

Plant protection information exchange among APPPC member countries

Background information

One of the key objectives of the Asia and Pacific Plant Protection Commission (APPPC) is to promote the exchange of plant protection information among the countries in the region. The Commission recognizes that transparency about how plant protection is executed in the different countries is an important means to improve regional cooperation and development.

The plant protection profiles which were first published in March 2007 and updated in July 2009, have played an instrumental role in promoting such exchange. The profiles provide key information about the plant protection functions in each country in an organized and structured manner so that they can be easily understood and updated.

Before the publication of these profiles, there was no systematically collected information about plant protection functions. Although there was some country information available on the International Phytosanitary Portal (IPP), it focused only on phytosanitary measures. There was no unified source of information for other plant protection areas such as pest and pesticide management, or the control of pest outbreaks. It was also difficult to find this information in conference proceedings or on websites of country plant protection organizations, which often only had selected information or were available in local language.

Presently, profiles are available from all of the member countries except for French Polynesia, Papua New Guinea, Solomon Islands and Tonga. Since their inception, the profiles have become the most comprehensive source of information about plant protection function in the APPPC region. Most of the profiles have been regularly updated to provide the most current information, while a few have information that is a couple of years old and possibly no longer valid. Nevertheless, they still provide the best information about the organization of plant protection

The availability of country plant protection profiles not only helps policy makers formulate better policies and strategies for plant protection, but also facilitates the international reporting requirements. This includes, among others, monitoring of the compliance and implementation of the International Standards for Phytosanitary Measures (ISPMs). Thus, the profiles are able to assist in regional harmonization and cooperation by providing transparency of procedures and practices.

In addition to the latest versions of country profiles (some of which, however, have not been recently updated) and analysis of the 26th session country reports, this 3rd edition also features the analyses and summaries of countries responses to the following four questionnaires:

- (1) Questionnaire on relevance and implementation of 16 selected ISPMs,
- (2) Questionnaire on usefulness and readability of FAO guidelines on pesticide management,
- (3) Questionnaire on management of highly hazardous pesticides (HHPs), and
- (4) Questionnaire on implementation, monitoring and observance of the International Code of Conduct on the Distribution and Use of Pesticides in Asia-pacific Countries in 2010.

The purpose of the questionnaire related to selected ISPMs was to identify key factors that contributed or hindered their implementation. Showing specific areas of challenges, the responses may be useful to policy makers and implementing staff who are concerned with enhancing effective ISPM implementation.

The other three questionnaires related to pesticide management are aimed at determining the current status of compliance with the International Code of Conduct on the Distribution and Use of Pesticides.

APPPC was founded in 1956. An amendment to the original agreement related to mandatory financial contributions to the Commission was adopted in 1983 and entered into force in September 2009 when the number of the accepting countries reached the required two-thirds majority. These newly available funds will give the Commission more opportunities to promote plant protection activities in the region.

Ratification and membership of international agreements

Country	APPPC	APPPC 1983 Amendment *	IPPC	Rotterdam Convention	Stockholm Convention	Basel Convention	Codex Alimentarius	WTO-SPS	Convention on Biological Diversity
Australia	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bangladesh	✓	✓	✓		2007	✓	✓	✓	✓
Cambodia	✓	✓	✓		✓	✓	✓	✓	✓
China	✓	✓	✓	✓	✓	✓	✓	✓	✓
DPR Korea	✓	✓	✓	✓	✓	2008	✓		✓
Fiji	✓	✓	✓		✓		✓	✓	✓
France	✓		✓	✓	✓	✓	✓	✓	✓
India	✓	✓	✓	✓	✓	✓	✓	✓	✓
Indonesia	✓	✓	✓	✓	2009	✓	✓	✓	✓
Japan *			✓	✓	✓	✓	✓	✓	✓
Lao PDR	✓	✓	✓	2010	✓	2010	✓		✓
Malaysia	✓	✓	✓	✓		✓	✓	✓	✓
Myanmar	✓		✓		✓		✓	✓	✓
Nepal	✓		✓	2007	2007	✓	✓	✓	✓
New Zealand	✓	✓	✓	✓		✓	✓	✓	✓
Pakistan	✓	✓	✓	✓	2008	✓	✓	✓	✓
Papua New Guinea	✓		✓		✓	✓	✓	✓	✓
Philippines	✓	✓	✓	✓	✓	✓	✓	✓	✓
Republic of Korea	✓	✓	✓	✓	2007	✓	✓	✓	✓
Samoa	✓		✓	✓	✓	✓	✓		✓
Solomon Islands	✓		✓		✓		✓	✓	✓
Sri Lanka	✓	✓	✓	✓	✓	✓	✓	✓	✓
Thailand	✓	2010	✓	✓	✓	✓	✓	✓	✓
Tonga	✓		✓		2009	2010	✓	2007	✓
Viet Nam	✓	✓	✓	2007	✓	✓	✓	2007	✓
Total	24	17	25	18	24	22	25	22	25

* Japan is not a member of APPPC.

Currently, the Commission consists of 24 member states (see the above table with the exception of Japan). All countries are also parties to the International Plant Protection Convention (IPPC), Codex Alimentarius and the Convention on Biological Diversity. The majority of countries are parties to other conventions including the World Trade Organization (WTO), the Rotterdam Convention, the Stockholm Convention, and the Basel Convention.*

The Commission holds biennial meetings to review the overall plant protection situations both at national and regional levels. Participants prepare country reports to inform the other members about the latest developments and activities undertaken in the previous two years. In the past, these country reports provided the most current information about the country's plant protection functions. With the availability of the structured profiles, the country reports at the meetings can assume a new role as summarizing and highlighting the information in the profile. Thus both reports assume a mutually complementary role, and the preparation of the country reports is greatly facilitated by the profiles.

In the future, the country reports may be distributed through the internet, and each country should update the information as needed. The APPPC Secretariat should ensure that all profiles should follow the same format since this will make it easy for the reader to find information and to make country-by-country comparisons. With this new arrangement, information exchange between APPPC countries can attain a new level which hopefully will promote greater cooperation and coordination, and fruitful discussions during the biennial meetings.

Brief status, development and progress

The following tables are a compilation of the executive summaries given in the profiles and past country reports which provide information about status, development and progress achieved by APPPC members and Japan in plant protection.

* It should be noted that Thailand ratified the APPPC 1983 amendment in 2010. As regards the Stockholm Convention, Indonesia ratified the Convention on 28 September 2009 while Tonga did it on 23 October 2009 and Lao PDR did it on 21 September 2010. As well, Tonga and Lao PDR ratified the Basel Convention on 26 March 2010 and 21 September 2010 respectively.

Plant protection overviews

Period	Plant protection overview: Australia
2009-2010	<p>Review of Australia’s quarantine and biosecurity arrangements</p> <p>A comprehensive, independent review of Australia’s quarantine and biosecurity arrangements was undertaken in 2008 by an independent panel of experts. In December 2008, the government released the panel's report, <i>One Biosecurity: a working partnership</i>, and its preliminary response to the recommendations. In its preliminary response, the government agreed in principle to all of the review panel’s 84 recommendations.</p> <p>Work continues in reforming the biosecurity system in line with government priorities. This includes implementing risk-based intervention approaches to imported goods, mail and passengers and reforming export certification arrangements while working in partnership with industry and states/territories, all supported by robust scientific assessments and advice. To better underpin the animal and plant health and biosecurity aims a major framework is being developed through the National Biosecurity Committee development of the Intergovernmental Agreement on Biosecurity.</p> <p>Funding has been committed over several Budgets for biosecurity measures at airports, seaports and mail centres to help protect against exotic pests. Whilst the reforms are being implemented, this includes to the Australian Customs and Border Protections Service to maintain biosecurity measures.</p> <p>A risk return approach to allocating Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) resources to manage biosecurity risks has been initiated. It is based on a four phase approach: 1. risk identification; 2. quantification of risk and analysis of biosecurity programs; 3. designing a new risk-based budgeting process; and 4. implementation of the process. Phase 2 is currently underway.</p> <p>Biosecurity Services Group</p> <p>In 2009, the areas of DAFF that contribute to biosecurity were re-organized to form the Biosecurity Services Group (BSG). The group integrates the functions and responsibilities of the Australian Quarantine and Inspection Service (AQIS), Biosecurity Australia (BA), Product Integrity, Animal and Plant Health (PIAPH) division and the Quarantine and Biosecurity Policy Unit. BSG supports the delivery of outcomes along the biosecurity continuum of pre border, border and post-border. The new structure is based on plant, animal and food divisions plus cross-organizational quarantine operations and corporate areas.</p>

Pre-border is the science based quarantine assessments and policy advice that protects Australia's favourable pest and disease status and enhances Australia's access to international animal and plant related markets continues. Quarantine inspections protect the border and post-border includes the management of incursions.

Australian Fumigation Accreditation Scheme (AFAS)

AFAS is a management system for overseas agencies, a training and accreditation for fumigators, a registration system for fumigation companies and acceptance by Australia of fumigation certificates issued under AFAS. The scheme provides capacity building for overseas quarantine agencies in monitoring and registering fumigators and to enhance the technical expertise of these fumigators and providing training for methyl bromide fumigations. It also assists fumigators in maintaining a high standard of fumigation performance and compliance with AQIS requirements and facilitates export trade.

It has been fully implemented in Indonesia, Malaysia, Thailand, India, Papua New Guinea and the Philippines leading to reduced fumigation failures. Full implementation of AFAS is scheduled for China and Viet Nam in 2011. Other countries have expressed interest in implementing the scheme, including some Pacific Islands and South American countries.

