



**Plant protection profiles**  
**from**  
**Asia-Pacific countries**  
**(2009-2010)**  
*3<sup>rd</sup> edition*



**Plant protection profiles  
from  
Asia-Pacific countries  
(2009-2010)  
*3<sup>rd</sup> edition***

**ASIA AND PACIFIC PLANT PROTECTION COMMISSION**

**and**

**FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS  
REGIONAL OFFICE FOR ASIA AND THE PACIFIC**

**Bangkok, 2011**

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO in preference to others of a similar nature that are not mentioned.

The views expressed in this information product are those of the author(s) and do not necessarily reflect the views of FAO.

ISBN 978-92-5-106920-2

All rights reserved. FAO encourages reproduction and dissemination of material in this information product. Non-commercial uses will be authorized free of charge, upon request. Reproduction for resale or other commercial purposes, including educational purposes, may incur fees. Applications for permission to reproduce or disseminate FAO copyright materials, and all queries concerning rights and licences, should be addressed by e-mail to [copyright@fao.org](mailto:copyright@fao.org) or to the Chief, Publishing Policy and Support Branch, Office of Knowledge Exchange, Research and Extension, FAO, Viale delle Terme di Caracalla, 00153 Rome, Italy.

© FAO 2011

For a copy of this publication, please write to:

Piao Yongfan  
FAO Regional Office for Asia and the Pacific  
Maliwan Mansion, 39 Phra Atit Road  
Bangkok 10200  
THAILAND  
Tel: (+66) 2 697 4268  
Fax: (+66) 2 697 4445  
Email: [yongfan.piao@fao.org](mailto:yongfan.piao@fao.org)

---

## Foreword


This 3<sup>rd</sup> edition of plant protection profiles from Asia-Pacific countries (2009-2010) provides the most current information about the organization and execution of plant protection functions in the 19 member countries of the Asia and Pacific Plant Protection Commission (APPPC) and Japan. The publication serves as one of the main platforms for information exchange in line with one of the key objectives of the Commission. Since publication of the previous edition in 2009, several countries have made significant progress in all areas of plant protection including plant quarantine, surveillance and pest outbreak management, pest management, as well as pesticide management.

In addition to the updated profiles of 14 countries and analysis of the 26<sup>th</sup> session country reports, this edition features the analyses and summaries of country responses to four questionnaires. The questionnaire related to selected International Standards for Phytosanitary Measures (ISPMs) identified key factors that contributed or hindered their implementation. The other three questionnaires related to pesticide management were aimed at determining the current status of compliance with the International Code of Conduct on the Distribution and Use of Pesticides.

I would like to take this opportunity to express my sincere appreciation and heartfelt thankfulness to the National Plant Protection Organization (NPPO), their colleagues and support staff for their valuable contributions and considerable efforts in updating the profiles and giving responses to the questionnaires.

I am also pleased to inform you that a new website ([www.apppc.org](http://www.apppc.org)) has recently been developed for the Commission's members, thanks to the kind support and continued assistance from the Secretariat of the International Plant Protection Convention (IPPC) and its staff. The new website is intended to facilitate the exchange of plant protection information among the APPPC members and other countries in the Asia-Pacific region. This represents an important step forward in the long journey towards realizing the goals and objectives of the Commission. The Commission welcomes suggestions and ideas to further improve the website so that it will truly serve the needs of the APPPC members and all the stakeholders concerned.

It is hoped that the country plant protection profiles and the analyses of the questionnaires will not only help policy-makers formulate more effective strategies and policies for their plant protection activities, but also promote closer coordination among the countries in the region. It is also hoped that the information provided in this publication will make plant protection management more successful and cost efficient, especially in dealing with pest outbreaks.



Hiroyuki Konuma  
Assistant Director-General and  
FAO Regional Representative for Asia and the Pacific

## Table of contents

	<i>Page</i>
<b>Foreword</b>	
<i>by the Assistant Director-General and FAO Regional Representative for Asia and the Pacific</i> .....	iii
<b>List of acronyms</b> .....	viii
<b>1. Plant protection information exchange among APPPC member countries</b> .....	1
Background information .....	1
Brief status, development and progress (covering periods before 2007, 2007-2009, and 2009-2010) .....	3
Plant protection overview .....	4
Plant quarantine .....	30
Outbreak management (surveillance, pest outbreaks and invasive species) .....	48
Pest management .....	55
Pesticide management .....	66
<b>2. Country plant protection profiles</b> .....	73
2.1 Australia .....	73
2.2 Bangladesh .....	92
2.3 Cambodia .....	111
2.4 China .....	132
2.5 Democratic People's Republic of Korea .....	156
2.6 Fiji .....	175
2.7 India .....	194
2.8 Indonesia .....	211
2.9 Japan (non-APPPC member) .....	230
2.10 Lao People's Democratic Republic .....	250
2.11 Malaysia .....	276
2.12 Myanmar .....	296
2.13 Nepal .....	314
2.14 New Zealand .....	331
2.15 Pakistan .....	352
2.16 Philippines .....	369
2.17 Republic of Korea .....	390
2.18 Sri Lanka .....	410
2.19 Thailand .....	429
2.20 Viet Nam .....	455

Table of contents (*continued*)

	<i>Page</i>	
<b>Appendix I</b>	<b>Analysis of the 26<sup>th</sup> session country reports and updated plant protection profiles .....</b>	477
<b>Appendix II</b>	<b>Relevance and implementation of 16 selected ISPMs – Results of a questionnaire survey in 2011 .....</b>	486
<b>Appendix III</b>	<b>Progress and constraints related to the implementation, monitoring and observance of the <i>International Code of Conduct on the Distribution and Use of Pesticides</i> – Results of a questionnaire survey in 2011 .....</b>	508
<b>Appendix IV</b>	<b>Usefulness and readability of FAO guidelines on pesticide management in support of the implementation of the International Code of Conduct on the Distribution and Use of Pesticides – Results of a questionnaire survey in 2011 .....</b>	535
<b>Appendix V</b>	<b>Management of Highly Hazardous Pesticides (HHP) in Asia and the Pacific – Results of a questionnaire survey in 2011 .....</b>	542
<b>Appendix VI</b>	<b>Implementation of the Rotterdam Convention .....</b>	550
	Table 1: Parties to the Rotterdam Convention in Asia and the Southwest Pacific (as well as numbers of their official contact points and designated national authorities).....	551
	Table 2: Rotterdam Convention implementation in Asia and the Pacific .....	552
	Table 3.1: Notifications of final regulatory actions for Annex III chemical .....	553
	Table 3.2: Notifications of final regulatory actions for Non Annex III chemicals .....	555
	Table 4: Chemicals covered by import responses by Parties and Non Parties to the Rotterdam Convention in Asia and the Pacific .....	559
	Table 5.1: Dates of import responses – Parties to the Rotterdam Convention in Asia and the Pacific .....	560
	Table 5.2: Import responses – Parties to the Rotterdam Convention in Asia and the Pacific .....	562
	Table 6.1: Dates of import responses – Non Parties to the Rotterdam Convention in Asia and the Pacific .....	564
	Table 6.2: Import responses – Non Parties to the Rotterdam Convention in Asia and the Pacific .....	566

**Table of contents** (*continued*)

	<i>Page</i>
<b>Appendix VII Membership and partnership status of APPPC and FAO member countries in Asia and the Pacific in international conventions and agreements .....</b>	567
<b>Appendix VIII Websites for plant protection information of APPPC member countries and Japan .....</b>	569

## List of acronyms

APPPC	Asia and Pacific Plant Protection Commission
ASEAN	Association of Southeast Asian Nations
Codex	Codex Alimentarius Commission
DAALI	Department of Agronomy and Agricultural Land Improvement
DNA	Designated National Authority
DOA	Department of Agriculture
ESCAP	Economic and Social Commission for Asia and the Pacific
ETL	Economic Threshold Level
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	FAO Statistical Database
FFS	Farmer Field School
GAP	Good Agricultural Practices
GDP	Gross Domestic Product
GMO	Genetically Modified Organism
GNI	Gross National Income
IPM	Integrated Pest Management
IPP	International Phytosanitary Portal ( <a href="https://www.ippc.int/IPP/En/default.jsp">https://www.ippc.int/IPP/En/default.jsp</a> )
IPPC	International Plant Protection Convention
ISPM	International Standards for Phytosanitary Measures
LMO	Living Modified Organism
MOA	Ministry of Agriculture
MOE	Ministry of Environment
MOH	Ministry of Health
MRL	Maximum Residue Limits
NGO	Non-Governmental Organization
NPPO	National Plant Protection Organization
OC	Organochlorine (pesticides)
OECD	Organisation for Economic Co-operation and Development
OP	Organophosphate (pesticides)
PANAP	Pesticide Action Network Asia and the Pacific
PCE	Phytosanitary Capacity Evaluation



POP	Persistent Organic Pollutants (Stockholm Convention)
PPD	Plant Protection Department/Division
PPPProfiles	Plant Protection Profiles
PRA	Pest Risk Analysis
PRG	Plant Growth Regulator
RSPM	Regional Standards for Phytosanitary Measures
SPS	Sanitary and Phytosanitary
TOT	Training of Trainers
UNEP	United Nations Environmental Programme
USD	United States Dollar
WHO	World Health Organization
WTO	World Trade Organization

# **1. 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 26<sup>th</sup> session country reports, this 3<sup>rd</sup> 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	✓
<b>Total</b>	<b>24</b>	<b>17</b>	<b>25</b>	<b>18</b>	<b>24</b>	<b>22</b>	<b>25</b>	<b>22</b>	<b>25</b>

\* 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.<sup>1</sup>

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 different areas of plant protection, i.e. plant quarantine, outbreak management (surveillance, pest outbreaks and invasive species), pest management and pesticide management.

---

<sup>1</sup> 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
<b>2009-2010</b>	<p><b>Review of Australia's quarantine and biosecurity arrangements</b></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><b>Biosecurity Services Group</b></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> <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.</p> <p><b>Australian Fumigation Accreditation Scheme (AFAS)</b></p> <p>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.</p>

Period	Plant protection overview: Australia
	<p>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.</p> <p><b>Regional capacity building</b></p> <p>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.</p> <p><b>Sea container hygiene system</b></p> <p>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.</p> <p><b>Australian IPPC activities</b></p> <p>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.</p> <p><b>Pesticide regulation</b></p> <p>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.</p> <p>Australia is a party to the Rotterdam and Stockholm conventions.</p> <p><b>National Plant Health Status</b></p> <p>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.</p>

Period	Plant protection overview: Australia
	<p><b>National plant health strategy</b></p> <p>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.</p> <p><b>PaDIL</b></p> <p>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 <a href="http://www.padil.gov.au">www.padil.gov.au</a> – 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.</p> <p>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).</p>

Period	Plant protection overview: Australia
<p><b>2007-June 2009</b></p>	<p><b>Review of Australia's Quarantine and Biosecurity Arrangements</b></p> <p>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><b>National Plant Health Status</b></p> <p>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>

<b>Period</b>	<b>Plant protection overview: Australia</b>
	The National Plant Health Status Report 07/08 is made available on the International Phytosanitary Portal.

<b>Period</b>	<b>Plant protection overview: Australia (Based on the country report presented at APPPC 25<sup>th</sup> session in August 2007)</b>
<b>Up to 2007</b>	<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>

<b>Period</b>	<b>Plant protection overview: Bangladesh</b>
<b>2009-2010</b>	<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 &amp; 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>



Period	Plant protection overview: Bangladesh
	<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 incorporation of of the provisions of Bio-pesticide registration. These modifications were submitted to the Ministry for approval.</p> <p>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 <i>IPM will be the main policy for controlling pests and diseases</i>. 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 gourd, gourd, 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.</p> <p>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.</p> <p>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.</p> <p>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 &amp; 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.</p>

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). 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"> <li>• To prepare the policy, plan, project, development programs, the measure to <i>reduce</i> the crop production loose caused by pest, to <i>manage</i> 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;</li> <li>• To prepare the plant product <i>quality standards</i>, the <i>assurance system of safety</i> 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;</li> <li>• To prepare the <i>regulation</i> and to be the <i>regulatory service</i> in the management of <i>plant protection work, safety of food</i> originally from plant product and <i>phytosanitary inspection</i> according to the Government policy and SPS agreement of WTO;</li> <li>• To direct , manage and encourage the <i>research activities</i> of research institution under its manage and in cooperation with the agricultural extension department and local organizations to encourage the <i>extension</i> of plant protection, phytosanitary and production measures to improve the quality and safety of product to farmers, farmer organization, investor and private sector for increasing their benefits and family income to improve population's welfare and facilitate the exportation of agricultural product;</li> <li>• To be a <i>supporting service to the seed inspector</i> by playing a role of regulatory authority for inspecting all the seed transportation across the border;</li> <li>• To persuade, facilitate and <i>encourage private sector to invest</i> the supporting service for plant protection, phytosanitary and improving quality of agricultural product;</li> <li>• To be a <i>technical advisor</i> and a service in <i>pest control</i> intervention, in <i>assessment of chemical</i> substances used to prevent, control, repellent, grow regulate (and all</li> </ul>

Period	Plant protection overview: Cambodia
	<p>other pesticide actives) pest and all agent or biological substances used for the above mentioned purpose and for soil fertility improvement and in <i>assessment of quality</i> of agricultural product;</p> <ul style="list-style-type: none"> <li>• To liaison, cooperate and implement the convention, agreement related in national, regional and international level.</li> <li>• To implement other duties as given by Director Team of General Directorate.</li> </ul> <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 <sup>th</sup> session in August 2007)
Up to 2007	<p>In Cambodia, three ministries are involved in plant protection, namely the <b>Ministry of Agriculture, Forestry and Fisheries (MAFF)</b>, 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 Solenopsis mealybug (<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>

Period	Plant protection overview: China
	<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 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 &amp; 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	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.

<b>Period</b>	<b>Plant protection overview: China (Based on the country reports presented at APPPC 25<sup>th</sup> session in August 2007)</b>
<b>Up to 2007</b>	<p><b>Plant protection policies</b></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>

<b>Period</b>	<b>Plant protection overview: Democratic People’s Republic of Korea</b>
<b>2009-2010</b>	<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>

<b>Period</b>	<b>Plant protection overview: Democratic People’s Republic of Korea</b>
<b>2007-June 2009</b>	<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 &amp; Import Commodity Inspection &amp; 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>

<b>Period</b>	<b>Plant protection overview: Fiji</b>
<b>2007-June 2009</b>	<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</p>

Period	Plant protection overview: Fiji
	<p>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"> <li>• The review of the Quarantine Legislations;</li> <li>• Training of officers;</li> <li>• Improve facilities and equipment;</li> <li>• Review and streamline current work practices;</li> <li>• Operating instructions;</li> <li>• Strengthen technical capacity;</li> <li>• Communication;</li> <li>• Awareness; and</li> <li>• New organization structure for the statutory authority to be known as the Biosecurity Authority of the Fiji Islands (BAFI).</li> </ul> <p>The reform exercise has been progressing slowly. However, the review of the legislation has been completed, awareness programmes for the public are on-going, 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 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>

Period	Plant protection overview: India
	<p>The Directorate of Plant Protection, Quarantine &amp; Storage, Department of Agriculture &amp; Cooperation administer the Destructive Insects &amp; 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 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 &amp; Andhra Pradesh.</p> <p>A Project on National Invasive Weed Surveillance (N.I.W.S) 1<sup>ST</sup> 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
2007-June 2009	<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 &amp; Storage, Department of Agriculture &amp; Cooperation administer the Destructive Insects &amp; 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,</p>

Period	Plant protection overview: India
	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.

Period	Plant protection overview: Japan
<b>2009-2010</b>	<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 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>

Period	Plant protection overview: Japan
<b>2007-June 2009</b>	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 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.



Period	Plant protection overview: Japan
	<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 People's Democratic Republic
<p><b>2009-2010</b></p>	<p>Lao PDR is a landlocked country. It occupies an area of 236,800 km<sup>2</sup> 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 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, 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.</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>

Period	Plant protection overview: Lao People's Democratic Republic
	<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> <p>Lao PDR has not yet fully implemented all 27 ISPMs adopted by CPM. The status of pest surveillance is essentially an <i>ad hoc</i> 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.</p> <p>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.</p> <p>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.</p> <p>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</p>

Period	Plant protection overview: Lao People's Democratic Republic
	<p>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.</p> <p>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.</p>

Period	Plant protection overview: Lao People's Democratic Republic
<p><b>2007-June 2009</b></p>	<p>Lao PDR is a landlocked country. It occupies an area of 236,800 km<sup>2</sup> 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>

Period	Plant protection overview: Lao People's Democratic Republic
	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).

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"> <li>• 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.</li> <li>• Mandatory ISPM 15 implementation for import in May 2010.</li> <li>• Continuous eradication programme to control <i>Erwinia papayae</i> on papaya</li> <li>• Implementing contingency plan to control red palm weevil (<i>Rhynchophorus ferrugineus</i>).</li> <li>• New regulations were imposed on importation of logs, sawn timber and other wood articles.</li> </ul> <p>Several significant events that had taken place in the area of crop protection are:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Introduction of <i>Asecodes hispanarium</i> to control <i>Brontispa</i> sp. with cooperation and assistance from DOA Thailand.</li> <li>• Hosting a Workshop on the Prevention of Introduction of South American Leaf Blight in line with the decision of 26<sup>th</sup> APPPC meeting.</li> <li>• Hosting of workshop on the Project Preparation Grant STDF/PPG/328 "Developing Trade Opportunities: An Integrated Systems Approach For Pest Risk Management".</li> <li>• Hosting of APEC workshop: Enhancing Food Security through a Regional Approach and Wide Stakeholders Participation to Plant Biosecurity.</li> <li>• Setting up of a new residue laboratory to increase capacity in residue analysis.</li> <li>• Phasing out of formulation containing tributyltin compound. Registration of such compound will be withdrawn as of 2011 in compliance with Rotterdam Convention.</li> </ul>

Period	Plant protection overview: Malaysia
	<ul style="list-style-type: none"> <li>• Implementation of specific label requirement for QPS and non-QPS to comply with Phasing out schedule on Methyl Bromide.</li> <li>• 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.</li> </ul>

Period	Plant protection overview: Malaysia
<b>2007-June 2009</b>	<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
<b>2007-June 2009</b>	<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 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>

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 &amp; invasive species management, pest and pesticide management programs through its different outfits as follows:</p> <ol style="list-style-type: none"> <li>1. National Plant Quarantine Programme (with five regional plant quarantine check posts, eight check posts and two sub-check posts),</li> <li>2. National IPM Programme,</li> <li>3. Pesticide Registration and Management Office,</li> <li>4. Five regional plant protection laboratories located in five development regions of the country.</li> </ol> <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>

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</p>

Period	Plant protection overview: New Zealand
	<p>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> <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.</p> <p>Several strategic activities have been undertaken in the last year:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• 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.</li> </ul> <p><b>Other Activities of interest</b></p> <p><i>Pseudomonas syringae</i> pv. <i>actinidiae</i> (Psa) (Bacterial Canker of kiwifruit)</p> <p>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.</p> <p>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>

Period	Plant protection overview: New Zealand
	<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>

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 &amp; 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> <p><b>1. Crop production</b></p> <p>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.</p>



Period	Plant protection overview: Philippines
	<p><b>2. Plant quarantine</b>                      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.”</p> <p><b>3. Seed quality</b>                      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.</p> <p><b>4. Crop protection</b>                      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.</p> <p><b>5. Pesticide residue analysis</b>                      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> <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>

Period	Plant protection overview: Republic of Korea
	<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. 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>

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 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>

Period	Plant protection overview: Thailand
2007-June 2009	<p>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 recently given a number of notifications to strengthen the quarantine practices for both export plants and plant products and import prohibited articles.</p>

Period	Plant protection overview: Thailand
	<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>

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 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.</p> <p>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.</p>

Period	Plant protection overview: Viet Nam
	<p><b>Plant protection</b></p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Apart from the above mentioned programs, some others were also implemented, including SRI, 3 Reductions – 3 Gains, 1 Must-5 Reductions, 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>

Period	Plant protection overview: Viet Nam
2007-June 2009	<p><b>Outstanding Issues</b></p> <p>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><b>Plant Protection</b></p> <p>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>

## Plant quarantine

Period	Plant quarantine: Australia
<b>2007-June 2009</b>	<p><b>Australian IPPC activities</b></p> <p>Dr Bill Roberts, Biosecurity Australia, was elected as the Southwest Pacific representative on the IPPC Bureau. David Porritt, Biosecurity Australia is one of three Southwest Pacific representatives on the Standards Committee. Australian experts on Technical Panels are Rob Duthie (Fruit Flies) and Mallik Malipatil (Diagnostic Protocols).</p> <p>Information exchange has been carried out using the IPP. This has included pest reports and the first nationally endorsed diagnostic protocols, for plum pox virus and apple brown rot (<i>Monilinia fructigena</i>).</p> <p>Awareness of IPPC activities and consultation on draft standards continued throughout 2007 and 2008, including contributions to Pacific activities.</p> <p><b>Biosecurity Australia</b></p> <p>Biosecurity Australia provides 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. It develops new policy, usually through an import risk analyses (IRA), and also reviews existing quarantine policy on imports of animals, plants and their products. An IRA is required where there is no quarantine policy or a significant change in existing quarantine policy is to be considered. IRAs identify and classify potential quarantine risks and develop policies to manage them.</p> <p><b>Border quarantine inspections</b></p> <p>The Australian Quarantine and Inspection Service (AQIS) inspect approximately 900 000 entries of sea or air cargo. The majority of detections of insects, fungi and contaminant weed seeds in horticultural products, grains and seeds and timber are sent for treatment without detailed taxonomic investigation. In addition, a small number of detections of quarantinable pests occur in products that have been released from quarantine. Over 60% of post quarantine detections are of insects, mainly associated with detections are furniture and wooden items (including bamboo, cane and wicker). This is thought to reflect the difficulty in detection on arrival due to the cryptic nature of wood boring insects.</p> <p><b>Australian Fumigation Accreditation Scheme (AFAS)</b></p> <p>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.</p> <p>It has been implemented in Indonesia, Malaysia, Thailand, India, Papua New Guinea and the Philippines leading to reduced fumigation failures. Full implementation of AFAS is scheduled in China in 2009 and discussions have commenced with Viet Nam.</p>

Period	Plant quarantine: Australia (Based on the country report presented at APPPC 25 <sup>th</sup> session in August 2007)
Up to 2007	<p><b>Plant Quarantine (Import Risk Analysis – IRA)</b></p> <p>Australia has recently reformed its import risk analyses (IRA) process to increase transparency and timeliness, enhance consultation with stakeholders and increase the level of scientific scrutiny. The reforms will not compromise Australia’s conservative approach to quarantine or change their science based risk analysis.</p> <p>Timeframes for the completion of IRAs have been imposed through regulations, improving timeliness and predictability for stakeholders. The regulations provide for a standard or expanded IRA process, depending on the complexity of the science and nature of the biosecurity risks. A standard IRA will be completed within 24 months and an expanded IRA within 30 months. The new process has the flexibility for timeframes to be suspended in certain circumstances, such as when Biosecurity Australia is waiting for scientific information considered essential to complete the IRA. The role of the Eminent Scientists Group (ESG) has been strengthened. The ESG’s role will now include assessing conflicting scientific views provided to it and reviewing the conclusions of draft final IRA reports to ensure they are scientifically-based on the material presented.</p> <p>A high level <b>Department of Agriculture, Fisheries and Forestry group</b> has been established to prioritize import proposals, thus assisting Biosecurity Australia to develop its work programme. The group will also monitor the progress of IRAs undertaken by Biosecurity Australia. Biosecurity Australia has completed the IRA for New Zealand apples under the previous IRA process and will also finalize the Philippines banana IRA under the old IRA process. The Chief Executive of Biosecurity Australia will announce the transition arrangements for other IRAs currently underway closer to the commencement of the new process.</p> <p><b>ISPMs and RSPMs</b></p> <p>Australia continues to be active in standard setting, both internationally and through the APPPC, with Australia involved in the draft ISPM on Sampling of Consignments and the Technical Panels on Phytosanitary Treatments and Fruit Flies as well as the production of the draft RSPM on Scales.</p> <p><b>Plant Pests, Risk Analysis, Phytosanitary Management</b></p> <p>Australia continues to detect and respond to incursions of emergency plant pests. The approach rate of timber borer pests remains high and will be the subject of a pathway risk analysis to review existing approaches to phytosanitary management. Long running eradication programmes include 6 invasive weed species, citrus canker, red imported fire ant and Wassmania fire ant in Queensland, European House Borer in Western Australia. Grapevine leaf rust has been eradicated from the Northern Territory following a four-year programme.</p>

Period	Plant quarantine: Bangladesh
2009-2010	<p>The Plant Quarantine Section of the Plant Protection Wing (NPPO) has followed the IPPC instructions on the Phytosanitary Export Certification and Phytosanitary Import Regulatory Systems in international trade. NPPO is also implementing the International Standards for Phytosanitary Measures (ISPMs) of IPPC into Bangladesh.</p> <p>Newly framed ‘Bangladesh Plant Quarantine Act 2009’ has been placed in the Parliament. It is expected that the Act will be passed soon. Plant Quarantine section of Plant Protection Wing is procuring modern equipments for diagnosing the insects pests of quarantine</p>



<b>Period</b>	<b>Plant quarantine: Bangladesh</b>
	<p>importance. Some of the laboratory equipments have already been procured and started functioning.</p> <p>We have selected some places of production of Mango. Moreover, we have undertaken a program for production of citrus and some vegetables to meet the requirements of EU. This program will be started within April, 2011.</p> <p>In case of emergency, phytosanitary actions will be taken by the authority for any interceptions and non-compliances. NPPO is taking measures against the dishonest traders. So far, NPPO has blacklisted 4(four) vegetable &amp; allied products exporters and three other exporters will be suspended for exporting potatoes to EU.</p>

<b>Period</b>	<b>Plant quarantine: Bangladesh</b>
<b>2007-June 2009</b>	<p>The Plant Quarantine Section of the Plant Protection Wing (NPPO) has followed the IPPC instructions on the Phytosanitary Export Certification and Phytosanitary Import Regulatory Systems in international trade. NPPO is also implementing the International Standards for Phytosanitary Measures (ISPMs) of IPPC into Bangladesh.</p> <p>In case of emergency, phytosanitary actions will be taken by the authority for any interception and non-compliance. NPPO has also drafted Bangladesh Plant Quarantine Act, 2009 and submitted it to the Ministry of Agriculture for approval.</p>

<b>Period</b>	<b>Plant quarantine: Cambodia</b>
<b>2007-June 2009</b>	<p><b>Regional capacity building</b></p> <p>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.</p>

<b>Period</b>	<b>Plant quarantine: Cambodia (Based on the country report presented at APPPC 25<sup>th</sup> session in August 2007)</b>
<b>Up to 2007</b>	<p><b>Phytosanitary Database and Staff Capacity Building</b></p> <p>Progress was mainly made in the establishment of the national phytosanitary database and staff capacity building on pest surveillance, pest list and SPS for ASEAN and the placement of plant and animal quarantine staff at the international airport. Constraints to plant quarantine include the absence of plant quarantine check points at river-ports, seaports and border areas. Awareness on phytosanitary inspections was still low and the plant quarantine infrastructure remain much below ISPM standards. The key challenge was to develop a strategy to include plant and animal quarantine staff in the team of inspectors at entry points.</p>

<b>Period</b>	<b>Plant quarantine: China</b>
<b>2009-2010</b>	<p>During the period of 2009-2010, a number of regulations and standards were formulated. In addition, two new pests were added in the list of quarantine pests of entry based on pest risk analysis.</p>

Period	Plant quarantine: China
	<p>In 2009, the pest interception cases in the import cargoes reached the number of 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 and among which 217 were quarantine pests and 3437 were non-quarantine pests. These cases involved consignments coming from 187 countries and regions. China notified relevant countries of the non-compliance through bilateral or multilateral channels according to the ISPMs.</p> <p>The national survey of <i>Solenopsis mealybug</i> (<i>Phenacoccus solenopsis</i> Tinsley) was conducted in 2009 and 2010 since the pest was first detected at the end of 2008. Based on the PRA and limited distribution in China, the new pest was added to the domestic quarantine pest list in 2010 and measures had been taken to control it. In 2010, Sunflower black stem disease (<i>Leptosphaeria lindquistii</i> Frezzi=<i>Phoma macdonaldii</i> Boerma) was detected in China first time, and the national survey was conducted since then. The new disease was added in the quarantine pest list.</p> <p>In 2009 and 2010, great effort was also taken to control the codling moth for establishing and maintaining the Pest free areas (PFA) for codling moth. <i>Radopholus similes</i> had been successfully eradicated in several sites of Guangdong Province which was detected in seedling imported into China.</p>

Period	Plant quarantine: China
<p><b>2007-June 2009</b></p>	<p>During the period from 2007-2008, a number of regulations and technical specifications/standards were formulated. These included, among others, the Regulations on the Quarantine and Supervision of Wood Packaging Materials for Entry/Exit Cargo, the Regulations on the Inspection, Quarantine and Supervision of Entry and Exit Fruits, quarantine protocol for the domestic movement of agricultural plants and plant products, plant quarantine protocol for propagating tubers and seedlings of sweet potato in producing areas. In addition, the People's Republic of China's new list of 435 quarantine pests of entry was issued in 2007, based on pest risk analysis.</p> <p>Meanwhile, more national inputs have been provided for the control of plant quarantine pest and the infrastructure construction of plant quarantine. Combined operations against major plant quarantine pests have been conducted by relevant provinces. Pest free areas (PFA) for codling moth are on the way to be established. The central government has helped 100 counties to build plant pest early warning and control stations as well as quarantine and testing labs. Efforts have also been made to provide technical trainings for plant quarantine technicians.</p> <p>In 2007, the 25<sup>th</sup> session of APPPC was hosted in Beijing, China. A number of Chinese experts were invited by IPPC /SPS/APPCC/APEC or sent by the Chinese government to participate in setting and revising relevant international and regional standards for phytosanitary measures. Two APPPC regional phytosanitary standards were drafted. New ISPMs and RSPMs of Asia and the Pacific region during 2007-2008 were implemented. Bilateral consultation mechanism for phytosanitary issues with many countries was found and a large amount of pest information was provided for counterparts in conducting relevant risk analysis.</p> <p>During 2007-2008, the pest interception cases in the import cargoes reached a new record height of 390,000. Moreover, 2,600 pest species were found. These included 150 dangerous species in 20,000 cases and the other 2,450 varieties in 370,000 cases. These cases involved 170 countries and regions. China has notified relevant countries of the non-compliance through bilateral and multilateral channels.</p>

Period	Plant quarantine: China (Based on the country report presented at APPPC 25 <sup>th</sup> session in August 2007)
Up to 2007	<p>During the period of 2005-2007, China completed the legislative approval procedures to join the IPPC.</p> <p>The Chinese Government made great efforts to fulfill the requirements of the IPPC and the SPS agreement during the past two years. All new phytosanitary measures were set up based on PRA guidelines. Some pest-free areas were set up in accordance with the requirements of the relevant ISPMs.</p> <p><b>International Cooperation</b></p> <p>In the development of bilateral cooperation, China signed Bilateral Plant Quarantine Cooperation Agreements with several countries. There is also continued cooperation with Kazakhstan on the control of migratory locusts along the borders.</p> <p><b>ISPMs and RSPMs</b></p> <p>Chinese experts were involved in the establishment of some international and regional ISPM and RSPM standards and protocols.</p>

Period	Plant quarantine: Democratic People's Republic of Korea
2009-2010	<p>The National Plant Protection Organization (NPPO) of the Democratic People's Republic of Korea (DPRK) recognizes the importance of PRA in plant protection in the country. The NPPO assesses the risk of pests corresponding with their real condition. The Central Plant Protection Station (CPPS), the Ministry of Agriculture, which is charge of national plant protection, and the Korea Export &amp; Import Commodity Inspection &amp; Quarantine Committee(KIQC), and the State Administration for Quality Management (SAQM) jointly assess the risk of pests occurred in the plant materials and manage the risks of pests, based on the results of pest risk analysis.</p>

Period	Plant quarantine: Democratic People's Republic of Korea
2007-June 2009	<p>In 2007, CPQS updated the "Animal and Plant Quarantine Regulations on Border" and compiled new "Minor Regulations of the Border Animal and Plant Quarantine" with the support of SAQM.</p> <p>In 2008, the State Administration for Quality Management (SAQM) sent a delegation to China for technical exchange in the field of phytosanitary measures and regulations.</p> <p>CPQS, MOA, will train more phytosanitary staff and uplift the level of pest risk analysis with the support of SAQM which will provide the advanced inspection equipment with cooperation of AQSIQ, China.</p>

Period	Plant quarantine: India
2007-June 2009	<p>Plant Quarantine regulatory measures are operative through the "<b>Destructive Insects &amp; Pests Act, 1914</b>". The purpose and intent of this act is to prevent the introduction of pests/diseases into India and transport from one State to another of any insect, fungus or other pest which is or may be destructive to crops. The Directorate of Plant Protection, Quarantine &amp; Storage was established under Ministry of Agriculture (Department of Agriculture &amp; Cooperation) in 1946 and is entrusted with the implementation of Plant Quarantine Regulations issued under the Destructive Insects &amp; Pests Act, 1914. Ministry</p>

Period	Plant quarantine: India
	<p>of Agriculture issued a notification “The Plant Quarantine (Regulation of Import into India) order 2003”.</p> <p>The new regulation is in enforce from 01.01.2004 and has been amended time to time. The existing Plant Quarantine Stations will be strengthened and there is possibility to establish some more stations with a view to enforce the quarantine regulations more effectively so as to keep the exotic pests and diseases at bay and to facilitate safe global trade in agriculture/horticulture by assisting the producers and exporters by providing a technically competent and reliable Phytosanitary Certification system to meet the requirements of trading partners. In Plant Quarantine, besides ongoing activities, the thrust area pertains to Pest Risk Analysis (PRA) and post entry quarantine surveillance. This has become essential in the light of World Trade Organization (WTO) agreement, which will facilitate more and speedier movement of plants, planting materials globally.</p> <p>The Sanitary and Phytosanitary Agreement of WTO envisages application of phytosanitary measures based on scientific justifications. Therefore, it is imperative to conduct all Plant Quarantine inspections as per the International Standards/guidelines. Accordingly, the National Standards for Phytosanitary Measures for some of the important activities have been developed and adopted. The Standards which are critical for exports have been prioritized. To streamline Plant Quarantine activities, efforts have been made to fully computerize the Plant Quarantine Stations for speedy and transparent functioning.</p> <p>Inspection of agricultural commodities meant for export is done as per the requirements of importing countries under International Plant Protection Convention (IPPC) 1951 of FAO, now as per revised text of IPPC and the model certificate prescribed there under, Phytosanitary Certificates are issued. The export inspections involve sampling and detailed laboratory tests in case of seeds and planting material for propagation whereas visual examination under lens and washing tests, etc are carried out for consumption plant material.</p>

Period	Plant quarantine: Japan
2007-June 2009	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 25th session of the APPPC.

Period	Plant quarantine: Lao People’s Democratic Republic
2009-2010	<p>Lao PDR is a least developing country, with agriculture being its main sector of natural economy. Lao PDR is a party member of international treaties such as International Plant Protection Convention (IPPC), which provides standards for phytosanitary measures on how to prevent the spread and introduction of pests of plants and plant products. Since the country has limited resources and lacks experience on how to deal with these subjects, both in the short term and the long term, it will place emphasis on securing common and effective action to prevent the spread and introduction of pests of plants and plant products, and to promote appropriate measures for their control. Its application is much wider than the protection of cultivated plants.</p> <p><b>Legal framework</b></p> <ul style="list-style-type: none"> <li>• “Prime Minister Decree on Plant Quarantine” No. 66/PM, dated 21 March 1993.</li> <li>• “Ministerial Agreement on Plant Quarantine Regulation” No. 0369/MAF, dated 02 July 1993.</li> </ul>

Period	Plant quarantine: Lao People's Democratic Republic
	<ul style="list-style-type: none"> <li>• “Ministerial Notice on Role and Function and Standard for Entry/exit Plant Quarantine Stations for implementing the Prime Minister Decree No. 66/PM” No. 0754/MAF.DoA.06, dated 14 July 2006.</li> <li>• “Plant Protection and Quarantine Law, No. 06/NA” has been approved by the National Assembly on 9 December 2008 and promulgated by Presidential Decree No. 241 of 18 December 2008.</li> </ul> <p><b>Set-ups</b></p> <p>1999 – Agricultural Regulatory Division, Department of Agriculture, MAF.  2002 – Reformed Plant Protection Center.  2000 – 9 land border and river port plant quarantine border posts.  2008 – 15 international plant quarantine border posts located in 10 provinces</p> <p><b>Assistance from donors</b></p> <ul style="list-style-type: none"> <li>• <b>NZAIDN</b>  Zaid conducted “NZAID Project on Phytosanitary Capacity Development” for three years (2001-2004) to establish strategic plan on phytosanitary and national phytosanitary database (NPD). Now “Phytosanitary Capacity Building Project for the Mekong Region” is ongoing as a second phase project focusing on specific training topics on pest surveillance, pest diagnostic, pest specimen curation and preservation.</li> <li>• <b>AusAID</b>  AusAID is implementing “Sanitary and Phytosanitary Capacity Building Program” to enhance SPS capacity in Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Thailand and Vietnam as a part of “Asia Regional Development Cooperation Program”. The project is seeking to extend its activities.</li> <li>• <b>JICA</b>  JICA is supporting an in-country and third country training program on Phytosanitary aiming to train plant quarantine staffs in the area of plant quarantine inspection.</li> <li>• <b>World Bank (WB)</b>  WB is producing a paper entitled “Sanitary and Phytosanitary (SPS) management Capacity Building Action Plan” which consolidates the methods to strengthen SPS in Lao PDR. The project is trade focused, not fully to strengthen or develop the capacity on phytosanitary development.</li> </ul> <p><b>National goal and objectives</b></p> <ol style="list-style-type: none"> <li>1. Conduct physical and instrumental awareness on newly approved Plant Protection and Quarantine Law.</li> <li>2. Continue using and improving (National Phytosanitary Database) NPD system, since it is already developed half way by the previous NZAID project.</li> <li>3. Improve inspection system at the main entry/exit points.</li> </ol>

Period	Plant quarantine: Lao People's Democratic Republic
	<ol style="list-style-type: none"> <li>4. Develop national guidelines and procedural manuals on plant quarantine and plant protection accordingly as stipulated in the new plant quarantine law in compliance with WTO/SPS requirements.</li> <li>5. Improve pest surveillance systems as well as pest inventory and insect pest collection for major high economic potential crops.</li> <li>6. Improve pest diagnostic capability.</li> <li>7. Improve pest risk analysis capability.</li> <li>8. Improve export certification system.</li> <li>9. Develop eradication standards for national pests of plants and plant products.</li> <li>10. Integration of plant and animal quarantine activities at the entry/exit points;</li> <li>11. Develop a repository of plant pest information on selected major crops based on general surveillance data by collating data/information on all previously recorded pests in the country and entering the data/information in the pest status records component of the national phytosanitary database (NPD).</li> <li>12. Develop and strengthen physical facilities (premise and equipment) required for plant pest diagnosis. These include a two-level reference laboratory capable for diagnosis of a wide range of plant pest in the various disciplines in central laboratory that should be set in the Plant Protection Center (PPC) in Vientiane, and the development of smaller regional laboratories refurbishing with necessary rudimentary equipment capable for identification of plant pest at a more basic level at strategic location in the provincial offices near major entry/exit points and major crop production areas. In this context, the post-entry plant quarantine station should be also taken into account.</li> <li>13. Develop the human resource capabilities for undertaking pest diagnosis in the various phytosanitary and plant health disciplines.</li> </ol> <p>Lao PDR currently has minimal or no capabilities for the identification of some significant pest groups including virus like organisms, bacteria, fungi and weeds.</p> <p>The capacity to identify arthropod pests is also mainly limited to a small number of common pests which are known to occur on rice in Lao PDR. Hence, this is another critical area which needs urgent attention but one which will take a few years for developing all the intangible assets (e.g. human resource, technical capabilities) and tangible assets (including laboratories and equipment).</p> <p>The NPPO currently has very limited capacity to minimize the probability of new pest introductions or for early detection of new pest introduction and respond to such introductions before the pest becomes widely established. Hence this is another important area for capacity development.</p> <p>The NPPO has virtually no capacity or competencies to raise PRA to international standards. The lack of technically skilled manpower in Lao PDR, at least in the short term, presents the NPPO with major challenges.</p> <p>Strategic options to consider in the short term include awareness building and training programs for the development of basic skills for undertaking PRA with management and technical staff from the NPPO, NAFRI, NAFES and the Faculty of Agriculture of the National University of Laos with donor agency assistance; development of computer assisted tools to facilitate learning and for undertaking PRAs, improving the resources required for undertaking PRAs (modern books, access to the internet, CD-ROMs with pest and crop information, etc).</p>

Period	Plant quarantine: Lao People's Democratic Republic
	<p>In the medium term to long term, the development of the capacity of the National University of Laos to teach PRA as part of its curriculum in plant protection would be a cost effective way of building sustainable systems in the country. Advanced level training for specialists from the University to acquire the skills and establish a course in PRA would assist in developing the foundation for capacity building in this fundamental area for phytosanitary activities.</p> <p>The NPPO has also very limited capacity to undertake pest diagnosis in almost all the disciplines. The gaps are substantial in all areas: skilled human resources, systems, documented procedures, physical assets (including appropriate laboratories and equipment) and laboratory management capabilities.</p> <p>The most serious area of concern is the shortage of technically skilled manpower in Lao PDR, leaving the NPPO with limited options for the rapid development of high level technical pest diagnostic skills in this critical or core area.</p> <p>Specific surveys are procedures by which a NPPO obtains information on pests of concern on specific sites in an area over a defined period of time. The verified information acquired may be used to determine the presence or distribution of pests in an area or in a host or commodity, or their absence from an area (in the establishment of pest free areas).</p> <p>Historically, specific survey programmes have mainly been focused on rice established under field based Integrated Pest Management (IPM) Programmes for a relatively small number of readily observable pests. Most of the data collected under these programmes were in the nature of monitoring surveys on pest-predator population levels especially on insect pests to determine if interventions were required to control the pest populations. Hence, the objectives of the IPM surveys and the methodologies employed were significantly different from what is required for developing a comprehensive pest surveillance system on a wide range of crops with stringent requirements for pest diagnosis (identification and verification) as outlined in the ISPMs.</p> <p>Neither the NPPO nor any of the non-NPPO agencies can currently meet the technical requirements for diagnostic services in most of the disciplines. Capacity building for pest diagnosis is an urgent and high priority area of need but one in which substantial inputs are required both from the government and from donor agencies.</p> <p>The NPPO needs a management system that ensures that all requirements, including certification specifications, legislative requirements and administrative requirements are satisfied; identify a person or office responsible for the export certification system; identify the duties and lines of communication of all personnel with certification related responsibilities; and ensure that adequate personnel and resources are available to undertake the following functions:</p> <ul style="list-style-type: none"> <li>• maintenance of information on importing country phytosanitary requirements as needed;</li> <li>• production of operational instructions to ensure that importing country phytosanitary requirements are satisfied;</li> <li>• inspection and testing of consignments and associated conveyances;</li> <li>• identification of organisms found during inspection of consignments;</li> <li>• verification of the authenticity and integrity of phytosanitary procedures;</li> <li>• completion and issue of phytosanitary certificates;</li> <li>• document storage and retrieval;</li> </ul>

Period	Plant quarantine: Lao People's Democratic Republic
	<ul style="list-style-type: none"> <li>• training;</li> <li>• dissemination of certification-related information;</li> <li>• review regularly the effectiveness of its export certification system; and</li> <li>• development of bilateral protocols, if necessary.</li> </ul>

Period	Plant quarantine: Lao People's Democratic Republic
2007-June 2009	<p>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.</p> <p>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.</p> <p>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.</p> <p>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 need 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 accordingly to correct need.</p>



Period	Plant quarantine: Malaysia
2007-June 2009	<p>As for plant quarantine organization, a agency known as Malaysia Quarantine Inspection Service (MAQIS) has been introduced in the organization. This agency is responsible for the inspection services for all agriculture products includes plants, animal and fish at the entry check points in Peninsular Malaysia since August 2008. In addition to that, there is a policy among ASEAN countries, whereby the international entry points are operating under CIQS system as one stop centre to facilitate trade and tourism. There is an appointment of new Director General in Department of Agriculture (DOA) Peninsular Malaysia (2008), Sabah (2007) due to retirement.</p> <p>Treatment facilities in Malaysia have been improved with the purchase of 3 Vapour Heat Treatment units, each with a 5 ton capacity, to carry out phytosanitary treatment for the purpose of market access to Japan and other potential markets. Establishment of two export centre in Kuala Lumpur International Airport and Serdang Selangor to carry phytosanitary treatment, processing and packaging.</p> <p>Electronic permits for import and export had been introduced for import and export of commodities since 2007. The Repository and Culture Collection Centre had also been established in 2007 to serve as biological centre with the aim of acquisition, authentication, production, preservation, development and distribution of standard reference for pest and beneficial organisms specimens as well as to address phytosanitary concerns.</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"> <li>• Pest risk analysis for papaya, jack fruit, rambutan, pineapple, and star fruit had recently been completed in order to facilitate market access to USA.</li> <li>• Malaysia has established three accreditation schemes namely, Malaysia Fumigation Accreditation Scheme (MAFAS), Malaysia Heat Treatment Accreditation Scheme (MAHTAS), and Malaysia Phytosanitary Certification Assurance Scheme (MPCA) to mitigate pest risk, expedite export with minimal phytosanitary requirements.</li> <li>• ISPM 15 for import will be implemented at the end of this year 2009.</li> <li>• Revised import requirement for mango seed weevil (<i>Sternochetus mangiferae</i>) and guava fruit fly (<i>Bactrocera correcta</i>)</li> <li>• Gazetting papaya die-back as a quarantine pest for the control and eradication of this disease on papaya</li> <li>• In the final stage of developing national pest list for commodities such as oil palm, rubber and forest trees.</li> </ul> <p>Since 2007, several significant events have taken place in the area of crop protection. Most notably is the enhancement of officer capability in identification/diagnosis of plant pests and diseases. This is made possible with the establishment of the biotechnology unit and the availability of polymerase chain reaction (PCR) technique which has enabled the foresaid activities to be carried out with a greater degree of accuracy and precision, thus, making appropriate remedial measures to be speedily dispensed to the targeted clients. Working closely with the Chemistry Department, this technique (PCR) is also being employed to detect for the presence of GMO in agricultural produce, specifically edible seeds, imported into the country.</p>

