engagement illustrates the recognition of the importance of the development of the ISPMs.

- Pre-CPM meeting with APPPC members, 4 April, 2016, FAO, Rome
- Pre-CPM meeting with APPPC members, 4 April, 2017, Incheon, Republic of Korea
- APPPC workshop on surveillance systems and management, 6-10 June 2016, Bangkok, Thailand
- APPPC training workshop on fruit fly management, 20-25 June 2016, Tien Giang, Viet Nam
- Regional consultation on methodologies for sampling of consignments (ISPM 31), 22-16 August 2016, Bakasi, Indonesia
- APPPC regional workshop on IPPC National Reporting Obligation (NRO) and use of Information Exchange Portal (IPP), 5-9 September 2016, Beijing, China
- Workshop on mitigation of South American leaf blight (SALB) of rubber in the Asia-Pacific region - Present and future, Kuala Lumpur, Malaysia, 17 -21 October 2016
- APPPC workshop on surveillance, 17-21 July, 2017, Chiang-rai, Thailand

- APPPC planning workshop and APPPC Standards Committee for review of draft RSPM, 8-10 May, 2017, Bangkok, Thailand

Details of the meetings and workshops are provided below.

16th APPPC regional workshop for the review of draft ISPMs, 19-23 October, 2015, Jeju Island, Republic of Korea

The following drafts were examined and commented on by participants:

- Appendix to ISPM 20 on arrangements for verification of compliance of consignments by the importing country in the exporting country
- Revisions to ISPM 15 (regulation of wood packaging material in international trade) Annex 1 and 2 for inclusion of the phytosanitary treatment sulphuryl fluoride fumigation of wood packaging material and the revision of the dielectric heating section of Annex 1 of ISPM 15

17th APPPC regional workshop for the review of draft ISPMs, 25-29 July 2016, Suwon-si, Gyeonggi-do, Republic of Korea

The following drafts submitted for their first consultation were examined and commented on by participants:

- Amendments to ISPM 5: Glossary of phytosanitary terms
- National surveillance systems (2009-004) (ISPM 6 rev)
- Requirements for the use of temperature treatments as a phytosanitary measure (2014-005)

The following drafts submitted for their second or third consultation were noted:

- International movement of wood
- Appendix 1 to ISPM 20: Arrangements for the verification of compliance of consignments by the importing country in the exporting country
- International movement of vehicles, machinery and equipment
- International movement of seed
- International movement of growing media in association with plants for planting

18th APPPC regional workshop for the review of draft ISPMs, 4-8 September 2017, Busan, Republic of Korea

The following drafts submitted for their first consultation were examined and commented on by participants:

- International movement of flowers,
- Requirements for the use of fumigation treatments as a phytosanitary measure,
- Amendments to the glossary (ISPM 5). Participants then considered the four draft ISPMs out for their second consultation: ISPM 6: Surveillance, requirements for the use of temperature treatments as phytosanitary measures, Amendments to ISPM 5: Glossary of phytosanitary terms, revisions to ISPM 15 Annex 1 and 2 for inclusion of the sulphuryl fluoride fumigation phytosanitary treatment of wood packaging and the revision of the dielectric heating section of ISPM 15.

The following drafts submitted for their second or third consultation were noted:

- ISPM 6: Surveillance,

- Requirements for the use of temperature treatments as phytosanitary measures,
- Amendments to ISPM 5: Glossary of phytosanitary terms,
- Revisions to ISPM 15 Annex 1 and 2 for inclusion of the sulphuryl fluoride fumigation phytosanitary treatment of wood packaging and the revision of the dielectric heating section of ISPM 15.

The Pre-CPM meeting with APPPC members, 4 April, 2016, FAO, Rome

The Pre-CPM meeting with APPPC members, 4 April, 2017, Incheon, Republic of Korea

The country delegates attending these meetings (35 delegates from 15 countries in 2016 and 36 delegates from 14 countries in 2017) used the pre-CPM meetings to be updated on issues by the Bureau members and to discuss matters of particular concern to those members attending the meetings.

APPPC workshop on surveillance systems and management, 6-10 June 2016, Bangkok, Thailand

This workshop on surveillance systems and management was the first in a series designed to cover all aspects of plant pest surveillance training for APPPC members.

The meeting discussed the present and the revised versions of ISPM 6 and noted the content of the recently published IPPC manual on plant pest surveillance. Then the fundamental nature of surveillance systems was described and how this supports national biosecurity and market access.

The workshop then examined surveillance systems and management under a number of headings including: surveillance programme organizational arrangement, programme approaches and application, programme management where the recent incursion of Russian wheat aphid into Australia was used as an example. This was followed by considerations of: surveillance programme planning, programme prioritization (when participants constructed lists of priority pests for the region), programme design and methodologies, system and programme resourcing, programme stakeholder engagement (taken as an integral component of any surveillance programme), programme delivery, programme information management, analysis and pest status determinations and programme reporting and communication.

The workshop was supported by clear topic descriptions, relevant examples from the experiences of the Australian facilitators and participant discussions.

APPPC training workshop on fruit fly management, 20-25 June 2016, Tien Giang, Viet Nam

The training workshop was hosted by Viet Nam Plant Protection Department and had 23 participations from 14 countries.

The training workshop enabled participants to improve their knowledge and skills of area-wide fruit fly management with ecological approaches. It benefited participants by:

- improving their capacity in identification of several important fruit fly species;
- enhancing knowledge of fruit fly management strategy especially 1-2-3 strategy, which includes use of protein baits, orchard sanitation and fruit fly monitoring by using traps (lures);
- showing them how to organize fruit fly management through farmer field schools (FFS) including details arrangements of pre/post FFS.

The participants from China, Nepal, Pakistan and Philippines shared experiences in fruit fly management and updated participants on the status of fruit fly infestations and management programmes. A report on the regional IPM programme highlighted pilot experiences of area-wide promotion and adoption of FF IPM-FFS in lower Mekong river basin countries (2010-2015) based on the former regional project (AIT/FAO).

Viet Nam PPD played key roles in organizing the workshop in collaboration with FAO and other member countries. This was very participatory training workshop with active interaction among participants with desk exercises as well as those in fruit orchards.

Regional consultation on methodologies for sampling of consignments (ISPM 31), 22-16 August 2016, Bekasi, Indonesia

This workshop was convened in collaboration with the Indonesian Agricultural Quarantine Agency (IAQA), Ministry of Agriculture, with participation of more than 35 delegates from 20 countries (including 11 local participants). Country reports updated participants with current status of implementation of ISPM31 in respective countries and enabled participants to better understand a number of practical sampling methodologies applied by countries at present.

The workshop also exposed the participants to various operational constraints that probably need to be addressed by each country to ensure that this ISPM could be fully implemented. Focus group sessions highlighted practical sampling methodologies and experiences and were followed by extensive discussions. Participants gathered information from different countries on specific methodologies for sampling of consignments, including seed and plant propagating materials, fresh fruits and vegetables, grain for food/feed, cut flowers and heterogeneous consignments. Sampling methods for inspection in packing facilities/site area production were also described.

The main elements in consignment sampling methodologies that showed potential for harmonization were discussed. Suggestions were made for further follow-up actions at country and regional levels. A further action plan may be proposed.

APPPC regional workshop on IPPC National Reporting Obligations (NRO) and the use of the Information Exchange Portal, 5-9 September 2016, Beijing, China

Twenty five participants attended the training workshop from 17 countries with experts from FAO Rome and Bangkok. The workshop introduced the IPP website and registration of OCPs and editors to perform the uploading and editing of their country's information. The data entry for the IPP hands-on training was conducted with all the participants based on the reference "The guide to National Reporting Obligations for IPPC contact points and IPP editors".

The main discussion in the workshop related to the improvement of the website for searching, uploading and editing with other discussions focusing on issues, constraints and challenges in fulfilling the NROs. Several suggestions were made for the improvement of the websites and the feedback was listed in the report for further action by the IPPC Secretariat. Several approaches have been suggested including national networking for collection and collation of data and regular meetings between stakeholders to conduct in country NRO awareness programmes.

Workshop on mitigation of South American leaf blight (SALB) of rubber in the Asia-Pacific region - Present and future, Kuala Lumpur, Malaysia, 17 -21 October 2016

The regional workshop was attended by 25 participants from 11 countries. In his welcoming remarks, Dr Piao Yongfan noted that the APPPC has organized several workshops in relation to this disease and published three important documents to support capacity building of the NPPO to prevent the incursion of the disease. The workshop discussed on the status of SALB in countries where it is endemic and the control measures adopted to control the disease. Current control measures have been found to be ineffective or too costly. Thus, the prevention of incursion is still the most cost-effective method. The purpose of the workshop was to discuss the approaches to reduce the risk of the disease incursion through the establishment of pest free areas (PFAs), pest free places of production and pest free production sites. Several international standard on phytosanitary measures (ISPMs) related to the implementation and recognition of pest free area were presented. Initial discussion on standard operating procedures (SOPs) on the establishment and maintenance of PFAs were discussed and how SOPs could be used as reference in trade negotiations with the SALB endemic countries.

Country presentations on achievements and future action plans showed that substantial progress has been implemented. For example, all the rubber growing countries have listed SALB as one of the quarantine diseases in their legislation/regulation. Most of the countries have:

- conducted advocacy, awareness and training programmes for their quarantine staff and the public,
- translated SALB training materials to local language, built diagnostic capacity to identify SALB on imported commodities and
- conducted specific survey for pests and diseases of rubber including detection of SALB.

These activities are crucial for preventing the incursion. The meeting agreed to explore a diagnostic training that will be held in Guatemala in 2017. Discussion of the future action plan included the recommendations:

- training for plant quarantine and technical officers on identification and surveillance;
- encouraging NPPOs to publish materials in local language for public awareness;
- the revision and updating of documents related to *Microcyclus ulei*, and the development of a diagnostic protocol develop for identification using molecular techniques;
- formulating criteria regarding risk assessment for importation of commodities from SALB endemic countries.

APPPC planning workshop and APPPC Standards Committee for review of Draft RSPM, 8-10 May, 2017, Bangkok, Thailand

The APPPC working group meeting on the preparation of APPPC's work plan for 2018-2019 was convened from 8-10 May 2017 in Bangkok, Thailand with participation of the Vice-Chairs of the 29th Session of APPPC, Chair and Vice-Chairs of APPPC three Standing Committees and members of APPPC Standards Committee. The meeting reviewed the implementation of the work plan adopted at the 29th Session, discussed the work plan for the remaining period of current biennium and the draft work plan for 2018-2019 to be submitted to the 30th Session, to be held 20-24 November 2017 for discussion and adoption. Associated estimated costings for the activities for remaining period of 2016-2017, a tentative budget of the work plan for 2018-2019 as well as possible level of assessed contribution of contracting countries during 2018-2019 relevant to the tentative work plan and the budget concerned, were discussed.

APPPC Standards Committee, 11-12 May, 2017, Bangkok, Thailand

The APPPC Standards Committee reviewed the draft guidelines for the hot water immersion treatment (HWIT) for fruit flies in mangoes.

The arrangement of the section was revised to be more logical and clear. The treatment levels for the different weight classes was moved to the Annex.

The Committee discussed at length the cooling methods that can be used after the HWIT and the effects on the efficacy of the treatment and the quality of the fruit. Further discussions will take place.

Additional experimental work is to be undertaken by Thailand to upgrade the experimental statistics.

APPPC workshop on surveillance, 17-21 July, 2017, Chiang rai, Thailand

The workshop on plant surveillance planning, coordination and delivery was held on 17-21 July 2017 in Chaing rai, Thailand. Thirty-two (32) participants from 19 countries attended the workshop with 3 resource persons from Australia and 3 staff from FAO Bangkok.

Prioritization is the first step in developing a successful surveillance programme to ensure NPPO's select the right commodities or pests to prevent incursion, support market access and basic activities in the issuance of phytosanitary certificate, eradication or control the pest in the country. Proper planning is an essential to provide guidelines to all stakeholders involved in the implementation of the surveillance system. The surveillance planning and operational plan should at least consist of the pest biology and background, budget, human resources, size and scope of the programme, survey duration, key stakeholders, implementation schedule and survey products, field and diagnostics technical resources, operational and logistical coordination, information management, survey dependencies, safety risk management and mitigation, governance, survey communications, records management and contingency planning.

Field operations also required well-defined standard operating procedures (SOP's) that provide the surveillance staff instruction to conduct the field operations correctly and always in the same consistent manner. Regular programme communication will ensure all stakeholders understand their tasks and will empower them to assist the implementation of the surveillance programme in achieving the intended outcomes. To ensure surveillance programmes are efficient and effective, the national surveillance manager must determine the information flow for reporting, share experiences and knowledge and provide the platform for feedback and discussion on the implementation issues.

A field trip was conducted to pomelo farms at Muang Yai to gain knowledge on the implementation of pest free production area for pomelo canker to fulfil the export requirement of the EU. Three breakout group discussion sessions were conducted during the workshop to ensure participants could apply the knowledge gained from the presentations.