Regional capacity building

Activities emphasise SPS awareness, PRA, diagnostics of plant pests, management of pest reference collections, information management and economics of SPS barriers to trade. It is delivered by a mixture of in-country training workshops and reciprocal training visits by ASEAN and Australian technical experts.

Sea container hygiene system

A sea container hygiene system has been initiated as a long term strategic collaboration with the shipping industry to manage quarantine risks associated with sea containers at ports of loading in the Pacific. It is currently operational in some ports in PNG and the Solomon Islands.

Australian IPPC activities

Australia continues to be actively engaged in the International Plant Protection Convention (IPPC). It provides information on all aspects of plant protection through the International Phytosanitary Portal.

Pesticide regulation

The National Registration Scheme for Agricultural and Veterinary Chemicals (National Registration Scheme) was established under Commonwealth and state legislation to provide an Australian scheme to regulate pesticides and veterinary medicines. The Australian Pesticides and Veterinary Medicines Authority is the prescribed agency within the Agriculture, Fisheries and Forestry portfolio that evaluates, registers and regulates agricultural and veterinary chemicals. DAFF manages the legislation under which the National

Registration Scheme operates.

Australia is a party to the Rotterdam and Stockholm conventions.

National Plant Health Status

A concise overview of Australia's plant biosecurity system is provided by the second National Plant Health Status Report, for the financial year 2008–09, published in 2010. It is a consolidated snapshot of the system that protects Australian agricultural and forestry industries from exotic pests. It describes Australia's plant health system and provides information on the plant pests of greatest concern to Australia; the organisations and processes involved in keeping Australia's agricultural and forestry industries free from pests; and the innovative plant health research projects currently being undertaken by Australian research organisations and universities. It identifies details of more than 200 high priority exotic pests of significant quarantine concern and also highlights surveillance programs targeting plant pests of concern across the country. The next issue covering the 2010 calendar year will be published in May 2011.

National plant health strategy

The national strategy will provide the direction for the plant health sector for the next 10 years. It incorporates all areas of the national plant health system and involves all stakeholders that have a shared response and a commitment to Australia's plant health status. It is linked to the Intergovernmental Agreement on Biosecurity.

PaDIL

Rapid recognition of regulated pests is critical to ensure appropriate response strategies are implemented. Diagnosticians require access to resources to ensure evidence based decisions are made on correct identifications. No single laboratory can house specimens of all pest species. This is where PaDIL – Pests and Diseases Image Library www.padil.gov.au – can help. PaDIL contains high quality diagnostic images and information on pests. Within its portal is the Plant Biosecurity Toolbox that provides detailed diagnostic information to assist with the rapid identification of exotic plant pests in the event of an incursion.

PaDIL is a capacity building biosecurity website which provides high quality images of pests. Its knowledge-base is built on specimen access to the collections of the world, combined with taxonomic skills that enable scientific literature, especially keys, to be translated into diagnostic images. The new and revised PaDIL has abandoned the hierarchical query system and has adopted the E-commerce query exploration system (as used by eBay, Amazon etc) to allow the user to effectively navigate the site. This system allows the user to explore and navigate through the contents of its catalogue (or database).

Period	Plant protection overview: Australia
2007-June 2009	<p>Review of Australia's Quarantine and Biosecurity Arrangements In February 2008, the Australian Government Minister for Agriculture, Fisheries and Forestry announced a comprehensive, independent review of Australia's quarantine and biosecurity arrangements. The review was undertaken by an independent panel of experts. In December 2008, the government released the panel's report, One Biosecurity: a working partnership, and its preliminary response to the recommendations. In its preliminary response, the government agreed in principle to all of the review panel's 84 recommendations.</p> <p>National Plant Health Status A concise overview of Australia's plant biosecurity system is provided by the first National Plant Health Status Report. It is a consolidated snapshot of the system that protects Australian agricultural and forestry industries, worth more than \$20 billion/year, from exotic pests. It describes Australia's plant health system and provides information on the plant pests of greatest concern to Australia; the organisations and processes involved in keeping Australia's agricultural and forestry industries free from pests; and the innovative plant health research projects currently being undertaken by Australian research organisations and universities. For the 2007-08 financial year (July 2007 - June 2008), it identifies details of more than 200 high priority exotic pests of significant quarantine concern and also highlights over 120 surveillance programs targeting plant pests of concern across the country.</p> <p>The National Plant Health Status Report 07/08 is made available on the International Phytosanitary Portal.</p>

Period	Plant protection overview: Australia (Based on the country report presented at APPPC 25 th session in August 2007)
Up to 2007	<p>The Department of the Environment and Water Resources (DEW) administers the Designated National Authority (DNA) obligations for industrial chemicals in cooperation with the Australian regulator for industrial chemicals, the National Industrial Chemicals Notification and Assessment Scheme (NICNAS). The Department of Agriculture, Fisheries and Forestry administers DNA obligations for pesticides.</p> <p>The Australian Quarantine and Inspection Service (AQIS) was restructured on 1 January 2007. It has a new Executive Director, Stephen Hunter, and plant quarantine and plant exports are now handled in different branches in different divisions.</p>

	<p>From 1 July 2007, new corporate governance structures came into effect at the Australian Pesticides and Veterinary Medicines Authority (APVMA) following reforms implemented by the Australian Government. Key reforms include conferring responsibility for governance of the APVMA on the Chief Executive Officer and establishing a new Advisory Board. The Advisory Board will include experts in the chemical industry, primary production, consumer interests, public health, the environment and occupational health and safety. These reforms only relate to the governance of the APVMA and do not change the regulatory scheme that is administered by the APVMA.</p>
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Period	Plant protection overview: Bangladesh
2009-2010	<p>Bangladesh is an agrarian country and her climate favors the rapid development of various pests and diseases on crops. One of the main constraints to crop production is the pests. Estimated crop loss by pest and diseases is around 10-15% annually.</p> <p>The plant protection activities of the country at national level are under the Director of Plant Protection Wing of the Department of Agricultural Extension under the Ministry of Agriculture. The Director is the National Plant Protection Organisation of Bangladesh (NPPO). He is responsible for implementing the International Standards for Phytosanitary Measures in Bangladesh.</p> <p>Bangladesh has to import a huge quantity of food, seeds and other plants and plant products. Annually on an average 76 lac metric tons of plants and plant products are imported through the Plant Quarantine Stations of Plant Protection Wing. On an average nine metric tons of agricultural commodities are inspected by the plant quarantine section per annum for the purpose of export and also need to issue huge number of phytosanitary certificates.</p> <p>The existing plant quarantine legislation known as “Destructive Insects and Pests Rules, 1966 (Plant Quarantine) was framed as per provisions delineated under Sub-section (I) of Section-3, Section-4A & 4D of the Destructive Insect and Pests Act, 1914 (II of 1914). Bangladesh Plant Quarantine Acts, 2009 has been placed in the Parliament for approval. It is expected that the Act will be passed very soon.</p> <p>Pest surveillance and forecasting system of the country have been upgraded recently. The infestation of Brown Plant Hopper (BPH) and Stem borer were to some extent high during last two years. Besides, outbreak of Bacterial Leaf Blight and Blast in rice crop during 2007-08 and 2008-2009 crop seasons created some threats on the total rice production in the country.</p> <p>As regards the pesticide management, the Department of Agricultural Extension (DAE) has revised “The Pesticide Ordinance, 1971”. The new name of the Ordinance is “The Pesticide Ordinance (Amended 2007)”. Necessary modifications were also made in The Pesticide Rules 1995 with the</p>

incorporation of the provisions of Bio-pesticide registration. These modifications were submitted to the Ministry for approval.

Different pest control approaches are being practiced to manage the pest incidence in the country. Among these Integrated Pest Management (IPM) approach is given more emphasis for the management of pests in the country. Realizing the importance of IPM, the Government of Bangladesh (GOB) has given due importance to it which has been reflected in the National Agricultural Policy where it is emphasized the *IPM will be the main policy for controlling pests and diseases*. 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. The research institutions are now putting emphasis on IPM particularly on bio control and non-chemicals (bio-pesticides) for pest management. They have developed package technologies on IPM for several pests. Bangladesh Agricultural Research Institute (BARI) recently found that pheromone trap is very effective for the control of fruit flies in bitter melon, bitter melon, and cucumber and also for shoot and fruit borer of egg plant. Moreover, they have developed BARI Begun (eggplant)-6 resistant to Jassid and 8 to bacterial wilt. The Bangladesh Rice Research Institute (BRRI) has developed BRRI Dhan 26, 31 and 35 resistant to Brown planthopper (BPH), BRRI Dhan 28,33,43,44 and 45 to blast and BRRI Dhan 36, 37, 39 and 41 to Tungro virus. They have also developed several varieties resistant to other insects and diseases. Couple of private companies has started rearing and marketing of parasitoids and predators in the country.

Private sectors have also come forward for mass rearing and marketing of parasitoids and predators. Pesticide free vegetables and some fruits are available in the on a limited scale but marketing channel need to be developed. The Government has started thinking about the GAP particularly of exportable vegetables and fruits. Safe food production through IPM approach created a great enthusiasm among the producers and consumers under the guidance of the different Government agencies.