Period	Plant quarantine: Myanmar
2007-June 2009	<p>The Plant Protection Division, Myanma Agriculture Service of the Ministry of Agriculture and Irrigation is legally responsible for issuing phytosanitary certificates and import certificates, according to the Plant Pest Quarantine Law.</p> <p>The certificates for import and export are issued at the headquarters of the Plant Protection Division as well as at the eight border entry points and two inspection stations. As regards the consignment transits, the post entry quarantine studies have been carried out with limitations.</p> <p>In relation to the ISPMs, Myanmar, as a developing country, has some technical barriers to implement the ISPMs. Myanmar has a very limited number of experts in the field of entomology, plant pathology, weed science and post-harvest quarantine. That in facts is a major obstacle for the implementation of ISPMs. Capacity building and human resource development are absolutely critical issues in Myanmar.</p>

Period	Plant quarantine: New Zealand
2007-June 2009	<p>In December 2006, the Director-General of MAF announced that MAF's two biosecurity businesses Biosecurity New Zealand (BNZ), and MAF Quarantine Service (MQS) would be structurally integrated. The new integrated organisation commenced operations on the 1st of July 2007, and is now known as MAF Biosecurity New Zealand (MAF BNZ).</p> <p>Around \$NZ500 million is spent annually on biosecurity in New Zealand, with activities undertaken by central government, regional councils, industry and private landowners. It is estimated government agencies are responsible for \$NZ304 million of this.</p> <p>MAF have approximately 1000 full time and part-time staff, based across New Zealand and overseas. They include vets, scientists, quarantine inspectors, directors, managers, administrators, advisers, Detector Dogs and their handlers, analysts, investigators, legal experts, policy makers, communicators, strategist and business services staff.</p> <p>Seventy five new organisms associated with plants and plant products were recorded as new to New Zealand by MAF BNZ in 2007/2008. MAF BNZ has officially responded to the presence of a number of these organisms.</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 25th session of the APPC, 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>

Period	Plant quarantine: Pakistan
2007-June 2009	<p>In 2008, the number of phytosanitary inspections amounted to 70,244. The country's international trade in 2008 increased significantly with the export of rice amounting to 2.7 million metric tons while the export of fresh and dry fruits amounted to almost 600,000 metric tons. The number of conventional phytosanitary certificates which were issued amounted to 70,244.</p> <p>Pakistan Plant Quarantine Act and Rules are being revised. The Central Plant Quarantine Laboratory and three regional labs are being completed. Equipment is being installed</p>

Period	Plant quarantine: Pakistan
	<p>and recruitment of personnel is under process. A total of 08 PRA of different crops are completed for 52 insects, 72 pathogens and 8 plants but they are being made in conformity of ISPM-4.</p> <p>The main constraint faced by the country is lack of trained personnel for PRA preparation. Training of personnel is also required in collection of information and preparation of different PRA's according to ISPM and surveillance lab analysis.</p> <p>In relation to the implementation of ISPMs, although many areas have been identified for full implementation, few are not fully implemented, mainly due to lack of resources and personnel.</p>

Period	Plant quarantine: Philippines
2009-2010	<p>The Bureau of Plant Industry's Plant Quarantine Service (BPI-PQS) is the office under the Office of the Director mandated to implement national laws and international guidelines regarding phytosanitary issues and concerns. Among these are the importation, exportation, domestic movement of agricultural plant and plant products phytosanitary risk management activities prior to trade and maintenance of the integrity of the plant industry of the country. To fulfill this mandate, the BPI-PQS embarked on various physical and institutional capacity building activities in 2009-2010 and has remained proactive in developing the capacity of its personnel and physical capital.</p> <p>The BPI-PQS has remained vigilant in securing the country's borders from pests as it has reinforced the capacity of its ports of entry by training Plant Quarantine Officers locally and abroad. The BPI-PQS has been a recipient of training programs which cover Sanitary and Phytosanitary matters, especially times of emergency, such as pest outbreaks and food safety risks. Specific topics are prevention of pest incursion, pest eradication and risk management. This is in addition to its function of issuing Plant Quarantine Certificates (Import Permit) for plants, plant products and planting materials.</p> <p>In the field of export, the BPI-PQS has continued to search for market opportunities for its agricultural commodities. Bilateral relations are created and the existing ones are enhanced through information exchange and mutual cooperation. The export programs of the Philippines (mangoes, pineapples, papayas, etc.) to different trading partners have continued to prosper despite some adjustments to Phytosanitary measures of the international phytosanitary community.</p> <p>Domestic movement of plants and plant products is continuously monitored by the BPI-PQS to maintain the integrity of the plant industry and protect the spread of pests on-shore. This is done since the Philippines maintains pest-free areas and areas of low pest prevalence. Pest eradication programs were also launched in order to minimize, if not eliminate, the risks that existing pests pose. This paves the way for the opening up of possible markets for the high-value commodities of the country.</p> <p>The BPI-PQS has remained active in its participation in different national and international SPS forums, seminars and training activities. This approach is done through coordination with other government departments (e.g. the Department of Trade and Industry, the Bureau of Customs, the Department of Health) and international organizations (the WTO, FAO, ASEAN, and the EU).</p>

Period	Plant quarantine: Philippines
2007-June 2009	<p>The Plant Quarantine Service (PQS) came up with a series of activities, programs and developments during the Calendar Year 2007-2008, heading towards the three-point program focus of improving the PQS image, technical excellence and efficiency to further strengthen the PQS' capacity to render service and carry out its mandate.</p> <p>In line with the PQS' thrust of improving its image and technical excellence, PQS conducted a series of Developing Personal Excellence Seminar for all PQS personnel to develop and improve working relationship through identification of one's self-concept, clarification of one's values and goals and team building process. A series of extensive technical trainings were also facilitated by the PQS which were participated by Plant Quarantine personnel nationwide. This includes <i>Training on Identification of Pests and Diseases of Fresh Fruits and Vegetables, Stored Products and Wood &amp; Non-wood Forest Products, Training on Identification of Fruit fly, Identification of Ornamental Plants and its Pests and Diseases, Training on Inspection Protocol on Musa Plantlets and the 6<sup>th</sup> General Plant Quarantine Training</i>. This is part of the technical upgrading of the PQS to equip its personnel with knowledge and learning experience for proficient performance of their duties. On top of these locally organized and funded training, PQS personnel attended numerous training conducted abroad. Moreover, part of PQS' focus of providing efficient and effective service to its clientele, new PQS buildings at the Port of Iloilo, Batangas and Bacolod were constructed and the diagnostic laboratory at the PQS South Harbor was renovated. PQS also acquired additional vehicles for smooth PQS operations. An 87 square meter treatment area was also constructed at the Central office for rapid export facilitation of cut flowers and ornamental plants.</p> <p>With the Philippine Plant Quarantine's need to conform to the international quarantine standards, comply with the requirements of the importing countries and expand the Philippine market internationally, PQS formulated and modified rules and regulatory policies and lined- up plans and programs to meet the said needs. Protocols for export were developed and amended which includes <i>Protocol for the Export of Fresh Asparagus to Japan, Revised Protocol for the Export of Fresh Cavendish Banana and Revised Protocol for the Export of Fresh Okra to Japan</i>. PQS also formulated <i>Guidelines for the Implementation of the Australian Fumigation Accreditation Scheme (AFAS)</i> in the Philippines which signifies the readiness of the PQS to implement high standard fumigation. <i>Rules and Regulations for the Importation, Exportation and Domestic Movement of Irradiated Plants and Plant Products and the Use of Irradiation as Phytosanitary Treatment</i> was also issued which provides another regulatory option for the Philippines with regards to phytosanitary treatment of fruits and vegetables for export. Recently, the PQS also set-up a total of 260 fruit fly traps all over the country. Ten sites per region were determined as strategic locations for setting of traps. Data gathered in the survey will show the population and changes of population of fruit fly within the coverage area. The survey is a continuing activity of PQS in which the information gathered will be readily available once needed by the countries importing mangoes and other fruits from the Philippines. Furthermore, additional areas were surveyed and identified by the Philippines as area free from Mango Pulp Weevil (<i>Sternochetus frigidus</i>) and Mango Seed Weevil (<i>Sternochetus mangiferae</i>). These includes the Province of Davao del Sur, Sarangani and City of General Santos. This provides a great opportunity for Philippine exporters given that there will be additional production areas as source of mangoes for export to other countries.</p>

<b>Period</b>	<b>Plant quarantine: Philippines</b>
	All these changes and developments reflect the Philippine Plant Quarantine's initiative of having an improved system in place, highly trained technical personnel, better buildings and laboratory facilities and good rules and regulatory policies to achieve its three-point program focus and proficiently perform the PQS mandate.

<b>Period</b>	<b>Plant quarantine: Republic of Korea</b>
<b>2009-2010</b>	<p>National Plant Quarantine Service (NPQS) of the Ministry for Food, Agriculture, Forestry and Fisheries (MIFAFF) developed a '10-year plan for plant quarantine development' in 2007. There are 3 goals: (1) prevention of exotic pest, (2) protection of agricultural and natural resources and (3) contribution to agricultural competitiveness and national development.</p> <p>Since 2008, NPQS has placed strong emphasis on increasing work efficiency with differentiation of inspection methods according to pest risk and adaptation of IT to plant quarantine management system. NPQS has also facilitated export of agricultural products through active negotiation with trading partners and customer friendly inspection for export.</p>

<b>Period</b>	<b>Plant quarantine: Republic of Korea</b>
<b>2007-June 2009</b>	<p>National Plant Quarantine Service (NPQS) of MIFAFF developed a '10-year plan for plant quarantine development' in 2007. There are 3 goals: prevention of exotic pest, protection of agricultural and natural resources and contribution to agricultural competitiveness and national development.</p> <p>Since 2008, NPQS has placed strong emphasis on increasing work efficiency with differentiation of inspection methods according to pest risk and adaptation of IT to plant quarantine management system. NPQS has also facilitated export of agricultural products through active negotiation with trading partners and customer friendly inspection for export.</p>

<b>Period</b>	<b>Plant quarantine: Sri Lanka</b>
<b>2007-June 2009</b>	<p>There were some important changes in the organization during the period under review, Dr. D.H. Muthukudaarachchi was appointed as the Director of the Seed Certification and Plant Protection Centre and thus became the official contact point person for IPPC. The most senior officers working in plant quarantine stations were transferred out of their work places giving way to new officers. There was a policy decision to replace two most senior officers in every three years by other competent officials. The officer holding the Deputy Director post of the National Plant Quarantine Service ( NPQS) retired from public service in 2007 and the following year, I was appointed as the Deputy Director.</p> <p>Necessary discussions and the consultations were held to revise the regulations made under the Plant Protection Act. The draft was submitted to the World Trade Organization to revise comments from stakeholders. The required changes were made and the draft of regulations is under review for consistency with the Act. Legal implications on certain decision taken under the provisions of the Plant Protection Act resulted in discovery of some loopholes and the authorities appointed a committee to revise the act. The committee had several discussions on changes to meet the present day requirements and to make the act and the regulations consistent with IPPC recommendations.</p>

Period	Plant quarantine: Sri Lanka
	<p>Quarantine pest intercepted during the import of planting material included <i>Phoma foveata</i>, <i>Clavieacter michiganensis</i> spp., <i>scpedonicus</i>, and <i>Geotrichum candidum</i>, on sweet potato <i>Ralastonia solanacearum</i> on ginger. In 2008, 757 questionable consignments were intercepted and destroyed due to unacceptable phytosanitary states. Upgrading of pest reference collection at the NPQS was done adding 80 specimens of insect pests found in the country.</p> <p>Pest Risk Analysis (PRA) on powdery scab on potato was completed and PRAs on import of dragon fruit and mangosteen from Thailand and in vitro cultures of banana from the Philippines were started. After careful study and bilateral negotiations fresh grapes from Chile were allowed to enter into the country.</p>

Period	Plant quarantine: Thailand
2007-June 2009	<p>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 Ministry of Agriculture and Cooperatives (MOAC).</p> <p>The Plant Quarantine Act (No. 3) B.E. 2551(2008) which was published in the Royal Gazette in May 2008 contains 26 Sections which provide specifications and criteria for notification of plants, plant pests and carriers as prohibited articles, adding power to control the exportation of specific controlled plants, as well as enhancing power of plant quarantine officers toward an effective prevention of exotic plant pests and diseases.</p> <p>In 2007-2008, the Department of Agriculture (DOA) gave five of Notifications of the Ministry of Agriculture and Cooperatives and eight of its own Notifications to strengthen the quarantine practices for both export plants and plant products and import prohibited articles.</p>

Period	Plant quarantine: Viet Nam
2009-2010	<p><b>Pest record/identification</b></p> <p>During 2009-2010, 248 cases of quarantine pest interception were reported, including:</p> <ul style="list-style-type: none"> <li>- In 2009: 59 cases, particularly: <ul style="list-style-type: none"> <li>• Bacterial wilt of maize (<i>Pantoea stewartii</i> (Smith) Mergaert et al) intercepted on maize imported into Viet Nam from Thailand.</li> <li>• Potato tuber moth (<i>Phthorimaea operculella</i> (Zeller 1873) intercepted on potato imported from China.</li> <li>• Khapra beetle (<i>Trogoderma granarium</i> Everts) intercepted on coconut oil-cake of Indonesia, wheat bran of Srilanca.</li> </ul> </li> <li>- In 2010: 189 cases. Especially, since August 2010 <i>Khapra beetle</i> (<i>Trogoderma granarium</i>) intercepted on corn, soya bean means, bailey and millet imported from India into Viet Nam.</li> <li>- In 2011, to 16<sup>th</sup> February 2011, <i>Khapra beetle</i> (<i>Trogoderma granarium</i>) intercepted on 104 consignments imported from India into Viet Nam.</li> </ul>

Period	Plant quarantine: Viet Nam
	<p><b>New regulations/decisions</b></p> <ul style="list-style-type: none"> <li>• Decree.02/2007/ND-CP of the government on plant quarantine dated 5 January 2007.</li> <li>• Decision No. 34/2007/QD-BNN of 23 April 2007 publishing the list of regulated articles subject to pest risk analysis before importing into Viet Nam.</li> <li>• Decision No. 48/2007/QD-BNN of 29 May 2007, Regulation Procedure for issuance of the phytosanitary import permit for articles subject to pest risk analysis before importing into Viet Nam.</li> <li>• Decision No. 89/QD-BNN of 29 October of Minister of Agriculture and Rural Development promulgating regulations on state management on fumigation practice for regulated articles.</li> <li>• New Law on Plant Protection is being drafted and will be submitted to the National Assembly in 2013.</li> </ul> <p><b>Projects/program cooperation</b></p> <ul style="list-style-type: none"> <li>• Improvement of Plant Quarantine treatment against Fruit Fly on fresh fruits (JICA), finished in 2008</li> <li>• Dragon fruit has been approved and entered into US market since October 2008</li> <li>• Two irradiation treatment facilities established in ABC Company and Son Son Company</li> <li>• One vapor heat treatment facility established by Yashaka Company</li> <li>• Viet Nam Methyl bromide phase out plan: ongoing with WB funding</li> <li>• NZAID phytosanitary capacity building in the Mekong region: going to terminate (NPD development is ongoing).</li> </ul>

Period	Plant quarantine: Viet Nam
2007-June 2009	<p><b>Pest record/identification</b></p> <p>During the period from 2007 to 2008, 104 cases of quarantine pest interception were reported, including:</p> <ul style="list-style-type: none"> <li>• Bacterial wilt of maize (<i>Pantoea stewartii</i> (Smith) Mergaert et al) intercepted on maize imported into Viet Nam from Thailand.</li> <li>• Potato tuber moth (<i>Phthorimaea operculella</i> (Zeller 1873) intercepted on potato imported from China.</li> <li>• Khapra beetle (<i>Trogoderma granarium</i> Everts) intercepted on coconut oil-cake of Indonesia, wheat bran of Srilanka.</li> </ul> <p><b>New regulations/decisions:</b></p> <ul style="list-style-type: none"> <li>• Decree No:02/2007/ND-CP of the government on plant quarantine dated 05 January 2007.</li> <li>• Decision No 34/2007/QD-BNN of 23 April 2007 publishing the list of regulated articles subject to pest risk analysis before importing into Viet Nam.</li> <li>• Decision No 48 /2007/QD-BNN of 29 May 2007, Regulation on Procedure for the issuance of the phytosanitary import permit for articles subject to pest risk analysis before importing into Viet Nam.</li> <li>• Decision No 89/QD-BNN of 29 October 2007 of Minister of Agriculture and Rural Development promulgating regulations on state management on fumigation practice for regulated articles.</li> </ul>

Period	Plant quarantine: Viet Nam
	<ul style="list-style-type: none"> <li>• New Law on Plant Protection is being drafted and will be submitted to the National Assembly by the end of 2010 for endorsement.</li> </ul> <p><b>Projects/program cooperation:</b></p> <ul style="list-style-type: none"> <li>• Improvement of Plant Quarantine treatment against Fruit Fly on fresh fruits (JICA), finished 2008.</li> <li>• Dragon fruit has been approved and entered into U.S market since October 2008.</li> <li>• 2 irradiation treatment facilities established in ABC Company and Son Son Company.</li> <li>• 1 vapor heat treatment facility is being built.</li> <li>• Viet Nam Methyl bromide phase out plan: on-going with World Bank funding.</li> <li>• NZAID phytosanitary capacity building in the Mekong region: going to terminate, (NPD development still on-going).</li> </ul> <p><b>Achievements:</b></p> <ul style="list-style-type: none"> <li>• BPH and Grassy stunt viruses were successfully control in past two years by using IPM Community approach for BPH control/management with assistance from FAO/TCP Project.</li> <li>• Coconut beetle was also under controlled by introduction of new parasites from Samoa under FAO/TCP Project.</li> <li>• Many quarantine pests found in two years (104 times).</li> <li>• Successful Technical Market Access to U.S, Japan.</li> <li>• Established equipment of vapor heat treatment and irradiation for fresh fruits exported.</li> <li>• National Capacity building in Phytosanitary was put in high priority in agriculture sector.</li> </ul>



## Outbreak management (surveillance, pest outbreaks and invasive species)

Period	<b>Outbreak management (surveillance, pest outbreaks and invasive species): Bangladesh</b>
<b>2009-2010</b>	Surveillance and forecasting program are performed across the country through an in-built network of concerned personnel. Surveillance activities are conducted in 5 (five) surveillance blocks of each upazilla (sub-district) of the country to monitor the introduction, establishment, spread and outbreaks of invasive species. On the basis of guidance and directives five representative surveillance blocks are selected in each upazilla for collecting and preparing of accurate surveillance report. It can be mentioned that the surveillance and forecasting activities operate parallel from grassroot level (surveillance blocks) through upazilla and district level up to the national level at plant protection wing. This unit provides forecast of pest outbreaks on the basis of surveillance report. Pest control operation is undertaken by the operation unit through co-ordination with this unit. The following flow chart shows the surveillance forecasting in Bangladesh.

Period	<b>Outbreak management (surveillance, pest outbreaks and invasive species): Bangladesh</b>
<b>2007-June 2009</b>	Regular surveillance activities are conducted in every district of the country to monitor the introduction, pest outbreaks, establishment and spread of invasive species.

Period	<b>Outbreak management (surveillance, pest outbreaks and invasive species): Cambodia (Based on the country report presented at APPPC 25<sup>th</sup> session in August 2007)</b>
<b>Up to 2007</b>	<p><b>Outbreaks</b></p> <p>Outbreaks of BPH affected more than 20,000 ha of rice. This problem was dealt with through the regional vegetable IPM programme and “community level BPH and associated virus management”. A key constraint was the high risk from new invasive species owing to the absence of plant quarantine check points at all entry points.</p> <p><b>Invasive pests</b></p> <p>The Sub-decree No. 15 on the phytosanitary inspection gave <b>PQA</b> the responsibility to conduct pest surveillance and eradicate new exotic pests. The golden apple snail and coconut beetles are considered invasive species to Cambodia. A lot of effort had been made to control and eradicate these pests.</p> <p>Staff of the plant protection office were trained on pest surveillance and biological control to enable the production of bio-agents such as <i>Asecodes</i> to control coconut beetle and <i>Cotesia</i> to control DBM.</p>

Period	<b>Outbreak management (surveillance, pest outbreaks and invasive species): China</b>
<b>2009-2010</b>	<p>During the period of 2009-2010, pest surveillance and monitoring were strengthened in high risk areas such as coastal areas, border regions, airports, sea ports, and distribution centers of imported agricultural products.</p> <p>The national-wide surveillance of the fruit fly program was carried out continuously. National or industry standards related to the plant quarantine pests surveillance had been</p>

Period	<b>Outbreak management (surveillance, pest outbreaks and invasive species): China</b>
	<p>formulated. The forecasting methods for main crop pests had also been sorted and unified. In addition, the TV programs on the pest forecasting and preventing technology were broadcasted by 31 provinces, covering more than 1,500 counties.</p> <p>The management of the pest data collection, transmission and utilization had improved, thanks to the establishment of the China Crop Pests Management Information System. Meanwhile, large-scale training events for farmers on pest prevention were organized. As a result, serious harmful pests such as locust, migratory rice pests, rice borer, rice blast, wheat stripe rust, and meadow moth, etc. were effectively suppressed.</p>

Period	<b>Outbreak management (surveillance, pest outbreaks and invasive species): China</b>
<b>2007-June 2009</b>	<p>During the period from 2007-2008, outbreaks of some pests on major crops occurred in responses to global warming, significant changes in cropping systems, climate conditions, and crop varieties. Among them, the locusts, lawn moth (<i>Crambus bolterellus</i>), wheat stripe rust, rice borers, rice brown plant hopper (<i>Nilaparavata lugans</i>), rice leaf folders (<i>Chaphalocrocis medinalis</i>), and cabbage diamond back moths (<i>Plutella xylostella</i>) were the most severe and destructive ones.</p> <p>The locusts damaged 1.54 million hectares in 2007 and 1.56 million hectares in 2008 respectively. Lawn moth damaged about 6.83 hectares of farm lands and pastures in 2008. The outbreaks of rice stem borers have been occurring with more serious damage over the past ten years. The outbreaks damaged 19.3 million hectares in 2007 and 19.42 million hectares in 2008 respectively. In the case of BPH, the infested area grew to 33.6 million hectares in 2007. The total area infested by major vegetable pests amounted to 29 million hectares in 2007 and 37 million hectares in 2008 respectively.</p> <p>During the period from 2007-2008, pest surveillance and monitoring were strengthened by Chinese government in high risk areas such as coastal areas, border regions, airports, sea ports, and distribution centers of imported agricultural products.</p> <p>The national-wide surveillance of the fruit fly program was carried out continuously. National or industry standards related to the plant quarantine pests surveillance had been formulated. The forecasting methods for main crop pests had also been sorted and unified. In addition, the TV programs on the pest forecasting and preventing technology were broadcasted by 31 provinces, covering more than 1,100 counties.</p> <p>The management of the pest data collection, transmission and utilization had improved, thanks to the establishment of the China Crop Pests Management Information System. Meanwhile, large-scale training events for farmers on pest prevention were organized. As a result, serious harmful pests such as locust, migratory rice pests, rice borer, rice blast, wheat stripe rust, and meadow moth, etc. were effectively suppressed.</p>

Period	<b>Outbreak management (surveillance, pest outbreaks and invasive species): Democratic People's Republic of Korea</b>
<b>2009-2010</b>	<p>The National Plant Protection Organization (NPPO) of the Democratic People's Republic of Korea (DPRK) has developed its own well-ordered pest survey system on crops, forests and other plants. Using this system, it surveys and records the occurrences of local pests</p>

<b>Period</b>	<b>Outbreak management (surveillance, pest outbreaks and invasive species): Democratic People's Republic of Korea</b>
	<p>of plants. The forecasting section of the Central Plant Protection Station (CPPS) assesses the state of the pest outbreaks in crops in the country. It also has its forecasting staff at the plant protection site in each county.</p> <p>As well, the Provincial Plant Protection Station which has surveillance spots, regularly surveys and records pest outbreaks. It reports data to the higher agency. On the other hand, the forecasting section of the CPPS has its own 10 surveillance branches, based on the difference of the agricultural meteorology. Each branch independently surveys, records, stores and reports on the pest outbreaks in its area. During the main farming season, the surveillance personnel surveys pest occurrences and reports to the CPPS on the survey results every 5 days.</p> <p>In case of the outbreak of a new pest, they will request the CPPS, the Ministry of Agriculture (MoA), and professional institutes to identify the pest species and give advice on methods to eradicate it.</p> <p>The Ministry of Land and Environment Protection has a system in every county to survey, record and report on the state of the pest outbreak in the forest.</p> <p>In 2009 and 2010, unexpected pests broke out and damaged crops in DPRK.</p> <p>Soil born pests such as cut worm and white grubs occurred abundantly in maize and vegetable farms and caused serious damage to the overall areas. Trionymus agrestis in the eastern area as well as Cephalosporium sp and Autogrpha sp, the new insect pests in the southern area, broke out and caused damage to maize and soybean. Surveys were conducted in the areas hit by the pests and the survey reports were sent to the CPPS.</p>

<b>Period</b>	<b>Outbreak management (surveillance, pest outbreaks and invasive species): Democratic People's Republic of Korea</b>
<b>2007-June 2009</b>	<p>In 2008, the MOA re-organised the County Plant Protection Office in every county under the CPPS. Each office would survey the outbreak of pests in its county, produce and provide biopesticides such as Trichogramma and Beauveria bassiana to the co-operative farms, educate and train farmers on pest management and report its activities and status of the situation to the CPPS through the Province Plant Protection Station during cropping seasons.</p>

<b>Period</b>	<b>Outbreak management (surveillance, pest outbreaks and invasive species): India</b>
<b>2007-June 2009</b>	<p>Constant vigil is kept on locust activity in the Scheduled Desert Area of 200,000 sq. km by the Locust Warning Organization (LWO). Keeping in view the locust invasion of 1993, 1997 and International Locust Situation, Locust Surveillance in the strategic areas has been intensified.</p>

Period	<b>Outbreak management (surveillance, pest outbreaks and invasive species): Japan</b>
<b>2007-June 2009</b>	<p>Japan has policies to control serious field pest outbreaks, to control migratory or periodically occurring pests, and to eradicate serious newly invaded exotic pests.</p> <p>The total number of designated staff for surveillance of field pests of national importance and migratory and periodically occurring pests amounts to 4,537, 3,637 of whom are prefecture staff and the remaining 900 are government staff.</p> <p>In 2007, <i>Erwinia</i> Sp. was discovered in Yamagata Prefecture. The pest affected an area of about 0.5 ha. The control method was to cut down and incinerate the diseased trees.</p>

Period	<b>Outbreak management (surveillance, pest outbreaks and invasive species): Lao People's Democratic Republic</b>
<b>2009-2010</b>	<p>Lao PDR has not established a national program for pest outbreaks and invasive species management. Moreover, beside the forecast signal of a possible pest outbreak, the warning system is still weak, to the extent of being almost non-existent. Consequently, farmers are faced with invasive species that become established and cause damage to their cash crop such as coffee, sugar cane and coconut.</p> <p>The Department of Agriculture (DOA) has recently established a network of plant protection with a role to monitor and develop a database on the pest status of economic crops, which is further reported to the NPPO to identify proper control measures. Those mandates of the plant protection unit have been clearly defined in the Agreement of the DOA on the function and role of the Provincial Agricultural Sector.</p> <p>Furthermore, with the support of NZAID Phytosanitary Capacity Building in the Mekong Region Project, surveillance work has started with the aim to build specimen-based pest lists on key crops (mango and maize) with potential for export.</p> <p>During the program, a number of key technical staff (entomologist and pathologist) were trained on pest diagnostic in New Zealand and Viet Nam. In addition, on-the-job training and technical assistance was also given on the use of the internet and digital technology (remote diagnostic) for identifying plant pests, the establishment of formal and informal networks for identifying plant pests in Lao PDR and the improvement of the sample collection system to ensure the capability of the trained staff in carrying out their tasks.</p>

Period	<b>Outbreak management (surveillance, pest outbreaks and invasive species): Lao People's Democratic Republic</b>
<b>2007-June 2009</b>	<p>Lao PDR has not established a national program for pest outbreaks and invasive species management. Moreover, beside the forecast signal of possibly pest outbreak, the warning system is still weak, to the extent of being almost non-existent. Consequently, farmers are faced with invasive species that become established and create impacts on their cash crop such as coffee and coconut.</p> <p>The Department of Agriculture (DOA) has recently established network of plant protection with their role to monitor and develop database on pest status of economic crop which is further reported to NPPO to identify proper control measure. Those mandates of plant protection unit have been clearly defined in the Agreement of DOA on function and role of the Provincial Agricultural Sector.</p>

Period	<b>Outbreak management (surveillance, pest outbreaks and invasive species): Lao People's Democratic Republic</b>
	<p>Furthermore, with the support of NZAID Phytosanitary Capacity Building in the Mekong Region Project, surveillance work has started with the aim to build specimen-based pest lists on key crops (mango and maize) with potential for export.</p> <p>During the program, a number of key technical staff (entomologist and pathologist) were trained on pest diagnostic in New Zealand and Viet Nam. In addition, on-the-job training and technical assistance was also given on the use of the internet and digital technology for identifying plant pests, the establishment of formal and informal networks for identifying plant pests in Lao PDR and the improvement of the sample collection system to ensure the capability of the trained staff in carrying out their tasks.</p>

Period	<b>Outbreak management (surveillance, pest outbreaks and invasive species): Malaysia</b>
<b>2007-June 2009</b>	<p>A national committee on Invasive Alien Species (IAS) was formed that was tasked with coordinating and control of IAS. A recently concluded seminar was aimed at creating IAS awareness among the general public.</p> <p>A pest of concern to the country especially in rice fields is golden apple snail (<i>Pomacea canaliculata</i>). Concomitantly, an improved version of rice pest surveillance techniques has been developed which, primarily, focuses on increasing the frequency of survey and a more realistic area of coverage. It is envisaged that with its implementation, all rice fields in the country will be surveyed regularly for early detection of pest and disease occurrences so that immediate control measures can be taken to prevent its spread.</p> <p>Efforts are stepped up to control and eradicate the exotic aquatic weeds, namely, <i>Cyperus papyrus</i> and <i>C. japonica</i> and terrestrial weed, <i>Pennisetum setaceum</i>, found in the country. The aquatic weeds, in particular, pose a serious threat where they had invaded the drainage and irrigation canal and impede the smooth flow of water and making it not readily available to the growing crop plants.</p> <p><i>Brontispa</i> sp. is a serious insect pest attacking the leaves of coconut palms. A biological agent, <i>Asedodes hispanarium</i> which is a hymenopteran parasite, will be introduced into the country in an effort to combat the menacing <i>Brontispa</i> pest.</p>

Period	<b>Outbreak management (surveillance, pest outbreaks and invasive species): Myanmar</b>
<b>2007-June 2009</b>	<p>The survey of pests and diseases occurred in Myanmar has been carried out and data entries are in progress. However, due to lack of expert verification of the collected specimens, it is not feasible yet to publish the updated list of pests in Myanmar.</p> <p>There were rodent outbreaks in the northern part of Myanmar in 2008. A rodent control team was dispatched to study the situation and discuss the results of the study. As the outbreaks occurred in the forestry area (bamboo), they were of no agricultural importance.</p> <p>There was no insect pest outbreak in agricultural areas. There was no invasive species management in Myanmar.</p>

Period	Outbreak management (surveillance, pest outbreaks and invasive species): Republic of Korea
2009-2010	<p>The Rural Development Administration (RDA) monitored and observed the pest outbreaks and invasive species. Total 690 observation stations located in 137 cities and counties have been operational.</p> <p>Two species of insect, a katydid <i>Paratlanticus ussuriensis</i> and a cicada <i>Lycorma delicatula</i>, broke out both in 2007 and 2008. And an invasive disease, TYLCV, also broke out in a limited area and it was under official control.</p> <p>Provincial governments, the RDA and the KFS collaborated to manage these pests and disease employing all sorts of methods currently in use. They also tried to develop an effective strategy.</p> <p>In 2007 a rice pest, smaller brown planthopper <i>Laodelphax striatellus</i>, occurred in extraordinarily high population causing severe damage in areas in the vicinity of the western coast because of the rice stripe virus disease it transmitted. In 2008 the disease incidence decreased greatly in comparison to that of 2007, even though it was still severe showing 205% occurrence compared to the average year.</p>

Period	Outbreak management (surveillance, pest outbreaks and invasive species): Republic of Korea
2007-June 2009	<p>Rural Development Administration (RDA) monitored and observed the pest outbreaks and invasive species. Total 690 observation stations located in 137 cities and counties have been operational.</p> <p>Two species of insect, a katydid <i>Paratlanticus ussuriensis</i> and a cicada <i>Lycorma delicatula</i>, broke out both in 2007 and 2008. And an invasive disease, TYLCV, out-broke in a limited area and it is under official control.</p> <p>Provincial governments, RDA and KFS collaborated to manage these pests and disease employing all sorts of methods currently in use. They also tried to develop an effective strategy.</p> <p>In 2007 a rice pest, smaller brown planthopper <i>Laodelphax striatellus</i>, occurred in extraordinarily high population causing severe damage in areas in vicinity of western coast because of the rice stripe virus disease it transmits. In 2008 the disease incidence decreased greatly in comparison to that of 2007, even though it was still severe showing 205% occurrence compared to average year.</p>

Period	Outbreak management (surveillance, pest outbreaks and invasive species): Sri Lanka
2007-June 2009	<p>During the period under review, a new exotic invasive species was reported from the western region of Sri Lanka. It was first observed in August 2008 by field extension officers of Gampaha District, and species was identified as Papaya Mealy Bug – <i>Paracoccus marginatus</i> and confirmed by the senior Biosystematics of the Plant Pest Diagnostic Center, USA. This species was observed in the host plant more than sixty and it caused significant losses to the papaya plants and ornamental plants in home garden.</p> <p>A detailed survey of the area was carried out with the assistance of Extension officers of the relevant district. A package of control practices were recommended and Biological control agent <i>Acerophagus papayae</i> was imported from Puerto Rico APHIS and released into several infested locations. At present damage is under control.</p>

<b>Period</b>	<b>Outbreak management (surveillance, pest outbreaks and invasive species): Thailand</b>
<b>2007-June 2009</b>	<p>A new pest outbreak was detected in some cassava plantations in early 2008. The unknown species of mealybug caused more severe damage to cassava than striped mealybug, <i>Ferrisia vergata</i>. The new pest was collected for taxonomic identification.</p> <p>The Department of Agriculture (DOA) conducts the detection survey of mango seed weevil, <i>Sternochetus mangiferae</i> in order to provide information supporting that Thailand is free from this weevil. This enables the country to expand the export market for Thai mango.</p>

<b>Period</b>	<b>Outbreak management (surveillance, pest outbreaks and invasive species): Viet Nam</b>
<b>2007-June 2009</b>	<p>During 2007-2009, brown plant hoppers and associated stunt virus diseases have been successfully controlled with improved cropping patterns. Viet Nam has also strengthened technical cooperation with neighboring countries in surveillance and control of rice migratory pests for effective management of these pests at regional level. Sugarcane grassy shoot disease has recently emerged and become a serious problem in sugarcane plantations. In 2008 alone, more than 5,000 ha of sugarcane were infested with this disease. Viet Nam is seeking international support to address this problem.</p>

**Pest management**

<b>Period</b>	<b>Pest management: Australia</b>
<b>2007-June 2009</b>	<p><b>PaDIL</b></p> <p>PaDIL was developed by Museum Victoria with support provided by DAFF and Plant Health Australia. PaDIL contains high quality images showing primarily exotic targeted organisms of plant health concern to Australia. It provides information on pests and diseases that assist in helping to protect against invasive threats to Australia's plant health by allowing rapid recognition of emergency plant pests to ensure appropriate response strategies are implemented. Guarding against pest and disease invasion is a key component of Australia's National Plant Health Strategy.</p>

<b>Period</b>	<b>Pest management: Australia (Based on the country report presented at APPPC 25<sup>th</sup> session in August 2007)</b>
<b>Up to 2007</b>	<p><b>Biosecurity</b></p> <p>Australian industries continue to develop industry specific biosecurity plans to significantly reduce the risk and spread of pest incursions.</p> <p>A Cooperative Research Centre of National Plant Biosecurity has been established to coordinate and undertake national plant biosecurity research.</p> <p>The Australian Biosecurity System for Primary Production and the Environment (AusBIOSEC) has been established as a whole-of-government project to improve Australia's biosecurity status. Its aim is to improve outcomes from Australia's biosecurity system for primary production and the environment, through greater national coordination on biosecurity policy, regulation, funding and delivery across jurisdictions and sectors. The scope of AusBIOSEC is along the entire biosecurity continuum from pre-border, border to post-border management of biosecurity risk.</p>

<b>Period</b>	<b>Pest management: Bangladesh</b>
<b>2009-June 2010</b>	<p>The Plant Protection Wing (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. Beside these, PPW also forecast pest outbreaks, their control measures and instructions were issued among the farmers by distributing different handbills, leaflets and booklets. This organization also conduct nationwide special program to control vertebrate pests.</p> <p>The IPM and ICM projects strengthen IPM activities through establishing and introducing Farmers Field School (FFS), IPM Clubs (Farmers Association), Organic Farming Pilot Program, Biological Pest Control, Farmers Training and organization of workshops/seminars throughout the country. They help farmers become aware of healthy crop production. IPM club also helps to promote IPM activities among the neighboring farmers. Pesticide-free crop production has now become popular among the farmers.</p>

<b>Period</b>	<b>Pest management: Bangladesh</b>
<b>2007-June 2009</b>	<p>The Plant Protection Wing (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.</p>



Period	Pest management: Bangladesh
	<p>The IPM and ICM projects strengthen IPM activities through establishing and introducing Farmers Field School (FFS), IPM Clubs (Farmers Association), Organic Farming Pilot Program, Biological Pest Control, Farmers Training and organization of workshops/seminars throughout the country. They help farmers become aware of healthy crop production. IPM club also helps promote IPM activities among the neighboring farmers. Pesticide-free crop production has now become popular among the farmers.</p>

Period	Pest management: Cambodia (Based on the country report presented at APPPC 25 <sup>th</sup> session in August 2007)
Up to 2007	<p>The IPM programme was established in 1993 and now operates in 15 major agriculture production provinces, including the Phnom Penh municipality, with the aim of promoting food security and safety. The main tasks were to reduce the dependence of farmers on agricultural chemicals, to develop the capacity of agriculture trainers and extension workers to educate farmers on agriculture technologies by developing skills in environmentally friendly crop management. The programme had trained more than 600 district trainers, 2,000 farmer facilitators and 100,000 farmers. IPM training had led to an increase in yield, sustainable and cost-effective production, reduction of ecology disruption and environmental contamination, reduction of public health and toxic residues in food, and improvement of the livelihood of farmers, biodiversity and marketability of produce.</p>

Period	Pest management: Democratic People's Republic 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. The CPPS has branches in each province and county which is responsible for managing pests in the area under the direct control of the Ministry of Agriculture.</p> <p>During the farming season, when pests occur and caused damage to crops, 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 was 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	Pest management: Democratic People's Republic of Korea
2007-June 2009	<p>The “Juche-based Farming Method” established in the Democratic People’s Republic of Korea includes all parts of the farming method as well as the management of pests in crops. The method is updated every year by the Ministry of Agriculture (MOA) for dissemination to cooperative farms across the country.</p> <p>Pest management by protecting, producing and applying natural enemies such as Trichogramma and biopesticides, while using few chemical pesticides in the fields, is included recently in the method to increase yields of crops.</p> <p>The Central Plant Protection Station (CPPS), the Ministry of Agriculture, is responsible for carrying out surveillance and managing significant pests in crops in the fields, while the Ministry of Land and Environment Protection is responsible for pest management in the forest.</p> <p>From 2007 to 2008, Swiss Development Cooperation (SDC) offered assistance such as training on vegetable IPM and provision of 4 sets of Trichogramma rearing facilities to 4 respective counties and Bt facility to AAS.</p> <p>During the period from 2009 to 2010, DPRK plans to increase the investment in pest management, such as pest control in the fields, production of biopesticides as well as phytosanitary measures and regulations.</p> <p>From 2009 to 2011 the European Union plans to support CPPS, MOA, the Plant Protection Institute and AAS through a project entitled the “Integrated Pest Management Application to Maize Production for Food Security in DPRK” which will provide 24 counties with Trichogramma Rearing Facilities and train personnel for the quality control of production.</p>

Period	Pest management: China
2009-2010	<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. Among them, the locusts, rice brown plant hopper (<i>Nilaparavata lugans</i>), rice leaf folders (<i>Chaphalocrocis medinalis</i>), meadow moth (<i>Loxostege sticticalis</i> L.), rice borers, and cabbage diamond back moths (<i>Plutella xylostella</i>) were the most severe and destructive ones.</p> <p>The locusts hit about 1.7 million hectares both in 2009 and 2010. Meadow moth 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, 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.</p> <p>Regional actions were coordinated by the National Agro-technical Extension and Service Center (NATESC) of the Ministry of Agriculture for controlling migratory pests- locusts, meadow moth, rice brown hopper, rice leaf roller and regionally epidemical diseases- wheat stripe rust, rice blast and rice sheath blight, etc.</p> <p>The annual control acreages of major crop pests reached 560.7 million hectares in 2009 and 532.7 million hectares in 2010 respectively.</p>

Period	Pest management: China
	<p>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 measures such as using microorganisms and reclaiming locust habitats were extensively promoted in recent years.</p> <p>The IPM technologies on rice were well developed and widely applied in China. Seed treatments with fungicides and insecticide were commonly used by farmers to prevent the infestations of rice seedling diseases and insects. Bio-diversity strategies were implemented in about 6.67 million hectares annually for rice blast management in 2009 and 2010. Light trips were extended to 1.2 million hectares of rice fields to kill moths of rice borers and leaf folders.</p> <p>During the period of 2009-2010, wheat IPM strategies focused on prevention and ecological approaches. In the regions where the pathogens of wheat stripe rust can overwinter and over-summer, the percentage of seed coating or treatment with fungicides was increased to over 90 % in 2010.</p> <p>In corn, biological technologies such as the use of <i>Beauveria bassiana</i> for killing overwinter larvae of corn borer, artificial release of <i>Trichogramma</i> spp in fields have been extended to above 3 million hectares since 2009.</p> <p>In cotton, the transgenic Bt cotton has been continually applied over 3.4 million hectares in China.</p>

Period	Pest management: China
<p><b>2007-June 2009</b></p>	<p>Regional actions were coordinated by the National Agro-technical Extension and Service Center (NATESC) of the Ministry of Agriculture for controlling migratory pests- locusts, lawn moth, rice brown hopper, rice leaf roller and regionally epidemical diseases- wheat stripe rust, rice blast and rice sheath blight, etc.</p> <p>The annual control acreages of major crop pests reached 543.5 million hectares in 2007 and 532.7 million hectares in 2008 respectively.</p> <p>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 measures such as using microorganisms and reclaiming locust habitats were extensively promoted in recent years.</p> <p>The IPM technologies on rice were well developed and widely applied in China. Seed treatments with fungicides and insecticide were commonly used by farmers to prevent the infestations of rice seedling diseases and insects. Bio-diversity strategies were implemented in about 6.67 million hectares annually for rice blast management in 2007 and 2008. Light trips were extended to 0.7 million hectares of rice fields to kill moths of rice borers and leaf folders.</p> <p>During the period from 2007-2008, wheat IPM strategies focused on prevention and ecological approaches. In the regions where the pathogens of wheat stripe rust can overwinter and over-summer, the percentage of seed coating or treatment with fungicides was increased to over 80% in 2007.</p> <p>In corn, biological technologies such as the use of <i>Beauveria bassiana</i> for killing overwinter larvae of corn borer, artificial release of <i>Trichogramma</i> spp in fields have been extended to above 2.5 million hectares since 2007.</p>

Period	Pest management: China
	In cotton, the transgenic Bt cotton has been expanded to over 2.4 million hectares in China.

Period	Pest management: China (Based on the country report presented at APPPC 25 <sup>th</sup> session in August 2007)
Up to 2007	<p>The quarantine pest list was updated. Two alien invasive pests, i.e., the red imported fire ant and the cucumber green mottle mosaic virus, were discovered and emergency quarantine eradication programmes were undertaken. Integrated measures were strengthened for the plant quarantine pests. Crop pests of national importance, particularly migratory locusts, rice borers, rice plant hoppers and rodent were successfully managed and controlled. Using an ecology approach such as improving biodiversity in its over-summer places to reduce inoculum, the national programme on the management of wheat stripe rust was implemented. Demonstrations of “green protection technologies” such as light-trapping, pheromone mating-disruption and biological control were carried out on a large scale, and these activities attained impressive economic, environmental and social benefits.</p> <p><b>International Cooperation</b></p> <p>IPM experts from China initiated exchange programmes with Viet Nam and Thailand, to explore the possibilities of cooperation on the management of rice plant hoppers.</p>

Period	Pest management: India
2007-June 2009	<p>Plant Protection plays a vital role in achieving targets of crops production. The major thrust areas of plant protection are promotion of Integrated Pest management, ensuring availability of safe and quality pesticides for sustaining crop production from the ravages of pests and diseases, streamlining the quarantine measures for accelerating the introduction of new high yielding crop varieties, besides eliminating the chances of entry of exotic pests and for human resource development including empowerment of women in plant protection skills.</p> <p>Keeping in view the ill effects associated with the use of pesticides, Integrated Pest Management (IPM) approach has been adopted as a cardinal principle and main plank of plant protection in the overall crop production programmes in the country. Further IPM is also an important component in the National Agriculture Policy adopted by the Government of India. The objectives of IPM approach are to increase crop production with minimum input costs, minimize environmental pollution and maintain ecological equilibrium. 31 Central Integrated Pest Management Centers have been set up for the purpose.</p>

Period	Pest management: Japan
2007-June 2009	The training course on disinfestation technique using thermal treatment on fruit fly has been organized since 1988 with trainees being invited from countries 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 the FAO.