7.2 Report by the working group on SALB

The APPPC workshop on mitigation of South American leaf blight (SALB) of rubber in the Asia-Pacific region was organized from 17-21 October 2016 Kuala Lumpur, Malaysia with

participation of 25 participants from 11 countries in collaboration with the Department of Agriculture Malaysia and Malaysia Rubber Board. This workshop was held pursuant to the agreement in the 29th Session of the APPPC meeting in Bali, Indonesia to update the progress on the prevention of SALB incursion and discussed on the future action plan to strengthen the capacity especially in mitigating SALB pathways of non-rubber rubber agricultural products by utilizing international standard on pest free area of production.

The overall objective of the workshop was to discuss the future plans on the protection the APPPC region from SALB invasion, with the following specific objectives; i) to report on the status of rubber pest and disease surveillance in the Asia and Pacific rubber growing countries; ii) to update progress on capacity building and public awareness programme on SALB in the Asia and Pacific rubber growing countries; and iii) to gain deep understanding on requirements of establishing pest free area and recognition of pest free area. Activities presented comprise of:

Latest/updated legislation and regulation on SALB;
Advocacy / awareness / workshop / training; Training material (local language); iv) Diagnostic capacity; v) Import risk assessment; and vi) Disease surveillance.

The continuation of the SALB work particularly in relation to diagnostics and to meet the expectation of APPPC, DOA Malaysia in collaboration with IRRDB and MRB, has arranged a workshop at Michelin plantation in Brazil. Fourteen (14) participants and 1 resource person attended the workshop which going to be held on 13th -17th of November 2017. The 5 days' workshop was assisted by the Michelin of Brazil, experts from CIRAD, COOPER VERDE and CEPLAC in Ilheus of Brazil. The workshop programme objectives were: The training programme focusing on the following objectives:

- To provide hands-on training on diagnostic of SALB so that the participants would be able to recognize and identify SALB symptoms and its pathogen including identification of pathogen using molecular techniques;
- To ensure the availability of SALB diagnostician in the rubber growing countries within the Asia and Pacific region;
- To familiarize participants on SALB; and
- To train the trainers – Upon their return, participants were expected to train other officers in their country and the region in a training of trainers programme.

It was noted in the discussion that infected plant material was the problem not spores on non-host material. Countries need to be careful about restricting trade with respect to possible spore contamination in regard to the concept being applied to other products. The PRA done in 2007 was clear that there was little to no risk of spores. The plant quarantine group will look at next steps.

7.3 Report by the ePhyto working group

The outcome of this agenda item was to seek Asia and Pacific Plant Protection Commission (APPPC) support for the ePhyto solution throughout Asia Pacific region. Key issues were noted: As a key partner of the IPPC ePhyto solution, Australia is keen to obtain APPPC support for the progress of the ePhyto solution in the Asia Pacific region; and the Asia Pacific has the potential to be the global lead for implementation of ePhyto due to the electronic certification developments across the region.

Australia outlined the development of the ePhyto initiative in the Asia Pacific region with China, Korea, New Zealand and Australia have committed to the hub pilot and are making preparations to participate in the pilot. Japan and Malaysia have expressed strong interest to start piloting as part of the next set of countries, from the Asia Pacific region, joining the ePhyto solution.

The Australian Department of Agriculture and Water Resources (DAWR) is currently working with Sri Lanka, Samoa and Viet Nam (APPPC countries) to pilot and implement the Generic ePhyto national system (GeNS) in 2018 for ePhyto exchange.

The pilot of the GeNS by Samoa, Sri Lanka and Viet Nam will commence in mid-2018 after the hub pilot is completed. Piloting will determine the efficiency of the system.

DAWR also developed the first draft of the strategic plan titled “ePhyto in the Asia Pacific region” to focus resources on the key strategies of harmonization, collaboration, implementation and sustainability of ePhyto in the next five years.

To support the strategic plan, DAWR has developed a proposal seeking to convene the APPPC ePhyto working group to develop a work plan and funding proposal to assist implementation of IPPC ePhyto solution throughout Asia Pacific.

The third IPPC global symposium on ePhyto will be hosted by the Malaysian Department of Agriculture, with funding provided by the DAWR (through IPPC) and the APPPC in Kuala Lumpur, Malaysia from 22-26 January 2018. The symposium will focus on the theme of electronic phytosanitary certification and its implications to supporting trade facilitation.

The objectives for the APPPC ePhyto working group are to convene a workshop in 2018 to:

- build on outcomes of the 3rd IPPC global ePhyto Symposium, held in Malaysia in January 2018.
- share experiences and knowledge on the Hub and GeNS pilots.
- revise terms of reference of the APPPC working group to capture recent ePhyto developments and reporting requirements.
- consider broader issues outlined in the draft Asia Pacific ePhyto strategic plan regarding ePhyto implementation.

This workshop will deliver the following outputs:

- a work plan for increasing ePhyto implementation across the APPPC.
- a funding proposal for the participating APPPC ePhyto member countries for submission to the Asian Development Bank (ADB), or similar funding body, to assist further implementation of the ePhyto solution.

Note: The time frames for implementing GeNS in relevant economies depend on their readiness (e.g. Infra structure, capacity development etc.), resources and trade volumes. The visits by consultants to participating economies will help to identify time frames required for implementation of ePhyto systems in the APPPC countries. The project seeks APPPC allocation of USD 10,000 per year for 2018 and 2019 in the APPPC budget to assist with travel of eligible APPPC participants to the workshop meetings where the work plan and funding proposal will be developed.

The APPPC ePhyto working group will consult the prospective countries in the APPPC region to undertake this work. The individual country proposals with time frames for completion of ePhyto implementation would have to be finalized before the workshop is convened.

It is important to highlight that the project aligns with the major roles of the APPPC to assist members (strategic direction 1) in the development of plant protection measures and to develop the capacity of APPPC members (strategic direction 3).

The project also contributes to a number of the IPPC's strategic framework objectives for 2012-2019, particularly to facilitate the economic and trade development by implementing phytosanitary measures (strategic objective C) and related objectives to protect sustainable agriculture and enhance global food security through the prevention of pest spread (strategic objective A) and to develop capacity of IPPC members (strategic objective D). ePhyto will be a key element of the IPPC 2020-2030 strategic plan.

The implementation of the ePhyto system in the APPPC region will facilitate safe trade amongst countries and develop more efficient procedures to regulate phytosanitary procedures to facilitate and expand agricultural trade, and take advantage of new international trade opportunities.

This project will promote better trade by improving clearance of ePhytos by minimizing constraints such as the lengthy time and processes needed to manually certify phytosanitary certificates). Good governance associated with sustainable ePhyto systems will also support efficient trade platforms and supply chains between trading partners at a reduced cost.

The ePhyto exchange via a global hub will also reduce the need for complex bilateral agreements required to undertake electronic certification (eCert). This approach will lead to enhanced cooperation between businesses leading to efficient use of employees (human resources) with educational, scientific, technological and innovative capabilities to advance trade transactions.

There is considerable interest from various external bodies like ASEAN and APEC. The speaker observed that there is a significant amount of work to do as it is a very complex to connect all the various components, so it was noted that it was important for the project not to get side tracked by meeting other bodies expectations.

Members were also encouraged to look at their systems to identify there various actions they would need to undertake to be ready to adopt the ePhyto hub system into the governmental systems. Members may need to look at the legislation, programmes and procedures.

Some members noted they already had ePhyto type systems and were concerned how their systems would be able to be integrated into the ePhyto hub. They were assured that in all likelihood their systems probably will only require minimal adjusting to work. It was also highlighted that ensuring the right people attend the global symposium on ePhyto from the members but also the experts. The Chair noted that developing the agenda for the Symposium would be important in assuring the most productive outcomes. A member also suggested that a short YouTube clip be filmed to show how to use the system, how to integrate it etc.

8. Progress report on integrated pest management in the Asia and Pacific region

The Chairperson of the Standing Committee presented on IPM in the region. He told participants that the FAO continued its assistance to APPPC member countries for inter-country exchange

and assistance for innovation of national IPM programmes and pesticide policy reform. This assistance included support for strengthening national IPM farmers field school programmes and capacity building for spread prevention and management of invasive crop pests and diseases.

Over the past two years, the activities of APPPC, IPM Standing Committee have focused on the implementation of national IPM programme, building capacities for the management of new pests, reducing pesticide risks and harmonizing pesticide regulatory management. At the same time, member countries have made significant progress in improving their own plant protection programmes and made organizational changes, and strengthened their capacity to implement national IPM programme in different commodities. It is expected that during the last two years, with the support of the Commission, countries in the Asia-Pacific region intensified their crop production in a sustainable manner, reduce hunger in the region, improve the livelihoods of the people and protect the environment by successfully implementing national IPM programme.

During the period 2015-2017, countries in Asia and Pacific region have continued efforts at intensifying food production to meet food needs of their increasing populations. Whereas overall good progress was made, national positive progressive efforts and support was made. There is a continued need for APPPC countries to collaborate, share information and expertise and develop ecology sound and efficient spread prevention and management policies and implementation support programmes for *sustainable* pest management and crop production intensification.

Over the last two years, APPPC member countries have continued to implement IPM programmes as part of their plant protection policies and national food security agendas. Several countries have strengthened pesticide management in support of more effective implementation of their national IPM policies. Several countries in the region have increased public investment and collaboration with local government and civil society organizations to support IPM as part of *sustainable* crop production intensification efforts, often promoted under the banner of “*Save and Grow*”.

In order to share experiences on IPM implementation in terms of innovations, sustainability and institutionalization, the APPPC IPM SC organized two regional workshops during the past two years, that are:

- Regional training workshop on fruit fly management in Tien Giang, Viet Nam on 20-25 June 2016.
- Regional workshop on empowering farmers through FFS-IPM training in support of sustainable intensification of crop production in Kathmandu, Nepal on 27 February to 2 March, 2017.

FAO also agreed to run regional programmes in different countries like *Toward a non-toxic environment in Southeast Asia conducting in the Greater Mekong sub-region*, Regional Rice Initiative (RRI) in Indonesia, Lao PDR and the Philippines, Plant pest surveillance and information management in Southeast Asian countries (GCP/RAS/286/ROK) in Cambodia, Lao PDR, Myanmar, Nepal, Thailand and Viet Nam. Likewise, FAO also has been supporting to APPPC countries by implementing TCP projects and over the last two years, the following TCP projects have been launched to support IPM programme in the region.

- Strengthening and revitalization of integrated pest management implementation and pesticide management system in Indonesia (TCP/INS/3403).
- Emergency assistance to strengthen regional response in the management of Yellow-Spined bamboo locust (*Ceracris kiangsu*) in China, Lao PDR and Viet Nam (TCP/RAS/3607)

9. Pesticides management

9.1 Progress report on pesticide management in the Asia and Pacific region

Dr Piao presented progress on pesticide management in the Asia and Pacific region. He noted that the pesticide risk reduction through regulatory management, phasing out highly toxic hazardous pesticides and implementation of the Code of Conduct on pesticides management as well as implementation of international treaties associated with pesticide management are important contexts of APPPC Standing Committee on Pesticide Management.

APPPC member countries in the region has made significant progress in strengthening pesticide regulatory management since the last APPPC, which include revision of pesticide laws, regulations and decrees, registration requirements or and process, facilitation of capacity development trainings, import and export control, etc. Various activities related to awareness, capacity building and sharing of information on sustainable pesticide management in accordance with the FAO Code of Conduct on Pesticide Management and relevant international treaties such as Rotterdam Convention have been carried out either by individual country or regional/sub-regional groups in collaboration with counterparts with coordination of APPPC and FAO programmes.

FAO developed a pesticide registration toolkit to support pesticide regulators in countries with limited capacity in pesticide registration. The toolkit can be considered as a decision support system for registration authorities in developing countries. APPPC organized a regional workshop on the application of the FAO pesticide registration toolkit in June 2017 in Beijing, China in collaboration with the Institute for the Control of Agrochemicals of the Ministry of Agriculture (ICAMA). It was hoped that the training would enable registration authority of participating countries *especially for least capacity countries in regulatory management of pesticides* by applying the analogy strategy through bridging assessment methods in pesticide registration process and make appropriate decision by consideration of feasibility of the local situation. The knowledge and experience of China in regulating highly hazardous pesticides, and demonstrated methods and procedures for human health risk assessment and environmental risk assessment were shared. The operator risk assessment model (COP-Risk) and fate model for paddy field (TOP-RICE model) established by China were also introduced to the participants. Detail information on the progressive examples would be provided by following short presentation to be made by Chinese delegate as a complimentary case study; Upon requests of Myanmar and Viet Nam training workshops in both countries on application of the toolkit were organized with assistance of FAO.

The Swedish government funded and Swedish Chemical Agency implemented longer-term programme “Toward a non-toxic environment in Southeast Asia” (GCP/RAS/229/SWE) aims at a reduction of health and environmental risks by strengthening capacity for management of industrial and agricultural chemicals in Southeast Asia, most notably in Cambodia, China, Lao PDR, Myanmar, Thailand and Viet Nam. As part of this programme, FAO supports policy reform and strengthening of the regulatory control of pesticides and pesticide risk reduction training. Laos and Cambodia are progressing in development of national regulations and laws on pesticide management with the support.