Several hundreds of IPM/ICM facilitators have been developed at DAE. Besides, for sustainability of IPM/ICM practices in the community, over 2000 Farmer Trainers have been developed. By September 2011, about 950,000 farm families will be trained on IPM/ICM but this is about 6% of the 15 million farm families. Over 10,000 IPM/ICM clubs have been formed throughout the country and these clubs started the formation of their association at union and Upazila level.

A total of 123 generic pesticides have been registered for use in agriculture and 60 for use in public health. Total number of trade name of agricultural & public health of these pesticides is 1674. There is a Pesticide Technical Advisory Committee headed by the Executive Chairman of Bangladesh Agricultural Research Council (BARC), Ministry of Agriculture. Based on formulation, the Government has banned nine pesticide compounds under WHO class 1a and 1b for agricultural purposes.

Period	Plant protection overview: Bangladesh
2007-June 2009	<p>Apart from following IPPC's guidelines on the phytosanitary export certification and phytosanitary import regulatory systems, the Plant Quarantine Section of the Plant Protection Wing (NPPO) is responsible for implementing the International Standards for Phytosanitary Measures (ISPMs) in Bangladesh. Importantly, NPPO plays a vital role in implementing the National Pest Management Policy through the activities of Integrated Pest Management (IPM) and Integrated Crop Management (ICM) projects. They strengthen IPM activities and help farmers to become aware about healthy crop production.</p>

Period	Plant protection overview: Cambodia
2007-June 2009	<p>The Plant Protection and Phytosanitary Inspection Office (PPPIO) as Cambodia's NPPO has recently been upgraded as the Plant Protection and SPS Department (PP-SPSD) of the General Directorate of Agriculture (GDA). NPPO was previously under the supervision of the former Department of Agronomy and Agricultural Land Improvement (DAALI).</p> <p>The Government of Cambodia has endorsed Sub-Degree No.188 (14/11/2008) with the establishment of GDA which consists of nine departments. One of these is the Plant Protection Sanitary and Phytosanitary Department (PP-SPSD) that has the following roles and responsibilities:</p> <ul style="list-style-type: none"> ▪ To prepare the policy, plan, project, development programs, the measure to <u>reduce</u> the crop production loose caused by pest, to <u>manage</u> chemical substances used to prevent, control, repellent, grow regulate (and all other pesticide actives) pest and all agent or biological substances used for the above mentioned purpose and for soil fertility improvement in order to increase productivity and plant production in the sound of sustainable of natural resources and biodiversity of the environment; ▪ To prepare the plant product <u>quality standards</u>, the <u>assurance system of safety</u> and quality of plant product, policy plant project development programs to <u>improve</u> the quality and safety of plant product in order to assure the quality and safety of plant product to consumer, market and encourage the export of plant product; ▪ To prepare the <u>regulation</u> and to be the <u>regulatory service</u> in the management of <u>plant protection work</u>, <u>safety of food</u> originally from plant product and <u>phytosanitary inspection</u> according to the Government policy and SPS agreement of WTO; ▪ To direct , manage and encourage the <u>research activities</u> of research institution under its manage and in cooperation with the agricultural extension department and local organizations to encourage the <u>extension</u> of plant protection, phytosanitary and production measures to improve the quality and safety of product to farmers, farmer organization, investor and

Period	Plant protection overview: Cambodia
	<p>private sector for increasing their benefits and family income to improve population's welfare and facilitate the exportation of agricultural product;</p> <ul style="list-style-type: none"> ▪ To be a <u>supporting service to the seed inspector</u> by playing a role of regulatory authority for inspecting all the seed transportation across the border; ▪ To persuade, facilitate and <u>encourage private sector to invest</u> the supporting service for plant protection, phytosanitary and improving quality of agricultural product; ▪ To be a <u>technical advisor</u> and a service in <u>pest control</u> intervention, in <u>assessment of chemical</u> substances used to prevent, control, repellent, grow regulate (and all other pesticide actives) pest and all agent or biological substances used for the above mentioned purpose and for soil fertility improvement and in <u>assessment of quality</u> of agricultural product; ▪ To liaison, cooperate and implement the convention, agreement related in national, regional and international level. ▪ To implement other duties as given by Director Team of General Directorate. <p>This newly endorsed Sub-Degree just described the general mandate of these nine departments. Ministerial regulations are being drafted for each department and will be submitted to the Ministry of Agriculture, Forestry and Fisheries (MAFF) for approval.</p>

Period	Plant protection overview: Cambodia (Based on the country report presented at APPPC 25 th session in August 2007)
Up to 2007	<p>In Cambodia, three ministries are involved in plant protection, namely the Ministry of Agriculture, Forestry and Fisheries (MAFF), Ministry of Environment (MoE) and Ministry of Commerce (MoC). However, MAFF is the main ministry responsible for plant protection and phytosanitary measures, IPM activity, pesticide registration and regulation, training, research and extension activities. The MoE is responsible for activities relating to the Stockholm Convention and the MoC is responsible for issue related to WTO-SPS.</p> <p>Many government and ministerial regulations had been developed for the management of border check points, the management of plant quarantine activities and phytosanitary inspection.</p>

Period	Plant protection overview: China
2009-2010	<p>In the past two years, the new pests such as Sunflower black stem disease (<i>Leptosphaeria lindquistii</i> Frezzi=<i>Phoma macdonaldii</i> Boerma) and <i>Solenopsis mealybug</i> (<i>Phenacoccus solenopsis</i> Tinsley) had been detected in China first time. Survey and PRA were conducted regarding those two pests and then the pests were added in the quarantine pest list. At the same time, the domestic quarantine pest list was revised in 2009 based on the PRA. A number of regulations and technical standards were formulated in the field of quarantine pest detecting, monitoring and management.</p> <p>In 2009, the pest interception cases in the import cargoes were 268131. Among them 189 were quarantine pests and 3715 were non-quarantine pests. In 2010, the pest interception cases in the import cargoes were 400497 among which 217 were quarantine pests and 3437 were non-quarantine pests. These cases involved 187 countries and regions. China notified relevant countries of the non-compliance through bilateral or multilateral channels.</p> <p>In 2009 and 2010, great effort was taken to control the codling moth and the Pest free areas (PFA) for codling moth were established and maintained. <i>Radopholus similes</i> had been successfully eradicated in several sites of Guangdong Province which was detected in seedling imported into China</p> <p>During the period of 2009-2010, China has provided pest information to countries for conducting relevant PRA upon request. Also, most of the international standards of phytosanitary measures and regional standards were implemented in China. IPP training course was conducted in Beijing in 2010 with the joint support from IPPC Secretariat and APPPC Secretariat.</p> <p>During the period of 2009-2010, outbreaks of some pests on major crops occurred in responses to global warming, significant changes in cropping systems, climate conditions, and crop varieties in China. The locusts hit about 1.7 million hectares both in 2009 and 2010, meadow moth (<i>Loxostege sticticalis</i> L.) hit about 5.4 million hectares of farm lands pastures and woodlands in 2009. The outbreaks of rice stem borers have been occurring with more serious damage over the past ten years. The outbreaks spread 18.3 million hectares in 2009 and 17.7 million hectares in 2010 respectively. In the case of BPH (<i>Nilaparavata lugans</i>), the infested area grew to 10.4 million hectares in 2009 and 12.0 million hectares in 2010 respectively. The total area infested by major vegetable pests amounted to 29.8 million hectares in 2009 and 30.6 million hectares in 2010 respectively. Regional actions were coordinated by the National Agro-technical Extension and Service Center (NATESC) of the Ministry of Agriculture for controlling major crop pests. The annual control acreages of major crop pests reached 560.7 million hectares in 2009 and 532.7 million hectares in 2010 respectively. National IPM programs coordinated by NATESC have been supporting the implementation of key IPM technologies in major crops and major pests. Biological and ecological control</p>

Period	Plant protection overview: China
	<p>measures such as using microorganisms and reclaiming locust habitats were extensively promoted in recent years.</p> <p>In order to protect people's health and environment's safety, China had strengthened pesticide management during the period of 2009-2010. The registration and production certificates of five highly toxic organophosphorus pesticides including Methamidophos, Parathion-methyl, Parathion, Monocrotophos, Phosphamidon China were repealed. The approval system for pesticides registration had also been revised and improved. A number of rules and regulations had been formulated which including the Measures for the Administration of Pesticide Labels and Instructions (Order of MOA, No.8), the Decision on Amending the Measures for Implementing the Regulation on Pesticide Administration (Order of MOA, No.9), the Revised Data Requirement for Registration of Pesticide (Order of MOA, No.10), the Revision and Approval for Pesticide Name (MOA Proclamation No.944), the Nomenclature for Pesticides (MOA Proclamation No.945), and the Content of Active Ingredient for Pesticide (MOA Proclamation No.946).</p> <p>During the period of 2009-2010, China implemented the "Sino-German Cooperative Project on Pesticide Wastes Management" in collaboration with the German government. At the same time, China also collaborated with the United States of Environment Protection Agency on the Continued Good Laboratory Practice Standards Compliance Monitoring Project.</p> <p>China has been continually implementing bilateral crop migratory pest management projects with neighboring countries during 2009 and 2010. China and Viet Nam established cooperative mechanisms on jointly managing rice BPH & WBPH and newly emerging rice virus disease – South China Rice black Stripe Dwarf Virus, main activities of the collaborations focused on sharing information on the monitoring and forecasting of the pests and diseases. China and Kazakhstan have been also continually working on controlling the trans-boundary crop pest- Asian Migratory Locust (AML), the exchanges of occurring information of AML were frequently carried out and its biological control methods shared between two sides during 2009 and 2010.</p>