Period	Pest management: Lao People's Democratic Republic
2009-2010	<p>Pest management is nationwide recognized in Lao PDR through the integrated pest management project (IPM) which has been implemented since 1995 under the technical cooperation programme between FAO and Lao PDR.</p> <p>The national IPM project office which is based in the Plant Protection Center has the central and local networks within the line institutions aiming at promoting and educating farmers in sustainable and environmentally friendly pest management.</p> <p>IPM activities play an important role in implementing the Lao government's current policies on agriculture with emphasis on increasing productivity, market-orientation, exports and household food security. At the same time, the policy also stresses the preservation of agriculture biodiversity and sustainability, equitable development, and the conservation of natural resources. Organic crops and production areas, and production for niche markets have also been advocated.</p> <p>The strategy for pest management has focused on vegetables since 2005. The IPM activities in Lao PDR have focused on increasing the capacity of the IPM program and policy support, and on increasing the participative role of stakeholders, especially farmers, in the planning and implementation.</p> <p>The main development during 2007-2008 has focused on promotion of involvement of additional agencies in the program support and implementation, including effective coordination among these agencies and strengthening technical and training capacities among field staff.</p> <p>More than 14 farmer field schools were conducted in the target area with 231 farmers trained in the IPM. As well, 7 officers and local trainers of the IPM program continue upgrading their capability on biological control and good agricultural practice of vegetable production through a series of training activities organized within the country and in the partnership countries (including China, Thailand, Cambodia and Viet Nam).</p> <p>In collaboration with Oxfam-Belgium Project on the use and production of biological control agents, a number of biological control agents have been introduced into the program and investigation is conducted on its potential to control important pests with possible field-level production. The knowledge on biocontrol practice of Diamond backmoth, using its major parasitoids (<i>Diadegma semiclausum</i> and <i>cotesia</i> sp.) and biopesticide (<i>Bacillus thuringiensis</i>), has been transferred to local trainers and farmer field schools in the target area where huge cabbage is produced for export.</p> <p>In October 2007, the status of Coconut hispine beetle in Lao PDR was assessed through a FAO program. The assessment formulated concrete recommendations for containing the spread of the beetle and for strengthening the biological management of beetle. The experiment to study potential of predatory earwigs and mass rearing of <i>Asecodes hispinarum</i> are being investigated under the lab condition of the PPC.</p> <p>Based on the IPM project's activities with its achievement, the Ministry of Agriculture and Forestry as well as the Department of Agriculture have been promoting the Integrated Pest Management (IPM/FAO) as basis for implementation of clean agricultural production which comprises 3 steps including (i) good agricultural practice, (ii) pesticide-free production and (iii) organic agriculture.</p>

<b>Period</b>	<b>Pest management: Lao People's Democratic Republic</b>
<b>2007-June 2009</b>	<p>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.</p> <p>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 is currently being in the process of consideration to support by STDF.</p>

<b>Period</b>	<b>Pest management: Malaysia</b>
<b>2007-June 2009</b>	<p>Integrated Pest Management (IPM) has long been implemented in rice, vegetable and fruit crops in an effort to alleviate the problems caused by excessive use of pesticides. New programmes and activities are being planned to further strengthen and expand IPM implementation in order that the benefits are enjoyed by a large segment of the farming community.</p>

<b>Period</b>	<b>Pest management: Myanmar</b>
<b>2007-June 2009</b>	<p>Myanmar has a national IPM policy. IPM is one of the main pillars to the development of the Plant Protection Division.</p> <p>The Plant Protection Division was established by a steering committee in 1999. The Division advocates the need for Integrated Pest Management to be adopted as a national crop protection policy. It also makes decision on crop information exchange between Myanmar and other ASEAN countries and international association.</p> <p>Currently, the IPM practices are being adopted to mitigate pest damage. The other aspect of the botanical insecticide such as neem pesticide has been tested against vegetable pests in the field condition.</p> <p>The Farmer's Field School has been established since 2000. However, during the beginning stage, emphasis was placed only on the rice farmers.</p>

<b>Period</b>	<b>Pest management: Nepal</b>
<b>2009-2010</b>	<p>Crop pests are important biotic agents to reduce crop loss accounting with 25-35%. Pesticide dominates major components of pest management in Nepal. However, very poor graded pesticides dominate Nepalese markets. Haphazard use, unnecessary use and their likely effects are common in major rural areas. In order to combat this situation, the Plant Protection Directorate (PPD) in association with line agency programs is active in the country. The PPD has been giving its services by applying effective quarantine and pesticide management approaches in the country. The Integrated Pest Management (IPM) is one of the major programs of the Directorate, which is also technically backstopping by FAO, Nepal.</p>

<b>Period</b>	<b>Pest management: New Zealand</b>
<b>2007-June 2009</b>	Integrated pest management continues to be an integral component of orchard management programmes in New Zealand.

<b>Period</b>	<b>Pest management: Philippines</b>
<b>2009-June 2010</b>	<p>The vision of the Crop Protection Division of the BPI is to strengthen crop protection services in the country. This is done by employing biological and cultural technologies which are effective, safe and environment friendly. To adequately address pest problems and ensure increase in farm productivity, food sufficiency and security, the Crop Protection Division develops and formulates guidelines and policies in the implementation of improved crop protection strategies.</p> <p>The major functions of the Division are the implementation of sustainable biological control technologies, generation of pest management strategies and improvement of crop protection technologies adapted for the local farmers. The Crop Protection Division provides technical assistance, coordination, and where necessary, supervision over regional facilities, e.g. Regional Crop Protection Centers (RCPCs) and surveillance and early warning system (SEWS). IPM-related national, as well as bilateral/multinational program implementations are involved.</p> <p>It provides facilities for plant pests and disease diagnosis, mass production and rearing of biological agents for field distribution, training for crop protection staff and extension agents, and proper evaluation of national programs and projects on crop protection. It works in tandem with the Plant Quarantine Service since it supervises and evaluates researches and other development projects on exotic pests of special national considerations and acts as central monitoring arm and repository of regional pest data information.</p> <p>Crop protection is vital to the success of sustainable agriculture. If pests are left unabated, the benefits of crop production will be futile, even if proper fertilization, good water management, and sound cultural practices are followed. Thus, crop protection is a key component of agricultural production.</p>

<b>Period</b>	<b>Pest management: Republic of Korea</b>
<b>2009-2010</b>	<p>The Rural Development Administration (RDA) conducted the demonstration projects for rice and citrus to promote the IPM practice. Demonstration farms operated in 2008 consisted of 284 sites for rice and 16 sites for citrus and contributed to reduce the chemical spray times by 4 from 12 times to 8 times in average for citrus, and for rice the chemical application reduced to 2 times from 3 times as well.</p> <p>The Ministry for Food, Agriculture, Forestry and Fisheries (MIFAFF) started a supporting program in 2005 for the growers who used natural enemies to control insect pests occurring in 9 greenhouse crops including strawberry. The Government gives a subsidy (about 50% of the cost for purchasing natural enemies) to the growers who satisfy the requirement set by the program with a goal that 50% of horticultural crop area use biological control methods by 2013.</p> <p>The RDA carried out research to determine economic threshold levels for about 13 major pests, 11 major diseases and 7 major weeds in cooperation with 8 provincial research institutes in 2008.</p>

Period	Pest management: Republic of Korea
2007-June 2009	<p>RDA conducted the demonstration projects for rice and citrus to distribute IPM practice. Demonstration farms operated in 2008 consisted of 284 sites for rice and 16 sites for citrus and contributed to reduce the chemical spray times by 4 from 12 times to 8 times in average for citrus, and for rice the chemical application reduced to 2 times from 3 times as well.</p> <p>MIFAFF started a supporting program in 2005 for the growers who used natural enemies to control insect pests occurring in 9 greenhouse crops including strawberry. The Government gives a subsidy (about 50% of the cost for purchasing natural enemies) to the growers who satisfy the requirement set by the program with a goal that 50% of horticultural crop area use biological control methods by 2013.</p> <p>RDA carried out research to determine economic threshold levels for about 13 major pests, 11 major diseases and 7 major weeds in cooperation with 8 provincial research institutes in 2008.</p>

Period	Pest management: Sri Lanka
2007-June 2009	<p>During the period under review the most significant change in the Pest Management in Sri Lanka, is the appointment of National committee to revise the Plant Protection Act No 35 of 1999, to make the necessary changes to meet the present day requirements and submission of new set of regulations under the Act.</p> <p>The country has embarked on several Pest Management Programmes for control of specific pests. Shortage in resource like funds, trained staff, machinery, and equipments always hindered the progress of the programme. Despite the problems encountered the centre has achieved most of the targets.</p> <p>The Integrated Pest Management (IPM) strategy that was practiced in rice cultivation is now extended to vegetable and other plantation crops by using Farmer Field School (FFS) training approach. After the successful implementation of IPM programme, a new programme was initiated in the country incorporating mosquito vector management into the IPM programme, called Integrated Pest and Vector Management (IPVM) Programme, funded by UNEP.</p> <p>Due to multidisciplinary nature of the programme it required the involvement of several stakeholder Departments, like the Department of Agriculture, Department of Health and Mahaweli Authority of Sri Lanka (MASL). This itself was a unique experience, integrating Agriculture with Health for the purpose of providing a better service and upgrading the livelihoods of rural communities.</p> <p>In order to sustain the programme IPVM clubs were formed in village where FFS training were conducted so that farmers themselves could continue the activities they learnt at the FFS while disseminating that knowledge to other farmers.</p> <p>Another development in the past two years is the preparation of regulations under Plant Protection Act No. 35, 1999, to control of Coconut Leaf Rot Disease and Weligama Cocconut Wilt Disease in southern region of Sri Lanka.</p> <p>Water hyacinth and <i>Salvinia molasta</i>, have been identified as principal invasive weeds that require adoption of biological control methods. Rearing facilities of bio control agent <i>Cytobagous salviniae</i> has been improved and four regional rearing units were also established during the last two years for biological control programme of salvinia.</p>



Period	Pest management: Sri Lanka
	In addition, bio control agent of water hyacinth, <i>Neochatina bruchi</i> was imported from Thailand and introduced into water bodies after completing the necessary host specific test.

Period	Pest management: Thailand
<b>2007-June 2009</b>	<p>During 2007-2008, MOAC did not change the national policy on IPM programme. The country's key economic crops included rice, okra, asparagus, fruit crops, vegetables, field crops, and orchids.</p> <p>However, the budget constraint had an impact on IPM activities. The Department of Agricultural Extension (DOAE) had to decrease the number of training programs and farmer field schools (FFS). As regards the main IPM programme, DOAE still encouraged the farmers' education and knowledge development, with focus on the change of attitude of farmers using highly toxic pesticides. The education helped them understand the principles and the framework of Good Agricultural Practices (GAPs).</p> <p>The main component of the IPM implementation is to encourage farmers to use biological control. A number of bio-agents are introduced to replace or alternate with chemical pesticides.</p> <p>Since the end of 2007, DOAE has set the project entitled "Using Integrated Pest Management for Decreasing Risk of Plant Pest Infestation" as the main activity of the Community Plant Pest Management Center. The objects of the project are to develop farmers into "Pests Management Professionals in IPM", to reduce damage to farmers crops, to encourage less investment, and to enhance community participation in the project.</p> <p>Technology transfer in the project mainly relies on the adaptation process of FFS. To ensure the product safety for consumers from pesticide residues, products will be tested for chemical residues before being harvested.</p> <p>Area-wide IPM of fruit fly control programme using the Sterile Insect Technique (SIT) has been carried out over a large area, and sometimes involves a major facility and a lot of equipment. The required financial resource may also be large. Even though a programme might be economical on a benefit/cost basis, it is not always affordable. Obtaining operating funds can be the most important issue facing a programme. Adequate financial resource affects the programme strategy and operations as well as the duration and reliability of programme support. In the case of Thailand's programme, financial support from the government is essential for the stability and success of the programme. Sometimes the government support is unreliable or not delivered in a timely manner. For a biological programme, this can easily cause delays, uncertainty, unnecessary repetitions of work, and even a programme failure.</p> <p>The basic requirements for scaling up the pilot project to a national level include not only a complex procedure of incorporating new and better technologies but also the support of the government officials who have to be convinced. This often poses a huge challenge.</p>

<b>Period</b>	<b>Pest management: Viet Nam</b>
<b>2007-June 2009</b>	The National IPM Programme has IPM trainers in all 63 provinces of Viet Nam, IPM FFSs have been conducted in more than 95% of the communes growing rice nationwide involving over 10% of farm households. IPM has been expanded to vegetables, cotton, maize, sweet potato, tea and citrus. FFS have been followed-up with various forms of community activities including establishment of IPM clubs and farmer groups, application of System of Rice Intensification at field level. The National IPM Programme actively supports the National Safe Vegetable Programme by developing IPM aligned to principles of GAP, thereby contributing to improving food safety.

### Pesticide management

Period	Pesticide management: Australia
<b>2007-June 2009</b>	<p><b>Pesticide regulation</b></p> <p>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.</p> <p>Australia is a party to the Rotterdam and Stockholm conventions.</p>

Period	Pesticide management: Australia (Based on the country report presented at APPPC 25 <sup>th</sup> session in August 2007)
<b>Up to 2007</b>	<p><b>Stockholm Convention</b></p> <p>Australia submitted its national implementation plan to the Stockholm Convention Secretariat in August 2006 setting out how Australia will implement its obligations under the Convention. Australia has eliminated the use of the POP chemical mirex and is in the process of withdrawing its exemption. Australia is in the process of adopting the <b>best available techniques (BAT)</b> and provisional guidance on <b>best environmental practices (BEP)</b>.</p>

Period	Pesticide management: Bangladesh
<b>2009-2010</b>	<p>The Pesticide Administration and Quality Control Section of the Plant Protection Wing (NPPO) of the Department of Agricultural Extension (DAE) revised “The Pesticide Ordinance, 1971” and its name was changed to “The Pesticide Ordinance (Amended), 2007”.</p> <p>The necessary modifications were also made to The Pesticide Rules, 1995 with the incorporation of the provisions of Bio-pesticide registration and submitted to the Ministry of Agriculture for necessary action.</p> <p>To facilitate modern diagnosis and laboratory facilities, the Pesticide Quality Control Laboratory of NPPO has already been modernized with the installation of testing equipment.</p> <p>To disposal off the obsolete pesticides, a survey was conducted in different areas of the country. Continuous farmers training programs were also conducted to increase awareness of harmful effects of injudicious use of pesticides.</p>

Period	Pesticide management: Bangladesh
<b>2007-June 2009</b>	<p>In 2007 the Department of Agricultural Extension (DAE) revised “The Pesticide Ordinance, 1971” and its name was changed to “The Pesticide Ordinance (Amended), 2007”. The necessary modifications were also made in The Pesticide Rules, 1995 with the incorporation of the provisions of Bio-pesticide registration. They have been submitted to the Ministry of Agriculture for necessary action.</p>

Period	Pesticide management: Bangladesh
	As part of the effort to disposal off the obsolete pesticides, a survey was conducted in different areas of the country. Moreover, continuous farmers training programs were also conducted to increase awareness about harmful effects of injudicious use of pesticides.

Period	Pesticide management: Cambodia (Based on the country report presented at APPPC 25 <sup>th</sup> session in August 2007)
Up to 2007	<p><b>Pesticide Management and Rotterdam Convention</b></p> <p>Pesticide regulations issued included the Sub-decree No. 69 on standards and management of agricultural materials and many other relevant documents. A pesticide registration scheme was established and the Department of Agricultural Legislation is responsible for pesticide registration, licensing of importers and retailers of pesticides, and enforcement of regulations, with technical advice from the Department of Agronomy and Agricultural Land Improvement, serving as focal point for the Rotterdam Convention. Current pesticide issues were broadly recognized, especially their implications for production, health, the environment and trade. However, many other constraints remained unresolved, such as insufficient enforcement of regulations, uncontrolled importation, and broad availability of undesirable pesticides, misuse and over-use, limited data on health and environmental effects and high pesticide residues in food.</p>

Period	Pesticide management: China
2009-2010	<p>During the period of 2009-2010, in order to protect people's health and environment's safety, pesticide management was strengthened in China.</p> <p>The registration and production certificates of five highly toxic organophosphorus pesticides including Methamidophos, Parathion-methyl, Parathion, Monocrotophos, Phosphamidon were repealed in China. The country also strictly prohibited the sale and application of this type of pesticides, encouraged and promoted the research and development of low-risk substitutes for highly toxic pesticides, implemented highly toxic pesticides replacement program, enhanced the public awareness of safe pesticides application and choosing medium and low toxic pesticides. The safety control of pesticide and surveillance of pesticides residues in food and environment were also attached great attention.</p> <p>China revised and improved the approval system for pesticides registration. A number of rules and regulations were formulated. These included 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. The implementation of this project had a positive influence on the improvement of the pesticide management in China. Emphasis was placed on appropriate pesticide waste disposal technologies and methods that conformed to the situation of China. 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>

<b>Period</b>	<b>Pesticide management: China</b>
<b>2007-June 2009</b>	<p>During the period from 2007-2008, in order to protect people's health and environment's safety, China has strengthened pesticide management.</p> <p>China has repealed the registration and production certificates of five highly toxic organophosphorus pesticides including Methamidophos, Parathion-methyl, Parathion, Monocrotophos, Phosphamidon. The country also strictly prohibited the sale and application of this type of pesticides, encouraged and promoted the research and development of low-risk substitutes for highly toxic pesticides, implemented highly toxic pesticides replacement program, enhanced the public awareness of safe pesticides application and choosing medium and low toxic pesticides. Importantly, it strengthened the quality examination of pesticides and surveillance of pesticides residues in food and environment.</p> <p>China has revised and improved the approval system for pesticides registration. A number of rules and regulations have been formulated. These include 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 from 2007-2008, China implemented the "Sino-German Cooperative Project on Pesticide Wastes Management" in collaboration with the German government. The implementation of this project had a positive influence on the improvement of the pesticide management in China. Emphasis was placed on appropriate pesticide waste disposal technologies and methods that conformed to the situation of China. 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>

<b>Period</b>	<b>Pesticide management: China (Based on the country report presented at APPPC 25<sup>th</sup> session in August 2007)</b>
<b>Up to 2007</b>	<p>Five types of highly toxic organophosphate pesticides have been banned since 1st January, 2007. National programmes have been developed and were being implemented in major crops. In addition, local government authorities have put in place their own regulations for the replacement of highly toxic pesticides. In the mean time, great effort had been made to develop bio-pesticides for the replacement of highly toxic chemical pesticides.</p> <p>With the support of FAO in 2006 and 2007, IPM farmer education programmes and field demonstrations of IPM technologies made great contributions to the reduction of pesticide applications. Significant economic, social and ecological benefits also resulted from those IPM programmes.</p> <p>China successfully organized the 39th International Conference of Codex Committee on Pesticide Residues (CCPR).</p>

<b>Period</b>	<b>Pesticide management: Democratic People's Republic of Korea</b>
<b>2009-2010</b>	<p>Chemical pesticides and biocontrol agents were imported from China. Biopesticides were produced in DPRK and used in the agriculture and forestry. The MoA, CPPS, MOLEP and ARI are jointly responsible for pesticide management in DPRK.</p>

<b>Period</b>	<b>Pesticide management: Democratic People's Republic of Korea</b>
<b>2007-June 2009</b>	It is noted that DPRK will control Corn Borer, using the biopesticides such as Trichogramma, with less use of chemical pesticides throughout the country.

<b>Period</b>	<b>Pesticide management: India</b>
<b>2007-June 2009</b>	Quality control of pesticides is accorded highest priority to ensure that the agro-chemicals used for pest management have the requisite efficacy. The Central Insecticide Laboratory, functions as the National Referral Laboratory Regional Pesticides Testing Laboratories, at Chandigarh and Kanpur supplement the resources of state /UT Governments in the analysis of pesticides samples for monitoring their quality to ensure availability of quality pesticides to the farmers.

<b>Period</b>	<b>Pesticide management: Japan</b>
<b>2007-June 2009</b>	<p>Agricultural chemical products shall be registered by the Minister of Agriculture, Forestry and Fisheries according to the Agricultural Chemical Regulation Law, if they are manufactured, imported and distributed in Japan.</p> <p>The risk assessment and its management of the products have been conducted in terms of product's quality, human health and environmental effects by the Food Agricultural Material Inspection Center (FAMIC), the Food Safety Commission (FSC), the Ministry of Health, the Labor and Welfare (MHLW), the Ministry of the Environment (MOE) and MAFF.</p>

<b>Period</b>	<b>Pesticide management: Lao People's Democratic Republic</b>
<b>2009-2010</b>	<p>The first regulation on the control and use of pesticide was promulgated by the Ministry of Agriculture and Forestry in 1992 and then revised in 1998 and 2000. The final version of the new Regulation on the Control of Pesticides No 2860/MAF was promulgated on 10 February 2010. The new Regulation on the Control of Pesticides is an important tool in regulating activities related to pesticide including import, export, transit, trade and use of pesticide in Lao PDR. Proper regulatory control of pesticides is an important factor in enhancing food safety and obtaining the WTO accession.</p> <p>So far, 55 kinds of pesticides in Lao PDR are prohibited to use in the country. Presently, 123 trade names of the pesticides (mainly imported from Viet Nam, China and Thailand) have been registered with the DOA.</p>

<b>Period</b>	<b>Pesticide management: Lao People's Democratic Republic</b>
<b>2007-June 2009</b>	<p>Pesticide management has been nationally recognized since the declaration of Pesticide Regulation No. 0886/MAF, dated on 10/030/2000, aiming at management and prohibition of non-quality pesticides and harmfulness to human, plants, animals and environment in Lao PDR. In addition, the regulation also aims at giving definition, principles, measures and approaches for management and inspection of pesticides used in Lao PDR.</p> <p>So far, 26 kinds of pesticides in Lao PDR are prohibited to use in the country. Presently, 112 brand names of the pesticides (consisting of 75 products from Viet Nam and 25 from Thailand) have been registered with DOA.</p>

<b>Period</b>	<b>Pesticide management: Lao People's Democratic Republic</b>
	<p>To comply with the WTO-SPS Agreement, new Decree on pesticide management is being in the process of public consultation with the national authorities concerned. The first draft preparation was assisted by FAO Experts during 2008. Lao PDR has not yet signed the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and their Disposal.</p> <p>The Ministry of Agriculture and Forestry has submitted a recommendation for ratification of the Rotterdam Convention to the Prime Minister's Office. In April 2006, this recommendation was under consideration by the national focal point, which was under the Prime Minister's Office.</p>

<b>Period</b>	<b>Pesticide management: Malaysia</b>
<b>2007-June 2009</b>	<p>Malaysia has amended the Pesticides Licensing Regulation of the Pesticides Act in 2008, to increase the license fee for the sale of more toxic class of pesticides. Similarly, the fee for the registration of pesticides has also been increased for more toxic class of pesticides. Malaysia is in the process of proposing a new regulation for the control of the manufacture of pesticides under the Pesticides Act. The proposed regulation will ensure a wider scope of authority of the enforcement section, better control of the manufacture of pesticides as well as control of the manufacturer.</p> <p>In an effort to facilitate export by meeting compliance of requirements of importing countries, Malaysia has established an export laboratory under the Central Laboratory Services Section of the Pesticides Control Division, Department of Agriculture.</p> <p>Under the implementation of international conventions, Malaysia has also initiated a review on the registration of tributyltin compound, in line with the inclusion of tributyltin compound in Annex III of the Rotterdam Convention in 2008. To ensure compliance to the Phase-out Schedule for methyl bromide under the Montreal Convention, Malaysia has informed the industry of the requirements of the phase-out schedule and set limits on the quantity of methyl bromide to be used by the industry until the end of the phase-out program. The use of methyl bromide for quarantine purposes and pre shipment is exempted from the phase-out schedule.</p>

<b>Period</b>	<b>Pesticide management: Myanmar</b>
<b>2007-June 2009</b>	<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>

<b>Period</b>	<b>Pesticide management: New Zealand</b>
<b>2007-June 2009</b>	<p>New Zealand operates an approvals framework for pesticides under the HSNO Act, developed a substance reassessment programme, and has implemented a compliance structure to support the approvals framework.</p>

Period	Pesticide management: Philippines
2009-2010	<p>Fertilizers and pesticides are vital agricultural inputs in food production and must be supplied in adequate quantities at reasonable costs at all times. The fertilizer and pesticide industries have much in common in terms of clientele, distribution channels, system of application in farmers' fields and technical supervision by the same farm management technicians under the government's food production program. The FPA is mandated to assure adequate supplies of fertilizers and pesticides at reasonable prices; rationalize the manufacture and marketing of fertilizers; protect the public from the risks inherent in the use of pesticides; and educate the agricultural sector in the use of these inputs.</p>

Period	Pesticide management: Republic of Korea
2009-2010	<p>Agro-chemical production increased 11% from 22,168 tons to 24,621 tons in 2009. Among the 1,431 items enlisted in Korea as pesticides, above 99% are low or moderately toxic. Hazardous chemicals including highly toxic pesticides are specifically regulated through many measures including a restriction standard on handling those materials.</p> <p>In case of agro-chemicals which are toxic to live organisms in nature, pictorial warning-mark and cautionary directions will be clearly printed on the label of the container. Especially, nowadays the safety standard for Korean ecological indicators including fish and loach has been strengthened.</p> <p>The Rural Development Administration (RDA) deposited the instrument of ratification to the Rotterdam convention on the Prior Informed Consent (PIC) Procedures for Certain Hazardous Chemicals and Pesticides on International Trade in August 2003, and improved related regulations or systems. As such, Korea has been fulfilling its duties as a contracting party.</p> <p>Also, Republic of Korea signed the Stockholm Convention on the production, usage and discharge prohibition of organic pollutants (POPs) in 2001, and ratified in February 2007.</p>

Period	Pesticide management: Republic of Korea
2007-June 2009	<p>Agro-chemical production increased 11.3% from 22,847 ton to 25,428 ton in 2007. Among the 1,287 chemicals enlisted in Republic of Korea as pesticide, above 98% is low or moderate toxic. Hazardous chemicals including high toxic pesticides are specifically regulated through many measures including a restriction standard on handling those materials.</p> <p>In case of agro-chemicals which are toxic to live organisms in nature, pictorial warning-mark and cautionary directions should be clearly printed on the label of the container. Especially, nowadays the safety standard for Korean ecological indicators including fish and loach has been strengthened.</p> <p>RDA deposited the instrument of ratification to the Rotterdam convention on the Prior Informed Consent (PIC) Procedures for Certain Hazardous Chemicals and Pesticides on International Trade in August 2003, and improved related regulations or systems. As such, Republic of Korea has been fulfilling its duties as a contracting party.</p> <p>Also, RDA signed the Stockholm Convention on the production, usage and discharge prohibition of organic pollutants (POPs) in 2001, and ratified in Jan.2007.</p>



Period	Pesticide management: Sri Lanka
2007-June 2009	<p>The mandate of the Office of the Registrar of Pesticides is to execute statutory provisions of the Control of Pesticides Act No. 33 of 1980. The pesticides registration is the key provision in the course of life cycle management of pesticides in the country from importation through marketing of crops treated with pesticides. During the period 182 registration applications and 319 re-registrations have been completed conforming to the international guidelines and test protocols ensuring acceptability on safety, efficacy and environmental grounds.</p> <p>The issuance of import approvals is entertained on certain quality assuring protocols for pesticide products entering into the country. Apart from procedural control measures, 2,093 formulation analyses have been carried out, prior to marketing, covering 1,118 import consignments during the above period. Under the National Organic Standard Certification Project, the laboratory was upgraded with a number of analytical and ancillary instruments including GCs and GCMS for over Rs.20 mn. Further, Rs. 11.3 million was contracted for lab space expansion which is under construction.</p> <p>Regulatory decisions were taken to phase out two insecticides (viz., dimethoate and fenthion) and a weedicide (viz., paraquat) based on unacceptable risks, especially acute poisoning associated with liberal use of these pesticides within the country.</p>

Period	Pesticide management: Thailand
2007-June 2009	<p>The Hazardous Substances Act B.E. 2535 (1992) was amended in B.E. 2551 (2008) and is enforced. Under this Act, the Department of Agriculture (DOA), the Ministry of Agriculture and Cooperatives, gave the Notification on Registration and Licensing with DOA responsible for issuing hazardous substances certificates. The main purpose of this Notification is to require pesticide companies or laboratories to adopt the Good Laboratory Practices (GLPs).</p>

Period	Pesticide management: Viet Nam
2007-June 2009	<p>Viet Nam has ratified and implemented all conventions related to pesticides and pesticide regulations/decisions have been amended in compliance with the International Code of Conduct on the Distribution and Use of Pesticides. Up until March of 2009, 877 a.i. with 2,537 trade names have been registered for use, 16 a.i. including 29 trade names restricted and another 29 a.i. have been banned for use.</p>

## 2. Country plant protection profiles

### 2.1 AUSTRALIA

#### I. GENERAL INFORMATION

Last updated: March 2011

#### Overall executive summary<sup>1</sup>

##### Review of Australia's quarantine and biosecurity arrangements

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, *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.

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.

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.

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.

##### Biosecurity Services Group

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.

---

<sup>1</sup> by Julia Rymer, Executive Officer, Australian IPPC Secretariat, Australian Government Department of Agriculture, Fisheries and Forestry, [julia.rymer@daff.gov.au](mailto:julia.rymer@daff.gov.au)

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](http://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.

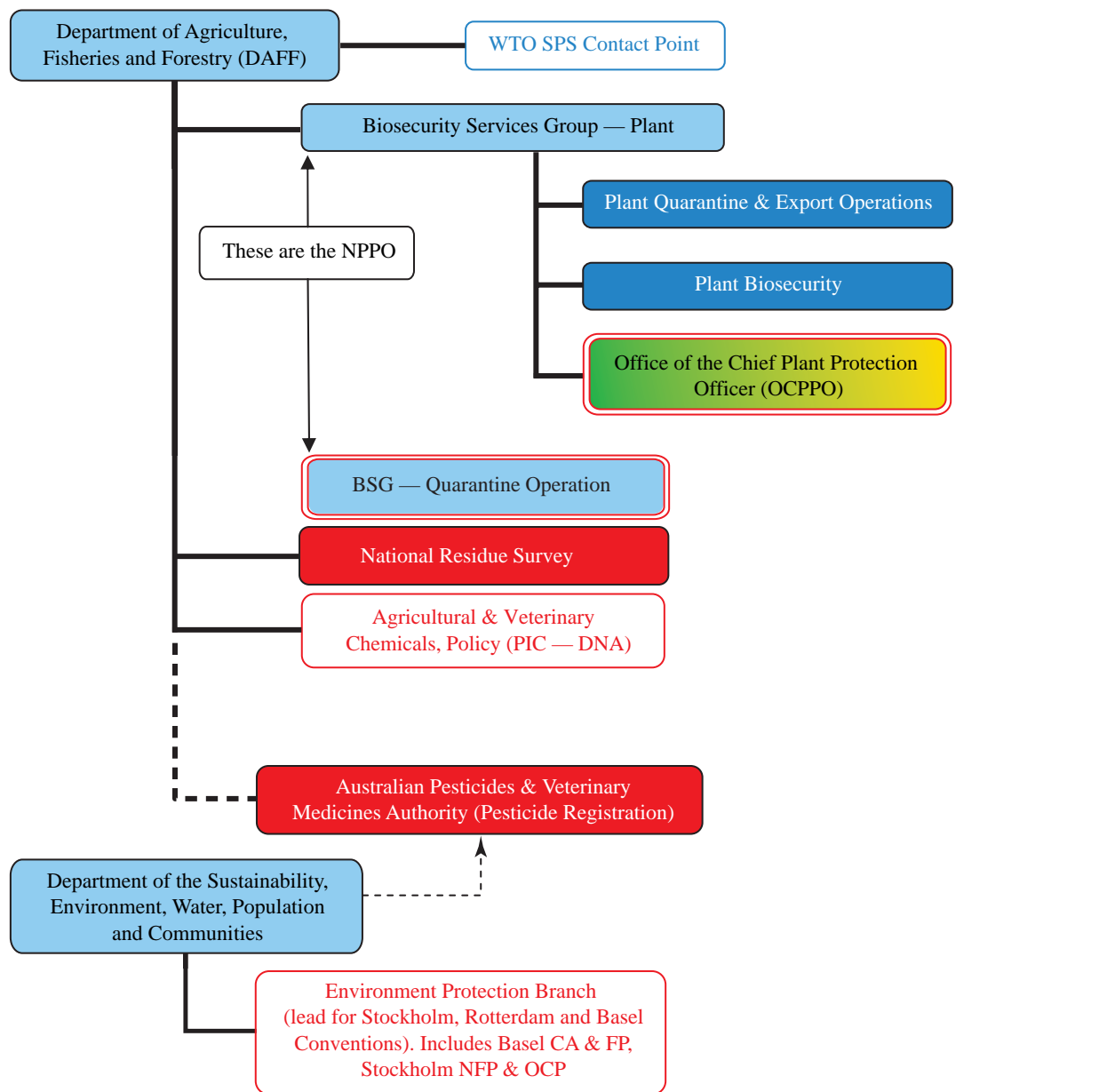
PaDIL is a capacity building biosecurity website which provides high quality images of pests. Its knowledge-base is built on specimen access to the collections of the world, combined with taxonomic skills that enable scientific literature, especially keys, to be translated into diagnostic images. The 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).

### **References**

Links to all relevant documents and websites can be found on the IPP.

- The Australian Government Department of Agriculture, Fisheries and Forestry website provides information general information on the activities of the department, including quarantine and risk assessment [www.daff.gov.au](http://www.daff.gov.au)
  - The Department's Annual Report is available at [www.daff.gov.au/about/annualreport/annual-report-2009-10](http://www.daff.gov.au/about/annualreport/annual-report-2009-10)
- The Australian Pesticides and Veterinary Medicines Authority (APVMA) is the national independent regulator. Information on the APVMA is at [www.apvma.gov.au/](http://www.apvma.gov.au/)
- **2008: Review of Australia's Quarantine and Biosecurity Arrangements**  
Review of Australia's Quarantine and Biosecurity Arrangements – Report and Australian Government Preliminary Response is available at [www.daff.gov.au/about/publications/quarantine-biosecurity-report-and-preliminary-response](http://www.daff.gov.au/about/publications/quarantine-biosecurity-report-and-preliminary-response)

**Plant protection organization chart**



Color Code:

Phytosanitation	Outbreak Management	Pest Management	Pesticides	NPPO
-----------------	---------------------	-----------------	------------	------

**Important contact addresses**

Last updated: December 2010

**Ministry/Department of Agriculture**

Australian Government Department of Agriculture, Fisheries and Forestry (DAFF)

*Dr Conall O'Connell, Secretary*

GPO Box 858

Canberra ACT 2601

Switchboard: +61 2 6272 3933

Website: [www.daff.gov.au](http://www.daff.gov.au)**Plant protection**

Office of the Chief Plant Protection Officer

*Ms Lois Ransom, Chief Plant Protection Officer*

Biosecurity Services Group – Plants

Department of Agriculture, Fisheries and Forestry

GPO Box 858

CANBERRA ACT 2601

Telephone: +61 2 6272 4888

Facsimile: +61 2 6272 5835

Email: [ocppo@daff.gov.au](mailto:ocppo@daff.gov.au)Websites: [www.daff.gov.au/planthealth](http://www.daff.gov.au/planthealth);[www.daff.gov.au/animal-plant-health/plant/international-standards-setting](http://www.daff.gov.au/animal-plant-health/plant/international-standards-setting)**Plant quarantine**Plant Quarantine (*inspections, permits*)*Ms Louise van Meurs, General Manager*

Biosecurity Services Group

DAFF

GPO Box 858

CANBERRA, ACT 2601

Phone: +61 2 6272 5440

**Plant Biosecurity**

Plant Biosecurity Grains and Forestry

*Mr Bill Magee, General Manager*

Biosecurity Services Group

GPO Box 858

Canberra, ACT 2601

Tel: +61 2 6272 3220

Fax: +61 2 6272 3307

Email: [bill.magee@biosecurity.gov.au](mailto:bill.magee@biosecurity.gov.au)**Plant Biosecurity Horticulture***Dr Vanessa Findlay, General Manager*

Biosecurity Services Group

GPO Box 858

Canberra, ACT 2601

Tel: +61 2 6272 3050

Fax: +61 2 6272 3307

Email: [vanessa.findlay@biosecurity.gov.au](mailto:vanessa.findlay@biosecurity.gov.au)

**Pest outbreaks and invasive species management**

Office of the Chief Plant Protection Officer  
State/Territory Departments of Agriculture

**Pesticide registration**

Australian Pesticides and Veterinary Medicines Authority

*Dr Eva Bennet-Jenkins, Chief Executive Officer*

*Raj Bhula, Program Manager Pesticides*

Amtech Park

18 Wormald Street

Symonston ACT 2609 Australia

*Mailing Address:*

P.O. Box E240

Kingston ACT 2604 Australia

Phone Switchboard +61 2 6210 4700

Fax: +61 2 6210 4874

Email: [EnquiryLine@apvma.gov.au](mailto:EnquiryLine@apvma.gov.au)

Website: [www.apvma.gov.au/](http://www.apvma.gov.au/)

**Official international contact points**

Last updated: March 2011

**National Plant Protection Organisation (NPPO) contact point (for IPPC/APPPC)**

Office of the Chief Plant Protection Officer

*Ms Lois Ransom, Chief Plant Protection Officer*

Biosecurity Services Group Plants

Australian Government Department of Agriculture, Fisheries and Forestry

GPO Box 858

Canberra, ACT 2601

Tel: +61 2 6272 4888

Fax: +61 2 62725835

Email: [IPPC.ContactPoint@daff.gov.au](mailto:IPPC.ContactPoint@daff.gov.au);

Website: [www.daff.gov.au/plantippc](http://www.daff.gov.au/plantippc)

Date received: 21 March 2006, Official Correspondence

**Australian IPPC Secretariat**

*Ms Julia Rymer, Executive Officer*

Tel: +61 2 6272 4837

Fax: +61 2 6272 5835

Email: [julia.rymer@daff.gov.au](mailto:julia.rymer@daff.gov.au)

**WTO SPS contact point**

Australian Government Department of Agriculture, Fisheries and Forestry

GPO Box 858

Canberra, ACT 2601

Tel: + 61 2 6272 5242

Fax: + 61 2 6272 3678

Email: [sps.contact@daff.gov.au](mailto:sps.contact@daff.gov.au)

Website: [www.daff.gov.au/market-access-trade/sps](http://www.daff.gov.au/market-access-trade/sps)

**Rotterdam Convention (PIC) DNA Pesticides (P)**

Manager, Agricultural and Veterinary Chemicals Section

Agricultural Productivity Division

Australian Government Department of Agriculture, Fisheries and Forestry

GPO Box 858

Canberra, ACT 2601

Tel: +61 2 6272 3210

Fax : +61 2 6272 3025

Email: controlledchemicals@daff.gov.au

**Stockholm Convention (POP) National Focal Point (P)**

Assistant Secretary, Environment Protection Branch

Australian Government Department of Sustainability, Environment, Water, Population and Communities

GPO Box 787

Canberra ACT 2601

Tel.: +61 2 6274 1622

Fax: +61 2 6274 1164

Email: chemicals@environment.gov.au

**Basel Convention Competent Authority (CA) and focal point**

Hazardous Waste Section

*Director*

Australian Government Department of Sustainability, Environment, Water, Population and Communities

GPO Box 787

Canberra ACT 2601

Tel: +61 2 62 74 14 11

Fax: +61 2 62 74 11 64

Email: hwa@environment.gov.au

**Selected country statistics**

Agricultural Population:	0.318 million	Agricultural Land:	48.3 million ha
GDP	Agric. GDP: 2.9%	GNI per capita:	Undernourishment: 0%
Main crops grown: Wheat, forestry, vegetables, fruit and nuts, sugar, wine grapes, coarse grains			

GDP= Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement



## II. PLANT QUARANTINE

Last updated: March 2011

### List of key legislation/regulations/rules for plant quarantine

#### 1908 Quarantine Act

The Act provides the legislative basis for human, plant and animal quarantine activities in Australia. It provides a national approach to the protection of Australia's international borders from incursions by exotic pests and diseases. It is supported by supplementary legislation.

#### Web sources for further information:

[www.comlaw.gov.au](http://www.comlaw.gov.au)

International Phytosanitary Portal ([www.ippc.int](http://www.ippc.int)) for more information

Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover both domestic and import/export quarantine?	x		
Is plant quarantine a separate organization from animal quarantine?		x	
Does phytosanitary legislation cover non-cultivated plants (wild flora)?	x		
Does phytosanitary legislation cover living modified organisms?		x	
Other policy goals: –			
Web source for further information: –			

Organization of plant protection functions	Responsible organizational unit (ministry/department/unit)
Pest Risk Assessment	DAFF/Biosecurity Services Group
Standards development	DAFF/Biosecurity Services Group
International notifications	DAFF/Biosecurity Services Group/OCPPPO
<i>Import:</i>	
Import permits/inspections	DAFF/Biosecurity Services Group/Quarantine Operations
Emergency action	DAFF/Biosecurity Services Group/OCPPPO
<i>Export:</i>	
Phytosanitary certificates	DAFF/Biosecurity Services Group/Quarantine Operations
Treatment of commodities	certified service providers

Infrastructure	Years: 2010
Total number of plant quarantine officers	
Total qualified personnel for plant pest risk assessment	
Number of quarantine offices/stations	
Number of post-entry plant quarantine containment facilities	
Number of quarantine service diagnosis laboratories	
Number of entry points (sea/air/land)	36

In-country pest diagnostics capabilities (incl. universities, etc.)	
Number of laboratories for insect samples	
Number of laboratories for pathogen samples	
Number of laboratories for insect/mite (arthropod) samples	
Number of laboratories for bacteria samples	
Number of laboratories for virus samples	
Number of laboratories for fungus samples	
Number of laboratories for mycoplasma samples	
Number of laboratories for nematode samples	
Number of laboratories for plant/weed samples	
Number of laboratories for other pests (snail, slug, rodents, etc.)	