Nepal promoted pesticide risk reduction through implementation of a FAO project – “Strengthening pesticide management in agriculture to reduce risks to health and environment in Nepal” (TCP/NEP/3502). A number of laboratories for fast detection of pesticide residues at

wholesale market of vegetables and fruits have been established and the detection toolkits are applied. It helped to improve the quality of food produced in terms of less risk of pesticide residues and promoted ecological approaches in production areas, while benefiting food retailers, traders and consumers.

Regulatory management of bio-pesticides through registration is one of essential to the sustainable development of bio-pesticides. It was also noted that a regulatory framework for bio-pesticides was absent in many countries in the region. In order to help countries improve capacity in bio-pesticide registration, the APPPC training workshop on registration of bio-pesticides was convened from 15-19 August in Wuhan, China in collaboration with Chinese Ministry of Agriculture through DOA and ICAMA. The workshop enabled participants from 15 countries have the opportunity to address operational stepwise procedures with the main elements of registration data requirements (chemistry data, toxicological data, residue data, environmental data), drafting protocols for efficacy test of bio-pesticides, which are currently applying in the country. It also helped the participants *better understand update developments, existing gaps and constraints to the biopesticide regulatory management*. Meanwhile the workshop discussed a way forward toward to potential harmonization of data requirement for the registration through collaboration, sharing resources as well as information exchanges to enhance participating countries' bio-pesticide registration and management schemes to make them more effective, efficient and transparent. APPPC website facilitated database of pesticide management in collaboration with member countries in recent years, which covers areas of

- List of registered pesticide active ingredients in Asia
- Pesticide listed in SC, RC and MP that have been banned in Asia
- Pesticide listed in the Conventions that have not been banned in Asia
- Product that have been cancelled/withdrawn/suspended in Asia
- Registration status of Pesticides listed in the Conventions in Asia
- List of banned and restricted pesticide in Asia
- Samples of Pesticides Registration Certificates in China
- Analysis on feedback-risk assessment in phasing-out of HHP

In addition, the collaboration between the Rotterdam Convention Secretariat and APPPC has evolved from information exchange, awareness raising to synergetic approach in work planning and concrete joint activities. A joint sub-regional training workshop with focus on notifications for new DNAs was convened in Indonesia in March 2017 and a number of follow-up activities have been taken place including provision of technical assistance to country DNAs on preparation and submission of notifications, import responses and collection of data on severely hazardous pesticide formulations (SHPF), etc. through country based extensive trainings (e.g. China and Laos) and communications. As a result a number of import responses and notifications have been submitted by several countries, such as China, Malaysia, Japan, Pakistan, Sri Lanka, Thailand and Viet Nam.

Dr. Hongjun Zhang, ICAMA, China, the Chairperson of the Standing Committee on Pesticides, gave a presentation on the pesticide risk reduction and HHPs phasing-out in China.

The report outlined a series of measures including promulgation of pesticide management law, pesticide monitoring plan, risk assessment and risk management of HHPs have been taken for enhancement of pesticide risk reduction in China. Regulation on pesticide administration is revised in 2017 as a basic regulation for pesticide management and HHPs risk control in China, which covers pesticide trials, registration, production, trade, use, monitoring and evaluation, etc.

The compulsory procedures and methods for pesticides risk evaluation are established, e.g. pesticide residue assessment methods and procedures, pesticide resistance assessment methods and procedures, pesticide drifting risk assessment methods and procedures, environmental safety assessment methods and procedures for aquatic organisms, bees, birds, groundwater, surface water, etc.

Some models for pesticide residues in food, for risk of manufacture workers, operators, farm workers and residents, for contamination risk of drinking water and ground water were also developed and validated. Based on risk assessment for some HHPs it was decided that Fipronil was not allowed to apply in paddy, and Chlorpyrifos was forbidden to apply in edible crops. China has strengthened the management of HHPs. After 15 years of risk monitoring and assessment, 43 HHPs were banned and 23 HHPs were strictly restricted totally. No new highly toxic or extremely toxic pesticides were registered in China in 2016; and the share of registration of slightly toxic, low toxic and medium toxic pesticides are 11.9 percent, 82.4 percent and 5.6 percent respectively.

Members noted there was a real need for members to understand other countries the regulations on pesticide levels, therefore sharing information is extremely important across the region. Sharing information and contact details of the right people in organizations will assist with this.

9.2 Update on the activities of the Rotterdam Convention on Prior Informed Consent

Ms Yun Zhou presented on proceedings on the Rotterdam Convention Secretariat to take the opportunity of the 30th APPPC to inform member countries about the global development of the Basel, Rotterdam and Stockholm conventions, and to discuss about the regional needs and opportunities for collaboration.

Global highlights

The triple conferences of the Parties of the Rotterdam, Stockholm and Basle conventions took place in May 2015 in Geneva, with about 1300 participants from 170 countries, significant steps were agreed upon by parties. As highlights, by consensus, the Rotterdam Convention (RC) added four new chemicals to Annex III. These are three pesticides, carbofuran (acute endogen disruptor – in humans, birds aquatic) and trichlorfon, and tributyltin compounds; and one industrial chemical, a short-chain chlorinated paraffins (SCCPs) – traces of which have been found in air, waterways and sediments. The addition of these highly toxic substances brings the total number of chemicals listed under the RC to fifty. The COP added tributyltin (TBT) under industrial chemicals category in addition to pesticides category. No agreement was reached, however, on chrysotile asbestos, carbosulfan, and pesticide formulations paraquat dichloride formulations and fenthion, although many Parties expressed their willingness to do so in order to ensure the best information exchange on these hazardous chemicals. They will be deferred to the next COP. An intersessional working group has been established to review the effectiveness of the process of listing new chemicals. Listing does not constitute a ban, but does however enable Parties to make informed decisions on future imports of these chemicals, based on a structured information exchange, also called the Prior Informed Consent (PIC) Procedure.

The 13th Chemical Review Committee meeting is scheduled from 23 to 28 October 2017. The Committee will review a total of 15 candidate chemicals and will recommend the listing of those ones that meet the criteria set out by the Convention.

Challenges noted that at an international level the listing of new chemicals in Annex III – 35 out of more than 900 are on the list, the lack of submission by parties and there is more need for technical assistance especially among stakeholders. For this reason they have provided various technical assistance activities in 2016-2017.

Regional development and progress

Over the last two years, progress has been made in the ratification and implementation of the Rotterdam Convention. As of September 2015, there are 159 parties worldwide, 18 parties among the APPPC members (Australia, Cambodia, China, DPR Korea, India, Indonesia, Lao, Malaysia, Nepal, New Zealand, Pakistan, Philippines, Republic of Korea, Samoa, Sri Lanka, Thailand, Tonga and Viet Nam). Since the 29th APPPC there are 5 new parties worldwide, but no increase among the APPPC member countries.

With regard to the status of implementation by the APPPC members, two countries submitted import responses for all 47 chemicals and pesticides in Annex III, while other countries still need to submit import responses for one or more pesticides or industrial chemicals. In 2016 and 2017, one country submitted 14 notifications of final regulatory action. Over the same period, no proposal for severely hazardous pesticide formulation has been received from APPPC members.

The Secretariat in cooperation with APPPC has provided technical assistance to countries for the effective implementation of the Convention. A national stakeholder consultation and training workshop was organized in Laos in February 2016, which resulted to a national action plan for the implementation of the Convention. A national workshop on the risk evaluation and policy development on chemical management took place in China in November 2016, in cooperation with the Chinese Government and the European Commission. A sub-regional training workshop on the Rotterdam Convention was conducted in Indonesia in March 2017, which was attended by 33 participants from 9 countries (China, Laos PDR, India, Indonesia, Malaysia, Nepal, Thailand, Sri Lanka and Viet Nam).

The technical assistance programme of the Rotterdam Convention covers a broader range of topics and is needs-driven. Priority areas identified for the next biennium include:

- Assist parties to undertake risk evaluation, prepare notification of final regulatory action for banned or severely restricted pesticides.
- Assist parties in identifying highly hazardous pesticides, promoting sustainable alternatives.
- Identify sustainable alternatives to newly listed pesticides in Annex III, including those under consideration for listing.
- National stakeholder workshop for training and development of national action plan for the implementation of the Convention.

The Rotterdam Convention Secretariat takes the opportunity of the 30th APPPC to discuss with member countries on needs and opportunities for technical assistance at national or regional level in the upcoming biennium.

10. Consideration and adoption of draft RSPM: Hot water immersion treatment of mango for fruit fly

Dr John Hedley, the Chair of the APPPC Standard Committee presented on the draft RSPM.

At the APPPC Standards Committee meeting 11-12 May 2017, the Committee reviewed the draft guidelines for the hot water immersion treatment (HWIT) for fruit flies in mangoes as prepared by Pakistan.

The arrangement of the sections was revised to be more logical and clear. It was decided after discussion that the treatment levels for the different weight classes should be moved to the Annex.

The Committee discussed at length the cooling methods that can be used after the HWIT and the effects on the efficacy of the treatment and the quality of the fruit. Further discussions will take place.

Additional experimental work is to be undertaken by Thailand to upgrade the experimental statistics.

The draft guideline document has been commented on by Australia, China, Fiji, Indonesia, New Zealand and Thailand. Most comments dealt with clarifying text or rearranging sections to aid understanding. The text of the RSPM was presented to the members for examination and adoption if agreed to by Commission members as an Annex to the RSPM. The members approved the draft guideline, and agreed that the treatment information would be added as an annex to the RSPM once the information was available from Thailand. Thailand indicated the information was now available.

Members expressed their thanks for the efforts made to get the guideline completed and approved the RSPM.

The material for the annex will be examined as soon as possible and the schedule published if the data is satisfactory.

With the withdrawal of New Zealand as Chair of the APPPC Standards Committee, Australia was nominated to take this position for the next two years. There were no objections to this.

11. The APPPC programme of work

11.1 a Summary of the outputs of the APPPC working group meeting on planning for the next biennium Dr Kyu-Ock Yim, Chairperson of the working group was presented to the meeting

The APPPC working group meeting on the preparation of APPPC's work plan for 2018-2019 was convened 8-10 May 2017 in Bangkok. The meeting reviewed the implementation of the work plan adopted at the 29th Session, discussed the work plan for the remaining period of current biennium. It was noted that all the work plan has been implemented on schedule and remaining activities include development of RSPM on hot water immersion treatment for fruit flies in mangoes, SALB training in Brazil, continual preparation of information exchange including newsletters, APPPC training workshop on the use of FAO toolkit for pesticide registration, APPPC regional workshop on draft ISPMs, Supporting ISPM 15, the 2nd workshop on surveillance, ePhyto workshop and 30th Session of APPPC. The working group also discussed costing for the activities for remaining period of 2016-2018 which was estimated within the available budget for this biennium.

The working group developed the draft work plan to be submitted to the 30th Session and

associated estimated cost. A number of projects were discussed:

- Workshop on ISPM 32
- Surveillance programme in line with the 6 year surveillance programme
- Workshop on phytosanitary treatment
- Post ePhyto workshops
- Workshop on emerging pest and management (IPM)
- Regional workshop on pesticide quality or/and workshop on pesticide residue detection
- Workshop on management of red palm weevil
- Workshop to train trainers on SALB of rubber
- Development of RSPM on phytosanitary procedure through seed certification
- APPPC standard committee meeting
- 31st Session of the APPPC and planning meeting 2019
- Pre-CPM consultation in 2018, 2019
- Information exchange programme

The estimated cost was approximately, \$531,000 this requires increase of 5-10 percent of mandatory contribution.

Korea highlighted the limited funds available for the regional workshops and encouraged members to fund themselves to these workshops to ensure that the APPPC gets the best possible outcomes with the funding available.

11.1 b Cooperation when introducing new phytosanitary requirements

Dr Kyu-Ock Yim highlighted that the introduction of new phytosanitary requirements may have an impact on trading partners. She stated the need that when a new requirement is introduced, there should always be consideration given to the impact on trade, especially on existing trade. As required by the SPS Agreement any requirement must be scientifically justified by a PRA, be notified to allow comments and preparation; and also align with international agreements and standards.

Dr Yim noted that in recent years concerns have been raised on the introduction of new phytosanitary requirements that do not meet these obligations. She further outlined that there are many available materials for guidelines on the SPS transparency, the IPPC Convention and ISPMs, these may offer assistance to countries when they are introducing new requirements, to ensure they meet these obligations and therefore avoid conflict and disputes with trading partners. She suggested the utilization of currently available activities such as the IPPC regional workshops, APPPC draft ISPM workshop and other related APPPC activities to discuss this issue further and find ways to provide mentorship and technical assistance in this area.

There was general support by the members to incorporate into discussions on the biennial work plan, as it was agreed that understanding member obligations is crucial. A member also highlighted the need to consider this in regard to the implementation of emergency measures, how this should be applied etc.

11.2 Group discussions on the work plan for 2018-19 by the three Standing Committees

Each standing committee met and prepared a draft plan for submission to the plenary meeting.