Period	Plant protection overview: China
2007-June 2009	<p>China has made steady progress in all areas of plant protection during the period from 2007-2008. The Plant Protection Office was established under the Ministry of Agriculture (MOA) in 2008 in order to enhance the leadership in plant protection.</p>

Period	Plant protection overview: China (Based on the country reports presented at APPPC 25 th session in August 2007)
Up to 2007	<p>Plant protection policies</p> <p>The Ministry of Agriculture re-formulated the national plant protection policies towards “public plant protection” and “green plant protection”. The policy on “public plant protection” requires that the Government be responsible for the provision of public services relating to plant protection. The policy on “green plant protection” requires that plant protection strategies, technologies, standards and protocols be sustainable and environment friendly.</p>

Period	Plant protection overview: Dem People’s Rep of Korea
2009-2010	<p>The National Plant Protection Organization (NPPO) of the Democratic People’s Republic of Korea (DPRK) has developed an efficient system and integrated measures for managing pest risks and controlling pests. The Central Plant Protection Station (CPPS), the Ministry of Agriculture (MoA), is in charge of the plant protection section. The CPPS has its branches in each province and county, which are responsible for managing pests in the areas under the direct control of the Ministry of Agriculture.</p> <p>During the farming season when pests occur and cause damage to crops, the MoA will form a pest management group to give advice on pest management, based on the pest surveillance information collected from every province and county.</p> <p>The NPPO holds two periodical workshops every year. At the workshops, participants share their successful experience on pest management and receive necessary training on it.</p> <p>In 2009 and 2010, there appeared soil born pests such as grubs and cut worm and immigrated pests such as army worm and plant hoppers which caused serious damage to crops. The MoA managed them by applying the Integrated Pest Management (IPM) methods, especially the use of biological control agents such as Bt and Trichogramma</p> <p>The MoA also thoroughly eradicated newly occurred pests such as Trionymus agrestis, Cephalosporium sp and Autogrpha sp in some areas.</p>

Period	Plant protection overview: Dem People's Rep of Korea
2007-June 2009	<p>In DPRK, the Central Plant Quarantine Station (CPQS), MOA, is responsible for inspecting and quarantining seeds and planting materials. CPQS also trains the quarantine staff of the Korea Export & Import Commodity Inspection & Quarantine Committee (KIQC). On the other hand, the State Administration for Quality Management (SAQM) is responsible for inspecting and quarantining plant commodities while the Bio-Safety Committee (BSC), the State Academy of Sciences, is responsible for inspecting and quarantining genetically modified organisms.</p>

Period	Plant protection overview: Fiji
2007-June 2009	<p>The agriculture sector holds a lot of promise but Fiji has yet to realize its full potential. The sector is further challenged with the loss of sugar preferential price that affects the sugar industry.</p> <p>The Cabinet on 18 January 2005 agreed on the reorganization of the Quarantine Department. A scoping study of the Department and audit of the Department's operations were carried out in the same year. The recommendations from the scoping study and the audit highlighted the need to reform the Department on areas of institutional strengthening to meet the SPS Agreement of the WTO.</p> <p>The Charter recommendations highlight the following areas for reform:</p> <ul style="list-style-type: none"> • The review of the Quarantine Legislations; • Training of officers; • Improve facilities and equipment; • Review and streamline current work practices; • Operating instructions; • Strengthen technical capacity; • Communication; • Awareness; and • New organization structure for the statutory authority to be known as the Biosecurity Authority of the Fiji Islands (BAFI). <p>The reform exercise has been progressing slowly. However, the review of the legislation has been completed, awareness programmes for the public are ongoing, communication has improved in the last two years and a standard operational procedure manual has been finalized.</p> <p>Currently in the pipeline, is the review of the organization structure and to be followed with the establishment of the Statutory Authority. The Authority</p>

Period	Plant protection overview: Fiji
	<p>will administer the Biosecurity Promulgation 2008 and fast-track the completion of the reform,</p> <p>This reform will bring the plant and animal biosecurity under one administration and develop its facilities and equipment to facilitate its operations. The Authority will have its laboratory and technical expertise to conduct risk and pest assessment whilst the Ministry Research Laboratory to focus on the Ministry's laboratory needs and will assist BAFI on needs that are beyond the capacity of BAFI's laboratory.</p> <p>The Government of the day is placing high priority on national security, putting biosecurity in the fore-front of its development plan. Fiji's biosecurity systems and services will continue to be developed, and we expect to fully administer the Biosecurity Promulgation 2008 when the Biosecurity Authority of the Fiji Islands is fully established in the year 2012.</p>

Period	Plant protection overview: India
2009-2010	<p>The Headquarters of the Directorate of Plant Protection Quarantine and Storage is located at Faridabad, Haryana. This office is headed by the Plant Protection Adviser to the Government of India and is responsible for the implementation of plant protection policies and programmes of the Department of Agriculture and Cooperation, the Ministry of Agriculture, the Government of India.</p> <p>The major activities are exclusion of exotic pests, surveillance and monitoring and control of desert locust, ensuring availability of quality pesticides and bio-pesticides, promotion of integrated pest management approach in plant protection, development of the human resources in plant protection and monitoring of pesticide residues in agricultural commodities.</p> <p>The Directorate of Plant Protection, Quarantine & Storage, Department of Agriculture & Cooperation administer the Destructive Insects & Pests Act, 1914 (2 of 1914) under which Plant Quarantine (Regulation of Import into India) Order 2003 regulates the imports of agricultural commodities and the wood packaging material. Being the National Plant Protection Organization, the Directorate is responsible for implementation of the phytosanitary certification programme. More than 150 plant protection specialists from all over the country have been authorized by NPPO to issue Phytosanitary certificates, in accordance with the requirements of importing countries as per IPPC,120243 Phytosanitary certificates were issued during 2010-11 and more than 2760 pest risk analyses were carried out. A number of quarantine pests had been intercepted in the imported consignments and notifications sent to the</p>

Period	Plant protection overview: India
	<p>exporting countries.</p> <p>IPM programme is based on crop based Farmers Field School approach. Seventy seven (77) IPM packages on major Agricultural/Horticultural crops have been developed. The Government of India encourages the use of biocontrol agents. 318 bio-control laboratories are in operation. National programme on the monitoring of pesticide residue is in progress. A project on surveillance on fruit flies has been completed and the data on distribution of different sps.of fruit flies has been compiled for the states U.P, Gujarat, Maharashtra & Andhra Pradesh .</p> <p>A Project on National Invasive Weed Surveillance (N.I.W.S) 1ST phase has been completed. Pest free area has been developed and notified for Brown rot (<i>Ralstonia solanacearum</i>) and Ring rot (<i>Clavibacter michijanesis</i>) of Potato in the State of Punjab, recognition of which is under consideration of EU..</p> <p>India is a signatory to FAO code of conduct on the distribution and use of pesticides and is implementing its provisions. The Insecticides Act, 1968 regulates the import, manufacture, sale, transport, distribution and use of pesticides with a view to prevent risk to the human beings, animals and the environment. The Pesticide Management Bill is under active consideration of Rajya Sabha.</p>

Period	Plant protection overview: India
<p>2007-June 2009</p>	<p>The Headquarters of the Directorate of Plant Protection Quarantine and Storage is located at Faridabad, Haryana. This office is headed by the Plant Protection Adviser to the Government of India and is responsible for the implementation of plant protection policies and programmes of the Department of Agriculture and Cooperation, the Ministry of Agriculture, the Government of India.</p> <p>The major activities are exclusion of exotic pests, surveillance and monitoring and control of desert locust, ensuring availability of quality pesticides and bio-pesticides, promotion of integrated pest management approach in plant protection, development of the human resources in plant protection and monitoring of pesticide residues in agricultural commodities.</p> <p>The Directorate of Plant Protection, Quarantine & Storage, Department of Agriculture & Cooperation administer the Destructive Insects & Pests Act, 1914 (2 of 1914) under which Plant Quarantine (Regulation of Import into India) Order 2003 regulates the imports of agricultural commodities and the wood packaging material. Being the National Plant Protection Organization,</p>

	<p>the Directorate is responsible for implementation of the phytosanitary certification programme. More than 150 plant protection specialists from all over the country have been authorized by NPPO to issue phytosanitary certificates, in accordance with the requirements of importing countries as per IPPC. 194,714 Phytosanitary certificates were issued during 2008-09 and more than 239 pest risk analyses were carried out. A number of quarantine pests had been intercepted in the imported consignments and notifications sent to the exporting countries.</p>
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Period	Plant protection overview: Japan
2009-2010	<p>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 26th session of the APPPC.</p> <p>The Ministry of Agriculture, Forestry and Fisheries (MAFF) is mainly responsible for plant protection and plant quarantine services to control and prevent the introduction of pests of plants and plant products. The Plant Protection Station (PPS) of MAFF is responsible for implementation of import/export inspections and supervision of disinfestation treatment. The PPS of Japan consisted of 5 head offices, 16 sub stations, 47 branches, three detached offices and one plant inspector's office and 881 plant quarantine officers who are authorized by the NPPO to implement appropriate inspection/certification.</p> <p>MAFF is working closely with pest control stations run by prefectural governments to conduct monitoring surveys to detect infiltrating pests at an early stage, and engage in emergency eradication, where necessary. Domestic certification systems are under operation for seed potatoes and major fruit tree seedlings and regulating the movement of plants from outbreaking areas to non outbreaking areas.</p> <p>MAFF provides the specific guidelines for the crop of rice, cabbage, citrus, soybean, tomato, strawberry, pear, apple, tea, chrysanthemum and sugarcane to facilitate implementation of the IPM for individual famers.</p> <p>MAFF is going to review the Enforcement Ordinance of the Plant Protection Law. The contents are as follows: Establishment of the quarantine pest list, Amendment of non-quarantine pest list not subject to phytosanitary measures, Amendment of the current list of pest/plant/area combinations subject to inspection at the growing sites in exporting countries, Amendment of the current list of pest/plant/area combinations subject to import prohibition and Novel phytosanitary measures to be carried out in exporting countries.</p> <p>The training course on disinfestation technique using thermal treatment on fruit fly has been organized since 1988 with trainees being invited from countries</p>