PestFree areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)
Overall management	States/territories
– surveillance	
– management	
– certification	
List of target pest species and crops ISPM 4	Number of sites in 2010
Queensland Fruit Fly	
Mediterranean Fruit Fly	
List of target pest species and crops ISPM 10	Number of sites in 2010
Web source for further information:	

### Key situation indicators depends on year and climatic conditions

International trade		Year: 2010
Main import plant commodities	Main countries of origin	No. of phytosanitary inspections
	USA	
	China	
Main export plant commodities	Main destination countries	
wheat		
sugar		
barley		

See [www.daff.gov.au/\\_data/assets/pdf\\_file/0003/1539831/aag-2010.pdf](http://www.daff.gov.au/_data/assets/pdf_file/0003/1539831/aag-2010.pdf)

Cooperation Projects			
Title (Purpose/Target)	Donor	Amount	Years (start-end)
Pacific Horticultural and Agricultural Market Access Program – PHAMA – phase 1	AusAID		2010-2012
See SPS paper G/SPS/GEN/717			
Title of government follow-up programmes		Amount	Years (start-end)

**Key Operation Indicators**

Institutional Functions	Year: 2010
Number of import permits issued	
Number of import inspections carried out	
Number of emergency phytosanitary treatments taken on imports	
Number notifications of non-compliance	
Number of conventional phytosanitary certificates issued <i>Do you have an electronic certification system?:</i> <i>Yes _____ No _____</i>	
Number of electronic phytosanitary certificates issued	

Number of quarantine pests intercepted		Year: 2010
Top three commodity	Top three pest/commodity	# of interceptions

Lists of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of quarantine pests				
Number of regulated non-quarantine pests				
Number of regulated import articles				
Website for the above information: <a href="http://www.daff.gov.au">www.daff.gov.au</a> and <a href="http://www.aqis.gov.au">www.aqis.gov.au</a>				

Pest Risk Assessments	Insects	Pathogens	Plants
No. of PRA completed and documented (according to ISPM)			
PRA included in the IRA: completed for 21 commodities/countries of origin, 4 currently under review			
Web source for further information: <a href="http://www.daff.gov.au/ba/ira">www.daff.gov.au/ba/ira</a>			

**Progress and constraints**

<b>Main progress in recent years (legislation, policies, infrastructure ,investments, training, etc.)</b>
Release of 'Import Risk Analysis Handbook 2011'
<b>Main constraints (personnel, infrastructure, administrative, operational, training, etc.)</b>

Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
ISPM 01 Principles of plant quarantine as related to international trade			x				x	
ISPM 02 Guidelines for pest risk analysis			x				x	
ISPM 03 Code of conduct for the import and release of exotic biological control agents			x				x	
ISPM 04 Requirements for the establishment of pest free areas			x				x	
ISPM 05 Glossary of phytosanitary terms			x				x	
ISPM 06 Guidelines for surveillance			x				x	
ISPM 07 Export certification system			x				x	
ISPM 08 Determination of pest status in an area			x				x	
ISPM 09 Guidelines for pest eradication programmes			x				x	
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites			x				x	
ISPM 11 Pest risk analysis for quarantine pests			x				x	
ISPM 12 Guidelines for phytosanitary certificates			x				x	
ISPM 13 Guidelines for the notification of noncompliance and emergency action			x				x	
ISPM 14 The use of integrated measures in a systems approach for pest risk management			x				x	
ISPM 15 Guidelines for regulating wood packaging material in international trade			x				x	1 July 2010
ISPM 16 Regulated non-quarantine pests: concept and application			x				x	
ISPM 17 Pest reporting			x				x	
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure			x				x	
ISPM 19 Guidelines on lists of regulated pests			x				x	
ISPM 20 Guidelines for a phytosanitary import regulatory system			x				x	
ISPM 21 Pest risk analysis for regulated non-quarantine pests			x				x	
ISPM 22 Requirements for the establishment of areas of low pest prevalence			x				x	
ISPM 23 Guidelines for inspection			x				x	
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures			x				x	
ISPM 25 Consignments in transit	x			x				
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)			x				x	
ISPM 27 Diagnostic protocols for regulated pests			x				x	
ISPM 28 Phytosanitary treatments for regulated pests			x					
ISPM 29 Recognition of pest free areas and areas of low pest prevalence			x					
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (Tephritidae)			x					
ISPM 31 Methodologies for sampling of consignments			x					
ISPM 32 Categorization of commodities according to their pest risk			x					
ISPM 33 Pest free potato ( <i>Solanum</i> spp.) micropropagative material and minitubers for international trade			x					
ISPM 34 Design and operations of post-entry quarantine stations for plants								
Comments/Constraints: –								

### III. SURVEILLANCE, PEST OUTBREAKS AND INVASIVE SPECIES

Last updated: March 2010

#### List of Key legislation/regulations/rules for surveillance, pest reporting and emergency actions

#### Web source for further information:

[www.planthealthaustralia.com.au/top\\_priorities/priorities.asp?ID=1](http://www.planthealthaustralia.com.au/top_priorities/priorities.asp?ID=1)

[www.planthealthaustralia.com.au/top\\_priorities/priorities.asp?ID=2](http://www.planthealthaustralia.com.au/top_priorities/priorities.asp?ID=2)

Policies regarding invasive/migratory species management	Yes	No	Don't know
National strategy to control serious field pest outbreaks?	x		
National strategy to control migratory or periodically occurring pests?		x	
National strategy to eradicate serious newly invaded exotic pests?	x		
Other policies: (e.g. subsidies, etc.): Emergency response system			
Web source for further information: <a href="http://www.daff.gov.au/animal-plant-health/pests-diseases-weeds">www.daff.gov.au/animal-plant-health/pests-diseases-weeds</a>			

Organization of functions related to surveillance pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field pest outbreaks</i>	(e.g. BPH, boll worm, etc.)
Response strategy/plans	DAFF/PIAPH/OCPP
Surveillance	States/territories
Control	
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	DAFF/Biosecurity Services Group/APLC, Queensland, NSW, Victoria, South Australia,
Surveillance	DAFF/Biosecurity Services Group/APLC; state departments in Qld, NSW, Victoria, S Australia, WA
Control	
<i>New exotic pest eradication</i>	(e.g. coconut beetle)
Response strategy/plans	DAFF/Biosecurity Services Group/OCPP
Surveillance	States and territories
Control/eradication	DAFF/ Biosecurity Services Group /OCPP + states/territories
Reporting to international organizations	DAFF/ Biosecurity Services Group /OCPP

Infrastructure	Years: 2010
Number of designated staff for <b>surveillance</b> of field pests of national importance	
Number of designated staff for <b>surveillance</b> of migratory and periodically occurring pests	
Number of designated staff for <b>surveillance</b> of invasive species	
Number of designated staff for <b>control</b> of field pests of national importance	
Number of designated staff for <b>control</b> of migratory and periodically occurring pests	
Number of designated staff for <b>eradication</b> of invasive species	

**Key Situation and operation indicators**

(Outbreaks and invasions in the past 2 years)

New exotic species found established in country	Insects	Pathogens	Weeds
Total number for year 2010:	1	7	
Total number for year 2009-2010:			
Total number on record			

Eradication or internal quarantine actions taken against economically important species			
Name of species	Citrus blight	Myrtle rust ( <i>Uredo rangellii</i> )	
Year of first discovery	2010	2010	
Pathway			
Location of first discovery	Victoria	New South Wales	
Area affected [ha]			
Area treated by government [ha]			
Control method	Removal and destruction of host		
Expenditures			

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species	Australian Plague Locust	Australian Plague Locust	
Year of outbreak	2009-2010	2009-2010	
Area affected [ha]			
Estimated damage US\$			
Area treated by government [ha]			
Expenditures by government [US\$]			
Control method	Ground and aerial spray	Ground and aerial spray	
Add more if necessary	NB APLC is not a national organisation and only deals with some areas of relevant states where migration is across state borders	NB APLC is not a national organisation and only deals with some areas of relevant states where migration is across state borders	

**Progress and constraints**

Main progress in recent years (legislation, policies, infrastructure ,investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

**IV. PEST MANAGEMENT**

Last updated: March 2011

**List of Key legislation/regulations/rules for pest management**

–

**Web source for further information: –**

Policies (regarding pest management)	Yes	No	Don't know
Do you have policies encouraging organic or low-pesticide production		x	
Is IPM specifically mentioned in laws or policy documents?		x	
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?	x		
Is pest management extension separate from general extension?			
Other policies:			
Web source for further information: – <a href="http://www.daff.gov.au/agriculture-food/food/regulation-safety/ag-vet-chemicals">www.daff.gov.au/agriculture-food/food/regulation-safety/ag-vet-chemicals</a>			

Organization of pest management functions	Responsible organizational unit (ministry/department/unit)
Policy development	Australian Government, states and territories through the Primary Industries Ministerial Council
Pest management research	States and territories
Control recommendations	States and territories
Pest management extension	States and territories
IPM training	States and territories, industry, research organizations
GAP training	States and territories

Infrastructure	Years: 2007-2008
Number of technical officers for pest management	
Number of central, regional, provincial or state offices	
Number of district and village level field offices	
Number of field/extension agents for pest management advice	
Number of field/extension agents trained in IPM-FFS facilitation	
Number of government biocontrol production/distribution facilities	
Number of government biopesticide production/distribution facilities	
Number of general extension staff involved in pest management	
Number of designated plant protection technical officers for extension	

**Key situation and operation indicators**

Pest management	Yes	No
Does the country have a National IPM programme? <i>If yes, give Name and Address of IPM Programme:</i>		x
Does the country have specific IPM extension programmes? <i>If yes, in which crops?: Cotton, grains</i>	x	
Does the country have specific IPM research programmes? <i>If yes, in which crops?: Cotton, grains</i>	x	
Does the country have specific GAP extension programmes? <i>If yes, in which crops?:</i>		

Market shares (estimated value, volume or area under control)	Year: 2010
Size of chemical pest control market	
Size of biopesticides market	
Size of biological control agents market	
Does the country have specific GAP research programmes? <i>If yes, in which crops?:</i>	

Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop			
Name(s) of pest(s)			
Estimated crop loss			
Affected area			
Number of pesticide applications or amount of pesticide used			
Government action taken			

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)

Pest management extension	Years: 2010
Number of farmers trained in IPM during the year	
Number of IPM-FFS conducted during the year	
Number of farmers trained in GAP standards during the year	
Area under IPM/low pesticide management [ha]	
Area under organic/pesticide-free management [ha]	
Crops in which IPM or other ecology friendly programmes are successfully implemented: Cotton	
Crops grown organic/pesticide-free: –	

### Progress and constraints

Main Progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Two reviews of the APVMA currently occurring: <ul style="list-style-type: none"> <li>• <a href="http://www.daff.gov.au/agriculture-food/food/regulation-safety/ag-vet-chemicals/domestic-policy/psic">www.daff.gov.au/agriculture-food/food/regulation-safety/ag-vet-chemicals/domestic-policy/psic</a></li> <li>• <a href="http://www.daff.gov.au/agriculture-food/food/regulation-safety/ag-vet-chemicals/better-regulation-of-ag-vet-chemicals">www.daff.gov.au/agriculture-food/food/regulation-safety/ag-vet-chemicals/better-regulation-of-ag-vet-chemicals</a></li> </ul>
Constraints (personnel, infrastructure, administrative, operational, training, etc)



## V. PESTICIDE MANAGEMENT

Last updated: March 2011

### List of Key legislation/regulations/rules

*Agricultural and Veterinary Chemicals Code Act 1994 [No. 47 of 1994]*

*Agricultural and Veterinary Chemicals Act 1994 [No. 36 of 1994]*

*Agricultural and Veterinary Chemical Products (Collection of Levy) Act 1994 [No. 41 of 1994]*

*Agricultural and Veterinary Chemicals (Administration) Act 1992 [No. 262 of 1992]*

See Comlaw website <http://www.comlaw.gov.au/>

### Web source for further information:

[www.apvma.gov.au/about/legislation/index.php](http://www.apvma.gov.au/about/legislation/index.php)

### List of registered products:

[www.apvma.gov.au/products/index.php](http://www.apvma.gov.au/products/index.php)

Policies (regarding pesticide management)	Yes	No	Don't know
Do you have national pesticide reduction targets? <i>If yes, what is the target: _____</i>		x	
Have you ratified the Rotterdam (PIC) Convention?	x		
Have you ratified the Stockholm (POP) Convention?	x		
Have you ratified the Basel Convention? (hazardous wastes)	x		
Have you ratified the Montreal Protocol? (MeBr phrasing-out)	x		
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?			
Have you adopted Good Laboratory Practices (GLP)?	x		
<b>Pesticide Registration</b>			
Do you require pesticides to conform to relevant FAO or WHO specifications?			
Do you allow the "me-too" registration and sale of generic pesticides?	x		
Do you require data on product equivalence for generic registration?	x		
Do you conduct country-specific risk assessments for...			
occupational risks?	x		
consumer risks?	x		
environmental risks?	x		
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labeling?	not yet		
Do you accept evaluation results from other countries?	Yes with qualifications		
Do you accept field studies conducted in other countries?	x		
Do you require environmental fate studies?	x		
<b>Incentives/Disincentives</b>			
Do you have a special tax on pesticides to cover externality costs?		x	
Do you subsidize or provide low-cost pesticides?		x	
Do you subsidize or provide low-cost biopesticides?		x	
Other policies:			
Web source for further information: <a href="http://www.apvma.gov.au">www.apvma.gov.au</a> , <a href="http://www.daff.gov.au/agriculture-food/food/regulation-safety/ag-vet-chemicals">www.daff.gov.au/agriculture-food/food/regulation-safety/ag-vet-chemicals</a>			

Organization of pesticide management functions	Responsible organizational unit (ministry/department/unit)
Legislation	DAFF APVMA
Registration	APVMA
Licensing of shops	Nil
Licensing of applicators	States
Enforcement/inspections	States/territories and APVMA for supply
Testing of pesticide efficacy	APVMA requires of applicant
Development of pesticide use recommendations	APVMA
Safe use training/extension	States/territories
Food residue monitoring	DAFF/PIAPH/National Residue Survey
Environmental monitoring	DAFF/PIAPH/National Residue Survey
Health monitoring	(DAFF)/APVMA/Adverse Experience Reporting Programme
<i>Other Stakeholders:</i>	
Pesticide Industry Association	CropLife Australia, ACCORD, PACIA
Civil Society Organizations (NGO, etc.)	Choice, WWF, National Toxics Network

Infrastructure	Year: 2010
Number of registration officers	depends how define
Number of enforcement officers	States – unknown
Number of department quality control laboratories	none
Number of quality control laboratory personnel	none
Number of department residue analysis laboratories	National Residue Survey Labs
Number of residue laboratory personnel	

### Key Situation Indicators – values \$Australian

Pesticide Trade: 2010 <sup>a**</sup>	Tons	\$Australian '000 Value
Imports		Don't have this broken out
Manufacture		ditto
Export		ditto
Sales (for 2009-2010)**	** Approximately 95% complete for financial year 2009-2010	A\$2 950 889 000
Pesticide use profile: 2010	Tons	\$Australian '000 Value
Agriculture		Financial year 2009-2010
Insecticides		A\$346 900 000
Fungicides		A\$179 716 000
Herbicides		A\$1 206 559 000
Other		A\$273 524 000
Veterinary		A\$808 747 000
Public Health		
Household		A\$135 443 000
Other		
TOTAL		A\$2 950 889 000

\*\* Approximately 95% complete for 2009-2010 figures

**Post Registration Monitoring**

Testing, Quality Control and Effects in the Field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?		x	
Do you have significant problems with pesticide resistance?	x		
Do you have a list of pesticides under close observation for problems?			
Source for more information: –			

Health and Environmental Information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?	x		
Do you have a system to monitor pesticide residues in food?	x		
Do you have a system to monitor pesticide residues in the environment?			x
Do you have significant problems of environmental contamination from pesticides?		x	
Do you have data on pesticides effects on wildlife and ecosystems?	x		
Source for Information: –			

Pesticide Disposal	Yes	No	Don't know
Do you have services to collect and safely dispose of used containers and small quantities of left-over pesticides?	x		
Do you have an inventory of outdated and obsolete pesticides in the country?			
Do you have illegal trade in pesticides? if yes: what is the estimated amount: _____			
Source for Information: –			

**Key Operation Indicators**

Registration/regulation/monitoring	Year: 2010	
	a.i.*	Trade names
Number of registered pesticide products		
Number of registered biopesticides		
Number of restricted-use pesticides		
Number of banned pesticides		
Number of licensed outlets		
Number of licensed applicators		
Number of licensing violations reported during year		
Number of quality control analyses conducted during year		
Number of food samples analyzed for pesticide residues during year		
Number of samples exceeding MRL		
Number of environmental samples analyzed for pesticide residues		

\* active ingredient

List of registered products: [www.apvma.gov.au/actives/standards\\_actives.shtml](http://www.apvma.gov.au/actives/standards_actives.shtml)

See pages 45–48 of the APVMA 2009-2010 annual report: [www.apvma.gov.au/about/corporate/annual\\_reports/index.php](http://www.apvma.gov.au/about/corporate/annual_reports/index.php)

Pesticides restricted in recent years (2009-2010)	
Year	Name of active ingredient or hazardous formulation
2011	Dichlorvos
2010	Quintozene

Pesticides banned in recent years (2009-2010)	
Year	Name of active ingredient
2010	Endosulfan

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

## VI. ADDITIONAL ISSUES OF INTEREST

Last updated: December 2010

Genetically Modified Crops	
Name of GMO Crop	Area under Cultivation [ha]

## 2.2 BANGLADESH

### I. GENERAL INFORMATION

Last updated: December 2010

#### Overall executive summary<sup>1</sup>

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.

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.

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.

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.

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.

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 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

<sup>1</sup> by Md. Hasanul Haque, Director, Plant Protection Wing (NPPO), Department of Agricultural Extension, Email: dppw@dae.gov.bd

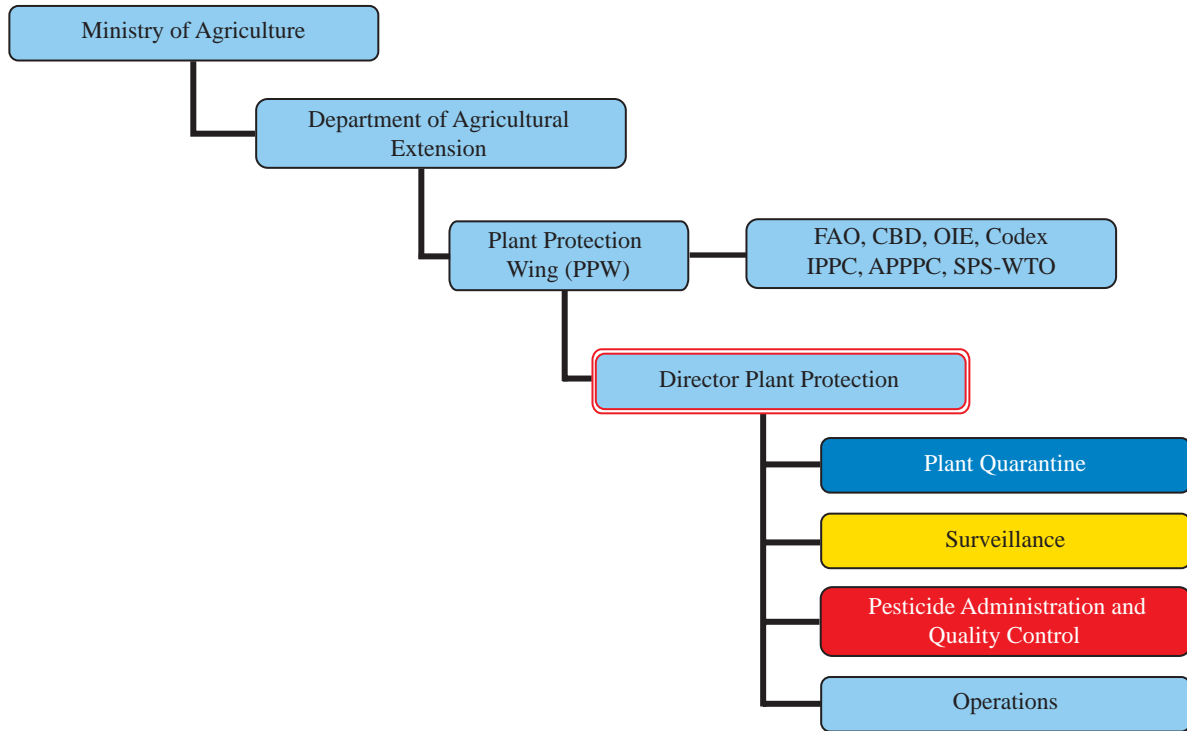
institutions are now putting emphasis on IPM particularly on bio control and non-chemicals (bio-pesticides) for pest management. They have developed package technologies on IPM for several pests. Bangladesh Agricultural Research Institute (BARI) recently found that pheromone trap is very effective for 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.

**Plant protection organization chart**



*Color Code:*

Phytosanitation	Outbreak Management	Pest Management	Pesticides	NPPO
-----------------	---------------------	-----------------	------------	------

---

---

## Important contact addresses

### Responsible ministry/ministries

–

### Responsible Department

#### Plant Protection (Policy, Regulations, Pesticide Registration, Overall Management)

##### *Director*

Plant Protection Wing ( NPPO )  
Department of Agricultural Extension  
Khamarbari, Dhaka-1215.  
Bangladesh  
Tel: (+ 88 ) 02- 9131295  
Fax: (+ 88 ) 02- 9111554  
Email: dppw@dae.gov.bd  
Website: www.dae.gov.bd

### Address of nominations

–

### *Operational offices:*

#### Plant protection

–

#### Plant quarantine

–

### Surveillance, pest outbreaks and invasive species management

##### *Director*

Plant Protection Wing ( NPPO )  
Department of Agricultural Extension  
Khamarbari, Dhaka-1215.  
Bangladesh  
Tel: (+ 88 ) 02- 9131295  
Fax: (+ 88 ) 02- 9111554  
Email: dppw@dae.gov.bd  
Website: www.dae.gov.bd

### Pesticide registration

##### *Director*

Plant Protection Wing ( NPPO )  
Department of Agricultural Extension  
Khamarbari, Dhaka-1215.  
Bangladesh  
Tel: (+ 88 ) 02- 9131295  
Fax: (+ 88 ) 02- 9111554  
Email: dppw@dae.gov.bd  
Website: www.dae.gov.bd



### Official international contact points

#### National Plant Protection Organization (NPPO) contact point (for IPPC/APPPC)

##### *Director*

Plant Protection Wing ( NPPO )  
 Department of Agricultural Extension  
 Khamarbari, Dhaka-1215.  
 Bangladesh  
 Tel: (+ 88 ) 02- 9131295  
 Fax: (+ 88 ) 02- 9111554  
 Email: dppw@dae.gov.bd  
 Website: www.dae.gov.bd

#### WTO-SPS Contact Point

##### *Senior Assistant Chief/Assistant Chief*

Policy-4 Branch  
 Ministry Of Agriculture  
 Bangladesh Secretariat  
 Dhaka-1000  
 Tel: ( + 88 ) 02-9555622  
 Fax: ( + 88 ) 02-7167680  
 Website: www.moa.gov.bd

#### Rotterdam Convention (PIC) DNA Pesticides (P)

–

#### Stockholm Convention (POP) National Focal Point (P)

##### *Director General*

Department of Environment  
 Paribesh Bhaban  
 E-16, Agargaon  
 Sher-e-Bangla Nagar  
 Dhaka-1207  
 Tel: (+88)02-8112461  
 Fax: (+88)02-9118682  
 Email: www.afrinakter@doe-bd.org  
 Website: www.doe-bd.org

#### Basel Convention Competent Authority (CA) and focal point

*Ministry of Environment and Forest*  
*Secretary to the Government of Bangladesh*

#### Selected country statistics

Agricultural Population	90.54 million	Agricultural Land	9.0985 million ha
GDP \$	Agric. GDP: 4.63%	GNI per Capita: \$ 667	Under nourishment: -
Main crops grown : Rice, wheat, jute, potato, sugar cane, tea, tobacco, pulses, Oil seeds etc.			

GDP = Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement

## II. PLANT QUARANTINE

Last updated: December 2010

### Executive summary<sup>2</sup>

The Plant Quarantine Section of the Plant Protection Wing (NPPO) has followed the IPPC instructions on the Phytosanitary Export Certification and Phytosanitary Import Regulatory Systems in international trade. NPPO is also implementing the International Standards for Phytosanitary Measures (ISPMs) of IPPC into Bangladesh.

Newly framed 'Bangladesh Plant Quarantine Act 2009' has been placed in the Parliament. It is expected that the Act will be passed soon. Plant Quarantine section of Plant Protection Wing is procuring modern equipments for diagnosing the insects pests of quarantine importance. Some of the laboratory equipments have already been procured and started functioning.

We have selected some places of production of Mango. Moreover, we have undertaken a program for production of citrus and some vegetables to meet the requirements of EU. This program will be started within April, 2011.

In case of emergency, phytosanitary actions will be taken by the authority for any interceptions and non-compliances. NPPO is taking measures against the dishonest traders. So far, NPPO has blacklisted 4(four) vegetable & allied products exporters and three other exporters will be suspended for exporting potatoes to EU.

### List of key legislation/regulations/rules

1914 Destructive Insects & Pests Act

1989 Destructive Insects & Pests Rules-1966 ( Plant Quarantine ) [Amended]

### Web source for further information:

[www.dae.gov.bd](http://www.dae.gov.bd)

Policies regarding plant quarantine	Yes	No
Does phytosanitary legislation cover domestic quarantine?		
Does phytosanitary legislation cover import quarantine?	x	
Does phytosanitary legislation cover export quarantine?	x	
Does phytosanitary legislation cover living modified organisms?		
Is plant quarantine a separate organization from animal quarantine?	x	
Other policy initiatives (under review/progress): Plant Quarantine Act, 2009	x	
Web source for further information: <a href="http://www.dae.gov.bd">www.dae.gov.bd</a>	x	

<sup>2</sup> by Md. Hasanul Haque, Director, Plant Protection Wing (NPPO), Department of Agricultural Extension, Email address: [dppw@dae.gov.bd](mailto:dppw@dae.gov.bd)

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest risk analysis (PRA)	PPW, DAE, MOA
National standards development	PPW, DAE, MOA
International notifications	PPW, DAE, MOA
Import:	
Import permits	PPW, DAE, MOA
Imports inspections	PPW, DAE, MOA
Emergency action	PPW, DAE, MOA
Export:	
Phytosanitary certificate	PPW, DAE, MOA
Treatment of commodities	PPW, DAE, MOA

Infrastructure	Year: 2010
Number of plant quarantine officers authorized to inspect/certify	31
Total qualified personnel for plant pest risk analysis	31
Number of quarantine offices	26
entry point (sea/air/land/mail= total)	2/3/21/1 = 27
post-entry plant quarantine containment facilities	2
other offices	
Number of quarantine service diagnosis laboratories	13 (Narrow facility)
In-country recognized pest diagnostics capabilities (incl. universities, etc.)	
Number of laboratories for insect/mite (arthropod) samples	13
Number of laboratories for bacteria samples	
Number of laboratories for virus samples	
Number of laboratories for fungus samples	13
Number of laboratories for mycoplasma samples	
Number of laboratories for nematode samples	13
Number of laboratories for plant/weed samples	13
Number of laboratories for other pests (snail, slug, rodents, etc.)	13

Pest-free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)
Overall management	PPW, DAE, MOA
surveillance	PPW, DAE, MOA
management	PPW, DAE, MOA
certification	PPW, DAE, MOA
List of target pest species and crops ISPM 4	Number of sites in 2010
Fruit fly	
Brown rot on potato	
Stone weevil and pulp weevil on mango	
List of target pest species and crops ISPM 10	Number of sites in 2010

**Key Situation Indicators**

International trade		Year: 2010
Main import plant commodities	Main countries/areas of origin	Quantity (Tons)
Raw cotton, Rice, Wheat, Pulses etc.	USA/Canada/Australia/Myanmar/India/Thailand/Pakistan/Egypt etc.	
Fresh fruits-pome/stone/citrus	China/Thailand/India/Pakistan/Australia/Middle east/Brazil	
Main export plant commodities	Main destination country	
Fresh vegetables,citrus/Fresh Fruits /Frozen Vegetables/Food Stuff	Middle East/EU/USA/Canada /Australia	
Fine and Aromatic Rice	EU/USA/Middle East	

Cooperation projects			
Title (Purpose/Target)	Donor	Amount	Years (start-end)
Title of government follow-up programmes		Amount	Years (start-end)

**Key operation indicators**

Institutional functions	Years: 2009-2010
Number of import permits issued	11 695
Number of import inspections carries out	11 695
Number of emergency phytosanitary treatments taken on imports	
Number notifications of non-compliance	
Number of conventional phytosanitary certificate issued	30 221
Number of electronic phytosanitary certificate issued	

Number of quarantine pests intercepted		Years: 2009-2010
Top three commodity	Top three pest/commodity	# of interceptions
	Soft Rot of Potato	

Lists of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of quarantine pests				
Number of regulated non-quarantine pests				
Number of regulated import articles				
Website for the above information: <a href="http://www.dae.gov.bd">www.dae.gov.bd</a>				

Pest risk analysis (PRA)	Insects	Pathogens	Plants
No. of PRA completed and documented (according to ISPM)			
Web source for further information: –			

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Upgraded Bangladesh Plant Quarantine Act, 2009 has been placed in the Parliament for approval.
Main constraints (personnel infrastructure, administrative, operational, training, etc.)
Modern Phytosanitary Diagnostic Laboratory support, Human Resources Development and Infrastructural development needed.

Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
ISPM 01 Principles of plant quarantine as related to international trade			x				x	
ISPM 02 Guidelines for pest risk analysis			x			x		
ISPM 03 Code of conduct for the import and release of exotic biological control agents			x			x		
ISPM 04 Requirements for the establishment of pest free areas			x		x			
ISPM 05 Glossary of phytosanitary terms			x				x	
ISPM 06 Guidelines for surveillance			x		x			
ISPM 07 Export certification system			x				x	
ISPM 08 Determination of pest status in an area			x		x			
ISPM 09 Guidelines for pest eradication programmes			x		x			
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites			x		x			
ISPM 11 Pest risk analysis for quarantine pests			x			x		
ISPM 12 Guidelines for phytosanitary certificates			x				x	
ISPM 13 Guidelines for the notification of noncompliance and emergency action			x				x	
ISPM 14 The use of integrated measures in a systems approach for pest risk management			x			x		
ISPM 15 Guidelines for regulating wood packaging material in international trade			x				x	
ISPM 16 Regulated non-quarantine pests: concept and application			x			x		
ISPM 17 Pest reporting			x		x			
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure			x	x				
ISPM 19 Guidelines on lists of regulated pests			x			x		
ISPM 20 Guidelines for a phytosanitary import regulatory system			x				x	
ISPM 21 Pest risk analysis for regulated non-quarantine pests			x		x			
ISPM 22 Requirements for the establishment of areas of low pest prevalence			x		x			
ISPM 23 Guidelines for inspection			x				x	
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures		x			x			
ISPM 25 Consignments in transit		x			x			
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)		x			x			
ISPM 27 Diagnostic protocols for regulated pests			x		x			
ISPM 28 Phytosanitary treatments for regulated pests			x		x			
ISPM 29 Recognition of pest free areas and areas of low pest prevalence		x			x			
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (tephritidae)		x			x			
ISPM 31 Methodologies for sampling of consignments			x		x			
ISPM 32 Categorization of commodities according to their pest risk			x		x			
ISPM 33 Pest free potato ( <i>Solanum</i> spp.) micropropagative material and minitubers for international trade			x		x			
ISPM 34 Design and operation of post-entry quarantine stations for plants			x		x			
Comments/Constraints: –								

### III. SURVEILLANCE, PEST OUTBREAKS, AND INVASIVE SPECIES MANAGEMENT

Last updated: December 2010

#### Executive summary

Surveillance and forecasting program are performed across the country through an in-built network of concerned personnel. Surveillance activities are conducted in 5 (five) surveillance blocks of each upazilla (sub-district) of the country to monitor the introduction, establishment, spread and outbreaks of invasive species. On the basis of guidance and directives five representative surveillance blocks are selected in each upazilla for collecting and preparing of accurate surveillance report. It can be mentioned that the surveillance and forecasting activities operate parallel from grassroot level (surveillance blocks) through upazilla and district level up to the national level at plant protection wing. This unit provides forecast of pest outbreaks on the basis of surveillance report. Pest control operation is undertaken by the operation unit through co-ordination with this unit. The following flow chart shows the surveillance forecasting in Bangladesh.

#### List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions

Existing DIP Act will be replaced by Plant Quarantine Act, 2009

**Web source for further information:** [www.dae.gov.bd](http://www.dae.gov.bd)

Policies (regarding invasive/migratory species management)	Yes	No
National strategy to control serious field pest outbreaks?		
National strategy to control migratory or periodically occurring pests?		
National strategy to eradicate serious newly invaded exotic pests?		
Other policies: (e.g. subsidies, etc.)		
Web source for further information: <a href="http://www.dae.gov.bd">www.dae.gov.bd</a>		

Organization of functions related to surveillance, pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field/storage pest outbreaks</i>	(e.g. BPH, boll worm, etc.)
Response strategy/plans	PPW, DAE, MOA
Surveillance	PPW, DAE, MOA
Control	PPW, DAE, MOA
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	PPW, DAE, MOA
Surveillance	PPW, DAE, MOA
Control	PPW, DAE, MOA
<i>New exotic pest eradication</i>	(e.g. coconut beetle)
Response strategy/plans	PPW, DAE, MOA
Surveillance	PPW, DAE, MOA
Control/eradication	PPW, DAE, MOA
Reporting to bilateral or international organizations	PPW, DAE, MOA

Infrastructure	Year: 2010
Number of designated staff for <b>surveillance</b> of field pests of national importance	2 578
Number of designated staff for <b>surveillance</b> of migratory and periodically occurring pests	2 578
Number of designated staff for <b>surveillance</b> of invasive species	2 578
Number of designated staff for <b>control</b> of field pests of national importance	2 578
Number of designated staff for <b>control</b> of migratory and periodically occurring pests	2 578
Number of designated staff for <b>eradication</b> of invasive species	2 578

### Key situation and operation indicators

(Outbreaks and invasions in the past 2 years)

New exotic species found established in country	Insects	Pathogens	Weeds
Total number for year 2009:			
Total number for year 2010:			
Total number on record			

Eradication or internal quarantine actions taken against economically important species			
Name of species			
Year of first discovery			
Pathway			
Location of first discovery			
Area affected [ha]			
Area treated [ha]			
Control method			
Expenditures			

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species	Brown Plant Hopper		
Year of outbreak	2009	2010	
Area affected [ha]	341.60	–	
Estimated damage US\$			
Area treated by government [ha]	336.60	–	
Expenditures by government [US\$]			
Control method	Cultural, Mechanical & Chemical controlmethod		
More information			

### Progress and Constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)



#### IV. PEST MANAGEMENT

Last updated: December 2010

##### Executive summary<sup>3</sup>

The Plant Protection Wing (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. Beside these, PPW also forecast pest outbreaks, their control measures and instructions were issued among the farmers by distributing different handbills, leaflets and booklets. This organization also conduct nationwide special program to control vertebrate pests.

The IPM and ICM projects strengthen IPM activities through establishing and introducing Farmers Field School (FFS), IPM Clubs (Farmers Association), Organic Farming Pilot Program, Biological Pest Control, Farmers Training and organization of workshops/seminars throughout the country. They help farmers become aware of healthy crop production. IPM club also helps to promote IPM activities among the neighboring farmers. Pesticide-free crop production has now become popular among the farmers.

##### List of key legislation/regulations/rules for pest management

1971 The Pesticide Ordinance

1995 The Pesticide Rules

**Web source for further information:** [www.dae.gov.bd](http://www.dae.gov.bd)

Policies (regarding pest management)	Yes	No
Do you have policies encouraging organic or low-pesticide use production	x	
Is IPM specifically mentioned in laws or policy documents?	x	
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?		
Is pest management extension separate from general extension?		x
Other policies: (subsidies, production inputs, etc.) Emphasis on bio-control agents, bio-pesticides and pheromones Phasing out, banning or restricting hazardous chemical pesticides		
Web source for further information: <a href="http://www.dae.gov.bd">www.dae.gov.bd</a>		

Organization of pest management function	Responsible organizational unit (ministry/department/unit)
Policy development	MOA
Pest management research	BRAC (BRRI, BARI, BJRI, BSRI, BINA)
Control recommendations	BRAC (BRRI, BARI, BJRI, BSRI, BINA)
Pest management extension	PPW, DAE
IPM training	PPW, DAE
GAP training	DAE

<sup>3</sup> by Md. Hasaul Haque, Director, Plant Protection Wing (NPPO), Department of Agricultural Extension, Email address: [dppw@dae.gov.bd](mailto:dppw@dae.gov.bd)

Infrastructure	Year: 2010
Number of technical officers for pest management	564
Number of central, regional, provincial or state offices	11
Number of district and village level field offices	545
Number of field/extension agents for pest management advice	12 880
Number of field/extension agents trained in IPM-FFS facilitation	2 305
Number of government biocontrol production/distribution facilities	
Number of government biopesticide production/distribution facilities	
Number of general extension staff involved in pest management	13 444
Number of designated plant protection technical officers for extension	564

### Key Situation and Operation Indicators

Pest management	Yes	No
Does the country have a National IPM program? <i>If yes, give Name and Address of IPM Programme:</i>	x	
Does the country have specific IPM extension programs? <i>If yes, in which crops?:</i>	x	
Does the country have specific IPM research programs? <i>If yes, in which crops?:</i>		
Does the country have specific GAP extension programs? <i>If yes, in which crops?:</i>	x	
Does the country have specific GAP research programs? <i>If yes, in which crops?:</i>		

Market shares (estimated value, volume or area under control)	Year: 2010
Size of chemical pest control market	
Size of biopesticides market	
Size of biological control agents market	

Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop			
Name(s) of pest(s)			
Estimated crop loss			
Affected area			
Number of pesticide applications or amount of pesticide used			
Government action taken			

Cooperation Projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)

<b>Pest management extension</b>	<b>Year: 2010</b>
Number of farmers trained in IPM during the year	131 800
Number of IPM-FFS conducted during the year	2 636
Number of farmers trained in GAP standards during the year	
Area under IPM/low pesticide management [ha]	240 000
Area under organic/pesticide-free management [ha]	9 500
Crops in which IPM or other ecology friendly programs are successfully implemented:IPM packages developed for Rice and Brinjal	
Crops grown organic/pesticide-free: –	

### **Progress and Constraints**

<b>Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)</b>
<b>Main constraints (personnel, infrastructure, administrative, operational, training, etc.)</b>

## V. PESTICIDE MANAGEMENT

Last updated: December 2010

### Executive summary<sup>4</sup>

The Pesticide Administration and Quality Control Section of the Plant Protection Wing (NPPO) of the Department of Agricultural Extension (DAE) revised “The Pesticide Ordinance, 1971” and its name was changed to “The Pesticide Ordinance (Amended), 2007”.

The necessary modifications were also made to The Pesticide Rules, 1995 with the incorporation of the provisions of Bio-pesticide registration and submitted to the Ministry of Agriculture for necessary action.

To facilitate modern diagnosis and laboratory facilities, the Pesticide Quality Control Laboratory of NPPO has already been modernized with the installation of testing equipment.

To disposal off the obsolete pesticides, a survey was conducted in different areas of the country. Continuous farmers training programs were also conducted to increase awareness of harmful effects of injudicious use of pesticides.

### List of key legislation/regulations/rules:

1971 The Pesticide Ordinance; The Pesticide Ordinance (Amended) 2007

1985 The Pesticide Rules

Ministry of Environment & Forest

1995 Bangladesh Environmental Conservation Act

1997 Bangladesh Environmental Conservation Rules

**Web source for further information:** [www.dae.gov.bd](http://www.dae.gov.bd)

Policies regarding pesticide management	Yes	No
Do you have national pesticide reduction target? If yes, what is the target:-	x	
Have you ratified the Rotterdam (PIC) Convention?		
Have you ratified the Stockholm (POP) Convention?	x	
Have you ratified the Basel Convention? (hazardous wastes)	x	
Have you ratified the Montreal Protocol? (MeBr phasing-out)	x	
Have you reported the observance of the code of conduct to FAO according to Art 12 of the Code?		
Have you adopted Good Laboratory Practices (GLP)?	x	
<b>Pesticide registration</b>		
Do you require pesticides to conform to relevant FAO or WHO specification?	x	
Do you allow the “me-too” registration and sale of generic pesticides?	x	
Do you require data on product equivalence for generic registration?	x	
Do you conduct country-specific risk assessments for...		

<sup>4</sup> by Md. Hasanl Haque, Director, Plant Protection Wing (NPPO), Department of Agricultural Extension, Email: [dppw@dae.gov.bd](mailto:dppw@dae.gov.bd)

occupational risks?		
consumer risks?	x	
environmental risks?	x	
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labeling?	x	
Do you accept evaluation results from other countries?	x	
Do you accept field studies conducted in other countries?		x
Do you require environmental fate studies?		x
<b>Incentives/disincentives</b>		
Do you have a special tax on pesticides to cover externality costs?	x	
Do you subsidize or provide low-cost pesticides?		x
Do you subsidize or provide low-cost bio-pesticides?		x
Other policies:Other policies: Pesticide Ordinance 1971 is being amended, Integrated Pest Management & Integrated Crop Management Policies The Pesticides (Amended) Rules -2007 is under process.	x	
Web source for further information: <a href="http://www.dae.gov.bd">www.dae.gov.bd</a>		

Organization of pesticide management function	Responsible organization unit (Ministry/Department/Unit)
Legislation	MOA/PPW, DAE,
Registration	PPW, DAE, MOA
Licensing of shops	PPW, DAE, MOA
Licensing of field applicators	PPW, DAE, MOA
Enforcement/inspections	PPW, DAE, MOA
Testing of pesticide efficacy	PPW, DAE, MOA
Development of pesticide use recommendation	PTAC
Safe use training/extension	PPW, DAE, MOA, BCPA
Food residue monitoring	BSTI
Environmental monitoring	PPW, DAE and DOE
Health monitoring	DOH
<b>Other Stakeholders:</b>	
Pesticide Industry Association	BCPA
Civil Society Organization (NGO,etc)	BCPA

Infrastructure *	Year: 2010
Number of registration officers	3
Number of enforcement officer	550
Number of department quality control laboratories	01
Number of quality control laboratory personnel	06
Number of department residue analysis laboratories	01
Number of residue laboratory personnel	06

\* Only include the laboratories belonging to MOA

**Key Situation Indicators**

Pesticide trade: 2010	Tons	US\$ '000 value
Imports	77 712 ( Formulated )	
Manufacture		
Export		
Domestic Use/Sales		
Pesticide Use Profile: 2010	Tons (a.i./formulation to be specified)	US\$ '000 Value
Agriculture		
Chem. Insecticides	66%	
Chem. Fungicides	29%	
Chem. Herbicides	3%	
Chem. Others: e.g. molluscicide, acaricide	2%	
Other: e.g. Avamectrin, Bt. NeeM		
Other purposes		
TOTAL		

**Post registration monitoring**

Testing, quality control and effects in the field	Yes	No
Do you have significant problems with low-quality pesticides in the market?	x	
Do you have significant problems with pesticide resistance?	x	
Do you have a list pesticides under close observation for problems		x
Source for more information		

Health and environmental information	Yes	No
Do you maintain data on pesticide poisoning cases?	x	
Do you have a system to monitor pesticide residues in food?	x	
Do you have a system to monitor pesticide residues in the environment?	x	
Do you have significant problems of environmental contamination from pesticides	x	
Do you have data on pesticides effects on wildlife and ecosystems?		x
Source for more information: <a href="http://www.dae.gov.bd">www.dae.gov.bd</a>		

Pesticide disposal	Yes	No
Do you have system to collect and safely dispose of used containers and small quantities of left-over pesticides?	x	
Do you have an inventory of outdated and obsolete pesticides in the country? (e.g. banned and no longer traded, but still in storage)	x	
Do you have illegal trade in pesticides?		x
if yes: what is the estimated amount: –		
<b>Note:</b> No estimated made, but it exists.		
Source for more information: –		

**Key Operation Indicators**

Registration/regulation/monitoring	Year: 2010	
	a.i.*	Trade Name
Number of registered pesticide products	123	
Number of registered biopesticides (Avamectrin, Bt, Neem, etc.)	02	
Number of restricted-use pesticides/formulations	04	
Number of banned pesticides	07	
Number of licensed outlets		
Number of licensed field applicators (professional and/or farmers)		
Number of licensing violations reported during year	02	
Number of quality control analyses conducted during year	56	
Number of food samples analyzed for pesticide residues during year		
Number of samples exceeding MRL		
Number of environmental samples analyzed for pesticide residues		

\* active ingredient

Pesticides restricted in recent year	
Year	Name of active ingredient or hazardous formulation
2010	No

Pesticide Banned in Recent Years	
Year	Name of active ingredient
2010	No

Cooperation project: SPPS			
Purpose/Target	Donor	Amount	Years (start-end)
Strengthening Plant Protection Project	DANIDA	28.50 crore	July 1997 to June 2002
Purpose/target of government follow-up programmes	Amount	Years (start-end)	
Integrated Pest Management Project	GOB	15 Core	2006

**Progress and Constraints**

<b>Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)</b>
Implementation of IPM & ICM policies
<b>Main constraints (personnel, infrastructure, administrative, operational, training, etc.)</b>
Plant Protection legislation, policies, infrastructure, investments, training, etc. should be modernized. Developed Pesticide Residue Analysis Laboratory.

**VI. ADDITIONAL ISSUES OF INTEREST**

Genetically Modified Crops	
Name of GMO Crop	Area under Cultivation [ha]

## 2.3 CAMBODIA

### I. General information

Last updated: December 2006

#### Overall executive summary

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).

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 PP-SPSD that details the following Roles and responsibilities:

- To prepare the policy, plan, project, development programmes, the measure to *reduce* the crop production loss caused by pest, to *manage* chemical substances used to prevent, control, repellent, growth regulator (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 *quality standards*, the *assurance system of safety* and quality of plant product, policy plant project development programmes to *improve* 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 *regulation* and to be the *regulatory service* in the management of *plant protection work, safety of food* originally from plant product and phytosanitary *inspection* according to the Government policy and SPS agreement of WTO;
- To direct, manage and encourage the *research activities* of research institution under its manage and in cooperation with the agricultural extension department and local organizations to encourage the *extension* of plant protection, phytosanitary and production measures to improve the quality and safety of product to farmers, farmer organization, investor and private sector for increasing their benefits and family income to improve population's welfare and facilitate the exportation of agricultural product;
- To be a *supporting service to the seed inspector* by playing a role of regulatory authority for inspecting all the seed transportation across the border;
- To persuade, facilitate and *encourage private sector to invest* the supporting service for plant protection, phytosanitary and improving quality of agricultural product;
- To be a *technical advisor* and a service in *pest control* intervention, in *assessment of chemical* substances used to prevent, control, repellent, growth regulator (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 *assessment of quality* of agricultural product;

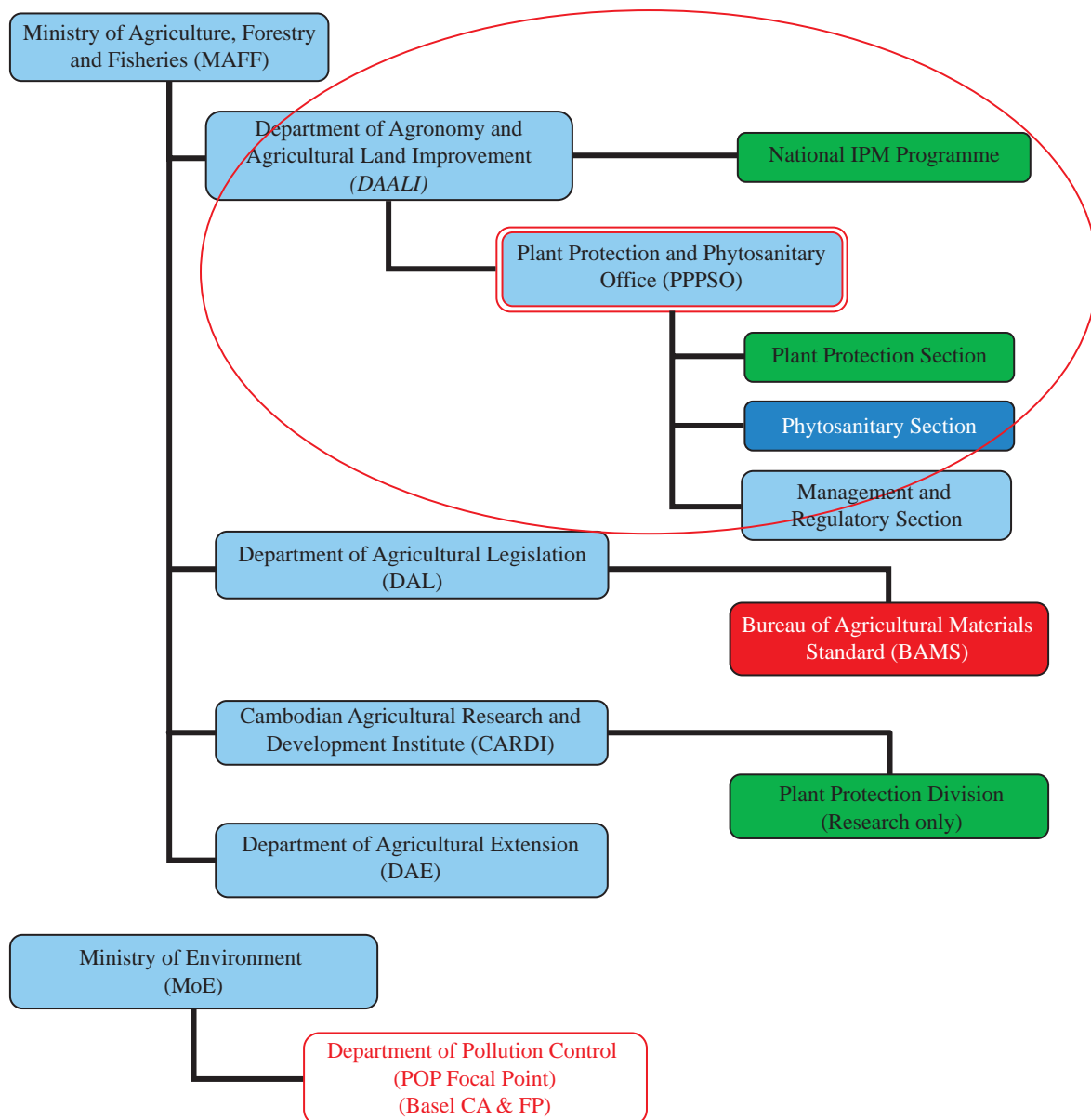


- To liaison, cooperate and implement the convention, agreement related in national, regional and international level
- To implement other duties as given by Director Team of General Directorate.