These are detailed below:

11.3 The chairs of three Standing Committees, Chairperson and Vice Chairpersons and Executive Secretary discussed the APPPC work programme for the 2018-2019 biennium.

11.4 Work plan reports from Chairpersons of Standing Committees on Plant Quarantine, IPM and Pesticides

11.4.1 Work programme for the Standing Committee on Plant Quarantine, 2018-19

Delegates from the following countries took part in the discussions: Australia, Cambodia, China, Fiji, India, Indonesia, Laos, Malaysia, Myanmar, New Zealand, Pakistan, Philippines, Republic of Korea, Samoa, Sri Lanka, Thailand and Tonga.

With the withdrawal of New Zealand as the Chair of the Standing Committee, Australia offered to undertake this role for the next two years. There were no objections to this.

The following items were proposed:

Workshop on ISPM 32

Australia/Indonesia lead, Indonesia host. 2019

The workshop will focus on products that fall in categories 2 and 3 in ISPM 32 and define and manage risks with partially processed goods, consider operating systems for further processing and identify methods to verify remaining risks. The meeting may also consider aspects of notification (\$50,000).

ISPM 6 Surveillance workshop

Australia lead, China host. 2018

This is the third workshop in the series (\$50,000).

ISPM 6 Surveillance workshop

Australia lead, undetermined host. 2019

This is the fourth workshop in the series (\$50,000).

Regional workshop on draft standards – including aspects of import requirements

Republic of Korea lead, ROK host. 2018

The workshop will consider the draft ISPMs out for country consultation (\$0).

Regional workshop on draft standards

Republic of Korea lead, ROK host. 2019

The workshop will consider the draft ISPMs out for country consultation (\$0).

Workshop on phytosanitary treatments – irradiation

Australia lead, undetermined host. June 2018?

The workshop would look at the application of irradiation in trade, the range of export commodities that can be treated, and on the compliance and verification procedures (\$50,000).

Information exchange

Secretariat lead. FAO host. 2018-19

The present information exchange programme will be continued (\$10,000).

Development of RSPM – seed certification procedures

Thailand lead, Thailand host. 2018-19

The intent is to provide guidance to NPPOs to assess and manage the pest risk associated with the movement of seed. The RSPM would also provide guidance on procedures to establish phytosanitary import requirements re sampling, inspection and testing of seeds and on phytosanitary certification (\$25,000).

Development of RSPM – Commodity standard for mango fruit

Lead New Zealand and Pakistan, host funding New Zealand, July 2018

A working group will attempt to develop a commodity standard for mango fruit – including major pest and accepted phytosanitary measures.

\$0 – extra \$25,000 funds from New Zealand

SALB – Training the trainers

Malaysia lead, Malaysia host. 2018

The experts who visited Brazil will run programmes on the recognition of SALB of rubber (\$40,000).

SALB – Diagnostic protocol training

Malaysia lead, Sabah host. 2019

Information gathered on the diagnosis of the SALB pathogen will be shared amongst rubber growing countries (\$30,000).

Planning group meeting

Secretariat lead, Thailand host. July 2019

The programme for the next two years will be prepared as recommendations for APPPC session 31st (\$25,000).

Pre- CPM consultation

Secretariat lead, FAO host. April 2018

APPPC delegates at CPM 13 will discuss agenda items and decide if joint interventions should be made (\$0)

Pre- CPM consultation

Secretariat lead, FAO host. April 2019

APPPC delegates at CPM 14 will discuss agenda items and decide if joint interventions should be made (\$0)

Post-ePhyto symposium workshop

APPPC ePhyto working group lead, undetermined host. 2018

To help APPPC members develop capacity to implement ePhyto (\$10,000)

Post-ePhyto symposium workshop

APPPC ePhyto Working Group lead, undetermined host. 2019

To help APPPC members develop capacity to implement ePhyto (\$10,000)

APPPC Standards Committee meeting

Secretariat lead. Thailand host. 2019

To consider consultation comments on draft RSPMs and recommend modified draft RSPMs for Commission adoption (\$25,000)

31st Session of the APPPC

Secretariat lead, Thailand host. November 2019

This meeting would include a session on the notification of new import requirements (\$0).

11.4.2 Work programme for the Standing Committee on IPM

Dr. Dilli Sharma from Nepal was elected Chair of the Standing Committee on IPM for the bi-ennium 2018/19. Myanmar (Ms Kyin Kyin Win) was elected Vice Chair. The meeting was attended by 13 participants representing the following countries: Bangladesh, Cambodia, China PR, Fiji, Japan, Lao PDR, Malaysia, Myanmar, Nepal, Republic of Korea, Samoa, and Thailand. Updates on biological control initiatives in the countries were shared. Various biological control agents (BCA) as well as expertise and experiences on their use are available in the different countries albeit there is a need to share more information or provide access to BCA especially for new pests/diseases amongst and between the APPPC countries. Enhancing ecosystem services as an IPM strategy was mentioned. The recently published paper on *Review and status of FAO-assisted diamondback moth (DBM) biological control programmes in the Asia region* was shared and electronic copies were sent to all attendees.

It was agreed that the chair will be sending the format to all 25 APPPC member countries to collect updated information on the roster of IPM experts, international market access of IPM produce and pesticide use data. Updated information will be uploaded on the APPPC website. Likewise, a follow up for submission of IPM success stories will be circulated and the case studies will be uploaded on the APPPC website.

Three regional workshops are proposed for the bi-ennium 2018/19, as follows:

S.N.	Topic	Lead/hosting countries	Technical support countries	Budget	Year
1.	Workshop on new emerging pests and its eco-friendly management	Nepal/Kathmandu	Malaysia, Thailand	33,000	2019
2.	Workshop on management of fruit fly in mango production areas – IPM approaches	Thailand/Bangkok	Myanmar, India and China	32,000	2018
3.	Workshop on management of pests and diseases in palm plants	Malaysia	Thailand, Indonesia, Philippines	25,000	2019
Total Budget				90,000	

11.4.3 Work programme for the Standing Committee on Pesticide Management

The Standing Committee on Pesticide Management was chaired by China and attended by Cambodia, China, Fiji, Indonesia, Kingdom of Tonga, Lao PDR, Myanmar, Philippines, Samoa, Thailand and Rotterdam Convention Secretariat.

The meeting discussed several issues relating to the challenges faced by the member countries such as developing capability to carry out pesticide residue and quality control testing; information exchange on disposal of obsolete pesticides and empty containers, etc. harmonization of pesticide registration of ASEAN countries; preventing illegal trade of pesticides, phasing out of HHPs, compulsory labelling as requested by importing countries; conduct strict testing analysis for factories before they are allowed to export; lack of registration of pesticides for minor crops; capacity building on registration of bio pesticide and risk assessment for chemical pesticide; insufficient facilities for information exchange on pesticides. Participants exchange views and experience in their countries on the effective management of pesticides.

Based on the discussions the meeting proposed following activities for 2018 and 2019:

Pesticide Management Committee Timetable
2018-2019

Title of activity	Cost	Leading/hosting country	Timing
Workshop on pesticide quality control	Support from APPPC (30000 US\$) and China seeking co-funding from China	China	2018
Workshop on pesticide residue testing	Support from APPPC (35000 US\$) and seeking co-funding from Philippines	Led by China and hosted by Philippines	2019
Capacity building on the implementation of PIC Convention focusing on information exchange and alternatives to newly listed and candidate chemicals	Support from PIC (40000 US\$) and seeking co-funding from Thailand	Thailand / Lao	2019
Information exchange on pesticide disposal		Thailand and Sri Lanka	2018-2019

11.5 Work plan proposal for 2018-2019 biennium, presentation (Executive Secretary), discussion and approval

Based on the presentations on draft work plans made by 3 Chairs of Standing Committees, the Executive Secretary of APPPC proposed details work plan (specific activities) of 2018-2019 for discussion and adoption by the Session

11.5.1 Implementation of ISPMs in the region including the work of the Standing Committee on Plant Quarantine:

Pre-CPM consultations

Implementation of ISPM6 (pest surveillance): (3rd year & 4th year)

Workshop on ISPM 32 (Categorization of commodities according to pest risk):

Cooperation among importing and exporting countries when introduction of new phytosanitary measures by importing countries. This will be combined with the 1.1.2 and will be a special session at the 31st Session of APPPC.

Workshop on phytosanitary treatments (PT): The workshop could focus on irradiation of commodities and would allow the sharing of experiences between countries.

Post-ePhyto symposium workshops:

Regional workshops on review of draft ISPMs - The 19th and 20th regional consultations will continue in 2018 and 2019

Development of a RSPM on Phytosanitary procedures through seed certification:

Development of a RSPM on commodity standard, this will be led by New Zealand and Pakistan and funded by New Zealand.

APPPC Standard Committee meeting for the review of draft RSPMs

SALB working group will continue -post training in Brazil: A workshop to train trainers on SALB of rubber in the Asia and Pacific region. A workshop on diagnostic protocols is also planned.

Information exchange programme

The planning group meeting for work plan (2020-2021). This would be held before the 31st session in 2019.

11.5.2 The IPM Standing Committee

A workshop on emerging pest and management, which will be led and hosted by Nepal with support from Malaysia and Thailand; A workshop on management of fruit fly for mango production areas –IPM approaches, this will be led and hosted by Thailand with support from India, Myanmar and China.

A workshop on management of palm pest such as red palm weevil, etc., this will be led by Malaysia with support from Thailand, Indonesia and Philippines

11.5.3 The Pesticides Standing Committee

A regional workshop on pesticide quality control, this will be led and hosted by China, some counterpart fund from China would be explored if necessary.

A workshop on residue detection, this will be led by China and hosted by Philippines, potential counterpart fund from Philippines would be explored.

The specific activities in 2018-2019 are summarized below:

Table1. Proposed work plan and estimated costs for 2018-2019 in US \$

No.	Activity planned	Remarks		cost
		2018	2019	
1	Implementation of ISPM6-Pest surveillance programme – 6 years plan 1)The third workshop	Led by Australia; Hosted by China		50,000\$
	2) The fourth workshop		Led by Australia, 2019 Hosting country-pending to be decided	50,000\$
2	Workshop on the ISPM32-categorisation of commodities according to pest risk; “Cooperation between import/export countries when introduction of new phytosanitary measures”		Led by Australia Hosted by Indonesia with support from Korea	50,000\$
3	Workshop on phytosanitary treatments for selected commodities	Led by Australia Hosting country-to be decided Middle-2018		(50,000\$) (TF258)
4	e-Phyto – post symposium follow up	Led by Australia (ePhyto WG) Aug. 2018	Led by Australia (ePhyto WG) Jan. 2019	20,000
5	- Regional workshop on review of draft ISPMs-2018 - <i>Regional workshop on review of draft ISPMs-2019</i>	Organized in collaboration with Korean NPPO Sept. 2018	Organized in collaboration with Korean NPPO Sept. 2019	Korea funds
6	(1)Development of RSPM – relating to seed - (specification, draft RSPM, review/consultation, etc.) - SC review and approval for country consultation - Adoption by the next Session	Led by Thailand in collaboration with the SC	Led by Thailand in collaboration with the SC	25,000 (in case of an expert meeting)
	(2) Development of a RSPM on commodities-Mango fruit; (same process as above)	Led by NZL	Led by NZL	25,000 (funded by NZL)

7	APPPC SC meeting on review and approval of two draft RSPMs prior to country consultations		Led by APPPC SC Chair	25,000
8	SALB working group will continue <ul style="list-style-type: none"> – A workshop for the training of trainers (follow up after training in Brazil) – A workshop on SALB molecular diagnostics 	Led and hosted by Malaysia July 2018	Led and hosted by Malaysia	40,000 30,000
9	Pre-CPM consultations -	At CPM13	At CPM14	
10	Information exchange programme <ul style="list-style-type: none"> – The working group will continue – Website maintenance, update and monitoring at quarterly basis – staffing assistance – publications 	2018	2019	10,000
11	Planning group meeting for the 31st Session of APPPC		July 2019	25,000
12	SC-IPM 3 workshops <ol style="list-style-type: none"> 1) Workshop on management of fruit fly for mangos 2) Workshop on emerging pest and management 3) Workshop on management of palm pest 	Led and hosted by Thailand (supported by India, Myanmar and China)	Led and hosted by Nepal (supported by Malaysia and Thailand) Led and hosted by Malaysia (supported by Thailand, Indonesia and Philippines)	90,000 33,000 32,000 25,000
13	SC-Pesticide management <ol style="list-style-type: none"> 1. Regional workshop on pesticide quality control 2. A Workshop on pesticide residue detection 	Led and hosted by China (China may explore some counterpart fund)	Led by China and hosted by	65,000 30,000 35,000

	3. PIC information exchange, alternative to nearly listed Annex III 4. Information exchange on disposal of pesticides and empty containers	Led by Thailand and Sri Lanka	Philippines (Philippines may seek counterpart fund) Led by Thailand assisted by RC Secretariat (40,000\$)	N/A
14	31 st Session of APPPC		2019, Thailand	

Note:

- Total cost: US\$530,000 (480,000/MTF257 plus 50,000/MTF258).
- Service charge: US\$68,900 (62,400/MTF257+6,500/MTF258).
- Total budget: **US\$598,900.** (542,400/MTF 257+56,500/MTF 258)

12. Commodity standards – the movement of seeds

Dr Stephen Butcher, Ministry for Primary Industries, New Zealand chaired this session.