	<p>which are affected by fruit fly. As a multilateral contribution, Japan financially supported through a trust fund a field project on phytosanitary capacity-building, targeting 10 countries. The project was implemented by FAO.</p>
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Period	Plant protection overview: Japan
2007-June 2009	<p>The Ministry of Agriculture, Forestry and Fisheries (MAFF) is mainly responsible for plant protection and plant quarantine services to control and prevent the introduction of pests of plants and plant products. The Plant Protection Station (PPS) of MAFF is responsible for implementation of import/export inspections and supervision of disinfection treatment. The PPS of Japan consisted of five head offices, 15 sub stations, 53 branches, three detached offices and one plant inspector's office and 865 plant quarantine officers who are authorized by the NPPO to implement appropriate inspection/certification.</p> <p>MAFF is working closely with pest control stations run by prefectural governments to conduct monitoring surveys to detect infiltrating pests at an early stage, and engage in emergency eradication, where necessary. Domestic certification systems are under operation for seed potatoes and major fruit tree seedlings and regulating the movement of plant from outbreaking area to non outbreaking area.</p> <p>MAFF provided the specific guidelines for the crop of rice, cabbage, citrus, soybean, tomato, strawberry, pear, apple, tea, chrysanthemum and sugarcane to facilitate implementation of IPM for individual farmers.</p>

Period	Plant protection overview: Lao PDR
2009-2010	<p>Lao PDR is a landlocked country. It occupies an area of 236,800 km² out of which approximately 75% is mountainous and lies entirely within the tropics and is located between latitudes 14° 10' to 22° 10' N and longitudes 100° 20' to 107° 50' E. The population end 2010 was estimated at about say 6.8 million, and more than half of the population is concentrated in flat plain adjacent to Mekong basin and its tributaries. Agriculture is the main stay of the national economy and contributes 45 percent of the country's GDP and it employs about 80 percent of the population.</p> <p>Lao PDR with its much smaller population and abundant but largely untapped natural resources, which include water and land, is in a prime position to serve what must become growth markets for rice, vegetables and other farm produce. Currently, the major food crop and agriculture product of Lao PDR is rice. It is cultivated during the wet season, either rain fed in upland areas of</p>

under wet conditions on inundated river plains. Rice is often grown as a subsistence crop. The problem continues to be nation wide food security made worse by the frequency of droughts and floods. Despite the importance, agricultural productivity in Lao PDR is at a rather low level mainly due to traditional farming system susceptible to adverse affect of pests and diseases associated with the introduction of high yielding varieties and exotic crops.

Increasingly, the traditional agriculture utilizing natural resources and providing basic needs is being replaced by a much more complex system dependent on many external influences such modern agricultural inputs, e.g. improved seed, fertilizer, new technology and credit access.

Increasing income and growth in neighboring countries create a growing demand for food and agricultural products. These can be supplied from Lao PDR, whose natural resources favor expansion of agricultural production. Improvement of the investment climate, preparation accession for membership of the World Trade Organization (WTO) and making optimal benefits of ASEAN Free Trade Area (AFTA) membership will play synergetic roles in unleashing the growth potential of agriculture.

Exports of agricultural products from Lao PDR have not yet faced a major ban or suspension for SPS non compliance, but there are specific concerns for the future. At present most agricultural exports are destined to market segments in neighboring countries where food safety and quality requirements are still moderate or low. There is no formal record, but it is estimated that greater than half of agricultural exports are through informal border trade. However, public and market requirements for quality and safety in neighboring countries are also increasing.

The role and responsibilities of the NPPO has been made more explicit under the WTO/SPS regime and stipulated in the New Revised Text of the IPPC (1997).

Lao PDR has not yet fully implemented all 27 ISPMs adopted by CPM. The status of pest surveillance is essentially an *ad hoc* event with no long term planning program in place, very limited resources and limited management capacity. Human resource development is the major issue of concern. The development of documented systems and processes, alignment of current activities with the requirements of international standards, improving the physical resources (equipment and transport) are all issues which the NPPO has to address to develop or improve the plant pest surveillance systems in Lao PDR. Because pest surveillance is a national issue, formalized collaborative systems with the provincial departments of agriculture and forestry (PAFO/DAFO), National Agriculture and Forestry Research Institute (NAFRI), the National Agriculture and Forestry Extension Service (NAFES) and the National University of Laos (Faculty of Agriculture) needs to be developed or strengthened.

Protecting the Lao People's Democratic Republic's Plant Health Status and Facilitating Safe Trade in Plants and Plant Products, the NPPO of Lao PDR is dealing its mandates with the Prime Minister Decree on Plant Quarantine promulgated on 1993 and so far to be in compliance with the WTO-SPS Agreement the National Assembly has approved new Plant Protection and

Quarantine Law on December 2008. This new law determines the mandate of the NPPO to become a highly effective, efficient and professional with the capacities and competencies to protect the nation's plant health status and biodiversity and promote market access for plants and plant products in compliance with international agreements and standards.

With regard to the policy development and legislation, the Government of Lao PDR has defined its new agriculture and forestry strategy for the period 2006-2010 which contains four key objectives, such as food security, commodity production, eradication of shifting cultivation, and sustainable forest management. The policy of commodity production involves increasing the supply of goods for both domestic and foreign market. The Government is launching the promotion of "Clean Agriculture" aiming to produce organic agricultural products. IPM program as well as GAP are included in 4 production systems of Clean Agriculture policy i.e. (i) conventional traditional agriculture, (ii) conventional chemical agriculture (GAP and IPM), (iii) pesticide free products (PFP), and (iv) organic agriculture (OA). The main achievements have been the adoption by the Ministry of Agriculture and Forestry of Lao PDR of the Standards for organic farming. They were adapted to the local context from IFOAM (International Forum for Organic Agriculture Movement) Standards. Therefore, GAP earlier has been initially interested by STDF, but no explicit comment, the last discarded its support as priority for consideration usually depends on the willingness and policy of donors. Finally, Japan International Cooperation Agency has initiated a pilot program for narrowing the development of GAP towards ASEAN Integration as component of tripartite cooperation mechanism among Lao PDR, the ASEAN Secretariat and JICA. Project activities related to GAP development is not yet launched.

As the role and responsibilities of the NPPO has been made more explicit under the WTO/SPS regime and stipulated in the New Revised Text of the IPPC (1997), there is an increasing demand for government organizations to be more efficient, transparent and accountable for their activities or actions both globally with the trading partners and nationally with their stakeholders. Identified strategic areas for further development towards 2010 and 2020 including increasing rice production and production of other crops including maize, coffee, cassava, soybean, green bean, peanut, sugarcane, sugar palm fruit, sesame, vegetable and tropical fruit require to pay critical attention to all economic sectors reforms; to develop human resources in various areas, and to support modern industry development.

At present, potentially more than 9 land border posts are going to play a major role in connecting Lao PDR to the neighboring countries. Lao PDR is also likely to become a major land route for the movement of agricultural products in the GMS countries. Hence, for instance, in the strategic planning process, careful assessment needs to be undertaken on the anticipated or projected increase in activities at the various entry/exit points. There entry/exit points are likely to need improved facilities for phytosanitary inspections, testing, certification, etc. Capacity building and infrastructure investment must be prioritized in accordance with real needs.

Period	Plant protection overview: Lao PDR
2007-June 2009	<p>Lao PDR is a landlocked country. It occupies an area of 236,800 km² out of which approximately 75% is mountainous and lies entirely within the tropics and is located between latitudes 14° 10' to 22° 10' N and longitudes 100° 20' to 107° 50' E. The population early 2008 was estimated at about 5.8 million, and more than half of the population is concentrated in flat plain adjacent to Mekong basin and its tributaries.</p> <p>Agriculture is the main stay of the national economy and contributes 45 percent of the country's GDP and it employs about 80 percent of the population.</p> <p>Lao PDR with its much smaller population and abundant but largely untapped natural resources, which include water and land, is in a prime position to serve what must become growth markets for rice, vegetables and other farm produce. Currently, the major food crop and agriculture product of Lao PDR is rice. It is cultivated during the wet season, either rain fed in upland areas of under wet conditions on inundated river plains. Rice is often grown as a subsistence crop. The problem continues to be nation wide food security made worse by the frequency of droughts and floods. Despite the importance, agricultural productivity in Lao PDR is at a rather low level mainly due to traditional farming system susceptible to adverse affect of pests and diseases associated with the introduction of high yielding varieties and exotic crops.</p> <p>Increasingly, the traditional agriculture utilizing natural resources and providing basic needs is being replaced by a much more complex system dependent on many external influences such modern agricultural inputs, e.g. improved seed, fertilizer, new technology and credit access.</p> <p>Increasing income and growth in neighboring countries create a growing demand for food and agricultural products. These can be supplied from Lao PDR, whose natural resources favor expansion of agricultural production. Improvement of the investment climate, membership of the World Trade Organization (WTO) and making optimal benefits of ASEAN Free Trade Area (AFTA) membership will play synergetic roles in unleashing the growth potential of agriculture.</p> <p>Exports of agricultural products from Lao PDR have not yet faced a major ban or suspension for SPS non compliance, but there are specific concerns for the future. At present most agricultural exports are destined to market segments in neighboring countries where food safety and quality requirements are still moderate or low. There is no formal record, but it is estimated that greater than half of agricultural exports are through informal border trade. However, public and market requirements for quality and safety in neighboring countries are also increasing.</p>