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.

As a result, it is not possible yet to fully update information in Cambodia's plant protection profile.

### Plant protection organisation chart



Color Code: Phytosanitation Outbreak Management Pest Management Pesticides NPPO

**Important contact addresses**

Last updated: December 2006

**Responsible ministry/ministries**

Ministry of Agriculture, Forestry and Fisheries (MAFF)  
No. 200, Preah Norodom Blvd., Sangkat Tonle Basak, Khan Chamkarmon,  
Phnom Penh, Cambodia  
Tel: (023) 211 351, 211 352  
Fax: (855) 23 217 320  
Website: <http://www.maff.gov.kh>

**Responsible department**

General Directorate of Agriculture (GDA)  
*Mr So Khan Rithykun, Acting Director General*  
Tel: (855)12 833777

*Dr Hean Vanhan, Deputy Director General in charge on plant protection, SPS and International Cooperation*

Tel: (855) 12818216/ (855)16818216  
Fax: (855) 23216655  
Email: [heanvanhan@gmail.com](mailto:heanvanhan@gmail.com)

National Plant Protection Organization (*if different from Focal Point*)

Plant Protection, Sanitary and Phytosanitary Department (PP-SPSD)  
*Dr Hean Vanhan, Deputy Director General in charge on plant protection, SPS and International Cooperation (Official NPPO)*

Tel: (855) 12818216/ (855)16818216  
Fax: (855) 23216655  
Email: [heanvanhan@gmail.com](mailto:heanvanhan@gmail.com)

*Dr Preap Visarto, Acting Director of PP-SPSD (Optional NPPO)*

Tel: (855) 11622916

**Address for nominations**

General Directorate of Agriculture (GDA)  
*Dr Hean Vanhan, Deputy Director General in charge on plant protection, SPS and International Cooperation*

#56B, Road 365, Teuk Laok III, Tuolkok, Phnom Penh, Cambodia  
Tel: (855) 12818216/ (855)16818216  
Fax: (855) 23216655  
Email: [heanvanhan@gmail.com](mailto:heanvanhan@gmail.com)

**Operational offices:****Plant protection**

Plant Protection, Sanitary and Phytosanitary Department (PP-SPSD)

- *Dr Preap Visarto, Acting Director of PP-SPSD/GDA*  
Tel: (855)11622916
- *Dy Sam An, Deputy Director of PP-SPSD/ GDA*  
Tel: (855) 12336934
- *Mr Heng Chhunhy, Deputy Director of PP-SPSD/GDA*  
Tel: (855) 12954963  
#56B, Road 365, Teuk Laok III, Tuolkok, Phnom Penh, Cambodia

**Plant quarantine**

Plant Protection, Sanitary and Phytosanitary Department (PP-SPSD)

- *Dr Preap Visarto, Acting Director of PP-SPSD/GDA*  
Tel: (855)11622916
- *Dy Sam An, Deputy Director of PP-SPSD/ GDA*  
Tel: (855) 12336934
- *Mr Heng Chhunhy, Deputy Director of PP-SPSD/GDA*  
Tel: (855) 12954963  
#56B, Road 365, Teuk Laok III, Tuolkok, Phnom Penh, Cambodia

**Surveillance, pest outbreaks and invasive species management**

Plant Protection, Sanitary and Phytosanitary Department (PP-SPSD)

- *Dr Preap Visarto, Acting Director of PP-SPSD/GDA*  
Tel: (855)11622916
- *Dy Sam An, Deputy Director of PP-SPSD/ GDA*  
Tel: (855) 12336934
- *Mr Heng Chhunhy, Deputy Director of PP-SPSD/GDA*  
Tel: (855) 12954963  
#56B, Road 365, Teuk Laok III, Tuolkok, Phnom Penh, Cambodia

**Pesticide registration (pesticide regulatory agency)**

Department of Agricultural Legislation (DAL)

*Mr Uk Siphon, Director*

Ministry of Agriculture Forestry and Fisheries (MAFF)  
No. 200, Preah Norodom Blvd., Sangkat Tonle Basak, Khan Chamkarmon,  
Phnom Penh, Cambodia  
Tel: (855) 12807806

**Bureau of Agricultural Materials Standards (BAMS) of DAL**

*Mr Chea Chan Veasna, Chief Office*

No. 200, Preah Norodom Blvd., Sangkat Tonle Basak, Khan Chamkarmon,  
Phnom Penh, Cambodia  
Tel: (855) 12841867

**Pesticide management (Technical Adviser to MAFF for Pesticide evaluation)**

1. Plant Protection, Sanitary and Phytosanitary Department (PP-SPSD)
  - *Dr Preap Visarto, Acting Director of PP-SPSD/GDA*  
Tel: (855)11622916
  - *Dy Sam An, Deputy Director of PP-SPSD/ GDA*  
Tel: (855) 12336934
  - *Mr Heng Chhunhy, Deputy Director of PP-SPSD/GDA*  
Tel: (855) 12954963  
#56B, Road 365, Teuk Laok III, Tuolkok, Phnom Penh, Cambodia
2. National Agricultural Lab of GDA
  - *Mrs Um Vannary, Director of NAL/GDA*  
Tel: (855)12 960 351
  - *Mr. Loan Socheata, Senior of Pesticide Lab of NAL/GDA*  
Tel: (855) 12871856  
#56B, Road 365, Teuk Laok III, Tuolkok, Phnom Penh, Cambodia

**Other useful contact addresses****Department of Agricultural Extension**

Department of Agricultural Extension (DAE)

*Mr Mak Soeun*, Director

Ministry of Agriculture Forestry and Fisheries (MAFF)

No. 200, Preah Norodom Blvd., Sangkat Tonle Basak, Khan Chamkarmon,

Phnom Penh, Cambodia

Tel: (855) 12826617

**Official international contact points****National Plant Protection Organization (NPPO) Contact Point** (for IPPC/APPPC)

General Directorate of Agriculture (GDA/MAFF)

*Dr Hean Vanhan*, Deputy Director General in charge on plant protection, SPS and International Cooperation (Official NPPO)

Tel: (855) 12818216/ (855)16818216

Fax: (855) 23216655

Email: heanvanhan@gmail.com

*Dr Preap Visarto*, Acting Director of PP-SPSD (Optional NPPO)

Tel: (855) 11622916

Language(s): English

Contact point received: 16/12/2003 Source: NPPO correspondence

**WTO-SPS enquiry point**

Cambodia Import Export Inspection and Fraud Repression Department (CAMCONTROL), Ministry of Commerce.

# 50Eo, Street 144

Phnom Penh, Cambodia

Tel/Fax: (855) 23 426 166

Email: camcontrol@camnet.com.kh

**ASEAN-SPS enquiry point for MAFF**

General Directorate of Agriculture (GDA/MAFF)

*Dr Hean Vanhan*, Deputy Director General in charge on plant protection, SPS and International Cooperation (Official NPPO)

Tel: (855) 12818216/ (855)16818216

Fax: (855) 23216655

Email: heanvanhan@gmail.com

**Rotterdam Convention (PIC) DNA Pesticides (P)**

Bureau of Agricultural Materials Standards (BAMS) of DAL

*Mr Chea Chan Veasna*, Chief Office

Tel: (855) 12841867

No. 200, Preah Norodom Blvd., Sangkat Tonle Basak, Khan Chamkarmon,

Phnom Penh, Cambodia

**Stockholm Convention (POP) National Focal Point (P)*****Political Focal Point***

Ministry of Environment  
*H.E. Mr Khieu Muth, Secretary of State*  
 #48 Samdech Preah Sihanouk  
 Tonle Bassac, Chamkarmon  
 Phnom Penh, Cambodia  
 Tel: (855) 16 821 180  
 Fax: (855) 23 219 287  
 E-mail: moe@online.com.kh

***Technical Focal Points***

Department of Pollution Control  
*Mr Ken Choviran, Deputy Director*  
 Ministry of Environment  
 #48 Samdech Preah Sihanouk  
 Tonle Bassac, Chamkarmon  
 Phnom Penh, Cambodia  
 Tel: (855) 12 856 818  
 Fax: (855) 23 987 880  
 E-mail: moepcd@online.com.kh

**Basel Convention Competent Authority (CA) and Focal Point**

Department of Pollution Control  
*Director*  
 Ministry of Environment  
 48, Samdech Preah Sihanouk  
 Tonle Bassac, Chamkarmon  
 Phnom Penh, Cambodia  
 Tel: (855) 12 85 68 18  
 Fax: (855) 23 21 25 40 or 98 78 80  
 E-mail: moepcd@online.com.kh

Environmental Pollution Research  
 and Technology Management  
*Vice Chief*  
 Department of Pollution Control  
 Ministry of Environment  
 48, Samdech Preah Sihanouk  
 Tonle Bassac, Chamkarmon  
 Phnom Penh, Cambodia  
 Tel: (855) 23 21 04 92  
 Fax: (855) 23 21 25 40 or 98 78 80  
 E-mails: choviran@hotmail.com or  
 moepcd@online.com.kh

**Selected country statistics**

Last updated: December 2010

Agricultural Population	9.6 million	Agricultural Land	3.8 million ha
GDP US\$ 4 299 million	Agric. GDP: 35.6%	GNI per capita: US\$ 380	Undernourishment: 33%
Main crops grown: —			

GDP = Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement

## II. PLANT QUARANTINE

Last updated: December 2006

### List of key legislation/regulations/rules for plant quarantine

- 2003 Prakas (Ministerial Regulation) No 522 on the creation and role of the office and organization under DAALI (Dated 30 September 2003): *DAALI responsible in Plant Quarantine Activity.*
- 2003 Sub-Decree (Government Regulation) No 15 on the Phytosanitary Inspection (Dated 13 March 2003): *which appointed PPPSO of DAALI as Cambodian Plant Quarantine Authority (PQA).*
- 2001 Sub-Decree No. 69 on the management of border check points(09/07/01) : Plant and animal quarantine staff are not included in the team of border check point inspectors.
- 2004 Sub-Decree No. 6 on the management of international airport of the Kingdom of Cambodia (30/03/04): *Plant and animal quarantine staff are included in the team of border check point inspectors.*
- (prep.) Sub-Decree on the management of the entry exit border check point at the sea and river port of the Kingdom of Cambodia: *Plant and animal quarantine staff may/will be included in the team of border check point inspectors.*
- (prep.) Sub-Decree on the management of the entry-exit check point at the land border of the Kingdom of Cambodia: *Plant and animal quarantine staff may/will be included in the team of border check point inspectors.*

### Web source for further information: –

Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover domestic quarantine?	x		
Does phytosanitary legislation cover import quarantine?	x		
Does phytosanitary legislation cover export quarantine?	x		
Does phytosanitary legislation cover living modified organisms?		x	
Is plant quarantine a separate organization from animal quarantine?	x		
Other policy initiatives (under review/progress): Protect the agriculture production and biodiversity.			
Web source for further information: <a href="http://www.maff.gov.kh">www.maff.gov.kh</a> / <a href="http://www.ippc.int">www.ippc.int</a>			

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest Risk Analysis	MAFF/DAALI/PPPSO/Phytosanitary Section
National standards development	MAFF/DAALI/PPPSO/Phytosanitary Section
International notifications	MAFF/DAALI/PPPSO/Phytosanitary Section (IPPC/ APPPC)MOC/CAMCONTROL/ (for WTO-SPS)
<i>Import:</i>	
Import permits	MAFF/DAALI/PPPSO/Phytosanitary Section
Import inspections	MOC/CAMCONTROL
Emergency action	MAFF/DAALI/PPPSO/Phytosanitary Section
<i>Export:</i>	
Phytosanitary certificates	MAFF/DAALI/PPPSO/Phytosanitary Section
Treatment of commodities	MAFF/DAALI/PPPSO/Phytosanitary Section Authorized pest control services

Infrastructure	Year: 2006
Number of plant quarantine officers authorized to inspect/certify	35
Total qualified personnel for plant pest risk analysis	5
Number of quarantine offices	
entry points (sea/air/land/mail = total)	0/1/0/0 = 1
post-entry plant quarantine containment facilities	0
other offices	0
Number of quarantine service diagnosis laboratories	1
In-country recognized pest diagnostics capabilities (incl. universities, etc.)	2
Number of laboratories for insect/mite (arthropod) samples	2
Number of laboratories for bacteria samples	0
Number of laboratories for virus samples	0
Number of laboratories for fungus samples	2
Number of laboratories for mycoplasma samples	0
Number of laboratories for nematode samples	0
Number of laboratories for plant/weed samples	2
Number of laboratories for other pests (snail, slug, rodents, etc.)	0

Pest free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)
Overall management	MAFF/DAALI
– surveillance	MAFF/DAALI/PPPSO/Plant Protection Section
– management	MAFF/DAALI/PPPSO/Plant Protection Section
– certification	MAFF/DAALI
List of target pest species and crops ISPM 4	Number of sites in 2008
List of target pest species and crops ISPM 10	Number of sites in 2008

### Key situation indicators

International trade		Year: 2006
Main import plant commodities	Main countries/areas of origin	Quantity (tons)
Cigarettes	Thailand, Singapore, China	
Dry mushroom	China, Singapore	
Main export plant commodities	Main destination countries	
Anacardium occidentale (Cashew nut)	India, China	25
Arachis hypogaea (Groundnut)	Taiwan	15
Glycine max	Taiwan	5
Hevea brasiliensis (Rubber wood)	Republic of Korea, Malaysia, Taiwan, Thailand, China	47
Manihot esculenta (Tapioca starch)	Indonesia, Malaysia, China, Philippines	16
Nicotiana tabacum (Tobacco)	Indonesia, Singapore, Republic of Korea	13
Oriza sativa (rice) milled paddy rice	Australia, Belgium, France, Malaysia, New Zealand, USA, Thailand, Italy, Taiwan.	27
Phellinus linteus (Dry Mushroom)	Republic of Korea	8
Piper nigrum (Black pepper)	UK	1



Sesamum indicum (Sesame)	China, Taiwan	11
Vigna radiata (Mungbean)	Taiwan	10
Zea mays (pigeon corn)	Hong Kong, Republic of Korea, Taiwan	26

Cooperation projects			
Title (Purpose/target)	Donor	Amount	Years (start-end)
Agric. Productivity Improvement Project	World Bank	<\$10 million	1999-2005
Phytosanitary Capacity Dev. Proj. Phase I Installation of NPD and SOM	NZAID	?	2001-2005
Phytosanitary Capacity Dev. Proj. Phase 2 Pest surveillance, diagnosis and PRA	NZAID AusAID	AUS\$ 29 089 + NZ\$ 37 552	2007-2009
Title of government follow-up programmes		Amount	Years (start-end)

### Key operation indicators

Institutional functions	Year: 2006
Number of import permits issued	19
Number of import inspections carried out	0
Number of emergency phytosanitary treatments taken on imports	0
Number notifications of non-compliance	0
Number of conventional phytosanitary certificates issued	0
Number of electronic phytosanitary certificates issued	287

Number of quarantine pests intercepted		Year: 2006
Top three commodity	Top three pest/commodity	# of interceptions

Lists of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of quarantine pests	2004	119	38	13
Number of regulated non-quarantine pests				
Number of regulated import articles		27 plant genera		
Website for the above information: –				

Pest risk analysis (PRA)	Insects	Pathogens	Plants
No. of PRA completed and documented (according to ISPM)	0	0	0
Web source for further information: –			

## Progress and constraints

### Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)

- National Phytosanitary Database have been set up (NZAID)
- Capacity building for staffs on pest surveillance, pest list (entomology and plant pathology) (AusAID: SPS capacity building for ASEAN; NZAID II)
- 2004 Sub-Decree No. 6 on the management of international airport of the Kingdom of Cambodia (30/03/04): *Plant and animal quarantine are included in the member of border-check point inspectors.*

### Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

- No Plant Quarantine Check point at all river-port, seaport and entry-exit point of the land border,
- Awareness on the advantages of Phytosanitary Inspection is still low amount related inspection agencies, exporters, shipping agencies, and policy-makers.
- Plant Quarantine infrastructure is still remain a big gap below the ISPM, that is the main constrain in compliance with the importing country requirement.

Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
ISPM 01 Principles of plant quarantine as related to international trade		x						
ISPM 02 Guidelines for pest risk analysis					x			
ISPM 03 Code of conduct for the import and release of exotic biological control agents					x			
ISPM 04 Requirements for the establishment of pest free areas				x				
ISPM 05 Glossary of phytosanitary terms		x						
ISPM 06 Guidelines for surveillance					x			
ISPM 07 Export certification system						x		
ISPM 08 Determination of pest status in an area					x			
ISPM 09 Guidelines for pest eradication programmes					x			
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites				x				
ISPM 11 Pest risk analysis for quarantine pests					x			
ISPM 12 Guidelines for phytosanitary certificates						x		
ISPM 13 Guidelines for the notification of noncompliance and emergency action				x				
ISPM 14 The use of integrated measures in a systems approach for pest risk management					x			
ISPM 15 Guidelines for regulating wood packaging material in international trade				x				
ISPM 16 Regulated non-quarantine pests: concept and application				x				
ISPM 17 Pest reporting					x			
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure				x				
ISPM 19 Guidelines on lists of regulated pests					x			
ISPM 20 Guidelines for a phytosanitary import regulatory system				x				
ISPM 21 Pest risk analysis for regulated non-quarantine pests				x				
ISPM 22 Requirements for the establishment of areas of low pest prevalence				x				
ISPM 23 Guidelines for inspection					x			
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures				x				
ISPM 25 Consignments in transit				x				
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)				x				
ISPM 27 Diagnostic protocols for regulated pests				x				
ISPM 28 Phytosanitary treatments for regulated pests								
ISPM 29 Recognition of pest free areas and areas of low pest prevalence								
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (tephritidae)								
ISPM 31 Methodologies for sampling of consignments								
ISPM 32 Categorization of commodities according to their pest risk								

ISPM 33 Pest free potato ( <i>Solanum</i> spp.) micropropagative material and minitubers for international trade								
ISPM 34 Design and operation of post-entry quarantine stations for plants								
Comments/Constraints: <ul style="list-style-type: none"> <li>• No enough capacity to implement;</li> <li>• No infrastructure</li> <li>• No supporting</li> </ul>								

### III. SURVEILLANCE, PEST OUTBREAKS AND INVASIVE SPECIES MANAGEMENT

Last updated: December 2006

#### List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions

2003 Sub-Decree (Government Regulation) No 15 on the Phytosanitary Inspection (Dated 13 March 2003): *the only one legislation on plant quarantine which give the obligation to plant quarantine authority to conduct the pest surveillance and take the eradication activity in case of new invaded exotic pest.*

#### Web source for further information: –

Policies regarding plant quarantine	Yes	No	Don't know
National strategy to control serious field pest outbreaks?		x	
National strategy to control migratory or periodically occurring pests?		x	
National strategy to eradicate serious newly invaded exotic pests?		x	
Other policies: (e.g. subsidies, etc.)			
Web source for further information: –			

Organization of functions related to surveillance pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field/storage pest outbreaks</i>	(e.g. BPH, bollworm, etc.)
Response strategy/plans	MAFF/GDA
Surveillance	MAFF/DGA/PP-SPSD + CARDI
Control	MAFF/ DGA/PP-SPSD
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	MAFF/ GDA
Surveillance	MAFF/ DGA/PP-SPSD
Control	MAFF/ DGA/PP-SPSD
<i>New exotic pest eradication</i>	(e.g. coconut beetle)
Response strategy/plans	MAFF/ GDA
Surveillance	MAFF/ DGA/PP-SPSD
Control/eradication	MAFF/ DGA/PP-SPSD
Reporting to bilateral or international organizations	MAFF/ DGA/PP-SPSD

Infrastructure	Year: 2006
Number of designated staff for <b>surveillance</b> of field pests of national importance	25
Number of designated staff for <b>surveillance</b> of migratory and periodically occurring pests	5
Number of designated staff for <b>surveillance</b> of invasive species	4
Number of designated staff for <b>control</b> of field pests of national importance	
Number of designated staff for <b>control</b> of migratory and periodically occurring pests	
Number of designated staff for <b>eradication</b> of invasive species	

**Key situation and operation indicators**

(Outbreaks and invasions in the past 2 years)

New exotic species found established in the country	Insects	Pathogens	Weeds
Total number for 2006 [most recent]			
Total number for 2005 [year before]	2		
Total number on record	2		

Eradication or internal quarantine actions taken against economically important species			
Name of species	<i>Brontispa longissima</i>		
Year of first discovery	2001		
Pathway	coconut and seedling import from Viet Nam		
Location of first discovery	The provinces near Viet Nam border		
Area affected [ha]	around 75% of Palm		
Area treated [ha]	2 provinces near Viet Nam border		
Control method	Raise and release the <i>Ascecodes hispinarum</i>		
Expenditures	support by AusAID through FAO		

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species	BPH	Golden snail	
Year of outbreak	2003	2005	
Area affected [ha]	22 500		
Estimated damage US\$			
Area treated by government [ha]			
Expenditures by government [US\$]	chemical	Mechanical	
Control method			
More information			

**Progress and constraints**

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
<ul style="list-style-type: none"> <li>Four staffs of PPPSO have been trained by SPS of AusAID project on basic of pest surveillance (entomology and plant pathology);</li> <li>Have ability to raise the <i>Ascecodes hispinarum</i> as the parasite to coconut beetle (<i>Brontispa longissima</i>).</li> </ul>
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
<ul style="list-style-type: none"> <li>No Plant Quarantine Check point at all entry-exit point of the border, It is a big risk to new invade species;</li> <li>Plant Quarantine infrastructure is still remain a big gap below the ISPM , that is the main constrain in compliance with the importing country requirement.</li> </ul>

#### IV. PEST MANAGEMENT

Last updated: December 2006

##### List of key legislation/regulations/rules for pest management

–

##### Web source for further information: –

Policies regarding plant quarantine	Yes	No	Don't know
Do you have policies encouraging organic or low-pesticide use production	x		
Is IPM specifically mentioned in laws or policy documents?	x		
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?		x	
Is pest management extension separate from general extension?			
Other policies: (subsidies, production inputs, etc.)			
Web source for further information: –			

Organization of plant protection functions	Responsible organizational unit (ministry/department/unit)
Policy development	MAFF/DGA
Pest management research	MAFF/DGA
Control recommendations	MAFF/DGA
Pest management extension	MAFF/DGA/PP-SPSD
IPM training	MAFF/DGA/Natl. IPM Programme
GAP training	MAFF/DGA

Infrastructure	Year:
Number of technical officers for pest management	44
Number of central, regional, provincial or state offices	24
Number of district and village level field offices	
Number of field/extension agents for pest management advice	
Number of field/extension agents trained in IPM-FFS facilitation	~200 + ~300 farmers
Number of government biocontrol production/distribution facilities	0
Number of government biopesticide production/distribution facilities	0
Number of general extension staff involved in pest management	
Number of designated plant protection technical officers for extension	

##### Key situation and operation indicators

Policies regarding plant quarantine	Yes	No	Don't know
Does the country have a National IPM programme? <i>If yes, give Name and Address of IPM Programme:</i> <b>National IPM Programme, #10, Monireth St., Tuol Svay Prey II, Phnom Penh, Cambodia</b>	x		
Does the country have specific IPM extension programmes? <i>If yes, in which crops?: Rice, Vegetables</i>	x		
Does the country have specific IPM research programmes? <i>If yes, in which crops?:</i>		x	

Does the country have specific GAP extension programmes? <i>If yes, in which crops?:</i>	x	
Does the country have specific GAP research programmes? <i>If yes, in which crops?:</i>	x	

Market shares (estimated value, volume or area under control)	Year:
Size of chemical pest control market	
Size of biopesticides market	
Size of biological control agents market	

Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop			
Name(s) of pest(s)			
Estimated crop loss			
Affected area			
Number of pesticide applications or amount of pesticide used			
Government action taken			

Cooperation projects			
Purpose/Target	Donor	Amount	Years (start-end)
Community IPM	FAO + donors		-2002
Agric. Productivity Dev. Proj.	World Bank	\$1.46 M	2000-
	DANIDA	\$4.5 M	2000-2005
Purpose/target of government follow-up programmes		Amount	Years (start-end)

Pest management extension	Year:
Number of farmers trained in IPM during the year	
Number of IPM-FFS conducted during the year	
Number of farmers trained in GAP standards during the year	
Area under IPM/low pesticide management [ha]	
Area under organic/pesticide-free management [ha]	
Crops in which IPM or other ecology friendly programmes are successfully implemented:	
Crops grown organic/pesticide-free:	

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)



## V. PESTICIDE MANAGEMENT

Last updated: December 2006

### List of key legislation/regulations/rules

- 1998 Sub-Decree on Standards and Management of Agricultural Materials. The Prime Ministers signed this Sub-Decree on 28<sup>th</sup> October 1998 (Pesticide management in Cambodia was clearly mentioned in Chapter III “Pesticides” of the above Sub-Decree (Article 11-24 ).
- 1998 Sub-Decree (No. 69) on Standard and the Management of Agricultural Materials issued 28 October 1998 contains 14 articles mentioning the pesticide management procedures.
- 1999 Ministerial declaration (No. 038) on the creation of the Bureau of Agricultural Material Standard issued 21 January 1999.
- 2002 Ministerial guideline (No. 245) on the implementation of Sub-Decree No. 69 on the Standard and the Management of Agricultural Materials issued 21 October 2002.
- 2003 Ministerial declaration (No. 064) on Formats of Application Forms relating to Agricultural Materials issued 27 February 2003.
- 2003 Ministerial declaration (No. 522) on the Mandate of the Department of Agronomy and Agricultural Land Improvement issued 30 September 2003.
- 2003 Ministerial declaration (No. 598) on the Lists of Pesticide in Cambodia issued 15 December 2003.
- 2004 Ministerial declaration (No. 204) on Amendment of Declaration No. 064 issued 12 July 2004.
- 2004 Mutual declaration (No. 02/04) between MAFF and MoJ on Formats and Police of Justice for DAL/MAFF issued 26 October 2004

### Web source for further information: –

Policies regarding plant quarantine	Yes	No	Don't know
Do you have national pesticide reduction targets? <i>If yes, what is the target: _____</i>		x	
Have you ratified the Rotterdam (PIC) Convention?		x	
Have you ratified the Stockholm (POP) Convention?		x	
Have your ratified the Basel Convention? (hazardous wastes)		x	
Have your ratified the Montreal Protocol? (MeBr phasing-out)			
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?			
Have you adopted Good Laboratory Practices (GLP)?			
<i>Pesticide registration</i>			
Do you require pesticides to conform to relevant FAO or WHO specifications?	x		
Do you allow the “me-too” registration and sale of generic pesticides?			
Do you require data on product equivalence for generic registration?			
Do you conduct country-specific risk assessments for...			
occupational risks?		x	
consumer risks?		x	
environmental risks?		x	
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labelling?		x	

Do you accept evaluation results from other countries?	x		
Do you accept field studies conducted in other countries?		x	
Do you require environmental fate studies?		x	
<i>Incentives/disincentives</i>			
Do you have a special tax on pesticides to cover externality costs?		x	
Do you subsidize or provide low-cost pesticides?		x	
Do you subsidize or provide low-cost biopesticides?		x	
Other policies:			
Web source for further information:			

Organization of plant protection functions	Responsible organizational unit (ministry/department/unit)
Legislation	MAFF/DAL + DGA
Registration	MAFF/DAL/BAMS
Licensing of shops	MAFF/DAL/BAMS
Licensing of field applicators	
Enforcement/inspections	MAFF/DAL/BAMS
Testing of pesticide efficacy	MAFF/DGA/PP-SPSD
Development of pesticide use recommendations	MAFF/DGA/PP-SPSD
Safe use training/extension	MAFF/DGA/PP-SPSD and MAFF/DAE
Food residue monitoring	MAFF/DGA/PP-SPSD
Environmental monitoring	MAFF/DGA/PP-SPSD
Health monitoring	
<i>Other Stakeholders:</i>	
Pesticide Industry Association	
Civil Society Organizations (NGO, etc.)	

Infrastructure	Year: 2006
Number of registration officers	25
Number of enforcement officers	
Number of department quality control laboratories	1
Number of quality control laboratory personnel	
Number of department residue analysis laboratories	1
Number of residue laboratory personnel	

### Key situation indicators

Pesticide Trade:	Tons	US\$ '000 Value
Imports	39	
Manufacture		
Export		
Domestic Use/Sales		
Pesticide use profile:	Tons (a.i./formulation to be specified)	US\$ '000 Value
Agriculture	198	226
Chem. Insecticides	73%	
Chem. Fungicides	3%	
Chem. Herbicides	8%	
Chem. Others: e.g. molluscicide, acaricide	15%	

Other e.g. Avamectrin, Bt, Neem		
Other purposes		
TOTAL		

### Post registration monitoring

Testing, quality control and effects in the field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?	x		
Do you have significant problems with pesticide resistance?			
Do you have a list of pesticides under close observation for problems			
Source for more information: –			

Health and environmental information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?		x	
Do you have a system to monitor pesticide residues in food?		x	
Do you have a system to monitor pesticide residues in the environment?		x	
Do you have significant problems of environmental contamination from pesticides? <i>Note: Unknown</i>			
Do you have data on pesticides effects on wildlife and ecosystems? <i>Note: Unknown</i>			
Source for more information: –			

Pesticide disposal	Yes	No	Don't know
Do you have system to collect and safely dispose of used containers and small quantities of left-over pesticides?		x	
Do you have an inventory of outdated and obsolete pesticides in the country? (eg. banned and no longer traded, but still in storage)	x		
Do you have illegal trade in pesticides? if yes: what is the estimated amount: _____	x		
Source for more information: –			

### Key operation indicators

Registration/regulation/monitoring	Year:	
	a.i.*	Trade Name
Number of registered pesticide products		
Number of registered biopesticides (Avamectrin, Bt, Neem, etc.)		
Number of restricted-use pesticides/formulations		
Number of banned pesticides		
Number of licensed outlets		
Number of licensed field applicators (professional and/or farmers)		
Number of licensing violations reported during year		
Number of quality control analyses conducted during year		
Number of food samples analyzed for pesticide residues during year		
Number of samples exceeding MRL		
Number of environmental samples analyzed for pesticide residues		

\* active ingredient

Pesticides restricted in recent years	
Year	Name of active ingredient or hazardous formulation

Pesticides banned in recent years	
Year	Name of active ingredient

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
The existing system is not effective to manage the pesticide import and distribution in the country.

## VI. ADDITIONAL ISSUES OF INTEREST

Genetically modified crops	
Name of GMO Crop	Area under cultivation [ha]

## 2.4 CHINA

### I. GENERAL INFORMATION

Last updated: December 2010

#### Overall executive summary

In the past two years, the new pests such as Sunflower black stem disease (*Leptosphaeria lindquistii* Frezzi=*Phoma macdonaldii* Boerma) and Solenopsis mealybug (*Phenacoccus solenopsis* 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.

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.

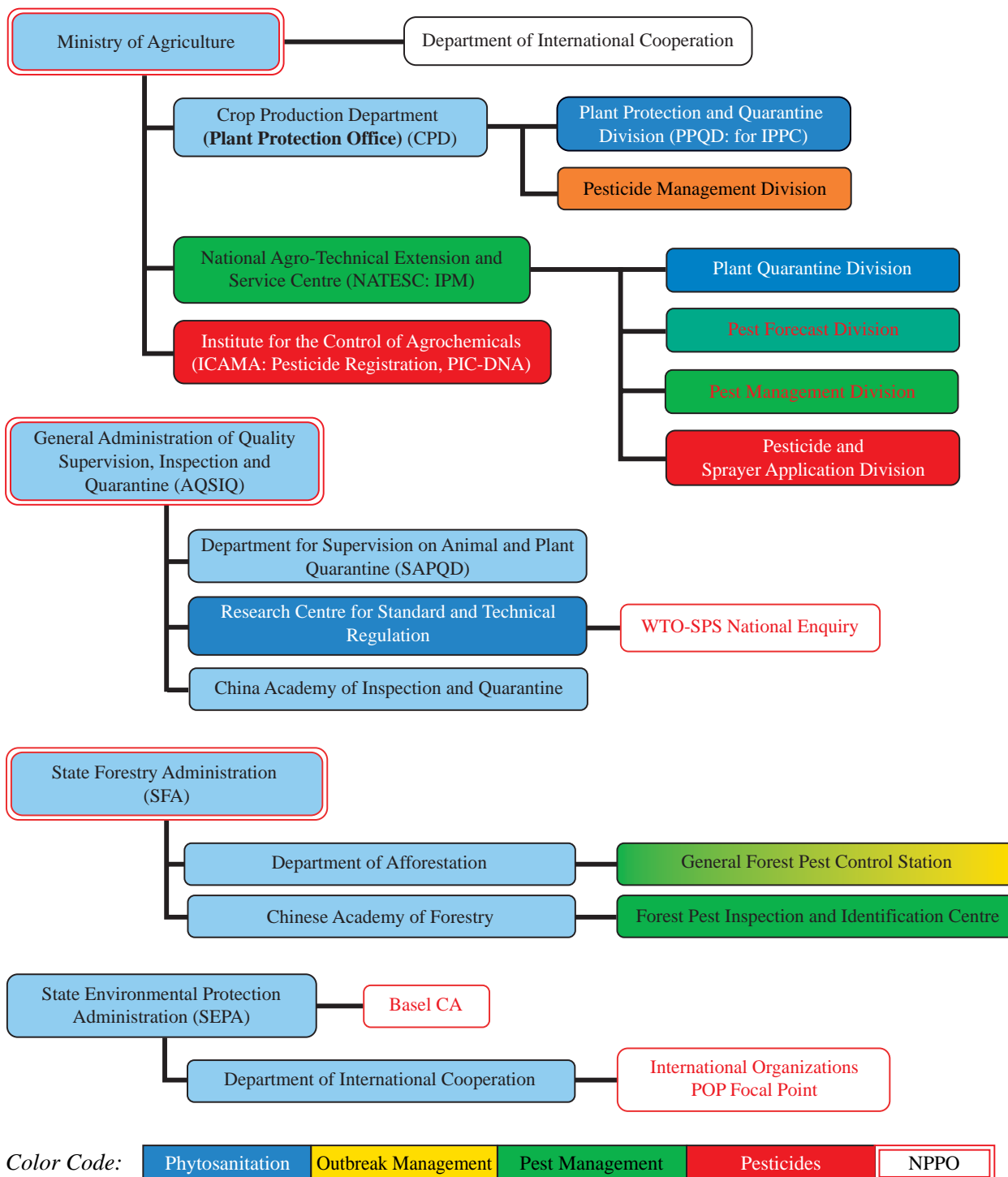
In 2009 and 2010, great effort was taken to control the codling moth and the Pest free areas (PFA) for codling moth were established and maintained. *Radopholus similis* had been successfully eradicated in several sites of Guangdong Province which was detected in seedling imported into China

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.

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 (*Loxostege sticticalis* 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 (*Nilaparavata lugans*), 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 programmes coordinated by NATESC have been supporting the implementation of key IPM technologies in major crops and major pests. Biological and ecological control measures such as using microorganisms and reclaiming locust habitats were extensively promoted in recent years.

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).

**Plant protection organization chart**



---

**Important contact addresses****Responsible ministry**

Ministry of Agriculture (MOA)

*Mr Dun Niu, Vice Minister*

No. 11 Nongzhanguan Nanli, Beijing, P.R.China, 100125

Tel: 86-10-5919 2328

Fax: 86-10-6500 3621

Website: [www.agri.gov.cn](http://www.agri.gov.cn)**Responsible department**

Crop Production Department, MOA

*Mr Pugu Zhou, Deputy General Director*

No. 11 Nongzhanguan Nanli, Beijing, P.R.China, 100125

Tel: 86-10-5919 2808

Fax: 86-10-59193376

Email: [ppq@agri.gov.cn](mailto:ppq@agri.gov.cn)Website: [www.agri.gov.cn](http://www.agri.gov.cn)**Address for nominations**

International Cooperation Department

*Ms Xiangjun Yao, Deputy General Director*

Ministry of Agriculture

No. 11 Nongzhanguan Nanli, Beijing, P.R.China, 100125

Tel: 86-10-5919 2400

Fax: 86-10-6500 4635

Email: [yaoxj@agri.gov.cn](mailto:yaoxj@agri.gov.cn)Website: [www.agri.gov.cn](http://www.agri.gov.cn)**Operational offices:****Plant protection and plant quarantine**

Plant Protection &amp; Quarantine Division

*Mr Enlin Zhu, Division Director (IPPC Contact Point)*

Crop Production Department, MOA

No. 11 Nongzhanguan Nanli, Beijing, P.R.China, 100125

Tel: 86-10-5919 1422

Fax: 86-10-5919 3376

Email: [ppq@agri.gov.cn](mailto:ppq@agri.gov.cn)Websites: [www.agri.gov.cn](http://www.agri.gov.cn)[www.ppq.gov.cn](http://www.ppq.gov.cn)**Forestry plant quarantine**

Pests Management Division

*Mr Jianbo Wang, Division Director*

Forestation Department, State Forestry Administration (SFA)

Tel: 86-10-8423 8509

Fax: 86-10-8423 8513

Email: [wangjb8289@sina.com](mailto:wangjb8289@sina.com)Website: [www.forestry.gov.cn](http://www.forestry.gov.cn)



**Import/export plant quarantine**

Plant Quarantine Division

*Mr Yiyu Wang, Division Director*

Department for Supervision on Animal and Plant Quarantine  
General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ)  
No. 9 Madian Donglu, Haidian District, Beijing, P.R.China 100088  
Tel: 86-10-8226 1909  
Fax: 86-20-8226 0157  
Email: wangyiyu@aqsiq.gov.cn  
Website: www.aqsiq.gov.cn

**Surveillance, pest outbreaks and invasive species management***Mr Jingyuan Xia, General Director*

National Agro-Tech Extension and Service Center (NATESC)  
Ministry of Agriculture  
No. 20, Maizidian Street. Chaoyang District, Beijing, P.R. China 100125  
Tel: 86-10-5919 4505  
Fax: 86-10-5919 4517  
Email: xiajyuan@agri.gov.cn  
Website: www.natesc.gov.cn

*Mr Tianrun Zhong, Deputy General Director*

National Agro-Tech Extension and Service Center (NATESC)  
Ministry of Agriculture  
No. 20, Maizidian Street. Chaoyang District, Beijing, P.R. China 100125  
Tel: 86-10-5919 4548  
Fax: 86-10-5919 4517  
Email: zhongtr@agri.gov.cn  
Website: www.natesc.gov.cn

*Mr Puyun Yang Division Director**Pest Control Division*

National Agro-Tech Extension and Service Center (NATESC)  
Ministry of Agriculture  
No. 20, Maizidian Street. Chaoyang District, Beijing, P.R. China 100125  
Tel: 86-10-5919 4543  
Fax: 86-10-5919 4542  
Email: yangpy@agri.gov.cn  
Website: www.natesc.gov.cn

*Mr Fuxiang Wang, Division Director*

Plant Quarantine Division

National Agro-Tech Extension and Service Center (NATESC)  
Ministry of Agriculture  
No. 20, Maizidian Street. Chaoyang District, Beijing, P.R. China 100125  
Tel: 86-10-5919 4524  
Fax: 86-10-5919 4726  
Email: wangfuxiang@agri.gov.cn  
Website: www.natesc.gov.cn

**Pesticide registration**

Institute for the Control of Agrochemicals (ICAMA)

*Mr Yanqiu Zhang, General Director*

Ministry of Agriculture

No. 22 Maizidian Street, Chaoyang District, Beijing, P.R. China 100125

Tel: 86-10-59194195

Fax: 86-10-59194047

Email: zhangyanqiu@agri.gov.cn

Website: www.chinapesticide.gov.cn

**Official international contact points****National Plant Protection Organization (NPPO) Contact Point (for IPPC/APPPC)**

Plant Protection & Quarantine Division

*Mr Enlin Zhu, Division Director*

Crop Production Department, Ministry of Agriculture

No. 11, Nongzhanguan Nanli

Beijing, P.R. China 100125

Tel: 86-10-5919 1422

Fax: 86-10-5919 3376

Email: ppq@agri.gov.cn

Website: www.ppq.gov.cn

Language(s): Chinese; English

Contact point received: 10/10/2004

Source: NPPO Correspondence

**WTO SPS contact point**

Research Centre for International Inspection & Quarantine Technical Regulation & Standard of the People's Republic of China

WTO-SPS Enquiry Point

General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ)

No. 9 Madiandonglu, Haidian District, Beijing, P.R.China 100088

Tel: 86-10-8226 2432

Fax: 86-10-8226 2449

Email: sps@aqsiq.gov.cn

**Rotterdam Convention (PIC) DNA Pesticides (P)**

*Pesticide Import & Export Registration and Service Division*

*Mr Guibiao Ye, Division Director*

Institute for the Control of Agrochemicals (ICAMA),

No. 22, Maizidian Street Chaoyang, Beijing, P.R. China 100125

Tel: 86-10-5919 4302

Fax: 86-10-6507 1072

Email: yeguibiao@agri.gov.cn

**Stockholm Convention (POP) National Focal Point (P)**

Division of International Organizations.

*Mr Yue Ruisheng, Deputy Director General*

Department of International Cooperation

Ministry of Environment Protection

No. 115 Xizhimennei Nanxiaojie

Beijing, P.R. China 100035

Tel.: 86-10-6655 6492

Fax: 86-10-6655 6494

Email: yuers@zhb.gov.cn

**Basel Convention Competent Authority (CA)**

Ministry of Environmental Protection

115 Xizhimennei Nanxiaojie

Beijing, P.R. China 100035

Tel: 86-10-6655 6256/62 57

Fax: 86-10-6655 6252

Emails: zhong.bin@sepa.gov.cn or wangqian@sepa.gov.cn

**Selected country statistics**

Last updated: December 2010

Agricultural Population:	674 million	Agricultural Land:	121.7 million ha
GDP: US\$ 65 00 billion	Agric. GDP: 8.6%	GNI per capita: US\$ 4371	Undernourishment: 2%
Main crops grown: Rice, Wheat, Maize, Cotton			

GDP= Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement

## II. PLANT QUARANTINE

Last updated: December 2010

### Executive summary

During the period of 2009-2010, a number of regulations and standards were formulated. In addition, two new pests were added in the list of quarantine pests of entry based on pest risk analysis.

In 2009, the pest interception cases in the import cargoes reached the number of 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 and among which 217 were quarantine pests and 3437 were non-quarantine pests. These cases involved consignments coming from 187 countries and regions. China notified relevant countries of the non-compliance through bilateral or multilateral channels according to the ISPMs.

The national survey of Solenopsis mealybug (*Phenacoccus solenopsis* Tinsley) was conducted in 2009 and 2010 since the pest was first detected at the end of 2008. Based on the PRA and limited distribution in China, the new pest was added to the domestic quarantine pest list in 2010 and measures had been taken to control it. In 2010, Sunflower black stem disease (*Leptosphaeria lindquistii* Frezzi=*Phoma macdonaldii* Boerma) was detected in China first time, and the national survey was conducted since then. The new disease was added in the quarantine pest list.

In 2009 and 2010, great effort was also taken to control the codling moth for establishing and maintaining the Pest free areas (PFA) for codling moth. *Radopholus similes* had been successfully eradicated in several sites of Guangdong Province which was detected in seedling imported into China.

### List of key legislation/regulations/rules

- 1991 Law of the PRC on the entry and exit animal and plant quarantine
- 1992 Regulation on Plant Quarantine
- 1996 Regulation for the implementation of the entry and exit animal and plant quarantine
- 1995 Rules for the implementation of the regulation on plant quarantine
- 2001 Administrative Rules for the Risk Alerting and Fast Response of Entry-Exit Inspection and Quarantine
- 2007 Administrative Rules for the Risk Analysis of Entry Plants and Plant Products
- 2009 Phytosanitary Requirements for the Import of Host Plant of *Phytophthora ramorum* from Regulated Areas
- 2010 The Phytosanitary Requirements for Importing Yaccatree
- 2010 The procedures and management of report and promulgate of quarantine pest and new pest.