12.1 Benefits and challenges of commodity standards

Dr Butcher opened the session by highlighting how the use of commodity standards could assist in trade. He focused on the importance of thinking about a multilateral environment rather than only bilateral trade. The IPPC has developed standards with bilateral trade in mind; perhaps it is time to consider a different way to approach standard setting.

A major barrier to continuing to develop individual standards for all traded commodities is the lack of resources. In addition to this he noted that some NPPO's appear to be setting overly restrictive requirements that are not related to the actual risk of the commodity. There is real concern about the increasing variety of measures between countries; it is increasingly challenging meeting all these different requirements when trading with more than one country. Developing a commodity standard would benefit trade directly. Therefore, it is the main purpose of this session to consider whether the APPPC could facilitate the development of commodity standards.

Seeds are the starting point of agricultural produces for food, non-food, pharmacy and other uses. The quality and healthiness of seeds are important factors contributing to the increase of agricultural productivity. The international seed trade around the world is growing significantly every year.

APPPC member countries such as India, Indonesia, the Philippines, Viet Nam, and Thailand are the main global seed producers and exporters. These countries import parent seeds such as maize and vegetables seeds, such as chili, tomato, eggplant, cucumber, for producing hybrid seeds and then export or re-export. Following the increasing trend of seed production, importation of parent seeds and exportation of hybrid seeds among the APPPC member countries will also be increased. Along with the increase in seed movement, the risk of introduction and spread of seed borne or seed transmitted pests will certainly increase.

Phytosanitary measures applied to control quarantine pests in each country in the region could be harmonized at the regional or international level, simply through the harmonization of phytosanitary procedures of seed health certification to ensure the reduced pest risk of seed movement in the region, to eliminate the specific trade concerns on pest risk management including seed testing and treatments. Continual efforts should be made towards the harmonization of phytosanitary measures. APPPC member countries were requested to provide support to this proposal in order to enhance capacity building on phytosanitary measures within the Asia-Pacific region.

ISPM 38 – International movement of seeds

Luigi Paglia, DAWR, Australia

Australia presented on the implementation of ISPM 38 – International movement of seeds by providing background to the standard. It was noted that ISPM 38 was driven by the international seed industry, principally because the current practice included inconsistent regulation, risk analysis, variable measures, lack of technical justification, additional costs.

The main purpose of the seed standard was to provide guidance to assist NPPOs identify, assess and manage the pest risk associated with the international movement of seeds and develop procedures to establish phytosanitary import requirements to facilitate the international movement of seeds. It applies to seeds for planting, including purposes of research, destructive analysis but not to grain or vegetative plant parts.

Mr Paglia identified that a global agreement on a pest list for seeds for planting would assist in harmonization of regulations, and global movement of seed. He noted that there were no requirements for specific quarantine pests for seeds for planting, but it did outline the process to establish the criteria for a quarantine pest. He emphasised the need for a pest risk analysis to identify quarantine pests for each country and that PRA is the basis for regulated or non-regulated pests. Other challenges mentioned were the increasing use of molecular and serological testing to detect pests in seeds; that is expensive and usually destructive; and that seed sample size is variable - for the target pest, seed species and required diagnostic sensitivity.

ISPM 38 has provided an outline of a risk-based approach to the regulation of seed for growing. It has identified pest management options and phytosanitary measures to achieve an appropriate level of protection in seeds imported for a range of end uses, including for growing. Finally it offers a platform for a systems approach or managed pathway.

12.2 Challenges and benefits for NPPOs

Republic of Korea

Republic of Korea outlined its current status of seed industry in Korea. The seed Korea uses are mainly produced abroad (China, India, Thailand etc.) and are imported into Korea for processing for both domestic use or re-exporting to other countries. Seeds produced outside Korea require a phytosanitary certificate to be issued by producing country and will be inspected at the point of entry of Korea. Korea produces some vegetable species the main ones being radish, Chinese cabbage, onion, cabbage, watermelon, mostly the small amount of seeds is produced for maintenance of the varieties or commercial use.

Korea outlined how it manages and supports the import and export seed through export inspection prior to exportation, field inspection, if necessary and laboratory test, if required.

Korea identified the challenges it faced in the trade of seed:

- Producing country (origin) is not clear in some cases
- Not enough information for targeted lab test for bacteria and virus
- Challenged by live/dead pathogen (ELISA, PCR)
- New pest or new biology (ex. Zebra chip)
- Detailed purpose of import (ISPM 38 1.3; lab testing, restricted condition, field planting): not distinguished
- No seed certification scheme for vegetable seeds
- No appropriate seed treatment for pathogens
- Sampling difficulties especially for small quantity and high value seeds

Malaysia

Malaysia outlined some of the challenges for exporting countries, noting the difficulty in fulfilling import requirements of importing countries if the seeds are to be re-exported because there is a need to identify true origin of consignment. Traceability of consignments can also be difficult. Malaysia went on to explain the challenges for importing countries. This mostly related to Pest Risk Analysis, technical documents and pest list from exporting country (country of origin), which is difficult to obtain if seed is re-exported. Malaysia reiterated the need for NPPOs of exporting countries to develop national pest lists and for the risk management to be proportionate to risk based on intended use.

Malaysia finished by making further recommendations. It suggested that capacity building in plant quarantine / plant biosecurity officers, specifically in seed health testing, seed sampling, risk management of seed movement and restated the need to address issues of phytosanitary declaration.

Thailand

Thailand summarized the challenges, noting with higher seed demand there needs to be effective and harmonized phytosanitary measures. Food and feed demand is growing in the Asia-Pacific region in accordance with increasing population and economic growth. Thailand observed that a sufficient supply of good quality seeds is essential to ensure sufficient food and feed supply to meet the growing demand; approx. 400,000 metric tonnes of seed are annually moved through export and import among countries in Asia Pacific region. Owing to the geographical, climatic, and economic challenges the route of seed from R&D to production to farmers often involves with phytosanitary measures in more than one country. Effective and harmonized phytosanitary measures in the region needed to both facilitating movement of good quality seed supply to meet demand of countries in the region and controlling undesirable movement of potential regulated pests to new areas.

Thailand explained that effective and harmonized phytosanitary measures will benefit NPPOs, seed industry and farmers by reducing the risk of pests from movement of seed, reducing quarantine work load while ensuring adequate phytosanitary standards, reducing seed production cost from non-transparent phytosanitary measure and approval process. This will subsequently reduce costs for farmers. In addition it will reduce requiring to destroy seeds in testing. Harmonization of phytosanitary measures is possible through seed certification that includes appropriate pest risk management options such as development of regional pest list for crops, field inspection, sampling of lots, seed treatment and testing methods conducted by national plant protection. Thailand concluded their presentation by restating the importance of the support from APPPC member countries to the success of phytosanitary measures to benefit NPPOs, seed industry and more importantly farmers.

New Zealand

New Zealand presented an initiative on sample testing advances that are being made in relation to small seed lots. New Zealand is working to improve the sampling rate for small seed lots, this is specifically for research (2,000 seeds or less), with the desired outcome of reducing the size of sampling. Focusing on the leakage rate is dependent on risk, this is very involved and challenging. A key element is the data history, this will show the low risk with the benefit of reduced sampling requirements. The work is in collaboration with government and industry, the initiative is called B3.

12.3 Challenges and benefits from an industry perspective

Michael Leader Australian Seed Federation

Industry believes that expanded and more efficient seed markets in the region will stimulate investment and will lead to increased availability of on-time quality seed, and to higher yields and incomes for farmers. However, the movement of seeds across borders currently faces many challenges. Some of these challenges include:

- Difficulties in determining what phytosanitary requirements need to be met;
- Non-differentiation between seed and other plant material as pathways;
- Revision of phytosanitary requirements without consultation;
- Risks posed by seed often not being considered separately from other plant material;
- A high number of Additional Declarations being required for the same crop;
- Different test protocols for the same pathogen;
- Non-acceptance of Additional Declarations from exporting NPPOs (onshore re-testing);
- Strict interpretation of Additional Declaration requirements; and
- Different interpretations of import permit requirements by exporting NPPO inspectors.

All of this makes it difficult for companies to plan or prepare for seed movements. Given the global nature of the seed for sowing production and processing industry, this can lead to seed not making it to growers in time for planting.

Work by governments on flexibility in the implementation of their phytosanitary processes for seed would greatly assist in ensuring that high quality seed is delivered to growers when and where it is needed. Recognizing the global nature, and reality, of breeding and seed production, will also help promote faster adoption of the best germplasm. ISPM 38 outlines how such flexibility can be introduced into phytosanitary systems.

12.4 Exploring solutions

Pest lists

Radha Ranganathan, International Seed Federation, Nyons, Switzerland

The seed industry welcomes the adoption of the ISPM on *International movement of seeds*, a commodity group standard, as it brings together elements of different concept standards relevant to seed, outlines seed specific pest risks that can be addressed through industry practices and stresses the importance of equivalency of phytosanitary measures for the international movement of seeds. Seeds are, perhaps, a unique group of commodities where most, if not all, pest risks can be collectively addressed by industry best practices and similar phytosanitary measures applied before planting, during growth, at seed harvest and during seed processing, storage and transportation reducing the need for commodity specific phytosanitary requirements.

A pest risk analysis is the foundation for science-based and proportionate phytosanitary regulations instituted by a country. PRAs for seed for sowing must take into consideration when

seed is a pest risk. Many pests that are neither seed borne nor seed transmitted are, however, regulated. Individual region and country seed import requirements differ substantially from one another even when addressing the same pest risks.

ISF's Regulated Pest List Initiative is a seed industry effort to facilitate the harmonization of phytosanitary requirements for seeds. Using seed company databases of national and regional seed import requirements, ISF has compiled lists of pests that are regulated for individual seed species. Irrespective of the pest status within the regulating country or countries and following a review of scientific literature, each pest in a species-specific list has been assessed for whether seed is a pathway for its entry or spread. Pest risk management options for each seed-as-a-pathway pest have been identified based on scientific literature and the collective experience of the industry.

Results for 10 seed species with high volume trade show that *seed is not a pathway* for entry or spread for approximately. Eighty percent (80%) of pests regulated for each crop. Seed is a pathway for only a small proportion of all regulated pests and for some pests there is insufficient evidence to conclude that seed is a pathway.

Systems approach for pest groups in commodity standards

Samantha Thomas, American Seed Trade Association, USA

The speaker outlined the formalized system of quality management system (QMS), highlighting some key components. An example of the vegetable seed industry was outlined.

The need to generate and deliver a product that meets customer needs through good timing, right cost and high quality, failure to meet these equals a loss of customers. Industry makes great efforts in the vegetable seed industry to safeguard seed supply and deliver the right quality. From a business/industry perspective, the vegetable seed industry thinks about quality impacts to customers, what are the risks, loss of production, how seed might be a pathway for disease introduction etc. so there are significant overlaps between those organisms of concern from a quality (industry) viewpoint and a regulatory viewpoint

A systems approaches offers opportunity challenges. An example is if a company has implemented a programme by which assessing pest risk, has defined pest mitigation steps that are routinely audited and verified, and they have process checks throughout to ensure compliance and efficacy, is the existing regulatory seed movement requirements relevant? Is there another way to move seed as opposed to the existing system of individual disease specific declarations?

12.5 Next steps

General discussion

It was pointed out again that currently the IPPC and the ISPMs provide guidance to NPPOs on how to manage bilateral trade. The concept of a QP is central to this bilateral relationship, as it involves different pest status between the trading partners. A commodity standard by comparison provides guidance on a multi-lateral trading relationship. The concept of QPs does not fit this scenario – we are considering listing potential quarantine pests. Commodity standards offer the opportunity to improve international trade based on minimum requirements that manage many but not all potential QPs.

A proposal for a Seed RSPM to be developed by the APPPC was put forward. It was also suggested that a possible seed option could be chili. Mango as a model for a commodity standard was also proposed as there are experts on mangos in the region

APPPC Action

Participant decided to develop a commodity RSPM for mango. The Commodity Standard proposed for mango is to be inserted into the work programme. The project will be led by New Zealand and Pakistan and funded by New Zealand.

13. RPPO/NPPO relations with industry

13.1 NAPPO relationship with industry

Dr Stephanie Bloem, NAPPO Executive Secretary

Dr Bloem introduced NAPPO by discussing:

- how long has NAPPO been operating and how it started,
- who directs the planning activities,
- the management by the Secretariat,
- how NAPPO is governed and funded
- how the organizational structure has changed over the years, etc.

Dr Bloem discussed how the industry fits into the organization and how the role of industry has changed over the years. The methods of accomplishing the work programme was outlined with the important role the industry plays in suggesting, selecting and participating in the work programme.