	<p>The role and responsibilities of the NPPO has been made more explicit under the WTO/SPS regime and stipulated in the New Revised Text of the IPPC (1997).</p>
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Period	Plant protection overview: Malaysia
2009-2010	<p>Since the last session of the APPPC 2009, Malaysia has finalized the draft Plant Biosecurity Act to replace the current Plant Quarantine Act 1976. It will be tabled in Parliament during the next session. The Malaysia Quarantine and Inspection Service (MAQIS) that was established since August 2008 will be in full operation as an entity by end of 2011 to carry out quarantine inspection for all agriculture produce including plants, animal and fish products at all entry check points in Peninsular Malaysia and Labuan. The new regulation to control pesticides manufacturer is also in the final stage of gazetting.</p> <p>Two export and treatment centres have been established as one stop centre for phytosanitary treatment, packaging, storage and phytosanitary certificate issuance. These centres are equipped with Vapour Heat Treatment machine and minimally processed facilities.</p> <p>In order to facilitate trade and market access of agriculture produces/products, Malaysia had also carried out the following phytosanitary measures:</p> <ul style="list-style-type: none"> • Apart from accreditation scheme on fumigation (MAFAS), heat treatment (MAHTAS) and phytosanitary certification (MPCA) schemes that have been established since 2007, another new scheme is being formulated to certify kiln drying facilities (MAKIDAS) that will facilitate trade in forest products. • Mandatory ISPM 15 implementation for import in May 2010. • Continuous eradication programme to control <i>Erwinia papayae</i> on papaya • Implementing contingency plan to control red palm weevil (<i>Rhynchophorus ferrugineus</i>). • New regulations were imposed on importation of logs, sawn timber and other wood articles. <p>Several significant events that had taken place in the area of crop protection are:</p> <ul style="list-style-type: none"> • The establishment of Remote Microscope Diagnostic Network (RMDN) in collaboration with DAFF, CABI and Cooperative Research Centre for National Plant Biosecurity Australia for the purpose of enhancing our officers' capability in identification/diagnosis of plant pests and diseases. • Introduction of <i>Asecodes hispanarium</i> to control <i>Brontispa</i> sp. with

	<p>cooperation and assistance from DOA Thailand.</p> <ul style="list-style-type: none"> • Hosting a Workshop on the Prevention of Introduction of South American Leaf Blight in line with the decision of 26th APPPC meeting. • Hosting of workshop on the Project Preparation Grant STDF/PPG/ 328 “Developing Trade Opportunities: An Integrated Systems Approach For Pest Risk Management”. • Hosting of APEC workshop: Enhancing Food Security through a Regional Approach and Wide Stakeholders Participation to Plant Biosecurity. • Setting up of a new residue laboratory to increase capacity in residue analysis. • Phasing out of formulation containing tributyltin compound. Registration of such compound will be withdrawn as of 2011 in compliance with Rotterdam Convention. • Implementation of specific label requirement for QPS and non-QPS to comply with Phasing out schedule on Methyl Bromide. • Hosting a workshop on harmonization of labelling requirements in ASEAN in November 2010 under the FAO-TCP project. Two more meetings will be held in Malaysia in 2011.
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Period	Plant protection overview: Malaysia
2007-June 2009	<p>Since the last session of the APPPC 2007, Malaysia is now getting to the final stage in the drafting of the plant quarantine legislation to replace the Plant quarantine Act 1976, and alongside with it the Plant Protection Regulations is also being drafted to replace the existing Plant Quarantine Regulations 1981.</p>

Period	Plant protection overview: Myanmar
2007-June 2009	<p>Myanmar has to rely mainly on its natural resources with its economy being based on agriculture. The agriculture contributes around 23% of the country’s export earnings and employs about 63% of working population. For further development of agricultural sector, it is vital that the agricultural outputs are produced and traded in compliance with SPS requirements which are internationally accepted.</p> <p>At present, 90% of major export crops such as pulses and maize are sold to countries with less rigorous SPS requirements. The authorities are trying their best to comply with the SPS requirements and implement ISPMs in a timely</p>

	<p>manner.</p> <p>The Plant Protection Division of Myanmar Agriculture Service is playing the role of the National Plant Protection Organization (NPPO) and actively participates in the implementation of the country's plant quarantine measures in line with both Regional Standards for Phytosanitary Measures (RSPMs) and International Standards for Phytosanitary Measures (ISPMs). Whenever the drafts for the new standard are received for comments, NPPO has made every effort to cooperate and respond to the request. However, the implementation of existing international and regional standards of phytosanitary measures still needs to be further strengthened.</p> <p>While no pest outbreak occurred during the period of 2007-2008, rodent outbreaks occurred in the northern part of Myanmar in 2008 but they were not of agricultural importance.</p> <p>The biological control research which is part of the Integrated Pest Management (IPM) Program is being carried out for cotton, groundnut and vegetables. While the Farmer's Field Schools (FFS) have been established since 2000, emphasis was placed only on the rice farmers during the beginning stage.</p> <p>The work related to the country's pesticide management has been progressing steadily. It covers pesticide registration schemes, licensing programme, control of Persistent Organic Pollutants, disposal of toxic wastes, as well as management of transboundary movement of illegal products.</p>
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Period	Plant protection overview: Nepal
2009-2010	<p>The economy of Nepal is predominantly dependant on agriculture. Nearly 17.71 million people are engaged in agriculture and about 17 % of the population lives below poverty line. The total cultivated area under agriculture is 3.091 million ha. The contribution of agriculture sector to the country's GDP constitutes about 32.60 %.</p> <p>Sustainable reduction of poverty, ensuring food security taking advantage of the country's agro-climatic diversity while fulfilling its international obligations concerning biodiversity conservation and environment protection are the important priorities of the government of Nepal. The above strategies are also closely linked to the various international conventions and agreements to which Nepal is a party.</p> <p>To streamline the services in the area of plant protection, the Government of Nepal has established a separate Plant Protection Directorate (PPD) in the Department of Agriculture under the Ministry of Agriculture and Cooperatives (MoAC). The Plant Protection Directorate executes and coordinates various plant protection functions such as plant quarantine and implementation of international standards on phytosanitary measures, surveillance, pest outbreaks & invasive species management, pest and pesticide management programs</p>

	<p>through its different outfits as follows:</p> <ol style="list-style-type: none"> 1. National Plant Quarantine Programme (with five regional plant quarantine check posts, eight check posts and two sub-check posts), 2. National IPM Programme, 3. Pesticide Registration and Management Office, 4. Five regional plant protection laboratories located in five development regions of the country. <p>In addition to above, each District Agriculture Development Office (DADO) (a total of 75) is posted with a Plant Protection Officer with supporting Junior Technicians and Technical Assistants, who are made responsible to coordinate and implement various plant protection functions at the district level.</p> <p>In 2004, in line with the provision made by the IPPC, the government of Nepal nominated the PPD as National Plant Protection Organization (NPPO) contact point for IPPC/APPCC and the Director of the PPD was assigned as focal point for the NPPO. The government of Nepal also nominated focal points for WTO SPS related matters (<i>Department of Food Technology and Quality Control under MoAC</i>), international treaties and conventions such as Rotterdam Convention, Stockholm Convention (<i>Pesticide Registration and Management Office</i>) as well as a competent authority (CA) and a focal point for Basel Convention (<i>Ministry of population and Environment</i>).</p> <p>Also, Nepal has either already brought into force or is in the process of passing laws, rules and regulations compatible with the above international treaties such as Plant Protection Act (2007), Pesticides Act (1991) and Plant Protection Regulation (2009).</p>
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Period	Plant protection overview: New Zealand
2009-2010	<p>Since the last Session of the Asia and Pacific Plant Protection Organisation, New Zealand has continued to develop and refine its biosecurity system. During this time it has undergone a major restructure with the amalgamation of the Ministry of Agriculture and Forestry (MAF), the New Zealand Food Safety Authority (NZFSA) and Biosecurity New Zealand. They were amalgamated on 1 July 2010 and the new integrated structure came into effect on 1 February 2011. The amalgamation is a move to a functional based structure. In addition the Government has announced that MAF will merge with the Ministry of Fisheries. This is to take affect on 1 July 2011.</p> <p>MAF is a large and extensive government agency and is charged with the leadership of New Zealand's biosecurity system, the core of New Zealand's economy. The focus of MAF is on enhancing the integrity and performance of the value food chain, which covers animals, plants, food and related sectors, and their contribution to New Zealand's economy and well-being.</p>

The Biosecurity Act Amendment Bill is in the process of coming into law. The amendments address areas in Border Risk Management, Marine Biosecurity, Readiness and Response, Pest Management, and Compliance and Enforcement.