**Web sources for further information:** [www.agri.gov.cn](http://www.agri.gov.cn) and [www.aqsiq.gov.cn](http://www.aqsiq.gov.cn)

Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover domestic quarantine?	x		
Does phytosanitary legislation cover import quarantine?	x		
Does phytosanitary legislation cover export quarantine?	x		
Does phytosanitary legislation cover living modified organisms?		x	
Is plant quarantine a separate organization from animal quarantine?	x		
Other policy initiatives (under review/progress)			
Web source for further information: <a href="http://www.agri.gov.cn">http://www.agri.gov.cn</a> ; <a href="http://www.aqsiq.gov.cn">http://www.aqsiq.gov.cn</a>			

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest risk analysis (PRA)	MOA/CPD/NATESC AQSIQ/SAPQD SFA/FD/PMD
National standards development	MOA/CPD/NATESC AQSIQ/SAPQD SFA/FD/PMD
International notifications	MOA/CPD AQSIQ/SAPQD
<i>Import:</i>	
Import permits	AQSIQ/SAPQD MOA/CPD/NATESC SFA/FD
Import inspections	AQSIQ/SAPQD
Emergency action	MOA/CPD/NATESC SFA/FD/PMD AQSIQ/SAPQD
<i>Export:</i>	
Phytosanitary certificates	AQSIQ/SAPQD
Treatment of commodities	AQSIQ/SAPQD

Infrastructure	Year: 2010
Number of plant quarantine officers authorized to inspect/certify	25 000
Total qualified personnel for plant pest risk analysis	200
Number of quarantine offices	5 557
entry points (sea/air/land/mail = total)	598
post-entry plant quarantine containment facilities	10
other offices	4 949
Number of quarantine service diagnosis laboratories	63
In-country recognized pest diagnostics capabilities (incl. universities, etc.)	400
Number of laboratories for insect/mite (arthropod) samples	many
Number of laboratories for bacteria samples	many
Number of laboratories for virus samples	many
Number of laboratories for fungus samples	many
Number of laboratories for mycoplasma samples	many
Number of laboratories for nematode samples	many
Number of laboratories for plant/weed samples	many
Number of laboratories for other pests (snail, slug, rodents, etc.)	many

Pest-free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)
Overall management	MOA/CPD/NATESC
– surveillance	MOA/NATESC/Plant Quarantine Division
– management	MOA/CPD/NATESC
– certification	MOA/CPD/NATESC
List of target pest species and crops ISPM 4	Number of sites in 2010
Codling moth on apples	9 provinces
Fruit fly on citrus	1 provinces
List of target pest species and crops ISPM 10	Number of sites in 2010

### Key situation indicators

International trade		Year: 2010
Main import plant commodities	Main countries/areas of origin	Quantity (tons)
Soybean	USA, Brazil, Argentina, etc.	54.78 million
Tapioca	Thailand, Viet Nam, Indonesia, etc.	5.76 million
Barley	Canada, Australia, France, etc.	2.36 million
Main export plant commodities	Main destination countries	
Fruit	Southeast Asia, Russia, etc.	2.85 million
Potato	Southeast Asia, Russia, etc.	0.26 million
Soybean	Japan, Korea, USA, etc.	0.16 million

Cooperation Projects			
Title (Purpose/Target)	Donor	Amount	Years (start-end)
Title of government follow-up programmes		Amount	Years (start-end)

### Key operation indicators

Institutional functions	Year: 2010
Number of import permits issued	20 000
Number of import inspections carried out	
Number of emergency phytosanitary treatments taken on imports	
Number notifications of non-compliance	
Number of conventional phytosanitary certificates issued	1 360 000
Number of electronic phytosanitary certificates issued	0

Number of quarantine pests intercepted		Year: 2010
Top three commodities	Top three pest/commodity	# of interceptions
Log	<i>Xyleborus sp</i> (non-Chinese species)	887
	<i>Platypus sp</i> (non-Chinese species)	515
	<i>Coptotermes sp.</i> (non-Chinese species)	257
Soy bean	<i>Ambrosia trifida</i>	480
	<i>Sorghum halepense (its hybrides)</i>	468
	<i>Euphorbia dentata</i>	453
other timber	<i>Xyleborus sp</i> (non-Chinese species)	397
	<i>Platypus sp</i> (non-Chinese species)	244
	<i>Coptotermes sp.</i> (non-Chinese species)	208

Lists of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of quarantine pests	2010	153	243	41
Number of regulated non-quarantine pests				
Number of regulated import articles				
Website for the above information: www.agri.gov.cn www.aqsiq.gov.cn				

Pest risk analysis (PRA)	Insects	Pathogens	Plants
Number of PRA completed and documented (according to ISPM)	10	6	1
Web source for further information: www.agri.gov.cn www.aqsiq.gov.cn			

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Updated the quarantine pest list of entry (2007). Updated the domestic quarantine pest list (2008). Updated the domestic quarantine pest list (2009). Updated the domestic quarantine pest list (2010).
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
ISPM 01 Principles of plant quarantine as related to international trade			x				x	2006
ISPM 02 Guidelines for pest risk analysis			x				x	2007
ISPM 03 Code of conduct for the import and release of exotic biological control agents		x				x		2005
ISPM 04 Requirements for the establishment of pest free areas		x				x		1995
ISPM 05 Glossary of phytosanitary terms			x				x	2010
ISPM 06 Guidelines for surveillance			x				x	1997
ISPM 07 Export certification system			x				x	1997
ISPM 08 Determination of pest status in an area			x				x	1998
ISPM 09 Guidelines for pest eradication programmes			x				x	1998
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites			x				x	1999
ISPM 11 Pest risk analysis for quarantine pests			x				x	2004
ISPM 12 Guidelines for phytosanitary certificates			x				x	2001
ISPM 13 Guidelines for the notification of noncompliance and emergency action			x				x	2001
ISPM 14 The use of integrated measures in a systems approach for pest risk management			x				x	2002
ISPM 15 Guidelines for regulating wood packaging material in international trade			x				x	2002
ISPM 16 Regulated non-quarantine pests: concept and application			x		x			2002
ISPM 17 Pest reporting			x				x	2002
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure		x			x			2003
ISPM 19 Guidelines on lists of regulated pests			x				x	2003
ISPM 20 Guidelines for a phytosanitary import regulatory system			x				x	2004
ISPM 21 Pest risk analysis for regulated non-quarantine pests			x			x		2004
ISPM 22 Requirements for the establishment of areas of low pest prevalence		x			x			2005
ISPM 23 Guidelines for inspection			x				x	2005
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measure			x				x	2005
ISPM 25 Consignments in transit			x				x	2006
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)			x			x		2006
ISPM 27 Diagnostic protocols for regulated pests			x			x		2006
ISPM 28 Phytosanitary treatments for regulated pests			x				x	2007
ISPM 29 Recognition of pest free areas and areas of low pest prevalence			x			x		2007
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (tephritidae)			x			x		2008
ISPM 31 Methodologies for sampling of consignments			x				x	2008
ISPM 32 Categorization of commodities according to their pest risk			x			x		2009
ISPM 33 Pest free potato (Solanum spp.) micro-propagative material and minitubers for international trade			x		x			2010
ISPM 34 Design and operation of post-entry quarantine stations for plants			x		x			2010
Comments/constraints: –								



### III. SURVEILLANCE, PEST OUTBREAKS AND INVASIVE SPECIES MANAGEMENT

Last updated: December 2010

#### Executive summary

During the period of 2009-2010, pest surveillance and monitoring were strengthened in high risk areas such as coastal areas, border regions, airports, sea ports, and distribution centers of imported agricultural products.

The national-wide surveillance of the fruit fly programme was carried out continuously. National or industry standards related to the plant quarantine pests surveillance had been formulated. The forecasting methods for main crop pests had also been sorted and unified. In addition, the TV programmes on the pest forecasting and preventing technology were broadcasted by 31 provinces, covering more than 1,500 counties.

The management of the pest data collection, transmission and utilization had improved, thanks to the establishment of the China Crop Pests Management Information System. Meanwhile, large-scale training events for farmers on pest prevention were organized. As a result, serious harmful pests such as locust, migratory rice pests, rice borer, rice blast, wheat stripe rust, and meadow moth, etc. were effectively suppressed.

#### List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions

2010 The procedures and management of report and promulgate of quarantine pest and new pest.

**Web sources for further information:** [www.natesc.org.cn](http://www.natesc.org.cn) and [www.cropipm.com](http://www.cropipm.com)

Policies regarding invasive/migratory species management	Yes	No	Don't know
National strategy to control serious field pest outbreaks?	x		
National strategy to control migratory or periodically occurring pests?	x		
National strategy to eradicate serious newly invaded exotic pests?	x		
Other policies: (e.g. subsidies, etc.): In 2009-2010, the amount of \$ 380 million RMB Yuan were subsidized from national government for control of migratory and grain pests			
Web source for further information: <a href="http://www.agri.gov.cn">www.agri.gov.cn</a>			

Organization of functions related to surveillance pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field/storage pest outbreaks</i>	(e.g. BPH, boll worm, etc.)
Response strategy/plans	MOA/CPD/PPQD, NATESC, SFA MOA/NATESC + Provincial Plant Protection Stations
Surveillance	MOA/NATESC/ Pest Forecast Division, SFA
Control	MOA/NATESC/ Pest Management Division, SFA
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	MOA/CPD/PPQD, NATESC, SFA
Surveillance	MOA/NATESC/Pest Forecast Division, SFA
Control	MOA/NATESC/Pest Management Division, SFA
<i>New exotic pest eradication</i>	(e.g. coconut beetle)

Response strategy/plans	MOA/CPD/PPQD, NATESC, SFA
Surveillance	MOA/NATESC/Plant Quarantine Division, SFA
Control/eradication	MOA/NATESC/Plant Quarantine Division, SFA
Reporting to bilateral or international organizations	MOA/CPD/PPQD, AQSIQ/SAPQD/PQD

Infrastructure	Year: 2009	Year: 2010
Number of designated staff for <b>surveillance</b> of field pests of national importance	16 963	18 165
Number of designated staff for <b>surveillance</b> of migratory and periodically occurring pests	16 963	18 165
Number of designated staff for <b>surveillance</b> of invasive species	8 359	7 939
Number of designated staff for <b>control</b> of field pests of national importance	21 412	22 194
Number of designated staff for <b>control</b> of migratory and periodically occurring pests	21 412	22194
Number of designated staff for <b>eradication</b> of invasive species	8 359	7 939

### Key situation and operation indicators

(Outbreaks and invasions in the past 2 years)

New exotic species found established in the country	Insects	Pathogens	Weeds
Total number for 2010 [most recent]	1	1	
Total number for 2009 [year before]	1		
Total number on record:	2	1	

Eradication or internal quarantine actions taken against economically important species			
Name of species	<i>Radopholus similes</i>		
Year of first discovery	2009		
Pathway	Seedling		
Location of first discovery	Guangdong Province		
Area affected [ha]	5		
Area treated [ha]	30		
Control method	eradication		
Expenditures	2.5 million US\$		

Pest outbreak actions	Outbreak 1		Outbreak 2		Outbreak 3		Outbreak 4	
Name of species	BPH		WBPH		Rice Leaf Folder		SRBSDV	
Year of outbreak	2009	2010	2009	2010	2009	2010	2009	2010
Area affected (million ha)	10.4	12.0	9.4	9.6	20.9	21.3	0.3	1.3
Estimated damage (million tons)	0.41	0.41	0.39	0.35	0.86	0.69	NA	NA
Area treated by government [million ha]	1	2.2	0.3	0.5	NA	NA	NA	NA
Expenditures by government [million \$]	9.2	16	3.4	4	NA	NA	NA	NA
Control method	Pesticides		Pesticides		Pesticides		Agricultural control	
More information								

**Progress and constraints**

<b>Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)</b>
<ul style="list-style-type: none"><li>• Both the national &amp; local governments increased financial subsidizes on the management of major crop pests during 2009 and 2010.</li><li>• National crop protection project funded the construction of over 30 plant protection stations at county level.</li></ul>
<b>Main constraints (personnel, infrastructure, administrative, operational, training, etc.)</b>
<ul style="list-style-type: none"><li>• Most plant protection stations at grass roots have limited operational funding resources.</li><li>• Plant protection staff at county level or below needed professional training.</li></ul>

#### IV. PEST MANAGEMENT

Last updated: December 2010

##### Executive summary

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. Among them, the locusts, rice brown plant hopper (*Nilaparavata lugans*), rice leaf folders (*Chaphalocrocis medinalis*), meadow moth (*Loxostege sticticalis* L.), rice borers, and cabbage diamond back moths (*Plutella xylostella*) were the most severe and destructive ones.

The locusts hit about 1.7 million hectares both in 2009 and 2010. Meadow moth 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, 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 migratory pests- locusts, meadow moth, rice brown hopper, rice leaf roller and regionally epidemical diseases- wheat stripe rust, rice blast and rice sheath blight, etc.

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 programmes coordinated by NATESC have been supporting the implementation of key IPM technologies in major crops and major pests. Biological and ecological control measures such as using microorganisms and reclaiming locust habitats were extensively promoted in recent years.

The IPM technologies on rice were well developed and widely applied in China. Seed treatments with fungicides and insecticide were commonly used by farmers to prevent the infestations of rice seedling diseases and insects. Bio-diversity strategies were implemented in about 6.67 million hectares annually for rice blast management in 2009 and 2010. Light trips were extended to 1.2 million hectares of rice fields to kill moths of rice borers and leaf folders.

During the period of 2009-2010, wheat IPM strategies focused on prevention and ecological approaches. In the regions where the pathogens of wheat stripe rust can over-winter and over-summer, the percentage of seed coating or treatment with fungicides was increased to over 90% in 2010.

In corn, biological technologies such as the use of *Beauveria bassiana* for killing over-winter larvae of corn borer, artificial release of *Trichogramma* spp in fields have been extended to above 3 million hectares since 2009.

In cotton, the transgenic Bt cotton has been continually applied over 3.4 million hectares in China.

## List of key legislation/regulations/rules for pest management

—

**Web sources for further information:** www.agri.gov.cn; www.cropipm.com.

Policies regarding pest management	Yes	No	Don't know
Do you have policies encouraging organic or low-pesticide use production	x		
Is IPM specifically mentioned in laws or policy documents?	x		
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?	x		
Is pest management extension separate from general extension?		x	
Other policies: (subsidies, production inputs, etc.)			
Web source for further information: <a href="http://www.ppq.gov.cn">http://www.ppq.gov.cn</a>			

Organization of pest management function	Responsible organizational unit (ministry/department/unit)
Policy development	MOA/CPD/PPQD, NATESC, SFA
Pest management research	MOA/NATESC, SFA
Control recommendations	MOA/NATESC, SFA
Pest management extension	MOA/NATESC, Plant protection station at county, prefecture and provincial levels. SFA
IPM training	MOA/NATESC, Plant protection station at county, prefecture and provincial levels. SFA
GAP training	Plant protection station at county, prefecture and provincial levels.

Infrastructure	Year: 2010
Number of technical officers for pest management	29 512
Number of central, regional, provincial or state offices	600
Number of district and village level field offices	10 865
Number of field/extension agents for pest management advice	19 026
Number of field/extension agents trained in IPM-FFS facilitation	1 036
Number of government biocontrol production/distribution facilities	NA
Number of government biopesticide production/distribution facilities	NA
Number of general extension staff involved in pest management	29 512
Number of designated plant protection technical officers for extension	29 512

## Key situation and operation indicators

Pest management	Yes	No	Don't know
Does the country have a National IPM Programme? <i>If yes, give Name and Address of IPM Programme:</i> NATESC, MOA	x		
Does the country have specific IPM extension programmes? <i>If yes, in which crops?:</i> Vegetables and Fruits	x		
Does the country have specific IPM research programmes? <i>If yes, in which crops?:</i>		x	
Does the country have specific GAP extension programmes? <i>If yes, in which crops?:</i> Apple	x		
Does the country have specific GAP research programmes? <i>If yes, in which crops?:</i>		x	

Market shares (estimated value, volume or area under control)	Year: 2010
Size of chemical pest control market	295.9 M ha
Size of bio-pesticides market	38.69 M ha
Size of biological control agents market	1.25 M ha

Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop	Rice [2009]	Vegetables [2009]	Cotton [2009]
Name(s) of pest(s)	Rice borers, BPH, Leaf feeders, Rice blast, Sheath blight	Leaf miners, Cater-pillars, DBM, White-flies, Soil and Leaf diseases	Cotton bollworm, Aphids, <i>Lygus</i> bugs
Estimated crop loss	627 million tons	1 283 million tons	36.1 million tons
Affected area	11.93 million ha	26 million ha	2.64 million ha
Number of pesticide applications or amount of pesticide used	12.73 million ha	2.6 million ha	1.87 million ha
Government action taken	Training farmers	Training farmers	Training farmers

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Pesticide risk reduction & IPM-FFS	FAO/Sweden	US\$ 150 000	2009-2012
IPM demonstration for substituting Dicofol in controlling citrus, apple and cotton mites	GEF/UNDP	US\$ 2 million	2009-2013
Purpose/target of government follow-up programmes		Amount	Years (start-end)
Matching funds for IPM-FFS in vegetables and fruits		US\$ 120 000	2009-2010

Pest management extension	Year: 2010
Number of farmers trained in IPM during the year	35 760
Number of IPM-FFS conducted during the year	120
Number of farmers trained in GAP standards during the year	NA
Area under IPM/low pesticide management [ha]	NA
Area under organic/pesticide-free management [ha]	NA
Crops in which IPM or other ecology friendly programmes are successfully implemented: Rice, cotton, wheat, locusts	
Crops grown organic/pesticide-free: NA	

## Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
<ul style="list-style-type: none"> <li>Both the national &amp; local governments increased financial subsidies on the management of major crop pests during 2009 and 2010.</li> <li>National crop protection project funded the construction of over 30 plant protection stations at county level.</li> </ul>
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
<ul style="list-style-type: none"> <li>Most plant protection stations at grass roots have limited operational funding resources.</li> <li>Plant protection staff at county level or below need professional training.</li> </ul>

## V. PESTICIDE MANAGEMENT

Last updated: December 2010

### Executive summary

During the period of 2009-2010, in order to protect people's health and environment's safety, pesticide management was strengthened in China.

The registration and production certificates of five highly toxic organophosphorus pesticides including Methamidophos, Parathion-methyl, Parathion, Monocrotophos, Phosphamidon were repealed in China. The country also strictly prohibited the sale and application of this type of pesticides, encouraged and promoted the research and development of low-risk substitutes for highly toxic pesticides, implemented highly toxic pesticides replacement programme, enhanced the public awareness of safe pesticides application and choosing medium and low toxic pesticides. The safety control of pesticide and surveillance of pesticides residues in food and environment were also attached great attention.

China revised and improved the approval system for pesticides registration. A number of rules and regulations were formulated. These included 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).

During the period of 2009-2010, China implemented the "Sino-German Cooperative Project on Pesticide Wastes Management" in collaboration with the German government. The implementation of this project had a positive influence on the improvement of the pesticide management in China. Emphasis was placed on appropriate pesticide waste disposal technologies and methods that conformed to the situation of China. 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.

### List of key legislation/regulations/rules

#### 1982 Pesticide Registration Regulation

1989 Data Requirement of Pesticide Registration

1995 Pesticide Advertisement Inspection Measures (MOA and SA Industry & Commerce)

#### 1997 Regulation on Pesticide Administration

1998 Implementation Rule of Regulation on Pesticide Administration (Min. Chem. Industry)

1999 Implementation Rule of Regulation on Pesticide Administration (MOA)

2007 Measures for the Administration of Pesticide Labels and Instructions (MOA)

2007 The Decision on Amending the Measures for Implementing the Regulation on Pesticide Administration (MOA).

2007 Revised Data Requirement for Registration of Pesticide (MOA).

2007 Revision and Approval for Pesticide Name (MOA).

2007 Nomenclature for Pesticides (MOA).

2007 Content of Active Ingredient for Pesticide (MOA).

**Web source for further information:** [www.chinapesticide.gov.cn](http://www.chinapesticide.gov.cn)

Policies regarding pesticide management	Yes	No	Don't know
Do you have national pesticide reduction targets? <i>If yes, what is the target: _____</i> <i>Note: Reduce the production of high toxic pesticides and persistence organic pollution pesticides</i>	See Note		
Have you ratified the Rotterdam (PIC) Convention?	x		
Have you ratified the Stockholm (POP) Convention?	x		
Have your ratified the Basel Convention? (hazardous wastes)	x		
Have your ratified the Montreal Protocol? (MeBr phasing-out)	x		
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?		x	
Have you adopted Good Laboratory Practices (GLP)?	x		
<i>Pesticide registration</i>			
Do you require pesticides to conform to relevant FAO or WHO specifications?	x		
Do you allow the “me-too” registration and sale of generic pesticides?	x		
Do you require data on product equivalence for generic registration?	x		
Do you conduct country-specific risk assessments for...			
occupational risks?	x		
consumer risks?	x		
environmental risks?	x		
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labelling?		x	
Do you accept evaluation results from other countries?		x	
Do you accept field studies conducted in other countries?		x	
Do you require environmental fate studies?	x		
<i>Incentives/disincentives</i>			
Do you have a special tax on pesticides to cover externality costs?		x	
Do you subsidize or provide low-cost pesticides?		x	
Do you subsidize or provide low-cost biopesticides?		x	
Other policies:			
Web source for further information: –			

Organization of pesticide management function	Responsible organizational unit (ministry/department/unit)
Legislation	National Legislative Bureau
Registration	MOA/ICAMA and ICAs
Licensing of shops	CAMTC /MOA
Licensing of field applicators	
Enforcement/inspections	AQSIQ, State Admin. for Industry and Commerce (SAIC), MOA
Testing of pesticide efficacy	State PPI, PPS
Development of pesticide use recommendations	MOA/ICAMA
Safe use training/extension	MOA/NATESC, + State PPS
Food residue monitoring	MOA/
Environmental monitoring	MOA/ICAMA
Health monitoring	MOA/ICAMA
<i>Other Stakeholders:</i>	
Pesticide Industry Association	Crop Life China, China Pesticide Industry Assoc. China Pesticide Development and Application Assoc.
Civil Society Organizations (NGO, etc.)	



Infrastructure *	Year: 2010
Number of registration officers	445 (ICAMA:90)
Number of enforcement officers	20 000
Number of department quality control laboratories	62
Number of quality control laboratory personnel	510
Number of department residue analysis laboratories	56
Number of residue laboratory personnel	448
	Total : ~30 000

\*only include the laboratories belonging to MOA

### Key situation indicators

Pesticide trade: 2010	Tons	US\$ '000 Value
Imports	56 500	171 000
Manufacture	584 000	3 719 000
Export	422 800	2 584 000
Domestic use/sales	350 000	1 200 000
Pesticide use profile: 2010	Tons (a.i./formulation to be specified)	US\$ '000 Value
Agriculture		
Chem. Insecticides	130 000 (a.i)	4 330 000 000
Chem. Fungicides	71 000 (a.i)	2 420 000 000
Chem. Herbicides	89 100 (a.i)	3 040 000 000
Chem. Rodenticides	2 400 (a.i)	72 000 000
Chem. Others: e.g.: molluscicide, acaricide	9 700 (a.i)	290 000 000
Other: e.g. Avamectrin, Bt, Neem	40 000 formulation	200 000 000
Other purposes		
TOTAL	300 000	10 400 000 000

### Post registration monitoring

Testing, quality control and effects in the field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?	x		
Do you have significant problems with pesticide resistance?	x		
Do you have a list of pesticides under close observation for problems	x		
Source for more information: <a href="http://www.chinapesticide.gov.cn">www.chinapesticide.gov.cn</a>			

Health and environmental information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?	x		
Do you have a system to monitor pesticide residues in food?	x		
Do you have a system to monitor pesticide residues in the environment?		x	
Do you have significant problems of environmental contamination from pesticides?	x		
Do you have data on pesticides effects on wildlife and ecosystems?	x		
Source for more information: –			

Pesticide disposal	Yes	No	Don't know
Do you have system to collect and safely dispose of used containers and small quantities of left-over pesticides?		x	
Do you have an inventory of outdated and obsolete pesticides in the country? (eg. banned and no longer traded, but still in storage)	x		
Do you have illegal trade in pesticides? if yes: what is the estimated amount: _____	x		
Source for more information: –			

### Key operation indicators

Registration/regulation/monitoring	Year: 2010	
	a.i.*	Trade name
Number of registered pesticide products	650	0
Number of registered biopesticides (Avamectrin, Bt, Neem, etc.)	150	0
Number of restricted-use pesticides/formulations	21	
Number of banned pesticides	18	
Number of licensed outlets		
Number of licensed field applicators (professional and/or farmers)	4 0000	
Number of licensing violations reported during year	600	
Number of quality control analyses conducted during year	15 000	
Number of food samples analyzed for pesticide residues during year	12 000	
Number of samples exceeding MRL	250	
Number of environmental samples analyzed for pesticide residues	1 000	

\* active ingredient

Pesticides restricted in recent years (2009-2010)	
Year	Name of active ingredient or hazardous formulation
1982, 2002	Methamidophos, Parathion-methyl, Parathion, Monocrotophos, Phosphamidon, Phorate, Isofenphos-methyl, Terbufos, Phosfolan-methyl, Sulfotep, Carbofuran, Demeton, Aldicarb, Ethoprophos, Phosfolan, Coumaphos, Fonofos, Isazofos, Fenamiphos(Banned use on fruit, vegetable, tea and herbal medicine)
1982	Phorate (Restricted for seed dressing)
1982	Carbofuran (Restricted for broadcasting and seed dressing)
	Pyrethroid insecticides (Banned use on paddy)
	Lindan (Restricted for wheat or in wastelands)
	Fenvalerate, Dicofol (Banned use on tea)
2009	Fipronil was banned using on paddy

Pesticides banned in recent years (2009-2010)	
Year	Name of active ingredient
1970's	Arsena, Acetate, Mercury compounds, dieldrin, aldrin
1982	Fluoroacetamide
1983	BHC, DDT, Dibromochloropropane
1984	Ethylene dibromide
1986	Cyhexatin
1990	Chlordimeform (Promugated 1990 and enforced 1992)
1990	
1991	Tetramine, Silatrane
1995	Gliflor
1997	Nitrofen ( Promulgated 1997, production banned 2000, use banned 2001)
2007	Methamidophos, Parathion-methyl, Parathion, Monocrotophos, Phosphamidon

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Sino-German Pesticide Quality Control Project	Germany Government	\$3 750 000	1995-2002
Sino-German Obsolete Pesticide Management Project	Germany Government	€2 550 000	2004-2009
Sino-Dutch Minimize	Holland Government	€2 849 461	2003-2007
Sino-US Pesticide Management Project	China and USA Government		2008-
Purpose/target of government follow-up programmes		Amount	Years (start-end)

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
In 2010, taking the advantage of medias such as broadcast, newspapers and television to publicize knowledge about safe application of pesticide, 40000 farmers and pesticide retailers were trained, and 30000 copies of hanging charts of safe application of pesticides, 20000 copies of safe application of pesticide handbook were compiled and distributed.
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

## VI. ADDITIONAL ISSUES OF INTEREST

### 1. Genetically Modified Crops

Genetically Modified Crops	
Name of GMO Crop	Area under cultivation [ha in 2010]
Cotton	3 542 000

### 2. International Cooperation

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.

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.

## 2.5 DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA

### I. GENERAL INFORMATION

Last updated: December 2010

#### **Overall executive summary**

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.

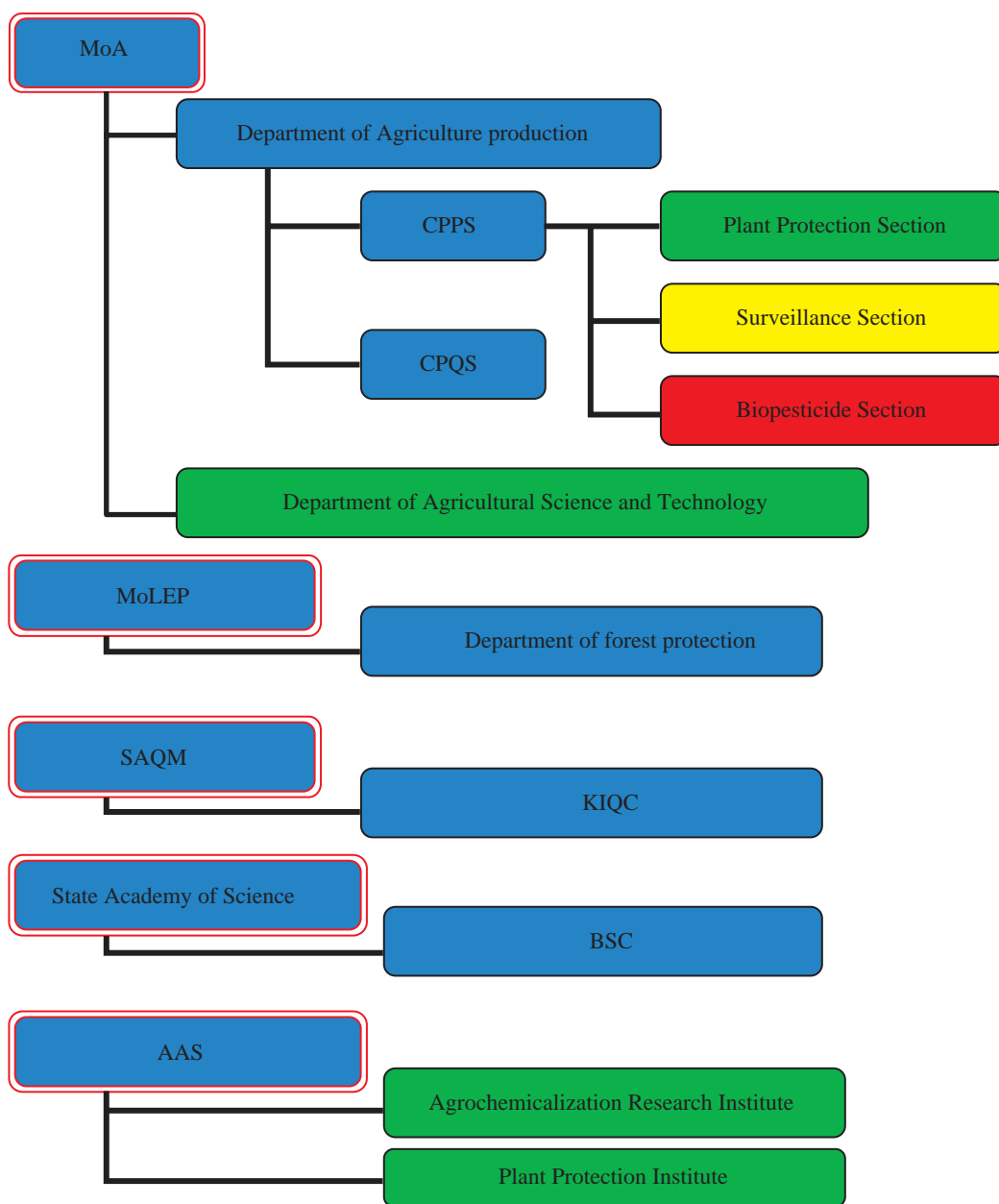
During the farming season when pests occur and cause damage to crops, the MoA will form a pest management group to give advice on pest management, based on the pest surveillance information collected from every province and county.

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.

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

The MoA also thoroughly eradicated newly occurred pests such as *Trionymus agrestis*, *Cephalosporium* sp and *Autogrpha* sp in some areas.

**Plant protection organization chart**



*Color Code:* Phytosanitation Outbreak Management Pest Management Pesticides NPPO

**Important contact addresses**

Last updated: December 2010

**Responsible ministry/ministries**

Ministry of Agriculture

*Mr CHOE Guang, Senior officer*

Jungsong-dong, Cenral District

Pyongyang City, Korea,DPRK

**Responsible Department**

–

**National Plant Protection Organization (NPPO)**

–

**Address for nominations**

–

***Operational offices:*****Plant protection**

Central Plant Protection Station

*Mr LI Un Sik, Director*

Ministry of Agriculture

Janghun Dong No. 1 Mangyongdae District

Pyongyang City, Korea, DPR

Fax: (+850) 2 381 4427; 2 381 4081

**Pesticide registration**

Agrochemicalization Research Institute

*Mr KIM Chi Yong, Director*

Academy of Agriculture Sciences

Chongye-dong, Ryongsong District

Pyongyang City Korea, DPR

Tel: (+850) 2 18111 (381 8557)

Fax: (+850) 2 381 2100

Email: ilsop@co.chesin.com

**Official international contact points****National Plant Protection Organisation (NPPO) contact point (for IPPC/APPPC)**

D.P.R. Korea National Committee for FAO

*Mr RI Song Chol, Coordinator*

P.O. Box 44

Jungsong-dong, Central District

Pyongyang City, Korea, DPR

Tel: (+850) 2 (through operator)

Fax: (+850) 2 381 4460

Email: kyongjun.ryu@fao.org

Language(s): English

Contact point received: –

Source: NPPO Directory

Central Plant Protection Station

*Mr LI Un Sik, Director*

Ministry of Agriculture

Janghun Dong No. 1 Mangyongdae District

Pyongyang City, Korea, DPR

Fax : (+850) 2 381 4427; 2 381 4081

Source: Country Report

**WTO-SPS contact point**

–

**Rotterdam Convention (PIC) DNA Pesticides (P)**

National Committee for FAO

*Mr RI Song Chol, Coordinator*

P.O. Box 44

Jungsong-dong, Central District

Pyongyang City, Korea, DPR

Tel: (+850) 2 (through operator)

Fax: (+850) 2 381 4460

Email: kyongjun.ryu@fao.org

**Stockholm Convention (POP) national focal point (P)**

National Coordinating Committee for Environment

*Mr SONG Se Il, Coordinator*

P.O. Box 44

Jungsong-dong, Central District

Pyongyang City, Korea, DPR

Tel: (+850) 2 (through operator)

Fax: (+850) 2 381 4460



**Basel Convention Competent Authority (CA) and focal point**

National Coordinating Committee for Environment

*Mr SONG Se Il, Coordinator*

P.O. Box 44

Jungsong-dong, Central District

Pyongyang City, Korea, DPR

Tel: (+850) 2 (Through operator)

Fax: (+850) 2 381 4460

**Montreal Protocol focal point**

National Coordinating Committee for Environment

*Mr SONG Se Il, Coordinator*

P.O. Box 44

Jungsong-dong, Central District

Pyongyang City, Korea, DPR

Tel: (+850) 2 (through operator)

Fax: (+850) 2 381 4460

**Selected country statistics**

Agricultural population:	7.0 million	Agricultural land: 1.85 million ha	
GDP: –	Agric. GDP: –	GNI per capita: –	Undernourishment: –
Main crops grown: Rice, maize, soyabean, potato, wheat, and barley			

GDP = Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement;

## II. PLANT QUARANTINE

Last updated: December 2010

### Executive summary

The National Plant Protection Organization (NPPO) of the Democratic People's Republic of Korea (DPRK) recognizes the importance of PRA in plant protection in the country. The NPPO assesses the risk of pests corresponding with their real condition. The Central Plant Protection Station (CPPS), the Ministry of Agriculture, which is charge of national plant protection, and the Korea Export & Import Commodity Inspection & Quarantine Committee(KIQC), and the State Administration for Quality Management (SAQM) jointly assess the risk of pests occurred in the plant materials and manage the risks of pests, based on the results of pest risk analysis.

### List of key legislation/regulations/rules

- 1997 Legislation of the Border Animal and Plant Quarantine" by the decision of Standing Committee of the Supreme People's Assembly, DPRK, No.89 (16 July 1997)
- 1998 Regulations of the Border Animal and Plant Quarantine" by the Cabinet of DPRK (14 February 1998)
- 2008 Minor Regulations of the Border Animal and Plant Quarantine by the MOA (September 2008)

### Web source for further information: –

Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover domestic quarantine?	x		
Does phytosanitary legislation cover import quarantine?	x		
Does phytosanitary legislation cover export quarantine?	x		
Does phytosanitary legislation cover living modified organisms?	x		
Is plant quarantine a separate organization from animal quarantine?	x		
Other policy initiatives (under review/progress)			
Web source for further information: –			

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest risk assessment (PRA)	KIQC
National standards development	MOA/MOLEP
International notifications	CPPS/SAQM
<i>Import:</i>	
Import permits	CPQM/SAQM/BSC
Import inspections	SAQM/CPQM/BSC
Emergency action	MOA/CPPS
<i>Export:</i>	
Phytosanitary certificates	CPQS/SAQM/BSC
Treatment of commodities	SAQM

**Note:**

MOA	Ministry of Agriculture
MOLEP	Ministry of Land & Environment Protection
CPPS	Central Plant Protection Station
CPQS	Central Plant Quarantine Station
KIQC	Korea Export & Import Commodity Inspection & Quarantine Committee
SAQM	State Administration for Quality Management
BSC	Bio-Safety Committee
AAS-PPI	Academy Agriculture Science-Plant Protection Institute
ARI	Agrochemicalization Research Institute

Infrastructure	Year: 2010
Number of plant quarantine officers authorized to inspect/certify	56
Total qualified personnel for plant pest risk assessment	32
Number of quarantine offices	30
– entry points (sea/air/land/mail = total)	7/1/17/1 = 26
– post-entry plant quarantine containment facilities	2
– other offices	2
Number of quarantine service diagnosis laboratories	7
In-country recognized pest diagnostics capabilities (incl. universities, etc.)	
Number of laboratories for insect/mite (arthropod) samples	Many
Number of laboratories for bacteria samples	Many
Number of laboratories for virus samples	Many
Number of laboratories for fungus samples	Many
Number of laboratories for mycoplasma samples	Many
Number of laboratories for nematode samples	Many
Number of laboratories for plant/weed samples	Many
Number of laboratories for other pests (snail, slug, rodents, etc.)	Many

Pest-free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)
Overall management	MOA/MOLEP
– surveillance	CPPS/SAQM
– management	CPPS
– certification	CPPS/SAQM
List of target pest species and crops ISPM #4	Number of sites in 2010
List of target pest species and crops ISPM #10	Number of sites in 2010

**Key situation indicators**

International trade		Year: 2010
Main import plant commodities	Main countries/areas of origin	Quantity (tons)
Main export plant commodities	Main destination countries	Quantity (tons)

Cooperation projects			
Title (Purpose/target)	Donor	Amount	Years (start-end)
Title of government follow-up programmes		Amount	Years (start-end)

### Key operation indicators

Institutional functions	Years: 2009-2010
Number of import permits issued	
Number of import inspections carried out	
Number of emergency phytosanitary treatments taken on imports	
Number of notifications of non-compliance	
Number of conventional phytosanitary certificates issued	
Number of electronic phytosanitary certificates issued	

Number of quarantine pests intercepted		Years: 2009-2010
Top three commodity	Top three pest/commodity	# of interceptions

List of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of quarantine pests	2004	79	63	33
Number of regulated non-quarantine pests				
Number of regulated import articles				
Web source for further information: –				

Pest risk analysis (PRA)	Insects	Pathogens	Plants
Number of PRA completed and documented (according to ISPM)			
Web source for further information: –			

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
Training on PRA.

Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
ISPM 01 Principles of plant quarantine as related to international trade			x			x		
ISPM 02 Guidelines for pest risk analysis			x		x			
ISPM 03 Code of conduct for the import and release of exotic biological control agents		x				x		
ISPM 04 Requirements for the establishment of pest free areas		x		x				
ISPM 05 Glossary of phytosanitary terms			x				x	
ISPM 06 Guidelines for surveillance			x			x		
ISPM 07 Export certification system			x				x	
ISPM 08 Determination of pest status in an area			x				x	
ISPM 09 Guidelines for pest eradication programmes		x		x				
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites			x				x	
ISPM 11 Pest risk analysis for quarantine pests			x		x			
ISPM 12 Guidelines for phytosanitary certificates			x				x	
ISPM 13 Guidelines for the notification of noncompliance and emergency action			x				x	
ISPM 14 The use of integrated measures in a systems approach for pest risk management			x	x				
ISPM 15 Guidelines for regulating wood packaging material in international trade			x			x		
ISPM 16 Regulated non-quarantine pests: concept and application			x	x				
ISPM 17 Pest reporting			x			x		
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure			x	x				
ISPM 19 Guidelines on lists of regulated pests			x		x			
ISPM 20 Guidelines for a phytosanitary import regulatory system			x				x	
ISPM 21 Pest risk analysis for regulated non-quarantine pests			x		x			
ISPM 22 Requirements for the establishment of areas of low pest prevalence			x				x	
ISPM 23 Guidelines for inspection			x			x		
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures			x			x		
ISPM 25 Consignments in transit			x			x		
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)			x		x			
ISPM 27 Diagnostic protocols for regulated pests			x		x			
ISPM 28 Phytosanitary treatments for regulated pests								
ISPM 29 Recognition of pest free areas and areas of low pest prevalence								
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (Tephritidae)								
ISPM 31 Methodologies for sampling of consignments								
ISPM 32 Categorization of commodities according to their pest risk								
ISPM 33 Pest free potato ( <i>Solanum</i> spp.) micropropagative material and minitubers for international trade								
ISPM 34 Design and operation of post-entry quarantine stations for plants								
Comments/constraints: –								

### III. SURVEILLANCE, PEST OUTBREAKS AND INVASIVE SPECIES MANAGEMENT

Last updated: December 2010

#### Executive summary

The National Plant Protection Organization (NPPO) of the Democratic People's Republic of Korea (DPRK) has developed its own well-ordered pest survey system on crops, forests and other plants. Using this system, it surveys and records the occurrences of local pests of plants. The forecasting section of the Central Plant Protection Station (CPPS) assesses the state of the pest outbreaks in crops in the country. It also has its forecasting staff at the plant protection site in each county.

As well, the Provincial Plant Protection Station which has surveillance spots, regularly surveys and records pest outbreaks. It reports data to the higher agency. On the other hand, the forecasting section of the CPPS has its own 10 surveillance branches, based on the difference of the agricultural meteorology. Each branch independently surveys, records, stores and reports on the pest outbreaks in its area. During the main farming season, the surveillance personnel surveys pest occurrences and reports to the CPPS on the survey results every 5 days.

In case of the outbreak of a new pest, they will request the CPPS, the Ministry of Agriculture (MoA), and professional institutes to identify the pest species and give advice on methods to eradicate it.

The Ministry of Land and Environment Protection has a system in every county to survey, record and report on the state of the pest outbreak in the forest.

In 2009 and 2010, unexpected pests broke out and damaged crops in DPRK.

Soil born pests such as cut worm and white grubs occurred abundantly in maize and vegetable farms and caused serious damage to the overall areas. *Trionymus agrestis* in the eastern area as well as *Cephalosporium* sp and *Autogrpha* sp, the new insect pests in the southern area, broke out and caused damage to maize and soybean. Surveys were conducted in the areas hit by the pests and the survey reports were sent to the CPPS.

#### List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions

2005 Regulation of Crop protection (21 February 2005)

2005 Minor Regulation for Crop Protection (16 August 2005)

#### Web source for further information: –

Policies regarding invasive/migratory species management	Yes	No	Don't know
National strategy to control serious field pest outbreaks?	x		
National strategy to control migratory or periodically occurring pests?	x		
National strategy to eradicate serious newly invaded exotic pests?	x		
Other policies: (e.g. subsidies, etc.):			
Web source for further information:			

Organization of functions related to surveillance pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field/storage pest outbreaks</i>	(e.g. BPH, bollworm, etc.)
Response strategy/plans	CPPS, MOA/MOLEP
Surveillance	Cooperative farm unit, county unit, provincial unit under guidance of CPPS, MOA and MOLEP
Control	CPPS, MOA/MOLEP
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	CPPS, MOA/MOLEP
Surveillance	Cooperative farm unit, county unit, provincial unit under guidance of CPPS, MOA and MOLEP
Control	MOA/MOLEP
<i>New exotic pest eradication</i>	(e.g. coconut beetle)
Response strategy/plans	MOA/MOLEP
Surveillance	CPQS/SAQM
Control/eradication	MOA/MOLEP
Reporting to bilateral or international organizations	CPPS, MOA/MOLEP

Infrastructure	Year: 2010
Number of designated staff for <b>surveillance</b> of field pests of national importance	390
Number of designated staff for <b>surveillance</b> of migratory and periodically occurring pests	390
Number of designated staff for <b>surveillance</b> of invasive species	390
Number of designated staff for <b>control</b> of field pests of national importance	5 416
Number of designated staff for <b>control</b> of migratory and periodically occurring pests	5 416
Number of designated staff for <b>eradication</b> of invasive species	5 416

### Key situation and operation indicators

(Outbreaks and invasions in the past 2 years)

New exotic species found established in the country	Insects	Pathogens	Weeds
Total number for 2010 [most recent]	2	3	
Total number for 2009 [year before]			
Total number on record:			

Eradication or internal quarantine actions taken against economically important species			
Name of species	Mealybug (Trionymus. sp)		
Year of first discovery	2010		
Pathway			
Location of first discovery			
Area affected [ha]	62		
Area treated [ha]	62		
Control method	pesticide		
Expenditures			

<b>Pest outbreak actions</b>	<b>Outbreak 1</b>	<b>Outbreak 2</b>	<b>Outbreak 3</b>
Name of species			
Year of outbreak			
Area affected [ha]			
Estimated damage \$			
Area treated by government [ha]			
Expenditures by government [\$]			
Control method			
More information			

### **Progress and constraints**

<b>Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)</b>
<b>Main constraints (personnel, infrastructure, administrative, operational, training, etc.)</b>
Lack of equipment for pest surveillance



#### IV. PEST MANAGEMENT

Last updated: December 2010

##### Executive summary

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. The CPPS has branches in each province and county which is responsible for managing pests in the area under the direct control of the Ministry of Agriculture.

During the farming season, when pests occur and caused damage to crops, 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.

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.

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 was 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.

The MoA also thoroughly eradicated newly occurred pests such as *Trionymus agrestis*, *Cephalosporium* sp and *Autogrpha* sp in some areas.