A typical work programme was described along with the input of industry into expert working groups. Attention is paid to the constitution of groups to ensure that there is a balance between government and industry interests. The interests of industry are communicated carefully to NAPPO management. The relationship fosters transparency, trust, harmonized approached and strategic partnerships.

13.2 Relationships between government and industry

Mr Greg Fraser, Plant Health Australia

While Australia's geographic isolation as an island nation has, in the past, provided agriculture with a relatively pest-free environment that allows it to contribute to global food security, today Australia largely relies on a strong biosecurity system to secure production from exotic pest threats. This is due to the increasingly globalized world with ever-increasing exchange of people and goods, as well as Australia's vast coastline, remoteness and large number of ports.

Australia is a leading agricultural producer and net exporter of food. In 2016–17 the gross value of Australia's plant production was greater than \$37 billion, with exports valued at over \$31 billion (ABARES, 2017).

Three core principles supporting Australia's biosecurity system are:

- The importance of having an integrated biosecurity continuum involving risk assessment and monitoring, surveillance and response pre-border, at the border and post-border.

- Risk assessment reflecting scientific evidence and rigorous analysis.
- Shared responsibility, between the Australian and state and territory governments, and between businesses and the general community.

The core element of the government – industry relationship is the Emergency Plant Pest Response Deed. This formal, legal agreement, establishes obligations on Parties including:

- A shared role in decision making.
- Cost sharing based on public versus private benefits.
- A nationally consistent and agreed approach to incursion management.
- Provision for reimbursement to growers for direct costs incurred during an approved eradication response.
- Requirement for trained and accredited personnel to work on a response.
- A commitment from all Parties to minimum levels of capacity and capability.
- Commitment to implement risk mitigation activities.

In this unique arrangement, the plant biosecurity system operates in partnership between governments and industry bodies that represent growers, coordinated by PHA. PHA facilitates national approaches to identifying pests of greatest concern, risk mitigation activities, system audits and improvements, and responses to incursions of pests of national significance.

14. APPPC financial consideration

Dr Piao Yongfan, APPPC Executive Secretary

14.1 Financial report of 2016-2017

Until 10 October 2017 twelve out of eighteen contributing contracting members provided full mandatory contributions during 2016-2017. Six countries (Cambodia-37\$, DPR Korea-536\$, Fiji-135\$, Pakistan-2,568.5\$ Timor Leste-73\$ and Vietnam-1,269\$) are pending to provide the contribution (see below table 1 & 2). It is hoped that the contribution would be made by these countries soon without further delay.

Table 1. Status of contributions as at 31-12-2016 (expressed in USD)

Member	Outstanding	Contribution	Received up to	Outstanding
Governments	12/31/2015	due for 2016	12/31/2016	12/31/2016
AUSTRALIA	0.00	39,155.00	39,155.00	0.00
BANGLADESH	0.00	18.50	18.50	0.00
CAMBODIA	0.00	18.50		18.50
CHINA	0.00	41,112.00	41,112.00	0.00
FIJI	(46.00)	90.50		44.50
INDIA	0.00	20,126.50	20,126.50	0.00
INDONESIA	0.00	10,456.00	10,456.00	0.00
KOREA, DPR	173.00	181.50		354.50

KOREA, RP	0.00	41,112.00	41,112.00	0.00
LAO, PDR	0.00	18.50	18.50	0.00
MALAYSIA	(706.00)	8,492.00	8,492.00	(706.00)
NEW ZEALAND	(7,282.00)	7,645.50	363.50	0.00
PAKISTAN	527.00	2,568.50	2,041.50	2,041.50
PHILIPPINES	(10.00)	4,654.00	4,644.00	0.00
SRI LANKA	4,178.00	755.50	4,933.50	0.00
THAILAND	0.00	7,222.50	7,222.50	0.00
VIETNAM	0.00	1,269.00	1,269.00	0.00
TIMOR LESTE	36.00	18.50		54.50

TOTALS	(3,130.00)	184,914.50	180,964.50	1,807.50
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Philippines paid USD 10 extra to be applied to 2016 invoice

Table 2. Status of contributions as at 27 August 2017 (expressed in USD)

Member	Outstanding	Contribution due for	Received up to	Outstanding
Governments	12/31/2016	2017	12/31/2017	10/10/2017
AUSTRALIA	0.00	39,155.00	39,155.00	0.00
BANGLADESH	0.00	18.50	18.50	0.00
CAMBODIA	18.50	18.50		37.00
CHINA	0.00	41,112.00	41,112.00	0.00
FIJI	44.50	90.50		135.00
INDIA	0.00	20,126.50	20,126.50	0.00
INDONESIA	0.00	10,456.00	10,456.00	0.00
KOREA, DPR	354.50	181.50		536.00
KOREA, RP	0.00	41,112.00	41,112.00	0.00
LAO, PDR	18.50	18.50	37.00	0.00
MALAYSIA	0.00	8,492.00	8,492.00	0.00
NEW ZEALAND	0.00	7,645.50	7,645.50	0.00
PAKISTAN	2,041.50	2,568.50	2,041.50	2,568.50
PHILIPPINES	210.99	4,644.00	4,854.99	0.00
SRI LANKA	0.00	755.50	755.50	0.00
THAILAND	0.00	7,222.50	7,222.50	0.00
VIETNAM	0.00	1,269.00		1,269.00
TIMOR LESTE	54.50	18.50		73.00

TOTALS	2,742.99	184,904.50	183,028.99	4,618.50
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The total amount of the contributions received from 1 Jan. 2016 until 10 October 2017 was about US \$363,993.5. The real amount carried over from previous years (accumulated from 2010) was US \$213,766. In addition the additional fund from Australia (MTF258) carried over from previous biennium (26,463\$) plus new provision in 2016 (100,142\$) were US \$126,605. Total available fund (MTF257 and MTF258) for 2016-2017 was US \$704,364.5. The actual expenditures until 23 October 2017 was US \$658,615. Out of this total amount US \$ 379,225 were funded by FAO, Indonesia, Korea, Malaysia and New Zealand, US \$279,390 was from MTF257 & MTF258, which included US \$20,000 for APPPC SALB training workshop in Brazil (13-17 November 2017) and potential expenditure of US \$40,000 for the International Symposium on ePhyto, which would be convened on January 2018 (planned and budgeted for current biennium). Due to a large volume of external funding there was a significant savings during 2016-2017 although the total expenditure (658,615 \$) reached a historical record. The balance from the current biennium by MTF257 is 180,980\$. The aggregated balance of MTF257 in the past several years (2010-2017) and MTF258 (2011-2017) would be about US \$436,289. This amount could be carried over to the next biennium (2018-2019), which will be the essential amount for covering the cost of main activities in the first year as usual by filling a gap of time period of receiving assessed contributions from countries in the first year.

Table 3. Expenditures for implementation of APPPC activities during 2016-2017

No	Activity planned	Estimated budget (US\$)	Expenditures (US\$)			Balance (US\$)
			MTF257	MTF258	Other source	(MTF257)
1	Surveillance programme (2016): The initial workshop on fundamentals of surveillance systems and management responsibilities of an NPPO in establishing and maintaining plant health surveillance systems and reporting on surveillance systems in accordance with ISPM 6	45 000	33,444		1,482 (FAO)	11,556
2	Surveillance programme (2017): The second workshop on fundamentals of designing, planning, coordinating and	30 000		23,227	15,119 (FAO)	30,000

	delivering surveillance activities and programmes in accordance with international and regional standards (ISPM 6, RSPM No .7 etc.)					
3	e-Phyto Workshop (2016 or 2017) to share the experiences gained by the countries involved with other APPPC countries	40 000	40,000 <i>Jan. 2018-Malaysia</i>			
4	Regional workshop on review of draft ISPMs (2016 & 2017)	Korea fund			120,000 (Korea) 4,500 (FAO)	N/A
5	RSPM – hot water treatment for mangoes A specification will be drafted. This will be followed by the collation of information from countries that apply HWT for mangoes	25 000	10,386-combination with the planning meeting			14,614
6	SALB working group continues – A workshop on SALB (led by Malaysia)/2016 – Training workshop in Brazil (2017, Nov.)	40 000	12,000 <i>20,000 (to be credited)</i>		8.875 (FAO) 10,000 (Malaysia) countries	8,000
7	ISPM 15 Should an international workshop take place, the APPPC will consider the participation of some APPPC developing countries	10 000	N/A		N/A	10,000
8	ISPM 31 – One workshop is proposed to consider sampling procedures for different consignments (e.g. seed or commodities for consumption)-2016. – a potential follow up workshop Led by	30 000	16,419		15,000 (Indonesia) 565 (FAO)	13,581

	Indonesia Potential funding from Indonesia					
9	Pre-CPM consultation	No cost				
10	Information exchange programme – The working group will continue – Website maintenance, update and monitoring at quarterly basis – staffing assistance – publications (-Training workshop on NRO/IPP)-2016	60 000	3,770		20,124 IPPC 8,633 FAO)	56,230
11	Planning group meeting for the 30th Session of APPPC	25 000	(merged with SC meeting)			25,000
12	SC-IPM Training workshop on fruit fly	25 000	21,342		812 (FAO)	3,658
13	SC-IPM – Workshop on farmer empowerment with IPM	25 000	23,351		1,071 (FAO)	1,649
14	SC-Pesticide management – training or workshop on registration of bio-pesticide – training on PIC Led by Indonesia Funded by RC Secretariat -training workshop on application of FAO toolkit for pesticide registration (led by China)	50 000	43,308		1,890 (FAO) 36,249 (Rotterdam Convention)+ 1,392 (FAO) 31,437 (GCP/RAS/229/SWE) + 2,076	6,692

					(FAO)	
15	30th Session of APPPC	NZL, FAO, Countries				70,000 NZ \$ +30,000
		FAO				
	Sub total	405 000 (from assessed contribution)	224,020 (MTF257)	23,227 (MTF258)	379,225	180,980
	13% of service charge	52 650	29,123	3,020		
	Total	457 650	253,143	26,247	379,225	180,980
			Total expenditure: 658,615			(MTF257)

Note:

1. MTF257 is the multi-trust fund account for receiving assessed contributions from contracting countries
2. MTF258 is another multi-trust fund account for receiving additional funding support from member countries. Current donor is Australia.
3. Total estimated cost of proposed programme for the current biennium (2016-2017) was **US\$457,650** including overhead charges;
4. Real expenditures of activities would be **658,615 US\$**, which includes 253,143 US\$ from MTF257, 26,247 US\$ from MTF258 and 379,225 US\$ from external support. The external funding was supported by FAO (164,225 US\$), Korea (120,000 US\$), New Zealand (70,000 US \$), Indonesia (15,000 US \$) and Malaysia (10,000 US \$). China, Nepal and Thailand provided in-kind support; In addition FAO provided additional funding for temporal staffing cost-172,210 US\$, which was not included in above total amount.
5. The aggregated balance of MTF257 (2010-2017) is 335,811US\$, and aggregated balance of MTF258 (2011-2017) is 100,478US\$.
6. Australia provided additional fund (MTF258)-100,000US\$ in June 2016 for implementation of APPPC surveillance program. The 2nd surveillance workshop in 2017 was jointly co-funded by this fund and FAO.

The financial report of 2016-2017 was adopted.

14.2 Proposed budget for 2018-2019

Consideration and adoption

Budget proposal for 2018-2017 activities supported by the Trust Fund from mandatory contributions (TF257) and additional contribution from Australia (TF258) together with other funding source (US\$) (Agenda 14.2)

Based on the work programme adopted under the agenda 11.5, specific activities to be supported by the mandatory contributions during 2018-2019 and their estimated costs are listed in the Table 4. Total estimated costs (2018-2019) is US\$598,900 including 13 percent of service charge. It is

expected that the amount of assessed contributions from 18 countries during 2018-2019 would be US\$373,748 for MTF257 with 0% increase. Savings from Australia funding and aggregated savings (both are about US\$436,811) from previous years due to a large volume of external funding support during 2016-2017, which was accounted more than 50 percent of total expenditures, would meet the requirements of supporting costs for activities planned during 2018-2019. The estimates are based on the assumption that all 18 countries will make their mandatory contributions timely and that the estimated costs are the minimum. In addition, some activities would be taken place at early 2018, while most contributions would be made late of the year. Therefore there is need to consider some flexible amount of funds (beyond actual amount of the budget planned) for backstopping potential expenditures of such activities as well as emergency actions.