Several strategic activities have been undertaken in the last year:

- The Biosecurity Surveillance Strategy 2020 sets the future direction for the biosecurity surveillance system and is a starting point for changing the way surveillance is led, planned, conducted, and communicated. As the strategy is implemented New Zealand expects that collaboration between government agencies, regional government, industries, and other stakeholders will improve, as will biosecurity surveillance decision-making. The Strategy was officially launched by the Minister of Biosecurity in February 2010, and implementation of many of the key actions that were identified, are now well underway.
- New Border Management Systems - Integrated improvements between rule making and border interventions. Key elements are using a risk management approach rather than prescription, using profiling/intelligence to determine interventions and a new IHS Development Process.
- Joint Border Management System (JBMS) It is a collaborative system between Customs, MAF and other frontline agencies. Stage 1 of this initiative is due to be completed in 2012. This stage is focused on integrated targeting and operations coordination and is a key element of the intervention approach that they are taking. It includes transactional support, intelligence functions, profile support and a risk management approach. This will provide information on passengers and goods arriving in the country and allow the sharing of information.

Other Activities of interest

Pseudomonas syringae pv. *actinidiae* (Psa) (Bacterial Canker of kiwifruit)

Update - Psa identified as being widespread across New Zealand, 147 separate kiwifruit orchards are now positive, however it looks like Psa may have been here for some time. Two or three distinct isolates of Psa have now been identified – Italian and Asian. The Italian isolate appear to have the potential to be more virulent as secondary symptoms appear to be associated with this type of isolate. It appears to be restricted to a small isolated zone in Te Puke, Bay of Plenty, North Island. Currently 41 Italian positive sites have been identified and the programme is geared around containing the isolate in this area and reducing the bacterial loading to a manageable level. The response is being moved to industry but MAF is still providing technical input and oversight.

Response Tracker is a database designed to support the maintenance and tracking of MAF responses. It is used to report on individual responses or to provide data on response activities for a given period. Responses are created and maintained by response managers.

	<p>FarmsOnLine is a shared resource that will give appropriate government agencies and industry groups' efficient access to up-to-date rural property information. It covers Biosecurity, National Animal Identification and Traceability, supporting responses to adverse rural events and effective policy development for the agricultural, food and forestry sectors.</p> <p>New Zealand operates an approvals framework for pesticides under the ACVM and HSNO Acts (see section IV). MAF (incorporating the former NZFSA) administers the ACVM Act, while ERMA NZ administers the HSNO Act and has developed a substance reassessment programme. Both organisations have implemented a compliance structure to support the approvals framework.</p> <p>New Zealand continues to develop and review import health standards based on pest risk assessment in accordance with the International Standards for Phytosanitary Measures. Since the last session of the APPPC, import health standards have been developed for a range of plants and plant products.</p> <p>New Zealand continues to be active in the development, implementation and promotion of international and regional standards.</p>
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Period	Plant protection overview: New Zealand
2007-June 2009	<p>Since the last Session of the Asia and Pacific Plant Protection Organisation, New Zealand has continued to develop and refine its Biosecurity system.</p> <p>MAF Biosecurity New Zealand (MAF BNZ) is the division of the Ministry of Agriculture and Forestry (MAF) charged with leadership of the New Zealand biosecurity system. It encompasses facilitating international trade, protecting the health of New Zealanders and ensuring the welfare of our environment, flora and fauna, marine life and Maori resources.</p>

Period	Plant protection overview: Pakistan
2007-June 2009	<p>During the period 2007-2008, Pakistan has made steady progress in all areas of plant protection.</p> <p>Under the supervision of the Ministry of Food and Agriculture (MINFA), the Department of Plant Protection (DPP) now consists of four divisions including Plant Quarantine, Locust Survey & Control, Pesticide Registration and Management and Aerial Spray.</p>

Period	Plant protection overview: Philippines
2009-2010	<p>The Bureau of Plant Industry (BPI) has the primary task of promoting the development of plant industries through research and development, crop production and protection and effective technology promotion and transfer. It is the main agency in the Department of Agriculture, which sets the directions for the accelerated development of modern crop technologies, proper packaging and dissemination to the end-users that would increase their farm productivity and ultimately improve the living standards of the farmers.</p> <ol style="list-style-type: none"> 1. Crop production The BPI was created to perform the task of plant research and crop production. The Production Division handles planning and programming of seed production and seed certification and propagation. These are in addition to the BPI's established functions on plant research and development, crop utilization, production and technology transfer. 2. Plant quarantine Plant quarantine which is a major activity necessary in crop protection specifically mandates the BPI "to prevent the introduction of exotic pests in the country and prevent further spread of plant pests already existing from infested to pest-free areas and to enforce phytosanitary measures for the export of plants, plant products and regulated articles." 3. Seed quality The BPI also has a role in the development of the seed industry and its inherent function seed and plant material certification, the act strengthen the Seed Quality Control Section to become the National Seed Quality Control Services and given control supervision over existing field inspections and control services and seed testing laboratories. 4. Crop protection To strengthen the BPI's crop protection function, Regional Crop Protection Centers are established to serve the research and protection needs covering all the regions. Pesticide Residue Analysis and Monitoring is also a mandate of the BPI. 5. Pesticide residue analysis Pesticide Laboratories all over the country are established to monitor the levels of pesticide residue in crops to protect the local and international consumers from possible health hazards, check on possible indiscriminate use and application of pesticides on food crops and other agricultural products, determine pesticide degradation rates for different crops to be able to improve/change agricultural practices and determine and evaluate practices on the use of pesticides for possible modification resulting in acceptable low residues in agricultural products. <p>The BPI functions to ensure safe supply of fresh agricultural crops, improve the quality of local fresh agricultural crops and encourage its export, and promote use of organic fertilizer and integrated pest management.</p>

Period	Plant protection overview: Republic of Korea
2009-2010	<p>The vision of the Ministry for Food, Agriculture, Forestry and Fisheries (MIFAFF) in 2011 is “Wealthy rural areas, happy people”. In the line with the government’s commitment, three goals were set: enhancing risk management, expansion of growth engines and vitalization of rural areas. Especially, the goal on enhancing risk management includes coping with climate change and enhancing safety and quality of agricultural products.</p> <p>The former Ministry of Agriculture and Forestry has been enlarged into the Ministry for Food, Agriculture, Forestry and Fisheries (MIFAFF), which results in substantive restructuring. A new bureau for the food safety and consumer affairs policy is established by the Ministry. A new division for labelling, quarantine and inspection is also established under the new bureau. The purpose is to strengthen food safety and quarantine.</p> <p>Recently, action is going on to merge animal, plant and fisheries quarantine agencies which may be finalized in 2011. However, current major policies will remain unchanged.</p> <p>The National Plant Quarantine Service (NPQS)’s vision for 2011 is “World top class quarantine for customer satisfaction” and its strategies are (1) creating green development engine through prevention of exotic pest introduction, (2) enhancing competitiveness of agricultural products through quarantine service, (3) increasing customer satisfaction and (4) strengthening quarantine based on technology development.</p> <p>The Rural Development Administration (RDA)’s vision for 2011 is “World top agriculture-strong country” and its strategic goals are (1) enhancing crop competitiveness through high quality agricultural technology, (2) establishing core basic techniques for future agriculture, (3) balanced development through providing agricultural technologies, (4) fostering next generation elite farmer through systematic professional education and (5) realizing administration for customers and outputs.</p>

Period	Plant protection overview: Republic of Korea
2007-June 2009	<p>One of the government goals to achieve for the next five years is ‘Profit-making agriculture and fisheries and lively rural society’. In the line with the government commitment, the Ministry for Food, Agriculture, Forestry and Fisheries (MIFAFF) aims to upgrade agriculture from primary production-based industry into advanced industry which encompasses processing and marketing so that our agriculture and fisheries can compete in a global arena.</p>

	<p>MIFAFF also drives production of environmentally-friendly, safe and high quality agro-good products.</p> <p>The former Ministry of Agriculture and Forestry has been enlarged into Ministry for Food, Agriculture, Forestry and Fisheries (MIFAFF) and substantive restructuring happened. A new bureau for Food Safety and Consumer Affairs Policy is developed in the Ministry and a new division for Labelling, Quarantine and Inspection was developed under the new bureau which may mean strengthening food safety and quarantine.</p> <p>However, major implementation organizations regarding plant protection such as National Plant Quarantine Service, Rural Development Administration, are unchanged.</p>
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Period	Plant protection overview: Sri Lanka
2007-June 2009	<p>Some key organizational changes took place during 2007-2008. Some senior officers were transferred to other work places while some retired or were promoted.</p> <p>Discussions were held to revise the regulations made under the Plant Protection Act. The draft on the revised regulations was submitted to the World Trade Organization. Incorporating comments from stakeholders, the draft was now under review for consistency with the Act. As some loopholes were found, the National Committee was appointed to revise the Plant Protection Act No 35 of 1999. The purpose was to make necessary changes to reflect the current requirements, ensuring that the regulations were consistent with IPPC recommendations.</p> <p>Noteworthy in the revised regulations was the control of Coconut Leaf Rot Disease and Weligama Cococnut Wilt Disease in the southern region of Sri Lanka.</p>

Period	Plant protection overview: Thailand
2009-2010	<p>Thailand's phytosanitary measures have been implemented in compliance with the Plant Quarantine Act B.E. 2507 (1952) amended by the Plant Quarantine Act (No. 2) B.E. 2542 (1999) and the Plant Quarantine Act (No. 3) B.E. 2551 (2008). The Department of Agriculture (DOA) is the agency in charge of the implementation of the phytosanitary measures and also serves as the National Plant Protection Organization (NPPO). The Plant Quarantine Act (No. 3) provides specifications and criteria for notification of plants, plant</p>