##### List of key legislation/regulations/rules for pest management

2005 Regulations of Crop Protection (21 February 2005)

2005 Minor Regulations for Crop Protection (16 August 2005)

##### Web source for further information: –

Policies regarding pest management	Yes	No	Don't know
Do you have policies encouraging organic or low-pesticide use production	x		
Is IPM specifically mentioned in laws or policy documents?	x		
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?	x		
Is pest management extension separate from general extension?	x		
Other policies: (subsidies, production inputs, etc.)			
Web source for further information:			

Organization of pest management function	Responsible organizational unit (Ministry/department/unit)
Policy development	MOA/MOLEP
Pest management research	PPI(AAS)/CPPS
Control recommendations	CPPS/MOA/MOLEP
Pest management extension	CPPS/AAS/MOLEP
IPM training	CPPS/MOA
GAP training	MOA

Infrastructure	Year: 2010
Number of technical officers for pest management	2 708
Number of central, regional, provincial or state offices	11
Number of district and village level field offices	208
Number of field/extension agents for pest management advice	510
Number of field/extension agents trained in IPM-FFS facilitation	500
Number of government biocontrol production/distribution facilities	208
Number of government biopesticide production/distribution facilities	208
Number of general extension staff involved in pest management	510
Number of designated plant protection technical officers for extension	510

### Key situation and operation indicators

Pest management	Yes	No	Don't know
Does the country have a National IPM Programme? <i>If yes, give Name and Address of IPM Programme:</i>			
Does the country have specific IPM extension programmes? <i>If yes, in which crops?:</i> Maize IPM	x		
Does the country have specific IPM research programmes? <i>If yes, in which crops?:</i> Rice, maize, vegetables	x		
Does the country have specific GAP extension programmes? <i>If yes, in which crops?:</i> All crops	x		
Does the country have specific GAP research programmes? <i>If yes, in which crops?:</i> All crops	x		

Market shares (estimated value, volume or area under control)	Year: 2010
Size of chemical pest control market	
Size of biopesticides market	
Size of biological control agents market	

Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop	Rice	Maize	Vegetable
Name(s) of pest(s)	Plant hoppers	Grubs	Diamond Back Moth
Estimated crop loss	27 794	15 965	1 365
Affected area			
Number of pesticide applications or amount of pesticide used			
Government action taken			

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Pest control by Bt	Switzerland		2001-2010
Asian Corn Borer Control by Trichogramma	EU	1 million Euro	2009-2011
Purpose/target of government follow-up programmes		Amount	Years (start-end)

Pest management extension	Year: 2010
Number of farmers trained in IPM during the year	
Number of IPM-FFS conducted during the year	
Number of farmers trained in GAP standards during the year	
Area under IPM/low pesticide management [ha]	
Area under organic/pesticide-free management [ha]	0.3 million ha
Crops in which IPM or other ecology friendly programmes are successfully implemented:	
Crops grown organic/pesticide-free:	

### Progress and constraints

Main progress in recent Years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

## V. PESTICIDE MANAGEMENT

Last updated: December 2010

### Executive summary

Chemical pesticides and biocontrol agents were imported from China. Biopesticides were produced in the DPRK and used in the agriculture and forestry. The MoA, CPPS, MOLEP and ARI are jointly responsible for pesticide management in DPRK

### List of Key Legislation/Regulations/Rules

1986 Law of the DPRK on the Pesticide Management

1992 Regulation on Pesticide Control. By the Administration Council Directive No.78

### Web source for further information: –

Policies regarding pesticide management	Yes	No	Don't know
Do you have national pesticide reduction targets? <i>If yes, what is the target: _____</i>	x		
Have you ratified the Rotterdam (PIC) Convention?	x		
Have you ratified the Stockholm (POP) Convention?	x		
Have your ratified the Basel Convention? (hazardous wastes)	x		
Have your ratified the Montreal Protocol? (MeBr phasing-out)	x		
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?	x		
Have you adopted Good Laboratory Practices (GLP)?	x		
<i>Pesticide registration</i>			
Do you require pesticides to conform to relevant FAO or WHO specifications?	x		
Do you allow the "me-too" registration and sale of generic pesticides?			
Do you require data on product equivalence for generic registration?	x		
Do you conduct country-specific risk assessments for...			
occupational risks?			
consumer risks?			
environmental risks?			
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labelling?			
Do you accept evaluation results from other countries?	x		
Do you accept field studies conducted in other countries?	x		
Do you require environmental fate studies?	x		
<i>Incentives/disincentives</i>			
Do you have a special tax on pesticides to cover externality costs?			x
Do you subsidize or provide low-cost pesticides?	x		
Do you subsidize or provide low-cost biopesticides?			x
Other policies:			
Web source for further information:			

Organization of pesticide management function	Responsible organizational unit (Ministry/Department/Unit)
Legislation	Cabinet/MOA
Registration	MOA/CPPS/ARI/MOLEP
Licensing of shops	
Licensing of field applicators**	MOA/CPPS/MOLEP
Enforcement/inspections	MOA/CPPS/MOLEP
Testing of pesticide efficacy	ARI/CPPS
Development of pesticide use recommendations	ARI
Safe use training/extension	ARI/MOA/CPPS/MOLEP
Food residue monitoring	Ministry of Health(MOPH)
Environmental monitoring	MOLEP
Health monitoring	MOPH
<i>Other Stakeholders:</i>	
Pesticide Industry Association	
Civil Society Organizations (NGO, etc.)	

Infrastructure	Year: 2010
Number of registration officers	1
Number of enforcement officers	11
Number of department quality control laboratories	11
Number of quality control laboratory personnel	25
Number of department residue analysis laboratories	11
Number of residue laboratory personnel	25

### Key situation indicators

Pesticide trade: 2010	Tons	US\$ '000 Value
Imports		
Manufacture		
Export		
Domestic use/sales		
Pesticide use profile: 2010	Tons (a.i./formulation to be specified)	US\$ '000 Value
Agriculture		
Chem. Insecticides	260	
Chem. Fungicides	52	
Chem. Herbicides	544.7	
Chem. Others: e.g.: molluscicide, acaricide		
Other: e.g. Avamectrin, Bt, Neem		
Other purposes		
TOTAL		

**Post registration monitoring**

Testing, quality control and effects in the field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?	x		
Do you have significant problems with pesticide resistance?	x		
Do you have a list of pesticides under close observation for problems	x		
Source for more information:			

Health and environmental information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?	x		
Do you have a system to monitor pesticide residues in food?	x		
Do you have a system to monitor pesticide residues in the environment?	x		
Do you have significant problems of environmental contamination from pesticides?			x
Do you have data on pesticides effects on wildlife and ecosystems?			x
Source for more information:			

Pesticide disposal	Yes	No	Don't know
Do you have system to collect and safely dispose of used containers and small quantities of left-over pesticides?	x		
Do you have an inventory of outdated and obsolete pesticides in the country? (eg. banned and no longer traded, but still in storage)	x		
Do you have illegal trade in pesticides? if yes: what is the estimated amount: _____			x
Source for more information:			

**Key operation indicators**

Registration/regulation/monitoring	Year: 2010	
	a.i.*	Trade name
Number of registered pesticide products		
Number of registered bio-pesticides (Avamectrin, Bt, Neem, etc.)		
Number of restricted-use pesticides/formulations		
Number of banned pesticides		
Number of licensed outlets		
Number of licensed field applicators (professional and/or farmers)		
Number of licensing violations reported during year		
Number of quality control analyses conducted during year		
Number of food samples analyzed for pesticide residues during year		
Number of samples exceeding MRL		
Number of environmental samples analyzed for pesticide residues		

\* active ingredient

Pesticides restricted in recent years (2009-2010)	
Year	Name of active ingredient or hazardous formulation
2009	Nubachron, Phospamid

Pesticides banned in recent years (2009-2010)	
Year	Name of active ingredient

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

## VI. ADDITIONAL ISSUES OF INTEREST

Genetically Modified Crops	
Name of GMO Crop	Area under cultivation [ha]

## 2.6 FIJI

### I. GENERAL INFORMATION

Last updated: December 2008

#### Overall executive summary<sup>1</sup>

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.

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.

The Charter recommendations highlight the following areas for reform:

- 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).

The reform exercise has been progressing slowly. However, the review of the legislation has been completed, awareness programmes for the public are on-going, communication has improved in the last two years and a standard operational procedure manual has been finalized.

Currently in the pipeline, is the review of the organization structure and to be followed with the establishment of the Statutory Authority. The Authority will administer the Biosecurity Promulgation 2008 and fast-track the completion of the reform,

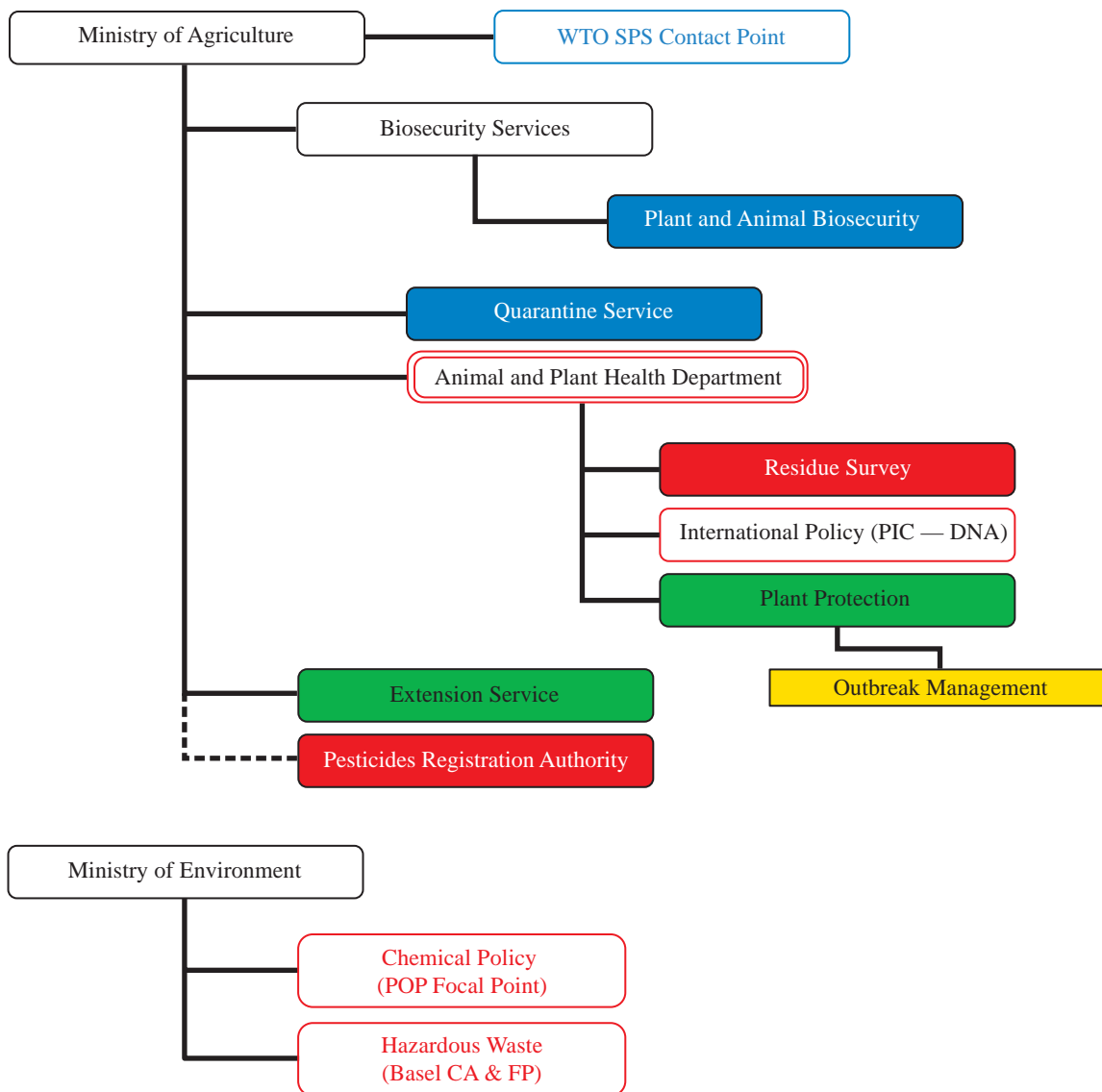
This reform will bring the plant and animal biosecurity under one administration and develop its facilities and equipment to facilitate its operations. The Authority will have its laboratory and technical expertise to conduct risk and pest assessment whilst the Ministry Research Laboratory to focus on the Ministry's laboratory needs and will assist BAFI on needs that are beyond the capacity of BAFI's laboratory.

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.

<sup>1</sup> by Hiagi Munivai FORAETE, Director Biosecurity Services, Biosecurity Services Division, Department of Agriculture, Ministry of Primary Industries, Email: hforaete@govnet.gov.fj



**Plant protection organization chart**



*Color Code:* Phytosanitation Outbreak Management Pest Management Pesticides NPPO

---

## Important contact addresses

### Responsible ministry/ministries

Ministry of Agriculture and Primary Industries

*Hiagi Munivai FORAETE*

*Director Biosecurity Services*

P.O. Box 18360

Suva, **FIJI ISLANDS**

Tel: (679) 331 2512

Fax: (679) 330 1657

Email: [hforaete@govnet.gov.fj](mailto:hforaete@govnet.gov.fj)

Website: [www.quarantine.gov.fj](http://www.quarantine.gov.fj)

### Responsible department

Biosecurity Services

*Hiagi Munivai FORAETE*

*Director Biosecurity Services*

Department of Biosecurity Services

P.O. Box 18360

Suva, **FIJI ISLANDS**

Tel: (679) 331 2512,

Fax: (679) 330 1657

Email: [hforaete@govnet.gov.fj](mailto:hforaete@govnet.gov.fj)

Website: [www.quarantine.gov.fj](http://www.quarantine.gov.fj)

### National Plant Protection Organization

Biosecurity Services

*Hiagi Munivai FORAETE*

*Director Biosecurity*

Biosecurity Services Division

Ministry of Agriculture & Primary Industries

P.O. Box 18360

Suva, **FIJI ISLANDS**

Tel: (679) 331 2512

Fax: (679) 3301657

Email: [hforaete@govnet.gov.fj](mailto:hforaete@govnet.gov.fj)

Website: [www.quarantine.go](http://www.quarantine.go)

### *Operational offices:*

#### **Plant protection**

Plant Protection Section

*Mr Moti Lal Autar*

Director of Research

Division of Research

Ministry of Agriculture and Primary Industries

Koronivia Research Station

FIJI ISLANDS

Tel: (679) 347 7044  
Fax: (679) 340 0262  
Email: [moti.autar@govnet.gov.fj](mailto:moti.autar@govnet.gov.fj)  
Website: [www.agriculture.org.fj](http://www.agriculture.org.fj)

### **Plant quarantine**

Biosecurity Services

*Mr Ilaitia Boa*

Principal Biosecurity Officer  
Biosecurity Services Division  
Ministry of Agriculture & Primary Industries  
P.O. Box 18360  
Suva, **FIJI ISLANDS**  
Tel: (679) 331 2512  
Fax: (679) 330 1657  
Email: [ilaitia.boa@govnet.gov.fj](mailto:ilaitia.boa@govnet.gov.fj)  
Website: [www.quarantine.gov.fj](http://www.quarantine.gov.fj)

### **Surveillance, pest outbreaks and invasive species management**

Biosecurity Services

*Hiagi Munivai FORAETE,*

Director Biosecurity  
Biosecurity Services Division  
Ministry of Agriculture & Primary Industries  
P.O. Box 18360  
Suva, **FIJI ISLANDS**  
Tel: (679) 331 2512  
Fax: (679) 330 1657  
Email: [hforaete@govnet.gov.fj](mailto:hforaete@govnet.gov.fj)  
Website: [www.quarantine.gov.fj](http://www.quarantine.gov.fj)

### **Pesticide registration**

Plant Protection Section

*Mr Moti Lal Autar*

Director Research  
Research Division  
Ministry of Agriculture & Primary Industries  
Koronivia Research Station  
FIJI ISLANDS  
Tel: (679) 347 7044  
Fax: (679) 340 0262  
Email: [moti.autar@govnet.gov.fj](mailto:moti.autar@govnet.gov.fj)  
Website: [www.agriculture.org.fj](http://www.agriculture.org.fj)

---

**Official international contact points****National Plant Protection Organisation (NPPO) contact point (for IPPC/APPPC)**

Biosecurity Services

*Mr Hiagi Munivai FORAETE*

Director Biosecurity

Ministry of Agriculture &amp; Primary Industries

P.O. Box 18360

Suva, **FIJI ISLANDS**

Tel: (679) 331 2512

Fax: (679) 330 1657

Email: hforaete@govnet.gov.fj

Website: www.quarantine.gov.fj

**WTO SPS contact point**

Department of Agriculture

*Dr Richard Beyer*

Permanent Secretary

Ministry of Agriculture &amp; Primary Industries

Private Mail Bag,

Raiwaqa, **FIJI ISLANDS**

Tel: (679) 331 2512

Fax: (679) 330 1657

Email: rbeyer@connect.fj

Website: www.agriculture.org.fj

**Rotterdam Convention (PIC) DNA Pesticides (P)**

Plant Protection Section

*Mr Moti Lal Autar*

Director Research

Research Division

Ministry of Agriculture &amp; Primary Industries

Koronivia Research Station

FIJI ISLANDS

Tel: (679) 347 7044

Fax: (679) 340 0262

Email: moti.autar@govnet.gov.fj

Website: www.agriculture.org.fj

**Stockholm Convention (POP) National Focal Point (P)**

—

**Basel Convention Competent Authority (CA) and Focal Point**

—

**Montreal Protocol Focal Point**

—

**Selected country statistics:**

Agricultural Population: <i>Fiji's population is around 800 000 of which 50% or 400,000 are employed in the agricultural sector.</i>		Agricultural Land: <i>Total land area for Fiji is 1.8 million hectares and only 16% is suitable for farming.</i>	
GDP: <i>Fiji's economy grew at an average rate of 2% in the past five years. While growth has been positive the rate of economic growth was low.</i>	Agric. GDP: <i>Agriculture remains a major sector of the economy, accounting for 43% of Fiji's foreign exchange earnings. It provides 50% of the country's total employment and contributes 19% to Fiji's GDP</i>	GNI per capita: –	Undernourishment: –
Main crops grown: –			

GDP = Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement

## II. PLANT QUARANTINE

Last updated: December 2008

### List of key legislation/regulations/rules

Fiji had reviewed its plant and animal quarantine laws and now have the Fiji Biosecurity Promulgation, 2008. The 2008 Promulgation is intended to:

- Replace the Plant Quarantine Act Cap 156, Animal Importation Act Cap 159 and the Animal (Contagious Diseases) Act Cap 160;
- Provide the Fiji Islands with a legislative foundation for action against the introduction of plant and animal pests and diseases;
- Enable the Fiji Islands to comply with its obligations to ensure that plant and animal diseases are not exported from the country into neighbouring countries; and
- Enable the establishment of the Biosecurity Authority of the Fiji Islands (BAFI) as a body corporate to replace the Fiji Quarantine & Inspection Division.

The main features of the Biosecurity Promulgation:

- The Promulgation establishes a regime to control the import and export of regulated pests and diseases;
- It provides powers to control outbreaks of regulated pests and diseases;
- Key administrative feature is the establishment of the Biosecurity Authority of the Fiji Islands (BAFI);
- The Authority will have its functions, prescribed service fees/charges and penalise/fines set out in the Promulgation; and
- The Promulgation contains administrative, miscellaneous and legal provisions, including enforcement procedures..

The Promulgation is divided into 13 Parts:

**Part 1** deals with preliminary matters.

**Part 2** sets out the administrative framework for implementing the Promulgation.

**Part 3** sets out the principles of border biosecurity control.

**Part 4** sets out the rules for in-coming and out-going vessels and aircrafts.

**Part 5** establishes a regime for the control of incoming goods once they have been landed from a vessel or an aircraft.

**Part 6** sets out the control over articles intended for export.

**Part 7** sets out the rules relating to plants, animals or other articles in biosecurity quarantine for observation or treatment.

**Part 8** defines the general powers of biosecurity officers under the Promulgation.

**Part 9** sets out the powers of the Authority and biosecurity officers to control pests and diseases within the Fiji Islands.

**Part 10** provides powers to deal with biosecurity emergencies in the Fiji Islands which cannot be dealt with under Part 9.

**Part 11** sets out some ancillary administrative provisions needed to allow the Promulgation to function effectively.

**Part 12** is concerned with enforcement of the Promulgation and specifies offences and penalties.

**Part 13** contains a number of miscellaneous provisions for implementing the Promulgation.

**Web source for further information:** [www.quarantine.gov.fj](http://www.quarantine.gov.fj)

Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover domestic quarantine?	yes		
Does phytosanitary legislation cover import quarantine?	yes		
Does phytosanitary legislation cover export quarantine?	yes		
Does phytosanitary legislation cover living modified organisms?	part		
Is plant quarantine a separate organization from animal quarantine?		no	
Other policy initiatives (under review/progress)			
Web source for further information: <a href="http://www.quarantine.gov.fj">www.quarantine.gov.fj</a> or <a href="http://www.agriculture.org.fj">www.agriculture.org.fj</a>			

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest Risk Assessment	Biosecurity Services Division and Plant Protection Section of Research Division
National standards development	Biosecurity Services Division and Plant Protection Section of Research Division
International notifications	Biosecurity Services Division
<i>Import:</i>	
Import permits	Biosecurity Services Division
Import inspections	Biosecurity Services Division
Emergency action	Biosecurity Services Division and National Disaster Management Department
<i>Export:</i>	
Phytosanitary certificates	Biosecurity Services Division
Treatment of commodities	Biosecurity Services Division and Accredited Companies

Infrastructure	Years: 2007-2008
Number of plant quarantine officers authorized to inspect/certify	60
Total qualified personnel for plant pest risk assessment	4
Number of quarantine offices	
– entry points (sea/air/land/mail = total)	100
– post-entry plant quarantine containment facilities	4
– other offices	6
Number of quarantine service diagnosis laboratories	2
In-country recognized pest diagnostics capabilities (incl. universities, etc.)	
Number of laboratories for insect/mite (arthropod) samples	Research laboratory has been used to carry out sampling and identification of insects and plant weeds
Number of laboratories for bacteria samples	
Number of laboratories for virus samples	
Number of laboratories for fungus samples	
Number of laboratories for mycoplasma samples	
Number of laboratories for nematode samples	
Number of laboratories for plant/weed samples	
Number of laboratories for other pests (snail, slug, rodents, etc.)	

Pest-free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)
Overall management	
– surveillance	Biosecurity Services Division and Plant Protection Section of Research Division
– management	Biosecurity Services Division
– certification	Biosecurity Services Division
List of target pest species and crops ISPM 4	Number of sites in 2008
Taro Beetle ( <i>Papuana uninodis</i> ) on Taro ( <i>Colocasia esculenta</i> )	Main island of Vanua Levu and out-lying islands making it 110 sites
Fruitfly ( <i>B.kirki</i> and <i>B.obscura</i> ) on Fruits	Apart from Rotuma, the two main islands of Viti Levu and Vanua Levu including all the smaller islands are free from the two species of fruitfly
List of target pest species and crops ISPM 10	Number of sites in 2008

### Key Situation Indicators

International trade		Years: 2007-2008
Main import plant commodities	Main countries/areas of origin	Quantity (tons)
Fruits, vegetables and spices	New Zealand, Australia, P.R.China	
Potatoes	New Zealand, Australia	
Wheat, rice, maize	Australia, USA, Vietnam	
Main export plant commodities	Main destination countries	
Root crops	New Zealand, Australia, USA, Canada and some Pacific Island Countries.	
Vegetables	NZ, Australia, USA, Canada	
Spices (Ginger, Tumeric)	NZ, Australia	

Cooperation projects			
Title (Purpose/target)	Donor	Amount	Years (start-end)
Bilateral Technical Cooperation between New Zealand MAF Biosecurity and Fiji Biosecurity Services Division on capacity strengthening	New Zealand Aid		2005-2009
Title of government follow-up programmes		Amount	Years (start-end)



**Key operation indicators**

Institutional functions	Years: 2007-2008
Number of import permits issued	3500
Number of import inspections carried out	153 000
Number of emergency phytosanitary treatments taken on imports	1 899
Number notifications of non-compliance	8
Number of conventional phytosanitary certificates issued	
Number of electronic phytosanitary certificates issued	

Number of quarantine pests intercepted		Years: 2007-2008
Top three commodity	Top three pest/commodity	# of interceptions

List of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of quarantine pests				
Number of regulated non-quarantine pests				
Number of regulated import articles				
Website for the above information: –				

Pest risk analysis (PRA)	Insects	Pathogens	Plants
Number of PRA completed and documented (according to ISPM)			
Web source for further information: –			

**Progress and constraints**

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
<ol style="list-style-type: none"> <li>1. Review of the Legislation;</li> <li>2. Reform of the Quarantine &amp; Inspection Services;</li> <li>3. Capacity Building.</li> </ol>
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
<ol style="list-style-type: none"> <li>1. Delay in establishing the Biosecurity Authority of the Fiji Islands;</li> <li>2. Insufficient funding to effectively provide biosecurity services;</li> <li>3. Government policy to “freeze” creating new posts resulting in qualified technical experts returning to old posts.</li> </ol>

Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
ISPM 01 Principles of plant quarantine as related to international trade			x		x			2012
ISPM 02 Guidelines for pest risk analysis			x			x		2012
ISPM 03 Code of conduct for the import and release of exotic biological control agents			x			x		2012
ISPM 04 Requirements for the establishment of pest free areas			x		x			2012
ISPM 05 Glossary of phytosanitary terms			x				x	
ISPM 06 Guidelines for surveillance			x				x	
ISPM 07 Export certification system			x				x	
ISPM 08 Determination of pest status in an area			x				x	
ISPM 09 Guidelines for pest eradication programmes			x		x			2012
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites			x		x			2012
ISPM 11 Pest risk analysis for quarantine pests			x			x		2012
ISPM 12 Guidelines for phytosanitary certificates			x				x	
ISPM 13 Guidelines for the notification of noncompliance and emergency action			x		x			2012
ISPM 14 The use of integrated measures in a systems approach for pest risk management			x				x	
ISPM 15 Guidelines for regulating wood packaging material in international trade		x				x		
ISPM 16 Regulated non-quarantine pests: concept and application		x			x			
ISPM 17 Pest reporting			x			x		2012
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure	x			x				
ISPM 19 Guidelines on lists of regulated pests								
ISPM 20 Guidelines for a phytosanitary import regulatory system			x				x	
ISPM 21 Pest risk analysis for regulated non-quarantine pests			x		x			2012
ISPM 22 Requirements for the establishment of areas of low pest prevalence			x	x				2012
ISPM 23 Guidelines for inspection			x				x	
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures			x				x	
ISPM 25 Consignments in transit			x				x	
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)			x			x		2012
ISPM 27 Diagnostic protocols for regulated pests		x			x			2012
ISPM 28 Phytosanitary treatments for regulated pests			x			x		
ISPM 29 Recognition of pest free areas and areas of low pest prevalence								
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (tephritidae)								
ISPM 31 Methodologies for sampling of consignments								
ISPM 32 Categorization of commodities according to their pest risk								
ISPM 33 Pest free potato (Solanum spp.) micropropagative material and minitubers for international trade								
ISPM 34 Design and operation of post-entry quarantine stations for plants								
Comments/constraints: –								

### III. SURVEILLANCE, PEST OUTBREAKS AND INVASIVE SPECIES MANAGEMENT

Last updated: December 2008

#### List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions

Fiji Biosecurity Promulgation 2008

**Web source for further information:** [www.quarantine.gov.fj](http://www.quarantine.gov.fj)

Policies regarding invasive/migratory species management	Yes	No	Don't know
National strategy to control serious field pest outbreaks?	x		
National strategy to control migratory or periodically occurring pests?		x	
National strategy to eradicate serious newly invaded exotic pests?	x		
Other policies: (e.g. subsidies, etc.)			
Web source for further information: –			

Organization of functions related to surveillance pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field/storage pest outbreaks</i>	(e.g. BPH, boll worm, etc.)
Response strategy/plans	Biosecurity Services Division and Plant Protection Section of Research
Surveillance	Biosecurity Services Division and Plant Protection Section of Research
Control	Biosecurity Services Division and Plant Protection Section of Research
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	Biosecurity Services Division and Animal Health Division
Surveillance	Biosecurity Services Division and Animal Health Division
Control	Biosecurity Services Division and Animal Health Division
<i>New exotic pest eradication</i>	(e.g. coconut beetle)
Response strategy/plans	Biosecurity Services Division and Plant Protection Section of Research
Surveillance	Biosecurity Services Division and Plant Protection of Research
Control/eradication	BSD and Plant Protection of Research
Reporting to bilateral or international organizations	Biosecurity Services Division

Infrastructure	Years: 2007-2008
Number of designated staff for <b>surveillance</b> of field pests of national importance	60
Number of designated staff for <b>surveillance</b> of migratory and periodically occurring pests	100
Number of designated staff for <b>surveillance</b> of invasive species	60
Number of designated staff for <b>control</b> of field pests of national importance	100
Number of designated staff for <b>control</b> of migratory and periodically occurring pests	60
Number of designated staff for <b>eradication</b> of invasive species	100

**Key situation and operation indicators**

(Outbreaks and invasions in the past 2 years)

New exotic species found established in the country	Insects	Pathogens	Weeds
Total number for 2007 [most recent]	none		none
Total number for 2008 [year before]	none		none
Total number on record			

Eradication or internal quarantine actions taken against economically important species			
Name of species	Taro Beetle ( <i>Papuana uninodis</i> )	Fruitfly ( <i>Bactrocera kirki</i> and <i>B.obscura</i> )	
Year of first discovery	late 1980's	late 1980's	
Pathway	arriving vessels	arriving vessels	
Location of first discovery	Eastern side of Viti Levu	Rotuma island about 500 mi from the main islands of Viti Levu and Vanua Levu.	
Area affected [ha]		48 sq. km.	
Area treated [ha]			
Control method	Internal quarantine measures on the movement of host plants.	Traps and internal quarantine control on movement of fruits out of Rotuma.	
Expenditures			

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species			
Year of outbreak			
Area affected [ha]			
Estimated damage US\$			
Area treated by government [ha]			
Expenditures by government [US\$]			
Control method			
More information			

**Progress and constraints**

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

**IV. PEST MANAGEMENT**

Last updated: December 2008

**List of key legislation/regulations/rules for pest management**

Fiji Biosecurity Promulgation 2008

**Web source for further information: –**

Policies regarding pest management	Yes	No	Don't know
Do you have policies encouraging organic or low-pesticide use production	x		
Is IPM specifically mentioned in laws or policy documents?	x		
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?		x	
Is pest management extension separate from general extension?		x	
Other policies: (subsidies, production inputs, etc.)			
Web source for further information: <a href="http://www.agriculture.org.fj">www.agriculture.org.fj</a>			

Organization of pest management function	Responsible organizational unit (ministry/department/unit)
Policy development	Ministry of Agriculture & Primary Industries
Pest management research	Agriculture Research Division
Control recommendations	Biosecurity Services Division and Agriculture Research Division
Pest management extension	Crop Extension Division
IPM training	Research and Extension Division
GAP training	

Infrastructure	Years: 2007-2008
Number of technical officers for pest management	
Number of central, regional, provincial or state offices	
Number of district and village level field offices	
Number of field/extension agents for pest management advice	
Number of field/extension agents trained in IPM-FFS facilitation	
Number of government biocontrol production/distribution facilities	
Number of government biopesticide production/distribution facilities	
Number of general extension staff involved in pest management	
Number of designated plant protection technical officers for extension	

**Key situation and operation indicators**

Pest management	Yes	No	Don't know
Does the country have a National IPM programme? <i>If yes, give Name and Address of IPM Programme:</i> Extension Pest Management Programme	x		
Does the country have specific IPM extension programmes? <i>If yes, in which crops?:</i> Cabbages	x		
Does the country have specific IPM research programmes? <i>If yes, in which crops?:</i> Vegetables of <i>Brassica</i> family	x		

Does the country have specific GAP extension programmes? <i>If yes, in which crops?:</i>		x	
Does the country have specific GAP research programmes? <i>If yes, in which crops?:</i>		x	

Market shares (estimated value, volume or area under control)	Years: 2007-2008
Size of chemical pest control market	
Size of biopesticides market	
Size of biological control agents market	

Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop			
Name(s) of pest(s)			
Estimated crop loss			
Affected area			
Number of pesticide applications or amount of pesticide used			
Government action taken			

Cooperation projects			
Purpose/Target	Donor	Amount	Years (start-end)
Purpose/Target of government follow-up programmes		Amount	Years (start-end)

Pest management extension	Years: 2007-2008
Number of farmers trained in IPM during the year	
Number of IPM-FFS conducted during the year	
Number of farmers trained in GAP standards during the year	
Area under IPM/low pesticide management [ha]	
Area under organic/pesticide-free management [ha]	
Crops in which IPM or other ecology friendly programmes are successfully implemented:	
Crops grown organic/pesticide-free: –	

### Progress and constraints

Main progress in recent Years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

## V. PESTICIDE MANAGEMENT

Last updated: December 2008

### List of Key Legislation/Regulations/Rules

–

### Web source for further information: –

Policies regarding pesticide management	Yes	No	Don't know
Do you have national pesticide reduction targets? <i>If yes, what is the target: _____</i>			
Have you ratified the Rotterdam (PIC) Convention?			
Have you ratified the Stockholm (POP) Convention?			
Have you ratified the Basel Convention? (hazardous wastes)			
Have you ratified the Montreal Protocol? (MeBr phasing-out)			
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?			
Have you adopted Good Laboratory Practices (GLP)?			
<i>Pesticide registration</i>			
Do you require pesticides to conform to relevant FAO or WHO specifications?			
Do you allow the “me-too” registration and sale of generic pesticides?			
Do you require data on product equivalence for generic registration?			
Do you conduct country-specific risk assessments for...			
occupational risks?			
consumer risks?			
environmental risks?			
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labelling?			
Do you accept evaluation results from other countries?			
Do you accept field studies conducted in other countries?			
Do you require environmental fate studies?			
<i>Incentives/disincentives</i>			
Do you have a special tax on pesticides to cover externality costs?			
Do you subsidize or provide low-cost pesticides?			
Do you subsidize or provide low-cost biopesticides?			
<i>Other policies:</i>			
Web source for further information:			

Organization of pesticide management function	Responsible organizational unit (ministry/department/unit)
Legislation	
Registration	
Licensing of shops	
Licensing of field applicators**	
Enforcement/inspections	
Testing of pesticide efficacy	
Development of pesticide use recommendations	

Safe use training/extension	
Food residue monitoring	
Environmental monitoring	
Health monitoring	
<i>Other stakeholders:</i>	
Pesticide Industry Association	
Civil Society Organizations (NGO, etc.)	

Infrastructure	Years: 2007-2008
Number of registration officers	
Number of enforcement officers	
Number of department quality control laboratories	
Number of quality control laboratory personnel	
Number of department residue analysis laboratories	
Number of residue laboratory personnel	

### Key situation indicators

Pesticide trade: 2007-2008	Tons	US\$ '000 Value
Imports		
Manufacture		
Export		
Domestic use/sales		
Pesticide use profile: 2007-2008	Tons (a.i./formulation to be specified)	US\$ '000 Value
Agriculture		
Chem. Insecticides		
Chem. Fungicides		
Chem. Herbicides		
Chem. Others: e.g.: molluscicide, acaricide		
Other: e.g. Avamectrin, Bt, Neem		
Other purposes		
TOTAL		

### Post registration monitoring

Testing, quality control and effects in the field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?			
Do you have significant problems with pesticide resistance?			
Do you have a list of pesticides under close observation for problems			
Source for more information:			



Health and environmental information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?			
Do you have a system to monitor pesticide residues in food?			
Do you have a system to monitor pesticide residues in the environment?			
Do you have significant problems of environmental contamination from pesticides?			
Do you have data on pesticides effects on wildlife and ecosystems?			
Source for more information:			

Pesticide disposal	Yes	No	Don't know
Do you have system to collect and safely dispose of used containers and small quantities of left-over pesticides?			
Do you have an inventory of outdated and obsolete pesticides in the country? (eg. banned and no longer traded, but still in storage)			
Do you have illegal trade in pesticides?if yes: what is the estimated amount: _____			
Source for more information:			

### Key operation indicators

Registration/regulation/monitoring	Years: 2007-2008	
	a.i.*	Trade name
Number of registered pesticide products		
Number of registered bio-pesticides (Avamectrin, Bt, Neem, etc.)		
Number of restricted-use pesticides/formulations		
Number of banned pesticides		
Number of licensed outlets		
Number of licensed field applicators (professional and/or farmers)		
Number of licensing violations reported during year		
Number of quality control analyses conducted during year		
Number of food samples analyzed for pesticide residues during year		
Number of samples exceeding MRL		
Number of environmental samples analyzed for pesticide residues		

\* active ingredient

Pesticides restricted in recent years (2007-2008)	
Year	Name of active ingredient or hazardous formulation

Pesticides banned in recent years (2007-2008)	
Year	Name of active ingredient

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

## VI. ADDITIONAL ISSUES OF INTEREST

Last updated: December 2008

Genetically Modified Crops	
Name of GMO Crop	Area under cultivation [ha]

## 2.7 INDIA

### I. GENERAL INFORMATION

Last updated: April 2011

#### Overall executive summary

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.

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.

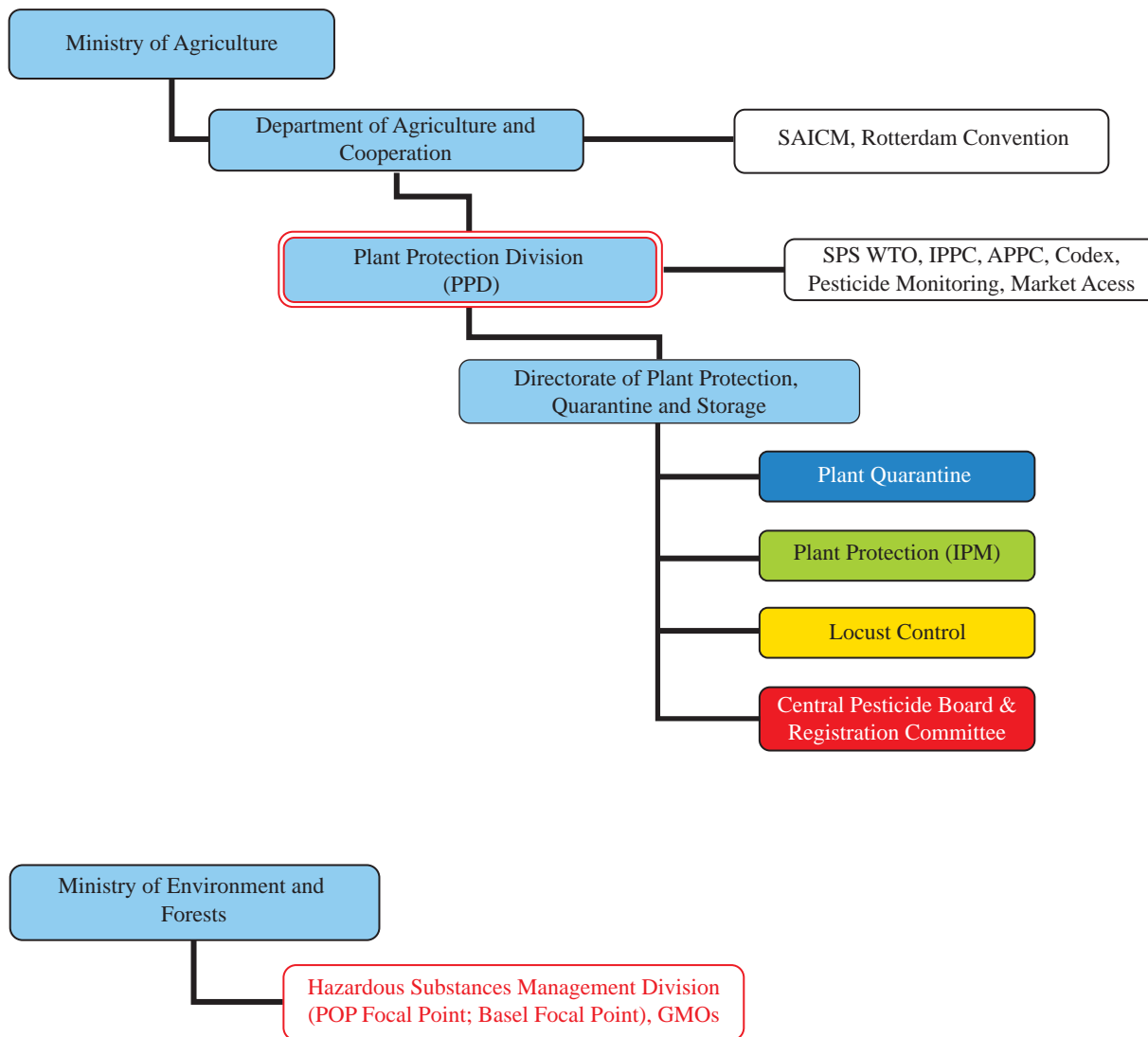
The Directorate of Plant Protection, Quarantine & Storage, Department of Agriculture & Cooperation administer the Destructive Insects & Pests Act, 1914 (2 of 1914) under which Plant Quarantine (Regulation of Import into India) Order 2003 regulates the imports of agricultural commodities and the wood 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 exporting countries.

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 .

A Project on National Invasive Weed Surveillance (N.I.W.S) 1<sup>ST</sup> phase has been completed. Pest free area has been developed and notified for Brown rot (*Ralstonia solanacearum*) and Ring rot (*Clavibacter michiganensis*) of Potato in the State of Punjab, recognition of which is under consideration of EU..

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.

**Plant protection organization chart**



Color Code:



**Important contact addresses****Responsible ministry/ministries**

–

**Responsible department**

–

**Plant protection (policy, regulations, pesticide registration, overall management)**

Directorate of Plant Protection, Quarantine and Storage

*Mr Pankaj Kumar, Joint Secretary (Plant Protection)**Shr S.K.G.Rahate, Plant Protection Adviser*

Department of Agriculture &amp; Cooperation, Ministry of Agriculture

Room no. 224, Krishi Bhawan, Rajendra Prasad Road

New Delhi 110001, India

Tel: (+91) 11-23070306/(+91) 11-23070916

Fax: (+91) 11-23070306

Emails: pankajkumar@nic.in

ppa@nic.in

Websites: [www.dacnet.ppin.nic.in](http://www.dacnet.ppin.nic.in); [www.plantquarantineindia.org/](http://www.plantquarantineindia.org/); [www.cibrc.nic.in](http://www.cibrc.nic.in),<http://agricoop.nic.in>.**Address for nominations**

–

**Operational Offices:****Plant protection****Plant quarantine****Surveillance, pest outbreaks and invasive species management**

Directorate of Plant Protection, Quarantine &amp; Storage

*Shri. S.K.G.Rahate, Plant Protection Advisor*

Department of Agriculture &amp; Cooperation, Ministry of Agriculture

N.H-IV., Faridabad – 121 001 (Haryana), India

Tel: (+91) 129-2413985; 129-2418506

Fax: (+91) 129-2412 125

Email: ppa@nic.in

Website: [www.plantquarantineindia.org/](http://www.plantquarantineindia.org/); <http://www.cibrc.nic.in>**Pesticide registration**

Registration Committee, Directorate of Plant Protection, Quarantine and Storage

*Dr S.K. Khurana, Secretary*

Department of Agriculture &amp; Cooperation, Ministry of Agriculture

N.H.IV, CGO Complex

Faridabad-121001 (Haryana), India

Email: [cibsecy@hub.nic.in](mailto:cibsecy@hub.nic.in)Website: [www.cibrc.nic.in](http://www.cibrc.nic.in)

### Official international contact points

#### National Plant Protection Organization (NPPO) contact point (for IPPC/APPPC)

Directorate of Plant Protection, Quarantine and Storage

*Mr Pankaj Kumar, Joint Secretary (Plant Protection)*

*Shri. S.K.G.Rahate, Plant Protection Advisor (Information officer for IPP)*

Department of Agriculture & Cooperation, Ministry of Agriculture

Room no.224, Krishi Bhawan, Dr Rajendra Prasad Road

New Delhi 110001, India

Tel: (+91) 129 2413985/(+91) 11 23385026

Fax: (+91) 129 2412125/(+91) 11 23384182

Emails: pankajkumar@nic.in

ppa@nic.in

Website: www.dacnet.ppin.nic.in; www.plantquarantineindia.org/

#### WTO-SPS contact point

Department of Agriculture & Cooperation

*Mr Pankaj Kumar, Joint Secretary (Plant Protection)*

Ministry of Agriculture

Krishi Bhavan

New Delhi 110001, India

Tel/Fax: (+91) 11 23070306/23070916

Email: pankajkumar@nic.in

#### Rotterdam Convention (PIC) DNA Pesticides (P)

Plant Protection Division

Director (Plant Protection)

Department of Agriculture and Cooperation, Ministry of Agriculture,

Krishi Bhavan, Dr Rajendra Prasad Road

New Delhi 110 001, India

Fax: (+91) 11 23070306/23070916

Email: pankajkumar@nic.in

#### Stockholm Convention (POP) National Focal Point (P)

Ministry of Environment & Forests

*Mr Rajiv Gauba*

*Joint Secretary*

Paryavaran Bhavan

CGO Complex, Lodhi Road

New Delhi 110003, India

Tel: (+91) 11 2436 0634

Fax: (+91) 11 2436 3577

Email: r.gauba@nic.in

Plant Protection Division

*Director (Plant Protection)*

Department of Agriculture and  
Cooperation, Ministry of Agriculture,

Krishi Bhavan

Dr Rajendra Prasad Road

New Delhi 110 001, India

Fax: (+91) 11 23070306

Email: pankajkumar@nic.in

**Basel Convention Competent Authority (CA) and Focal Point**

Ministry of Environment and Forests  
*Secretary to the Government of India*  
 CGO Complex, Lodi Road  
 New Delhi 110 003, India  
 Tel: (+91)11 24 36 07 21 or 24 36 18 96  
 Fax: (+91) 11 24 36 27 46  
 Email: meena.gupta@nic.in

Hazardous Substances Management Division  
*Mr Rajiv Gauba, Joint Secretary*  
 Ministry of Environment and Forests  
 Paryavaran Bhavan  
 CGO Complex, Lodi Road  
 New Delhi 110 003, India  
 Tel: (+91) 11 24 36 06 34  
 Fax: (+91) 11 24 36 35 77  
 Email: r.gauba@nic.in

**Selected country statistics:**

Last updated: December 2010

Agricultural Population	553 million	Agricultural Land	170 million ha
GDP US\$ 598 966 million	Agric. GDP: 22.7%	GDP US\$ 598 966 million	Undernourishment: 20%
Main crops grown: –			

GDP = Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement

## II. PLANT QUARANTINE

Last updated: December 2010

### List of key legislation/regulations/rules

1914 Destructive Insects & Pests Act

2003 Plant Quarantine Order (effective: 1.1.2004) and amendments thereto (under consideration)

### Web sources for further information:

[www.plantquarantineindia.org/law.htm](http://www.plantquarantineindia.org/law.htm); <http://agricoop.nic.in>

Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover domestic quarantine?	x		
Does phytosanitary legislation cover import quarantine?	x		
Does phytosanitary legislation cover export quarantine?		x	
Does phytosanitary legislation cover living modified organisms?		x	
Is plant quarantine a separate organization from animal quarantine?	x		
Other policy initiatives (under review/progress): The DIP Act is in the process of being amended but is not likely to result in altered import phytosanitary conditions:			
Web source for further information: <a href="http://www.plantquarantineindia.org/abpqo.htm">www.plantquarantineindia.org/abpqo.htm</a>			

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest Risk Analysis	MOA/DAC/PPD/PPQ & S/NBPGR
National standards development	MOA/DAC/PPD/PPQ & S/
International notifications	MOA/DAC/PPD
<i>Import:</i>	
Import permits	MOA/DAC/PPD/PPQ & S/NBPGR/
Import inspections	MOA/DAC/PPD/PPQ & S/NBPGR
Emergency action	MOA/DAC/PPD/PPQ & S
<i>Export:</i>	
Phytosanitary certificates	MOA/DAC/PPD/PPQ & S/Notified State government authorities/ICAR/SAUs.
Treatment of commodities	MOA/DAC/PPD/PPQ & S/NBPGR/Accredited agencies.