Table 1. Estimated costs of specific activities supported by the mandatory contributions for 2018-2019

No.	Activity planned	Remarks		cost
		2018	2019	
1	Implementation of ISPM6-Pest Surveillance programme – 6 years plan 1)The third workshop	Led by Australia; Hosted by China		50,000\$
	2) The fourth workshop		Led by Australia, 2019 Hosting country-pending to be decided	50,000\$
2	Workshop on the ISPM32-categorisation of commodities according to pest risk; “Cooperation between import/export countries when introduction of new phytosanitary measures”		Led by Australia Hosted by Indonesia with support from Korea	50,000\$
3	Workshop on phytosanitary treatments for selected commodities	Led by Australia Hosting country-to be decided; Middle- 2018		(50,000\$) (TF258)
4	e-Phyto – post symposium follow up	Led by Australia (ePhyto WG) Aug. 2018	Led by Australia (ePhyto WG) Jan. 2019	20,000
5	- Regional workshop on review of draft ISPMs-2018 - <i>Regional workshop on review of draft ISPMs-2019</i>	Organized in collaboration with Korean NPPO Sept. 2018	Organized in collaboration with Korean NPPO Sept. 2019	Korea funds
6	(1)Development of RSPM –	Led by Thailand	Led by Thailand	25,000

	relating to seed <ul style="list-style-type: none"> - (specification, draft RSPM, review/consultation, etc.) - SC review and approval for country consultation - Adoption by the next Session (2) Development of a RSPM on commodities-eg. Mango fruits; (same process as above)	in collaboration with the SC Led by NZL	in collaboration with the SC Led by NZL	(in case of an expert meeting) 25,000 (funded by NZL)
7	APPPC SC meeting on review and approval of two draft RSPMs prior to country consultations		Led by APPPC SC Chair	25,000
8	SALB working group will continue <ul style="list-style-type: none"> - A workshop for the training of trainers (follow up after training in Brazil) - A workshop SALB molecular diagnostics 	Led and hosted by Malaysia July 2018	Led and hosted by Malaysia	40,000 30,000
9	Pre-CPM consultations -	At CPM13	At CPM14	
10	Information exchange programme <ul style="list-style-type: none"> - The working group will continue - Website maintenance, update and monitoring at quarterly basis - staffing assistance - publications 	2018	2019	10,000
11	Planning group meeting for the 31st Session of APPPC		2019	25,000
12	SC-IPM 3 workshops <ul style="list-style-type: none"> a)Workshop on management of fruit fly for mangos b)Workshop on emerging pest and management c)Workshop on management of palm pest 	Led and hosted by Thailand (supported by India, Myanmar and China)	Led and hosted by Nepal (supported by Malaysia and Thailand) Led and hosted by Malaysia (supported by Thailand, Indonesia and	90,000 33,000 32,000 25,000

			Philippines)	
13	SC-Pesticide management 1.Regional workshop on pesticide quality control 2. A Workshop on pesticide residue detection 3.PIC information exchange, alternative to nearly listed Annex III 4.Information exchange on disposal of pesticides and empty containers	Led and hosted by China Led by Thailand and Sri Lanka	Led by China and hosted by Philippines Led by Thailand assisted by RC Secretariat (40,000\$)	65,000 30,000 35,000 N/A
14	31 st Session of APPPC		2019, Thailand	

Note:

- Total cost: US\$530,000 (480,000/MTF257 plus 50,000/MTF258).
- Service charge: US\$68,900 (62,400/MTF257+6,500/MTF258).
- Total budget: **US\$598,900.** (542,400/MTF 257+56,500/MTF 258)

The proposed budget APPPC for 2018-2019 was adopted by the **Session**

14.3 Determination of level of mandatory country contributions

Proposed level of mandatory contributions for 2018-2019 by contributing contracting members

The level of contributions was discussed at the APPPC working group meeting on the preparation of the work plan for 2018-2019, which was held in Bangkok, Thailand, from 8-10 May 2017. The proposed recommendation to the 30th Session by the planning meeting was to request a 5 percent increase of total amount of the assessed contribution in comparison of current biennium budget (increase of 18,687US \$), recognizing the impact of inflation and cost increases in the next biennium.

With 5 percent increase, the contributions would amount to US \$392,435, the budget for activities planned for 2018-2019 is about US \$598,900. The additional funding from Australia and potential amount to be carried-over from current biennium plus assessed contribution from countries (totalled US\$ 829,246) would be able to cover this budget.

The calculation of the scale of each country for the next biennium (2018-2019) (Table 1) is based on "Assessment of Member States' contributions of the United Nations regular budget for the

year 2015 (ST/ADM/SER.B/910 dated 29 December 2014). It also maintained that 0.01 percent ceiling for assessing the rate of least developed countries (LDCs) and the 22 percent maximum assessment rate for all other countries.

Table 1. Potential contribution scales for the period of 2018-2019 based on the current biennium (2016-2017) level

(Options of increase with 0 percent, 5 percent and 10 percent: Summarized by biennium)

APPPC member countries endorsing mandatory contributions	UN scale of assessments for 2016-2018	APPPC Scale for 2018-2019	Sharing of different budgets (US\$) for 2018-2019		
			0% increase	5% increase	10% increase
Australia	2.337	22.000	82,224	86,335	90,447
China	7.921	22.000	82,224	86,335	90,447
Republic of Korea	2.039	22.000	82,224	86,335	90,447
DPR Korea	0.005	0.069	257	270	283
Fiji	0.003	0.041	154	161	169
India	0.737	10.104	37,765	39,653	41,541
Indonesia	0.504	6.910	25,826	27,117	28,408
Malaysia	0.322	4.415	16,500	17,325	18,150
New Zealand	0.268	3.674	13,733	14,419	15,106
Pakistan	0.093	1.275	4,765	5,004	5,242
Philippines	0.165	2.262	8,455	8,878	9,300
Sri Lanka	0.031	0.425	1,588	1,668	1,747
Thailand	0.291	3.990	14,912	15,657	16,403
Viet Nam	0.058	0.795	2,972	3,121	3,269
Bangladesh	0.010	0.010	37.37	39.24	41.11
Cambodia	0.004	0.010	37.37	39.24	41.11
Lao PDR	0.003	0.010	37.37	39.24	41.11
Timor-Leste	0.003	0.010	37.37	39.24	41.11
Total	14.794	100.000	373,748	392,435	411,123

Note:

1/ The calculation of the scale is based on “Assessment of Member States' contributions of the United Nations regular budget for the period of 2016-2018” (Reference - A/70/416/Add.1).

1st Weblink: http://www.un.org/ga/search/view_doc.asp?symbol=a/res/70/245

2nd Weblink: http://www.un.org/ga/search/view_doc.asp?symbol=ST/ADM/SER.B/955

The total rate form the basis for calculating the % contributions of APPPC endorsing countries adds up to a full 100 percent.

2/ The UN scale of assessment is subject to a maximum assessment rate of 0.01 percent for the least developed countries as well as a maximum assessment rate of 22 percent, as set out in Items 6(h) and 6(f) respectively of the UN General Assembly's resolution 70/245 (23 December 2015).

Weblink: http://www.un.org/ga/search/view_doc.asp?symbol=a/res/70/245

3/

The list of Least Developed Countries available on the website of the UN Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS)

1st Weblink: <http://unohrlls.org/about-ldcs/criteria-for-ldcs/>

1st Weblink: http://www.un.org/en/development/desa/policy/cdp/ldc/ldc_list.pdf

Table 2. Potential contribution scales for the period of 2018-2019 based on the current biennium (2016-2017) level

(Options of increase with 0 percent, 5 percent and 10 percent: Summarized by year)

APPPC member countries endorsing mandatory contributions	UN scale of assessments for 2016-2018	APPPC Scale for 2018-2019	Sharing of different budgets (US\$) for 2018-2019								
			0 percent increase			5 percent increase			10 percent increase		
			2018-2019	2018	2019	2018-2019	2018	2019	2018-2019	2018	2019
Australia	2.337	22.000	82,224	41,112	41,112	86,335	43,167.5	43,167.5	90,447	45,223.5	45,223.5
China	7.921	22.000	82,224	41,112	41,112	86,335	43,167.5	43,167.5	90,447	45,223.5	45,223.5
Republic of Korea	2.039	22.000	82,224	41,112	41,112	86,335	43,167.5	43,167.5	90,447	45,223.5	45,223.5
DPR Korea	0.005	0.069	257	128.5	128.5	270	135	135	283	141.5	141.5
Fiji	0.003	0.041	154	77	77	161	80.5	80.5	169	84.5	84.5
India	0.737	10.104	37,765	18,882.5	18,882.5	39,653	19,826.5	19,826.5	41,541	20,770.5	20,770.5
Indonesia	0.504	6.910	25,826	12,913	12,913	27,117	13,558.5	13,558.5	28,408	14,204	14,204
Malaysia	0.322	4.415	16,500	8,250	8,250	17,325	8,662.5	8,662.5	18,150	9,075	9,075
New Zealand	0.268	3.674	13,733	6,866.5	6,866.5	14,419	7,209.5	7,209.5	15,106	7,553	7,553
Pakistan	0.093	1.275	4,765	2,382.5	2,382.5	5,004	2,502	2,502	5,242	2,621	2,621
Philippines	0.165	2.262	8,455	4,227.5	4,227.5	8,878	4,439	4,439	9,300	4,650	4,650
Sri Lanka	0.031	0.425	1,588	794	794	1,668	834	834	1,747	873.5	873.5
Thailand	0.291	3.990	14,912	7,456	7,456	15,657	7,828.5	7,828.5	16,403	8,201.5	8,201.5
Viet Nam	0.058	0.795	2,972	1,486	1,486	3,121	1,560.5	1,560.5	3,269	1,634.5	1,634.5
Bangladesh	0.010	0.010	37.37	18.69	18.69	39.24	19.62	19.62	41.11	20.56	20.56
Cambodia	0.004	0.010	37.37	18.69	18.69	39.24	19.62	19.62	41.11	20.56	20.56
Lao PDR	0.003	0.010	37.37	18.69	18.69	39.24	19.62	19.62	41.11	20.56	20.56
Timor-Leste	0.003	0.010	37.37	18.69	18.69	39.24	19.62	19.62	41.11	20.56	20.56
Total	14.794	100.000	373,748	186,874	186,874	392,435	196,217.5	196,217.5	411,123	205,561.7	205,561.7

Note:

1/ The calculation of the scale is based on “Assessment of Member States' contributions of the United Nations regular budget for the period of 2016-2018” (Reference - A/70/416/Add.1).

1st Weblink: http://www.un.org/ga/search/view_doc.asp?symbol=a/res/70/245

2nd Weblink: http://www.un.org/ga/search/view_doc.asp?symbol=ST/ADM/SER.B/955

The total rate form th basis for calculating the % contributions of APPPC endorsing countries adds up to a full 100 percent.

2/ The UN scale of assessment is subject to a maximum assessment rate of 0.01 percent for the least developed countries as well as a maximum assessment rate of 22 percent, as set out in Items 6(h) and 6(f) respectively of the UN General Assembly's resolution 70/245 (23 December 2015).

1st Weblink: http://www.un.org/ga/search/view_doc.asp?symbol=a/res/70/245

3/ It is proposed that the % share of contributions by each of the four least developed countries (LDCs) including Bangladesh, Cambodia, Lao PDR and Timor-Leste does not exceed 0.010 percent. Based on the criteria of the UN scale of assessment, the maximum assessment rate for the least developed countries (LDC ceiling) is 0.010 percent, as set out in the UN General Assembly's resolution 70/245.

Based upon the list of Least Developed Countries available on the website of the UN Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS)

1st Weblink: <http://unohrlls.org/about-ldcs/criteria-for-ldcs/>

1st Weblink: http://www.un.org/en/development/desa/policy/cdp/ldc/ldc_list.pdf

The assessed contribution level is adopted by the session with increase of 5 percent.

Table 3. The contribution scales for the period of 2018-2019 based on the current biennium (2016-2017) level

(Increase of 5 percent; Summarized by year)

APPPC member countries endorsing mandatory contributions	UN scale of assessments for 2016-2018	APPPC Scale for 2018-2019	Amount of contribution (US\$) for 2018-2019		
			5 percent increase		
			2018-2019	2018	2019
Australia	2.337	22.000	86,335	43,167.5	43,167.5
China	7.921	22.000	86,335	43,167.5	43,167.5
Republic of Korea	2.039	22.000	86,335	43,167.5	43,167.5
DPR Korea	0.005	0.069	270	135	135
Fiji	0.003	0.041	161	80.5	80.5
India	0.737	10.104	39,653	19,826.5	19,826.5
Indonesia	0.504	6.910	27,117	13,558.5	13,558.5
Malaysia	0.322	4.415	17,325	8,662.5	8,662.5
New Zealand	0.268	3.674	14,419	7,209.5	7,209.5
Pakistan	0.093	1.275	5,004	2,502	2,502
Philippines	0.165	2.262	8,878	4,439	4,439
Sri Lanka	0.031	0.425	1,668	834	834
Thailand	0.291	3.990	15,657	7,828.5	7,828.5
Viet Nam	0.058	0.795	3,121	1,560.5	1,560.5
Bangladesh	0.010	0.010	39.24	19.62	19.62
Cambodia	0.004	0.010	39.24	19.62	19.62
Lao PDR	0.003	0.010	39.24	19.62	19.62
Timor-Leste	0.003	0.010	39.24	19.62	19.62
Total	14.794	100.000	392,435	196,217.5	196,217.5

After some discussion it was decided that contributing APPPC members should increase their contributions by 5 percent per annum. This would provide flexibility for the financial management of the Secretariat in case some countries are unable to provide their contributions on time.