	<p>pests and carriers as prohibited articles. So far, there are altogether 32 notifications which are issued under this Act. The purpose of the notifications is to strengthen the quarantine practices for both the export of plants and plant products and the import of prohibited, restricted and unprohibited materials.</p> <p>During the period 2009-2010, there were outbreaks of pests including <i>Phenococcus manihoti</i> (Pink cassava mealybug), <i>Opisina orenosella</i> (Black headed caterpillar), and <i>Salvinia molesta</i> (Giant salvinia). The responsible state agencies including the Department of Agriculture (DOA) and the Department of Agricultural Extension (DOAE) joined hands in getting rid of pink cassava mealybug and black headed caterpillar by using chemicals and the <i>Bacillus thuringiensis</i> (Bt) as a biocontrol agent. In dealing with the giant salvinia, the state agencies not only attempted to eradicate and control the pests but also closely monitored them. The members of the public were also kept informed about the pests. Moreover, the DOA conducted a detection survey of mango seed weevil, <i>Sternochetus mangiferae</i>. The purpose is to confirm that Thailand is free from this weevil and to expand the export market for Thai mango.</p> <p>During the same period, the DOAE's national policy on the IPM programmes remained unchanged. There were three important IPM programmes including the IPM development on economic crops, the area-wide integrated control of fruit flies and the establishment of the community plant pest management centre. IPM-related researches were also conducted on four types of plants including pomelo, tangerine, longan and ginger. As well, the DOA and the DOAE joined hands in providing farmers with training on the Good Agricultural Practice (GAP) and in awarding GAP certifications to farmers who produce durian, longan orchid, fresh orchid, cut flower, pineapple, pomelo, coffee, non-heading Chinese cabbage, tomato, asparagus, Chinese kale, onion, cabbage, chilli, yard long bean, sugar pea, baby corn, Chinese cabbage, shallot, cassava, rubber, mango, tangerine, and curcuma.</p> <p>The Hazardous Substances Act B.E. 2535 (1992) which was amended in 2008 is being enforced. The DOA issues a notification on registration and licensing, which requires pesticide companies or laboratories to adopt the Good Laboratory Practices (GLPs). During the period 2009-2010, Endosulfan CS formulation was restricted.</p>
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Period	Plant protection overview: Thailand
2007-June 2009	The Plant Quarantine Act B.E. 2507 (1952) amended by the Plant Quarantine Act (No.2) B.E. 2542 (1999) and Plant Quarantine Act (No.3) B.E. 2551 (2008) have been enforced by the Department of Agriculture (DOA). The Plant Quarantine Act (No.3) provides specifications and criteria for notification of plants, plant pests and carriers as prohibited articles. DOA has

	<p>recently given a number of notifications to strengthen the quarantine practices for both export plants and plant products and import prohibited articles.</p> <p>In 2008, the outbreak of an unknown species of mealybug occurred in some cassava plantations. The new pest caused more severe damage to cassava than striped mealybug, <i>Ferrisia vergata</i>.</p> <p>DOA has recently conducted a detection survey of mango seed weevil, <i>Sternochetus mangiferae</i>. The purpose is to confirm that Thailand is free from this weevil and to expand the export market for Thai mango.</p> <p>During 2007-2008, the Department of Agricultural Extension (DOAE) has not changed the national policy on IPM programme. However, a number of IPM training programs and farmer field schools had to be curtailed, due to the budget constraint. Farmers' education placed emphasis on changing the attitude of the farmers who applied highly toxic pesticides and on helping them understand the good principles of Good Agricultural Practices (GAPs). The farmers were also encouraged to use bio-agents to replace or alternate with chemical pesticides.</p> <p>Since the end of 2007, under the project entitled "Using Integrated Pest Management for Decreasing Risk of Plant Pest Infestation", DOAE has put efforts to develop farmers into "Pests Management Professionals in IPM", to reduce damage to farmers crops, to encourage less investment, and to enhance community participation.</p> <p>Area-wide IPM of fruit fly control programme using the Sterile Insect Technique (SIT) has been carried out over a large area. However, its success largely depends on adequate and timely financial support from the government.</p> <p>The Hazardous Substances Act B.E. 2535 (1992) was amended in 2008 and is enforced. DOA gave a notification on registration and licensing, which requires pesticide companies or laboratories to adopt the Good Laboratory Practices (GLPs).</p>
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Period	Plant protection overview: Viet Nam
2009-2010	<p>During the last two years (2009-2010), Viet Nam continued to strengthen and improve its plant health system. Great attention is paid to the reform of pesticide management regulations on food safety and pesticide trading and use at the commune level. Especially, the Law on Plant Protection and Quarantine is being drafted and will be submitted to the Assembly in 2013. This Law provides for prevention and eradication of pest outbreaks to plant resources, for plant quarantine, management pesticides, practicing of plant protection and quarantine and State management of plant protection and quarantine.</p> <p>Great efforts have been made in controlling pest outbreaks on rice, particularly the Southern Black Streaked Dwarf Virus Disease (SBSDVD) in the North</p>

and Rice Ragged Stunt virus (RRSV)/ Rice Grassy Stunt Virus (RGSV) in the South. As a result, rice production in 2009 and 2010 continued to increase to 38.9 and 39.8 million tonnes respectively, and the national food security was maintained.

For capacity building purpose, a lot of programs were carried out in different fields. Farmer and trainer training courses on plant protection and pesticide application were organized nationwide, both by State budget and international supports. In quarantine sectors, training focussed on quarantine officers and fumigation companies.

Plant protection

Viet Nam has developed a plant protection network from the Central level to the commune level to have timely direction and guidance for production. Especially, the country is making efforts to empower the commune authorities in managing the pesticide use and trading, and the farmers in managing the pests and crops based on IPM principles. In order to fulfill the plant protection tasks, besides the regular activities a lot of projects and programs were implemented in 2009-2010.

In 2010, various pest outbreaks happened at higher level than some previous years. In the North, SBSDVD, transmitted by white back plant hopper, spread to 52,800 ha in 33 provinces; brown plant hopper (BPH) infested around 1,082,000 ha; and small leaf folder affected 1,189,434 ha... In the South, the area influenced by stunt virus diseases RGSV and RRSV was reduced to 420 ha. To control the disease infestation various measures were taken, including IPM, field cleaning, migratory avoidance, and seedling protection. At the same time, technical cooperation with neighboring countries (such as China) and international organizations (such as IRRI and FAO) were strengthened to exchange and share the experiences on sustainable management of the pests. As a result, the loss was much reduced in comparison with 2009.

The National IPM Program has IPM trainers in 63 provinces and cities. In 2009-2010, with the supports from FAO, Norway, Oxfam Quebec, Oxfam America, Oxfam, 4 IPM courses for training of trainers were conducted for 120 trainers of 22 provinces, and 2,333 farmer field schools (FFS) for 87,800 farmers. In the IPM training curriculum, field studies on variety selection, fertilizer and pesticide application were carried out. The IPM also promoted the application of VietGAP and the market access for farmers' products.

To adapt to climate change, the Biodiversity Use and Conservation in Asia Programme (BUCAP) was actively maintained in 200 communes of 13 provinces, involving 67,834 rice farmers. The program also utilized the FFS approach to promote the Plant Genetic Resource Management. The farmers could learn how to rehabilitate, multiply and breed rice varieties. Notably, farmers in some provinces bred new rice varieties which were certified and multiplied to supply seed for seed companies and other localities.

Apart from the above mentioned programs, some others were also implemented, including SRI, 3 Reductions – 3 Gains, 1 Must-5 Reductions,

	<p>and potato production with minimum tillage technique. Specifically, in 2010 (two cropping seasons), SRI - introduced as a follow-up of IPM FFS - was applied in 286,053 ha in 22 northern provinces and participated in by 781,282 farmers. Remarkably, SRI has been recognized as a technical advance by Ministry of Agriculture and Rural Development. The potato production by minimum tillage technique which utilized rice stubble was developed in 2009 in the North of Viet Nam and quickly became an effective solution to minimize the stubble burning. This helped to mitigate the harm to the environment and reduce the production costs such as labor and water. Estimatedly, it increased the yield over 10% in comparison with the conventional practices. In 2010, the technique was applied in 14 Northern provinces. Briefly speaking, all the conducted programs helped farmers reduce seed, fertilizers and pesticides and, therefore, increase the profit.</p>
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<p>Period</p>	<p>Plant protection overview: Viet Nam</p>
<p>2007-June 2009</p>	<p>Outstanding Issues During the last two years (2007-2008), Viet Nam continued to strengthen and improve its plant health system. The Plant Protection Department (PPD) is the National Plant Protection Organization (NPPO) responsible for carrying out the functions specified in the International Plant Protection Convention (IPPC), and for overseeing the agricultural plant safeguarding system. The mission statement of PPD for this new period is “to become a highly effective, efficient and professional NPPO with the capacities and competencies to protect the nation’s plant health status and biodiversity and promote market access for plant and plant products in compliance with international agreements and standards”.</p> <p>Plant Protection The plant health functional responsibilities in Viet Nam are delegated to 2 layers: central and provincial levels. PPD has a substantial network at the provincial level with Plant Protection Sub Departments (PPSDs) in 63 cities and provinces, managing and implementing plant health programme.</p>