15. Date and venue of 31st Session of the APPPC

The head of the Thailand delegation made a presentation to participants on hosting the 31st session in Thailand. There were no objections from participants to holding the next meeting in Thailand in November 2019. The location in Thailand has not yet been decided.

16. Other business

As this would be his last APPPC session, participants acknowledged the leadership and work of Dr Piao. Two other participants will not attend the next meeting, Mr Clive Lau and Dr John Hedley; their contributions to the work of the Commission were recognized.

17. Adoption of the report

The meeting report was presented by Dr Hedley on behalf of the drafting committee. The session adopted the report.

18. Closure of the Session

The participants completed the agenda at 2.30pm and the chair closed the session.

List of Participants

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**APPPC Regional Standard for
Phytosanitary Measures
Hot Water Immersion Treatment of
Mango for Fruit Fly**

INTRODUCTION

SCOPE

This standard describes the minimum requirements for application of hot water immersion treatment (HWIT) to fresh mango fruit as a treatment against target fruit fly species (Family: Tephritidae) as described in the treatment schedules as annexes to this standard.

REFERENCES

Guidelines for the Development of Heat Disinfestation Treatments of Fruit Fly Host Commodities, RSPM-1, 2004. FAO-APPPC.

The present standard refers to International Standards for Phytosanitary Measures (ISPMs). ISPMs are available on the International Phytosanitary Portal (IPP) at <https://www.ippc.int/coreactivities/standards-setting/ispms>.

Shellie KC, Mangan RL (2002) Hot Water Immersion as a Quarantine Treatment for Large Mangoes: Artificial versus Cage Infestation. *Journal of the American Society for Horticultural Science* **127**(3): 430-434.

DEFINITIONS AND ABBREVIATIONS @ 2017

APPPC	Asia and Pacific Plant Protection Commission
area	An officially defined country, part of a country or all or parts of several countries [FAO, 1990; revised ISPM 2, 1995; CEPM, 1999; based on the World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures (WTO, 1994)]
HWIT	hot water immersion treatment
national plant protection organization NPPO	Official service established by a government to discharge the functions specified by the IPPC [FAO, 1990; formerly “plant protection organization (national)”] National Plant Protection Organization [FAO, 1995]
pathway	Any means that allows the entry or spread of a pest [FAO, 1990; revised FAO, 1995]
pest	Any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products. Note: In the IPPC, “plant pest” is sometimes used for the term “pest” [FAO, 1990; revised ISPM 2, 1995; IPPC, 1997; CPM, 2012]
phytosanitary measure (agreed interpretation)	Any legislation, regulation or official procedure having the purpose to prevent the introduction or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests [ISPM 4, 1995; revised IPPC, 1997; ICPM, 2002] The agreed interpretation of the term phytosanitary measure accounts for the relationship of phytosanitary measures to regulated non-quarantine pests. This relationship is not adequately reflected in the definition found in Article II of the IPPC (1997).
quarantine pest	A pest of potential economic importance to the area endangered thereby and not yet present there, or present but not widely distributed and being officially controlled [FAO, 1990; revised FAO, 1995; IPPC 1997]
spread (of a pest)	Expansion of the geographical distribution of a pest within an area [ISPM 2, 1995]
treatment	Official procedure for the killing, inactivation or removal of pests, or for rendering pests infertile or for devitalization [FAO, 1990, revised FAO, 1995; ISPM 15, 2002; ISPM 18, 2003; ICPM, 2005]

OUTLINE OF REQUIREMENTS

The establishment and operation of a hot water immersion treatment (HWIT) facility for target fruit flies in mangoes is described. Two basic facilities have been used – namely, the batch type and the continuous flow type. Requirements for operators regarding facility registration, the positioning of temperature sensors, water quality, fruit labelling (for traceability) and facility hygiene are specified. Additional requirements concerning product export include phytosanitary security, phytosanitary certification, documentation and record keeping and the training of staff.

The treatment schedules are included as annexes to this standard.

BACKGROUND

Mango (*Mangifera indica*) L. is a known host for several species of fruit fly of quarantine concern. The global trade of fresh mango fruit provides a possible pathway for the introduction and spread of these fruit flies. In order to manage this pest risk, phytosanitary treatments have been developed to ensure that any juvenile fruit fly life stages infesting mango fruit are killed or sterilized. These treatments include fumigation, temperature treatment and irradiation. HWIT is a temperature treatment that has been proven experimentally and shown in practice to be effective in minimizing the risk of introduction of fruit fly in those countries where species are of quarantine concern.

REQUIREMENTS

1. Establishment and Operation of HWIT Facility

1.1 Registration of a HWIT Facility with the NPPO of Exporting Country

After passing the necessary technical audit and approval protocols the HWIT facility used for treating fresh mango fruit intended for export should be registered with the NPPO of the exporting country. Registration may be renewed on an annual basis after an audit at the beginning of the season. Also, the NPPO should monitor the treatment facilities on an ongoing basis during their operational season to ensure their continued compliance with requirements and Standard Operating Procedures (SOPs) developed for this purpose.

1.2 HWIT Systems

Facilities used for this treatment can be of two basic types:

- a) Batch system – where the mango fruit are held in baskets in the hot water immersion tank for a specified time.
- b) Continuous flow system - where the fruit are on a submerged conveyor belt that moves the fruit through the tank in a specified time.

1.3 Facility hygiene

The HWIT facility should have approved procedures in place to ensure that all areas of the facility are hygienically maintained (cleaned daily of damaged, blemished, infested fruit).

All the packing lines, production surfaces and equipment, the solid surfaces of inspection, sorting, grading tables and the floors of pre-cooling and cold storage chambers should be cleaned, washed and disinfected.

Fruit waste, packing materials and rubbish should be collected from all areas and moved to bins with lids. Bins should be emptied daily and treated with an appropriate disinfectant.

1.4 Water quality

The HWIT facility should have a regular supply of clean and filtered water. The immersion tank water should be sampled and tested regularly and chlorinated or replaced as necessary to avoid microbial contamination.

1.5 Temperature treatment facilities

Each HWIT facility should have heat treatment equipment capable of achieving and maintaining the required temperatures. The facility should have equipment capable of keeping the fruit at least 10 cm (4 inches) below the surface of the water.

The HWIT facility should have a thermostatic control system to ensure constant temperature of water in the tank throughout the entire immersion time.

The water circulation system should be sufficient to ensure uniform water temperature of the entire mass of water in the immersion tank. The water should be free of debris to maintain the flow of the water throughout the immersion tank.

1.6 Temperature sensors

HWIT sensors should be calibrated according to the manufacturer's instructions and certified by the NPPO. All certified thermometers should be checked annually against a calibrated reference thermometer.

The requirements for sensitivity and calibration of temperature sensors, are included in the treatment schedules as annexes to this standard.

1.7 Fruit traceability and segregation

Each HWIT facility should have systems in place to ensure traceability of fruit to the NPPO-registered export treatment facility. This will mean that fruit crates should be properly labeled indicating name of orchard or location, product name/variety, date of harvesting, date of packing.

The treatment facility should have the capacity to segregate fruit, if required, to ensure contamination does not occur. All treated consignments should be clearly labelled to differentiate them from untreated material.

The facilities should maintain complete isolation of treated fruit from untreated fruit. The facility should operate so that there is a minimum of one-metre segregation of fruit for export to different markets throughout the treatment, packing, storage and transport stages, before exports commence (if cool storage is used, segregation can be reduced to 100 mm).

2. Treatment schedule

2.1 Fruit temperature prior to treatment

Fruit pulp temperature should be at a minimum temperature prior to commencing treatment. The required minimum temperature is included for each treatment schedule in the annex. Pre-treatment warming will be required to achieve this minimum pulp temperature when fruit is directly coming from refrigerated rooms or there are low ambient temperatures.

2.2 Temperature treatment monitoring

HWIT involves submerging fruit in hot water for a period of time. Fruit should be submerged at least 10cm below the water surface and water should circulate constantly to maintain the required temperature throughout the treatment period.

There are two temperature monitoring approaches that may be taken to ensure the efficacy of the temperature treatment:

- a) Pulp temperature
- b) Water temperature

2.2.1 Pulp temperature monitoring approach

When using batch systems the pulp temperature approach may be used. This approach involves monitoring the pulp temperature of the fruit to ensure the minimum required level is maintained throughout the treatment period.

The probe should be inserted into the fruit so that the temperature is measured at the seed of the mango. The largest mango should be monitored throughout the treatment process to ensure that all fruit maintain temperature at the minimum required level.

The treatment schedules for specific fruit fly species are annexes to this standard.

2.2.2 Water temperature monitoring approach

When using the water temperature monitoring approach with either continuous flow or batch systems the water temperature should be monitored to ensure the efficacy of the treatment. This approach involves sorting fruit into specific weight classes and shape, to ensure the efficacy of the treatment.

It takes longer to heat the pulp in the center of the mango fruit (near the seed) than it does to heat pulp near the surface of the fruit (Shellie and Mangan 2002). Therefore larger fruit require a longer treatment time than smaller fruit. Treatment duration can also be affected by fruit shape (i.e. round vs. oblong fruit).

Prior to treatment (either at the pack house or treatment facility), mango fruit should be sorted into weight classes. A large sample of fruit from each batch should be weighed from each batch of mangoes to determine the average mango weight, and therefore the weight class. Each weight class will be treated separately. In instances where loads are of mixed weight classes the load will need to be treated at the temperature/time schedule for the largest fruit weight class for the treatment to be effective.

When using either continuous flow or batch systems with the water temperature monitoring approach, sensors should be placed evenly within the tank where the mangoes are located, to

ensure the water temperature is maintained. For batch systems using multiple baskets, there should be at least one sensor per basket.

The treatment schedules for specific fruit fly species, contain the fruit weight classes, water temperature and immersion time, are annexes to this standard.

2.3 Post treatment cooling options

After the completion of the HWIT, fruit may be kept at room temperature until it has cooled. Alternatively, post treatment cooling may be used to prolong shelf life and prevent fruit softening. Post treatment cooling options include air cooling, or hydro-cooling.

Any additional treatment time required as a result of these post treatment cooling options, are included in the treatment schedules as annexes to this standard.

3. HWIT system administration

3.1 Authority

In certifying the application of HWIT, an NPPO is responsible for ensuring the facilities, staff and management are fully capable of applying HWIT. The NPPO has the responsibility to ensure the product and facility requirements, the HWIT application requirements and management requirements are met. The following requirements should be taken into account when certifying HWITs. Registration of the facility, including the packing house, will require appropriate audits and verification by the NPPO.

3.2 Phytosanitary security

The phytosanitary security of consignments should be maintained after treatment to prevent re-infestation by fruit flies or any other pest and checked by the staff of the NPPO of the exporting country. The facilities should be designed to prevent the entry of fruit flies and other pests into areas where treatment is being performed and where treated and unsecured fruit is held.

Each HWIT facility should ensure that successfully treated fruit is discharged directly into fruit fly proof and secure packing rooms. Treated fruit should be packed in fruit fly proof boxes with ventilation holes covered with mesh of 0.6 mm or less. Boxes should be loaded into clean and disinfected containers.

Where packing houses are separate from a treatment facility, treated, unpacked fruit should be discharged directly into insect proof containers in secure dispatch rooms prior to transfer to registered packinghouses by insect secure transport. The destination packinghouse should have systems in place to ensure that no re-infestation can occur including fruit fly proof packing rooms.

3.3 Phytosanitary certification

Phytosanitary inspection of the treated fruit should be conducted by the NPPO of the exporting country and the details of the treatment included on the additional declaration section of the Phytosanitary Certificate.

3.4 Documentation and record keeping

The registered HWIT facility should maintain a documented record of all treatment operations and consignment details for at least 12 months. This information should be made available for audit by the respective NPPO when requested.

3.5 Competency of staff

NPPOs should ensure that facility staff are trained to operate the facility and that operational manuals are available. The NPPO should provide appropriate certification, training and assurance. Records of training and certification should be made available if required.

An NPPO may require a compliance agreement with the treatment facility operator that specifies the requirements of the treatment and the responsibilities, liabilities and procedures should a non-compliance be detected.

3.6 Suspension, reinstatement of HWIT export pathway

In case of detection of live fruit flies (i.e. eggs and larvae) in treated mango fruit during pre-export quarantine inspection by the NPPO of the exporting country or during quarantine inspection at port of entry in the importing country, the particular HWIT facility where the consignment was treated should be immediately suspended. The NPPO of the exporting country should conduct a technical review of the case to ascertain the reason for non-compliance.

Once the cause of the non-compliance has been determined, the problem rectified, including appropriate auditing and verification processes, and discussions have taken place between the NPPOs of the importing and exporting country, the facility may be reinstated for HWIT.

All aspects of the HWIT export pathway may need to be considered to ensure only compliant fruit is exported.

Annex 1

This Annex will contain hot water immersion treatment schedules for target fruit fly species in mango that have been approved by the APPPC, based on efficacy data, as having a stated level of efficacy.

Established treatments used bilaterally in trade can be accessed on the International Phytosanitary Portal (<http://www.phytosanitary.info/>).