Infrastructure	Year: 2011
Number of plant quarantine officers authorized to inspect/certify	376
Total qualified personnel for plant pest risk analysis	120
Number of quarantine offices	5 N/RPQS + 30PQS = 35
entry points (sea/air/land/mail = total)	36/12/14 = 62
post-entry plant quarantine containment facilities	142
other offices	–
Number of quarantine service diagnosis laboratories	45
In-country recognized pest diagnostics capabilities (incl. universities, etc.)	
Number of laboratories for insect/mite (arthropod) samples	42
Number of laboratories for bacteria samples	30
Number of laboratories for virus samples	5
Number of laboratories for fungus samples	57
Number of laboratories for mycoplasma samples	5
Number of laboratories for nematode samples	4
Number of laboratories for plant/weed samples	40
Number of laboratories for other pests (snail, slug, rodents, etc.)	4



Pest-free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)	
Overall management	MOA/DAC	
– surveillance	MOA/DAC/PPQ&S/ICAR/State Agricultural Universities	
– management	MOA/DAC assisted by PPQ&S	
– certification	MOA/DAC/PPQ&S/ICAR/	
List of target pest species and crops ISPM 4	Number of sites in 2011	
Fruit fly	–	
Brown rot on potato, ring rot on potato	Punjab State	
Stone weevil and pulp weevil on mango	Uttar Pradesh State	
List of target pest species and crops ISPM 10	Number of sites in 2011	
	–	

### Key situation indicators

International trade		Year: 2011
Main import plant commodities	Main countries/areas of origin	Quantity (tons)
Pulses and Peas	USA/Canada/France/Australia/Myanmar	Data not available
Timber	Canada/Malaysia/South America/New Zealand/Ghana	-do-
Fresh fruits- pome/stone/citrus	Australia/New Zealand, Thailand	-do-
Main export plant commodities	Main destination countries	
Mango	EC/Japan/Canada/Africa/China, USA	Data not available
Grapes	EC/Canada/China/Middle East	-do-
Basmati Rice	Across the Globe – Majority of the Countries	-do-

Cooperation projects			
Title (Purpose/target)	Donor	Amount	Years (start-end)
Need assessment and project formulation for the development of an Integrated National Quarantine	UNDP		
Title of government follow-up programmes		Amount	Years (start-end)

### Key operation indicators

Institutional functions	Year: 2011
Number of import permits issued	15 517
Number of import inspections carried out	>61 350
Number of emergency phytosanitary treatments taken on imports	>1 520
Number notifications of non-compliance	137
Number of conventional phytosanitary certificates issued	120 243
Number of electronic phytosanitary certificates issued	–

Number of quarantine pests intercepted		Year: 2011
Top three commodity	Top three pest/commodity	# of interceptions
Timber	Platypus parallebus	
Almond	Ephestia kuehniella	
Coffee beans	Oryzaephilus mercator	

List of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of quarantine pests	2010-2011	151		
Number of regulated non-quarantine pests	–	–		
Number of regulated import articles	2010-2011	63		
996 Commodities with Import Risk Analyses				
<b>Web source for further information:</b> <a href="http://www.plantquarantineindia.org/seeds.htm">www.plantquarantineindia.org/seeds.htm</a>				
<b>Note:</b> India regulates import seeds and consumption plant species, not pests.				

Pest risk analysis (PRA)	Insects	Pathogens	Plants
Number of PRA completed and documented (according to ISPM)	2 760		
<b>Web source for further information:</b> 1682 Commodities can be imported into India as per the Pest Risk Analysis. Details are available on <a href="http://www.plantquarantineindia.org">www.plantquarantineindia.org</a> .			

## Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
<ul style="list-style-type: none"> <li>• A new PRA based and continually updated PQ regulation put in effect, ie Plant Quarantine Order, 2003, effective since 1 July 2004.</li> <li>• SPS principles and transparency requirements being met through timely notifications of proposed phytosanitary measures.</li> <li>• National Phytosanitary certification system being modernized and strengthened.</li> <li>• Market access and phytosanitary requests from a number of member countries considered and issues resolved.</li> <li>• National Phytosanitary Standards, protocols and guidelines developed in a number of key phytosanitary activities.</li> <li>• Emphasis on capacity building; training and human resource development.</li> <li>• Continuous overhaul of the certification and accreditation system for treatment providers- both fumigators and ISPM 15 heat treatment providers.</li> <li>• Major expansion of facilities and laboratories under way – Number of new entry points and Plant Quarantine Stations opened across the country, more being opened.</li> <li>• Modern diagnostic facilities put in place.</li> <li>• Quarantine treatment facilities using VHT, Irradiation and other treatments developed and accreditation/certification systems developed for these facilities.</li> <li>• Massive survey and surveillance programmes undertaken for development and maintenance of pest free areas.</li> <li>• Pest free area notified for brown rot and ring rot on potato in Punjab, recognition of which is under consideration of EU.</li> </ul>
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
<ul style="list-style-type: none"> <li>• Constraints are mainly in form of staff shortages in the wake of massive expansion of the Plant Quarantine facilities and operations across the country. Also, the need remains for upscaling training of officials and support staff in phytosanitary tasks.</li> </ul>

Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
ISPM 01 Principles of plant quarantine as related to international trade			x				x	
ISPM 02 Guidelines for pest risk analysis			x				x	
ISPM 03 Code of conduct for the import and release of exotic biological control agents			x			x		
ISPM 04 Requirements for the establishment of pest free areas			x		x			
ISPM 05 Glossary of phytosanitary terms			x				x	
ISPM 06 Guidelines for surveillance			x			x		
ISPM 07 Export certification system			x				x	
ISPM 08 Determination of pest status in an area			x			x		
ISPM 09 Guidelines for pest eradication programmes			x			x		
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites			x			x		
ISPM 11 Pest risk analysis for quarantine pests			x				x	
ISPM 12 Guidelines for phytosanitary certificates			x				x	
ISPM 13 Guidelines for the notification of noncompliance and emergency action			x				x	
ISPM 14 The use of integrated measures in a systems approach for pest risk management			x			x		
ISPM 15 Guidelines for regulating wood packaging material in international trade			x				x	
ISPM 16 Regulated non-quarantine pests: concept and application			x			x		
ISPM 17 Pest reporting			x			x		
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure			x			x		
ISPM 19 Guidelines on lists of regulated pests			x			x		
ISPM 20 Guidelines for a phytosanitary import regulatory system			x			x		
ISPM 21 Pest risk analysis for regulated non-quarantine pests			x			x		
ISPM 22 Requirements for the establishment of areas of low pest prevalence			x		x			
ISPM 23 Guidelines for inspection			x				x	
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures		x			x			
ISPM 25 Consignments in transit		x			x			
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)			x			x		
ISPM 27 Diagnostic protocols for regulated pests			x			x		
ISPM 28 Phytosanitary treatments for regulated pests								
ISPM 29 Recognition of pest free areas and areas of low pest prevalence								
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (Tephritidae)								
ISPM 31 Methodologies for sampling of consignments								
ISPM 32 Categorization of commodities according to their pest risk								
ISPM 33 Pest free potato ( <i>Solanum</i> spp.) micropropagative material and minitubers for international trade								
ISPM 34 Design and operation of post-entry quarantine stations for plants								
Comments/constraints: 15 adopted National standards: <a href="http://www.plantquarantineindia.org/standards.htm">www.plantquarantineindia.org/standards.htm</a> 5 standards under preparation								

**III. SURVEILLANCE, PEST OUTBREAKS AND INVASIVE SPECIES MANAGEMENT**

Last updated: December 2010

**List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions**

2003 DIP Act/Plant Quarantine (Regulation of Import into India) Order

**Web source for further information:** [www.agricoop.nic.in](http://www.agricoop.nic.in)

Policies (regarding invasive/migratory species management)	Yes	No
National strategy to control serious field pest outbreaks?	x	
National strategy to control migratory or periodically occurring pests?	x	
National strategy to eradicate serious newly invaded exotic pests?	x	
Other policies: (e.g. subsidies, etc.): IPM/GAP/Survey and Surveillance Project/NRM		
Web source for further information: <a href="http://www.agricoop.nic.in">www.agricoop.nic.in</a>		

Policies regarding invasive/migratory species management	Yes	No	Don't know
National strategy to control serious field pest outbreaks?	x		
National strategy to control migratory or periodically occurring pests?	x		
National strategy to eradicate serious newly invaded exotic pests?	x		
Other policies: IPM/GAP/Survey and Surveillance Project/NRM			
Web source for further information: <a href="http://www.agricoop.nic.in">www.agricoop.nic.in</a>			

Organization of functions related to surveillance pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field/storage pest outbreaks</i>	(e.g. BPH, bollworm, etc.)
Response strategy/plans	MOA/DAC/PPQ & S/CIPMC/LWO/State Government/ICAR and SAUs
Surveillance	MOA/DAC/PPQ & S/CIPMC/State Governments
Control	MOA/DAC/State Government./PPQ & S/LWO/CIPMCs/ICAR/SAUs/Pesticide Industry
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	MOA/DAC/PPQ & S/Locust Warning Organization (LWO)
Surveillance	MOA/DAC/PPQ & S/LWO/CIPMC/State Governments
Control	MOA/DAC/State Government./PPQ & S/LWO/CIPMCs/ICAR/SAUs/Pesticide Industry
<i>New exotic pest eradication</i>	(e.g. coconut beetle)
Response strategy/plans	MOA/DAC/PPQ & S/CIPMC/State Government/ICAR and SAUs
Surveillance	MOA/DAC/PPQ & S/CIPMC/State Governments
Control/eradication	MOA/DAC/State Government./PPQ & S/CIPMCs/ICAR/SAUs/Pesticide Industry
Reporting to bilateral or international organizations	MOA/DAC/PPD

Infrastructure	Year: 2010
Number of designated staff for <b>surveillance</b> of field pests of national importance	> 150 000
Number of designated staff for <b>surveillance</b> of migratory and periodically occurring pests	11 Locust centers and 32 CIPMCs
Number of designated staff for <b>surveillance</b> of invasive species	> 150 000
Number of designated staff for <b>control</b> of field pests of national importance	>600
Number of designated staff for <b>control</b> of migratory and periodically occurring pests	11 Locust centers and 32 CIPMCs
Number of designated staff for <b>eradication</b> of invasive species	76

### Key situation and operation indicators

(Outbreaks and invasions in the past 2 years)

New exotic species found established in the country	Insects	Pathogens	Weeds
Total number for 2010 [most recent] Outbreak	2		
Total number for 2009 [year before] Outbreak	1		
Total number on record	3		

Eradication or internal quarantine actions taken against economically important species			
Name of species			
Year of first discovery			
Pathway			
Location of first discovery			
Area affected [ha]			
Area treated [ha]			
Control method			
Expenditures			

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species	Mealy bug	Tobacco caterpillar	BPH
Year of outbreak	2007	2008	2008
Area affected [ha]	297 640	254 828	112 750
Estimated damage \$			
Area treated by government [ha]	238 100	79 497	46 100
Expenditures by government [\$]			
Control method			
More information	On cotton in Punjab	On soybean in Maharashtra	On paddy in Haryana

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

**IV. PEST MANAGEMENT**

Last updated: December 2010

**List of key legislation/regulations/rules for pest management**

1971 Insecticides Act, 1968, Insecticides Rules

**Web source for further information: –**

Policies regarding pest management	Yes	No	Don't know
Do you have policies encouraging organic or low-pesticide use production	x		
Is IPM specifically mentioned in laws or policy documents?	x		
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?	x		
Is pest management extension separate from general extension?		x	
Other policies: (subsidies, production inputs, etc.)			
<ul style="list-style-type: none"> <li>• Increase in financial support for IPM</li> <li>• Phasing out subsidies on chemical pesticides</li> <li>• Emphasis on biocontrol agents, biopesticides and pheromones</li> <li>• Phasing out, banning or restricting hazardous chemical pesticides</li> </ul>			
Web source for further information: <a href="http://www.dacnet.ppin.nic.in">www.dacnet.ppin.nic.in</a>			

Organization of pest management function	Responsible organizational unit (ministry/department/unit)
Policy development	MOA/DAC
Pest management research	MOA/DAC/ICAR & PPQ&S/SAUs
Control recommendations	MOA/DAC/ICAR & PPQ&S/SAUs
Pest management extension	States/PPQ&S
IPM training	States/PPQ&S
GAP training	

Infrastructure	Year: 2011
Number of technical officers for pest management	
Number of central, regional, provincial or state offices	31 Central IPM Centres
Number of district and village level field offices	
Number of field/extension agents for pest management advice	
Number of field/extension agents trained in IPM-FFS facilitation	7 213
Number of government biocontrol production/distribution facilities	177
Number of government biopesticide production/distribution facilities	177
Number of general extension staff involved in pest management	
Number of designated plant protection technical officers for extension	

**Key situation and operation indicators**

Pest management	Yes	No	Don't know
Does the country have a National IPM programme? <i>If yes, give Name and Address of IPM Programme: PPQ&amp;S</i>	x		
Does the country have specific IPM extension programmes? <i>If yes, in which crops?: Vegetables &amp; fruits, cereals, pulses, oilseeds, cotton, sugarcane etc.</i>	x		
Does the country have specific IPM research programmes? <i>If yes, in which crops?: Several crops</i>	x		
Does the country have specific GAP extension programmes? <i>If yes, in which crops?: Grapes, Mangoes</i>	x		
Does the country have specific GAP research programmes? <i>If yes, in which crops?:</i>			

Market shares (estimated value, volume or area under control)	Year: 2010
Size of chemical pest control market	43 000 MT
Size of biopesticides market	9 000 MT
Size of biological control agents market	

Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop	Cotton	Paddy	Vegetables
Name(s) of pest(s)			
Estimated crop loss			
Affected area			
Number of pesticide applications or amount of pesticide used	40%	17%	13%
Government action taken			

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)

Pest management extension	Years: 2009-10, 2010-11
Number of farmers trained in IPM during the year	45 820
Number of IPM-FFS conducted during the year	1 542
Number of farmers trained in GAP standards during the year	
Area under IPM/low pesticide management [ha]	
Area under organic/pesticide-free management [ha]	
Crops in which IPM or other ecology friendly programmes are successfully implemented: 77 IPM packages developed	
Crops grown organic/pesticide-free: –	

**Progress and constraints**

Main progress in recent Years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

## V. PESTICIDE MANAGEMENT

Last updated: December 2010

### List of key legislation/regulations/rules about pesticide management

Ministry of Agriculture Department of Agriculture & Cooperation

1968 Insecticides Act

1971 Insecticides Rules

Ministry of Environment & Forest

1986 Environment Protection Act.

Ministry of Health & Family Welfare

2006 Food Safety & Standards Act (residue monitoring, MRLs).

Ministry of Labour

1948 Factories Act.

### Web source for further information: –

Policies regarding pesticide management	Yes	No	Don't know
Do you have national pesticide reduction targets? <i>If yes, what is the target: _____</i>			
Have you ratified the Rotterdam (PIC) Convention?	x		
Have you ratified the Stockholm (POP) Convention?	x		
Have your ratified the Basel Convention? (hazardous wastes)	x		
Have your ratified the Montreal Protocol? (MeBr phasing-out)	x		
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?	x		
Have you adopted Good Laboratory Practices (GLP)?	x		
<i>Pesticide registration</i>			
Do you require pesticides to conform to relevant FAO or WHO specifications?		x	
Do you allow the "me-too" registration and sale of generic pesticides?	x		
Do you require data on product equivalence for generic registration?	x	x	
Do you conduct country-specific risk assessments for...			
– occupational risks?	x		
– consumer risks?	x		
– environmental risks?	x		
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labelling?	x		
Do you accept evaluation results from other countries?	x		
Do you accept field studies conducted in other countries?		x	
Do you require environmental fate studies?	x		
<i>Incentives/disincentives</i>			
Do you have a special tax on pesticides to cover externality costs?		x	
Do you subsidize or provide low-cost pesticides?		x	
Do you subsidize or provide low-cost biopesticides?		x	
Other policies: Insecticides Act, 1968 being amended			
Web source for further information:			



Organization of pesticide management function	Responsible organizational unit (ministry/department/unit)
Legislation	MOA/DAC
Registration	MOA/DAC/CIB & RC/PPQ & S
Licensing of shops	State Governments
Licensing of field applicators	State Governments
Enforcement/inspections	States, Central Task Force
Testing of pesticide efficacy	RC, IARI, PLT, ICAR, SAUs
Development of pesticide use recommendations	RC
Safe use training/extension	MOA/DAC/PPQ & S/NPPTI
Food residue monitoring	MOA/DAC/PPD & DOH
Environmental monitoring	DOC/DBT
Health monitoring	DOH
<i>Other Stakeholders:</i>	
Pesticide Industry Association	Crop Life India, Indian Pest Control Assoc., Crop Care Fed. of India, Pestic. Manuf. & Formulation Assoc. of India
Civil Society Organizations (NGO, etc.)	Center for Science and Environment (CSE), Voluntary Health Assoc. of India

Infrastructure	Year: 2010
Number of registration officers	
Number of enforcement officers	>10 000
Number of department quality control laboratories	57
Number of quality control laboratory personnel	>250
Number of department residue analysis laboratories	21 Central Gov't, 56 States; 30 other Gov't sectors
Number of residue laboratory personnel	> 1 500

### Key situation indicators

Pesticide trade: 2010	Tons	US\$ '000 Value
Imports	29 297	321 680
Manufacture		
Export	96 268	968 226
Domestic Use/Sales	43 000	
Pesticide use profile: 2010	Tons (a.i./formulation to be specified)	US\$ '000 Value
Agriculture	43 000	
Chem. Insecticides	56%	
Chem. Fungicides	15%	
Chem. Herbicides	15%	
Chem. Others: e.g.: molluscicide, acaricide	14%	
Other: e.g. Avamectrin, Bt, Neem		
Other purposes		
TOTAL		

**Post registration monitoring**

Testing, quality control and effects in the field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?	x		
Do you have significant problems with pesticide resistance?	x		
Do you have a list of pesticides under close observation for problems			
Source for more information: –			

Health and Environmental Information	Yes	No
Do you maintain data on pesticide poisoning cases?	x	
Do you have a system to monitor pesticide residues in food?	x	
Do you have a system to monitor pesticide residues in the environment?	x	
Do you have significant problems of environmental contamination from pesticides?	x	
Do you have data on pesticides effects on wildlife and ecosystems?	x	
Source for more information:		

Health and environmental information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?	x		
Do you have a system to monitor pesticide residues in food?	x		
Do you have a system to monitor pesticide residues in the environment?	x		
Do you have significant problems of environmental contamination from pesticides?	x		
Do you have data on pesticides effects on wildlife and ecosystems?	x		
Source for more information: –			

Pesticide disposal	Yes	No	Don't know
Do you have system to collect and safely dispose of used containers and small quantities of left-over pesticides?	x		
Do you have an inventory of outdated and obsolete pesticides in the country? (e.g. banned and no longer traded, but still in storage)	x		
Do you have illegal trade in pesticides? if yes: what is the estimated amount: <i>Note:</i> No estimates made, but it exists.	See Note		
Source for more information: –			

**Key operation indicators**

Registration/regulation/monitoring	Year: 2010	
	a.i.*	Trade name
Number of registered pesticide products	229	
Number of registered biopesticides (Avamectrin, Bt, Neem, etc.)	12	
Number of restricted-use pesticides/formulations	13	
Number of banned pesticides	37	
Number of licensed outlets	145 173	
Number of licensed field applicators (professional and/or farmers)	>300	
Number of licensing violations reported during year	299	
Number of quality control analyses conducted during year	44 226	
Number of food samples analyzed for pesticide residues during year	9 834	
Number of samples exceeding MRL	112	
Number of environmental samples analyzed for pesticide residues	2 751	

\* active ingredient; \*\*provisional registration

Pesticides restricted in recent years (2009-2010)	
Year	Name of active ingredient or hazardous formulation
2009	Nil
2010	Nil

Pesticides banned in recent years (2009-2010)	
Year	Name of active ingredient
2009	Nil
2010	Nil

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Monitoring of pesticide residues at national level, a new national initiative has been started by the Plant Protection Division of the Ministry of Agriculture to synthesize the efforts and data/results of more than 100 laboratories across the country with view to synthesize and collate their results and prepare the basis for future food safety decision-making and as a tool for policy formulation. This scheme is being handled through existing and dedicated laboratories which have been made updated and state of the art in the current year.
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

## VI. ADDITIONAL ISSUES OF INTEREST

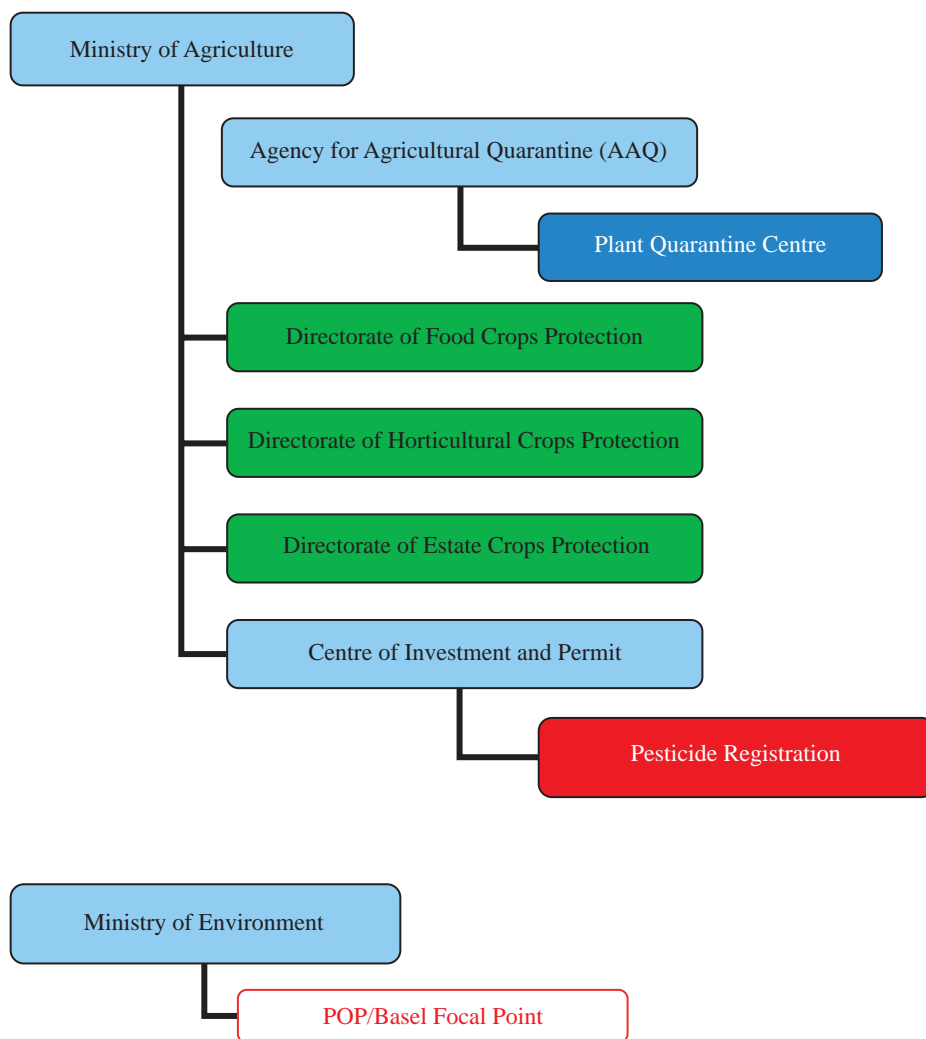
Genetically Modified Crops	
Name of GMO Crop	Area under cultivation [ha]

## 2.8 INDONESIA

### I. GENERAL INFORMATION

Last updated: December 2008

#### Plant protection organisation chart



Color Code:

Phytosanitation	Outbreak Management	Pest Management	Pesticides	NPPO
-----------------	---------------------	-----------------	------------	------

---

---

### Important contact addresses

#### Responsible ministry/ministries

Centre for Plant Quarantine

*Mr Suwanda, Director (NPPO focal point)*

Agency for Agricultural Quarantine (AAQ)

Ministry of Agriculture

Jl. Harsono RM No. 3 E Building (5th floor)

Pasar Minggu, Jakarta Selatan.12550, Indonesia

Tel: (+62) 21 7816482 / 7805641 ext.1508

Fax: (+62) 21 7816481 / 7816482 / 7816483

Email: pusatkt@indo.net.id; suwanda@deptan.go.id

Websites: www.karantina.deptan.go.id/

www.deptan.go.id/karantina/english/plant.htm

#### Responsible department

—

#### Address for nominations

—

#### Operational offices:

##### Plant protection

Directorate of Food Crop Protection

*Ms Ati Wasiati, Director*

Jl. AUP Pasar Minggu, PO. Box. 7236/Jks Pasar Minggu

Jakarta 12520, Indonesia

Tel: (+62) 21 7806213

Fax: (+62) 21 7805652

Email: atiwasiati@deptan.go.id; ditlin-ptp@deptan.go.id

Directorate of Estate Crops Protection

*Dr Herdradjat Natawijaya, Director*

Building C, Ministry of Agriculture, Jl. Harsono RM No. 3

Ragunan, Pasar Minggu

Jakarta 12550, Indonesia

Tel: (+62) 21 7815684

Fax: (+62) 21 7815684

Directorate of Horticulture Crop Protection

*Mr Sukirno, Director*

Jl. AUP Pasar Minggu, PO. Box. 7228/Jks PsM 12072

Jakarta 12520, Indonesia

Tel: (+62) 21 7819117

Fax: (+62) 21 78845628

Email : ditlinhor@deptan.go.id

**Plant quarantine**

Centre for Plant Quarantine

*Mr Suwanda, Director (NPPO focal point)*

Agency for Agricultural Quarantine (AAQ)

Ministry of Agriculture

Jl: Harsono RM No. 3 E Building (5th floor)

Pasar Minggu

Jakarta Selatan.12550, Indonesia

Tel: (+62) 21 7816482 / 7805641 ext.1508

Fax: (+62) 21 7816481 / 7816482 / 7816483

Email: pusatkt@indo.net.id ; suwanda@deptan.go.id

Websites: [www.karantina.deptan.go.id/](http://www.karantina.deptan.go.id/)

[www.deptan.go.id/karantina/english/plant.htm](http://www.deptan.go.id/karantina/english/plant.htm)

**Surveillance, pest outbreaks and invasive species management**

—

**Pesticide registration**

Centre for Investment and Permit

*Mr Mohammad Dani, Director*

Ministry of Agriculture

3<sup>th</sup> Floor, Archive Building , Ministry of Agriculture, Jl. Harsono RM No. 3

Ragunan, Pasar Minggu

Jakarta 12550, Indonesia

Tel: (+62) 21 7815380 ext.6314, 7812162

Fax: (+62) 21 7818205

**Official international contact points****National Plant Protection Organization (NPPO) contact point (for IPPC/APPPC)**

Centre for Plant Quarantine

*Mr Suwanda, Director (NPPO focal point)*

Agency for Agricultural Quarantine (AAQ)

Ministry of Agriculture

Jl: Harsono RM No. 3 E Building (5th floor)

Pasar Minggu

Jakarta Selatan.12550, Indonesia

Tel: (+62) 21 7816482 / 7805641 ext.1508

Fax: (+62) 21 7816481 / 7816482 / 7816483

Emails: pusatkt@indo.net.id; suwanda@deptan.go.id

Website: <http://karantina.deptan.go.id/>

Language(s): English

Contact point received: 29/01/2004 Source: Official Correspondence

**WTO-SPS contact point:**

*Dr Antarjo Dikin, Division Manager of Cooperation and Public Awareness*

Agency for Agricultural Quarantine (Badan Karantina Pertanian)

Ministry of Agriculture

Ged. E. Lt. V. Jl. Harsono RM No. 3, Ragunan-Pasar Minggu

Jakarta Selatan 12550, Indonesia

Tel: (+62) 21 781 6480

Fax: (+62) 21 781 6481/781 6483

Email: caqsps@indo.net.id

Website: <http://karantina.deptan.go.id/>

**Rotterdam Convention (PIC) DNA Pesticides**

Pesticide Committee

*Mr Hasanuddin Ibrahim, Chairman*

Ministry of Agriculture

3<sup>th</sup> Floor, Building F Jl. Harsono RM No.3

Jakarta 12520, Indonesia

Tel: (+62) 21 781 53 80 ext.6305

**Stockholm Convention (POP) national focal point (S)**

Ministry of Environment

*Mr Moh Gempur Adnan, Deputy for Environmental Pollution*

5th Floor, Building A

Jl. D.I. Panjaitan, Kebon Nanas

Jakarta 13410, Indonesia

Tel: (+62) 21 858 0110/0067

Fax: (+62) 21 852 0763/851 8135

Email: haruki@indo.net.id

**Basel Convention Competent Authority (CA) and focal point office**

Ministry of Environment

*Mr Imam Hendargo Abu Ismoyo, Deputy Minister for Hazardous and Toxic Wastes Management*

Jl. D.I. Panjaitan, Kebon Nanas

Jakarta 13410, Indonesia

Tel: (+62) 21 85 90 56 37

Fax: (+62) 21 85 90 56 37 or 85 90 49 32

Email: db3@menlh.go.id

**Selected country statistics:**

Last updated: December 2008

Agricultural Population:	93.0 million	Agricultural Land:	33.7 million ha
GDP: US\$ 208 311 million	Agric. GDP: 17.5%	GNI per capita: US\$ 810	Undernourishment: 6%
Main crops grown: Paddy, Maize, Crude Palm Oil, Rubber, Cocoa, Coffee			

GDP = Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement;

## II. PLANT QUARANTINE

Last updated: December 2008

### Executive summary

Agricultural industry is the backbone of Indonesian economy instead of mining industry. Indonesia has more than 17,000 islands that need specific risk management in the agricultural quarantine operation with limited available resources.

Under the new organization structure, the Centre for Plant Quarantine which is a part of Indonesian Agricultural Quarantine Agency has 51 stations and offices which spread over the whole of Indonesian territory.

In 2008, the operational organization in the stations and offices went through restructuring. The number of stations and offices was reduced from 43 plant quarantine stations and 43 animal quarantine stations to be 51 stations and offices, in order to enhance the efficacy of the available resources, particularly human resources and infrastructures.

However, the quarantine operations are still the same places to cover the whole of entry points such as air ports, sea ports, mail offices, land borders and dry ports. Plant quarantine operation in the entry points is based on the law and regulations.

During 2007-2008, the importation of fresh plant products in the form of fresh bulb vegetables into the territory of the Republic of Indonesia was subject to plant quarantine inspection. The objective was to protect the entry of quarantine pests associated with the consignments. The quarantine action was taken to mitigate the risk by physically removing the roots.

To strengthen the capacity building, new infrastructures for training staff, particularly professional quarantine officers were built in 2008. These new infrastructures in the quarantine training complex include quarantine research and development. The members of APPPC are invited to use this facility for regional activities such as workshop, seminar, training and other scientific activities.

The operational plant quarantine activities to cover import, export and intra islands of Indonesia have significantly increased, when compared to the year 2006. The issuance of import permits for plant propagation material reached 56,044 and the import inspection reached a total of 58,832 times. The issuance of phytosanitary certificates for exporting consignment reached 63,900 times. The Centre for Plant Quarantine's receipt of notifications of non-compliance was 24 times.

The main import commodities were wheat, soybean and fresh fruits, while Indonesia exported rubber, palm oil and living plants for ornamental.

The quarantine inspection intercepted quarantine pests such as *Acidovorax avenae* subsp. *avenae*, *Xylella fastidiosa* and Turnip Mosaic Virus. Those pathogens were destroyed as there was not any effective treatment to be carried out at border.

South American Leaf Blight (SALB) and plant products of rubber which have potential risk are prohibited entry into Indonesia.

In the harmonization of trade, most of ISPMs were applied at the operational level from partial to full implementation. A number of ISPM are still in the process of being studied before they can be implemented. The Pest Risk Analysis referred to in the ISPMs No. 2 and No. 11 as basic



principles is conducted by a PRA team for deciding the status of the new commodity to be imported into Indonesia. The team was conducting the risk analysis of 57 documents.

The Centre for Plant Quarantine has forged strong relationships with directorates of plant protection including the directorates of food crops, horticulture, estate crops, as well as with universities and research institutes.

International cooperation at the bilateral, regional, interregional and multilateral levels may affect the optimal quarantine operation and procedures related to pest risk management. Bilateral cooperation between two countries such as Indonesia-Australia, Indonesia-China and Indonesia-PNG is effective not only to resolve trade disputes but also to strengthen plant protection between the two countries concerned. Other project cooperation includes strengthening of the quarantine pest status on fruit fly management with the Australian Centre for International Agricultural Research (ACIAR).

#### List of key legislation/regulations/rules

- 1961 Exportation from the Territory of the Republic of Indonesia of Plant Propagating Materials on Regulation of the Minister of Agriculture No. 6/PMP/1961.
- 1984 Importation into the Territory of the Republic of Indonesia of Plants Used as Packing on DOMOA No. 796/Kpts/TP.830/10/1984.
- 1984 Importation into the Territory of the Republic of Indonesia of Plant Growing Media on DOMOA No. 797/Kpts/TP.830/10/1984.
- 1985 Plant Quarantine Requirements for the Importation of Plant Propagating Materials of Coconut, Oil Palm, Cocoa, Rubber, Coffee, Tea, Sugarcane, and Tobacco on DOMOA No. 559/Kpts/KB.630/8/1985.
- 1985 Domestic Plant Quarantine on DOMOA No. 809/Kpts/LB.710/12/1985.
- 1989 Prevention on the Introduction into the Territory of the Republic of Indonesia of South American Leaf Blight of Hevea on DOMOA No. 861/Kpts/LB.720/12/1989.
- 1989 Eradication for Khapra Beetle (*Trogoderma granarium* Everts) on DOMOA No. 799/Kpts/LB.710/10/1989.
- 1990 Plant Quarantine Requirements and Actions in relation to the Importation into the Territory of the Republic of Indonesia of Plants and Plant Propagating Materials on DOMOA No. 38/Kpts/HK.310/1/1990.
- 1992 Law No. 16 of 1992 concerning Animal, Fish, and Plant Quarantine.
- 1995 Importation into the Territory of the Republic of Indonesia of Biological Agents on DOMOA No. 411/Kpts/TP.120/6/1995.
- 1995 Formation of Biological Agent Commission on DOMOA No. 412/Kpts/KP.150/6/1995.
- 2001 Actions and conditions of quarantine plant for the entry of plant and seedling into the territory of the Republic of Indonesia, lastly amended by the decree of the Ministry of Agriculture Number : 211/Kpts/HK.310/2001 on DOMOA No. 469/Kpts/HK.310/8/200.
- 2002 Government Regulation of the Republic Indonesia No. 14 of 2002, concerning Plant Quarantine.
- 2006 Decree of the Minister of Agriculture No. 38 of 2006 concerning Plant Quarantine Pests Group I Category A1 and A2, and Group II Category A1 and A2; their hosts, carriers and countries of distribution.
- 2006 Minister of Agriculture Regulation No. 37 of 2006 concerning Importation of Fresh fruits and vegetables.

- 2006 Concerning requirements and guideline for Quarantine Installation Establishment for Private on MOAR No. 05/Permentan/HK.060/3/2006.
- 2006 Concerning requirements and guidelines for the Implementation of Plant Quarantine action by third party on MOAR No. 271/Kpts/HK.310/4/2006.
- 2006 Concerning the Implementation of Plant Quarantine action conducted import and exit points on MOAR No. 18/Permentan/OT.160/5/2006.
- 2006 Concerning addition requirements on MOAR No. 52/Permentan/OT.140/10/2006.
- 2008 Concerning Plant Quarantine Requirements and Measures Governing the Importation of Fresh Plant Products in the form of Fresh Bulb Vegetables into the territory of the Republic of Indonesia No. 18.

### Web sources for further information:

[www.deptan.go.id](http://www.deptan.go.id) and [www.karantina.deptan.go.id](http://www.karantina.deptan.go.id)

Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover domestic quarantine?	x		
Does phytosanitary legislation cover import quarantine?	x		
Does phytosanitary legislation cover export quarantine?	x		
Does phytosanitary legislation cover living modified organisms?	x		
Is plant quarantine a separate organization from animal quarantine?		x	
Other policy initiatives (under review/progress)			
Web source for further information: <a href="http://www.karantina.deptan.go.id/">www.karantina.deptan.go.id/</a>			

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest Risk Analysis	Center for Plant Quarantine
National standards development	MOA/AAQ/ Centre for Plant Quarantine
International notifications	MOA/Agency for Agricultural Quarantine
<i>Import:</i>	
Import permits	DGs of Food Crops, DG of Estate Crops, DG of Horticulture, DG of Livestock
Import inspections	Centre for Plant Quarantine
Emergency action	Centre for Plant Quarantine, Directorate of Horticulture Crop Protection, Directorate of Food Crop Protection, and Directorate of Estate Crop Protection
<i>Export:</i>	
Phytosanitary certificates	MOA/AAQ/ Centre for Plant Quarantine
Treatment of commodities	Center for Plant Quarantine, Plant Protection

Infrastructure	Years: 2007-2008
Number of plant quarantine officers authorized to inspect/certify	356
Total qualified personnel for plant pest risk analysis	17
Number of quarantine offices	51
entry points (sea/air/land/mail = total)	>200
post-entry plant quarantine containment facilities	5
other offices	
Number of quarantine service diagnosis laboratories	6
In-country recognized pest diagnostics capabilities (incl. universities, etc.)	

Number of laboratories for insect/mite (arthropod) samples	45
Number of laboratories for bacteria samples	15
Number of laboratories for virus samples	4
Number of laboratories for fungus samples	15
Number of laboratories for mycoplasma samples	1
Number of laboratories for nematode samples	15
Number of laboratories for plant/weed samples	45
Number of laboratories for other pests (snail, slug, rodents, etc.)	1

Pest-free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)
Overall management	Directorate of Plant Protections of related DG/AAQ
– surveillance	Directorate of Plant Protections of related DGs
– management	Directorate of Plant Protections of related DGs
– certification	Centre for Plant Quarantine
List of target pest species and crops ISPM 4	Number of sites in [year]
To be determined	
List of target pest species and crops ISPM 10	Number of sites in [year]
To be determined	

### Key situation indicators

International trade		Years: 2007-2008
Main import plant commodities	Main countries/areas of origin	Quantity (tons)
Wheat	Australia, USA, Canada, China, Argentina, Belgium,	261 136 575 262
Soybean	USA, India	2 209 255 290
Fruits	Australia, USA, China	425 033 075
Main export plant commodities	Main destination countries	
Crude palm oil	Viet Nam, China,	1 124 440 748
Rubber	USA, Argentina, Africa, Brazil, Netherlands, England, Canada	261 831 055
Living plants (ornamentals)	Korea, Netherlands, Japan, USA	9 604 045

Cooperation projects			
Title (Purpose/target)	Donor	Amount	Years (start-end)
Fruitfly management	ACIAR	A\$124 000	2004-2008
Title of government follow-up programmes		Amount	Years (start-end)

### Key operation indicators

Institutional functions	Years: 2007-2008
Number of import permits issued	56 044
Number of import inspections carried out	58 832
Number of emergency phytosanitary treatments taken on imports	122
Number notifications of non-compliance	24
Number of conventional phytosanitary certificates issued	63 900
Number of electronic phytosanitary certificates issued	0

Number of quarantine pests intercepted		Years: 2007-2008
Top three commodity	Top three pest/commodity	# of interceptions
Rice seeds	<i>Acidovorax avenae</i> subsp. <i>avenae</i>	Phillippines, China
	Rice Stripe Virus	China
Strawberry seedlings	<i>Xylella fastidiosa</i>	USA
Brassicaceae seeds	Turnip Mosaic Virus	South Korea

List of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of quarantine pests	2009	261	394	58
Number of regulated non-quarantine pests				
Number of regulated import articles				
Website for the above information: <a href="http://www.karantina.deptan.go.id">www.karantina.deptan.go.id</a>				

Pest risk analysis (PRA)	Insects	Pathogens	Plants
Number of PRA completed and documented (according to ISPM)			57*
Web source for further information: <a href="http://www.karantina.deptan.go.id">www.karantina.deptan.go.id</a> (*PRA conducted is based on country and commodity. not based on type of pests, the number of PRA conducted are 57)			

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
In 2008 IAQA has successfully issued 1 new Minister of Agriculture Decrees concerning Plant Quarantine Requirements and Measures Governing the Importation of Fresh Plant Products in the form of Fresh Bulb Vegetables into the territory of the Republic of Indonesia.
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
<ul style="list-style-type: none"> <li>• Reorganize the structure of IAQA by integrating plant quarantine dan animal quarantine into one operational service level.</li> <li>• Increasing diagnostic capacity of quarantine pests in the main service point by providing some equipments and materials.</li> <li>• Two trainings on new recruitment of plant quarantine inspector.</li> <li>• One training on Pest Risk Analysis.</li> <li>• Two trainings on Phosphine Fumigation.</li> </ul>

Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
ISPM 01 Principles of plant quarantine as related to international trade			x			x		2008
ISPM 02 Guidelines for pest risk analysis			x				x	2006
ISPM 03 Code of conduct for the import and release of exotic biological control agents			x				x	2000
ISPM 04 Requirements for the establishment of pest free areas			x	x				2009
ISPM 05 Glossary of phytosanitary terms			x			x		
ISPM 06 Guidelines for surveillance			x		x			2007
ISPM 07 Export certification system			x				x	
ISPM 08 Determination of pest status in an area			x				x	
ISPM 09 Guidelines for pest eradication programmes		x			x			
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites		x		x				2007
ISPM 11 Pest risk analysis for quarantine pests			x				x	
ISPM 12 Guidelines for phytosanitary certificates			x				x	
ISPM 13 Guidelines for the notification of noncompliance and emergency action			x			x		2002
ISPM 14 The use of integrated measures in a systems approach for pest risk management	x			x				2008
ISPM 15 Guidelines for regulating wood packaging material in international trade			x				x	2006
ISPM 16 Regulated non-quarantine pests: concept and application			x	x				2007
ISPM 17 Pest reporting			x			x		
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure			x	x				2008
ISPM 19 Guidelines on lists of regulated pests			x				x	
ISPM 20 Guidelines for a phytosanitary import regulatory system			x			x		
ISPM 21 Pest risk analysis for regulated non-quarantine pests			x					2008
ISPM 22 Requirements for the establishment of areas of low pest prevalence		x			x			
ISPM 23 Guidelines for inspection			x			x		2007
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures		x			x			
ISPM 25 Consignments in transit		x				x		
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)			x	x				
ISPM 27 Diagnostic protocols for regulated pests			x			x		
ISPM 28 Phytosanitary treatments for regulated pests			x	x				
ISPM 29 Recognition of pest free areas and areas of low pest prevalence	x			x				
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (tephritidae)		x		x				
ISPM 31 Methodologies for sampling of consignments			x		x			
ISPM 32 Categorization of commodities according to their pest risk								
ISPM 33 Pest free potato ( <i>Solanum</i> spp.) micropropagative material and minitubers for international trade								
ISPM 34 Design and operation of post-entry quarantine stations for plants								
Comments/constraints: The applications of ISPM involve many different institutions. It needs some periods of time to be harmonized and applied. Changing of MOA internal position also results in different policies of new decision-maker.								

### III. Surveillance, pest outbreaks and invasive species management

Last updated: December 2008

#### List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions

1992 Law No. 16 of 1992 and Government Regulation No. 14 of 2002

#### Web source for further information: –

Policies regarding invasive/migratory species management	Yes	No	Don't know
National strategy to control serious field pest outbreaks?	x		
National strategy to control migratory or periodically occurring pests?	x		
National strategy to eradicate serious newly invaded exotic pests?	x		
Other policies: (e.g. subsidies, etc.)			
Web source for further information: –			

Organization of functions related to surveillance pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field/storage pest outbreaks</i>	(e.g. BPH, bollworm, etc.)
Response strategy/plans	MOA
Surveillance	Related Directorate of Plant Protection
Control	Related Directorate of Plant Protection
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	MOA
Surveillance	Related Directorate of Plant Protection
Control	Related Directorate of Plant Protection
<i>New exotic pest eradication</i>	(e.g. coconut beetle)
Response strategy/plans	MOA
Surveillance	Related Directorate of Plant Protection/AAQ
Control/eradication	Related Directorate of Plant Protection/AAQ
Reporting to bilateral or international organizations	NPPO/Centre of Plant Quarantine

Infrastructure	Years: 2007-2008
Number of designated staff for <b>surveillance</b> of field pests of national importance	3 000
Number of designated staff for <b>surveillance</b> of migratory and periodically occurring pests	3 000
Number of designated staff for <b>surveillance</b> of invasive species	
Number of designated staff for <b>control</b> of field pests of national importance	3 000
Number of designated staff for <b>control</b> of migratory and periodically occurring pests	3 000
Number of designated staff for <b>eradication</b> of invasive species	

**Key situation and operation indicators**

(Outbreaks and invasions in the past 2 years)

New exotic species found established in the country	Insects	Pathogens	Weeds
Total number for 2007 [most recent]			
Total number for 2008 [year before]			
Total number on record:			

Eradication or internal quarantine actions taken against economically important species			
Name of species	<i>Paracoccus Marginatus</i> (Papaya mealybug)	None	None
Year of first discovery	2008		
Pathway	Undetermined		
Location of first discovery	Bogor, West Java		
Area affected [ha]			
Area treated [ha]			
Control method	Plant sanitation, insecticide (spraying)		
Expenditures			

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species	None	None	None
Year of outbreak			
Area affected [ha]			
Estimated damage \$			
Area treated by government [ha]			
Expenditures by government [\$]			
Control method			
More information			

**Progress and constraints**

<b>Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)</b>
<b>Main constraints (personnel, infrastructure, administrative, operational, training, etc.)</b>

#### IV. PEST MANAGEMENT

Last updated: December 2008

##### Executive summary\*

Integrated pest management called IPM programme has been launched since 1990. The IPM programme funded either by the government or donor countries or international banks is regulated with the Law No. 12 of 1992 and Government Regulation No. 6 of 1995. The programme has successfully changed the attitude of many farmers in uncontrolled application of pesticide. Organization of the plant protection function consists of policy development, pest management research, control recommendation, pest management extension, IPM training and Good Agricultural Practice training. The successful implementation of the IPM programme is supported by technical officers for pest management, village-level field officers, and field-extension agents for pest management advice and farmer field schools.

##### List of key legislation/regulations/rules for pest management

- 1992 Law No. 12 on Crop Cultivation System (incl. IPM)  
 1995 Regulation of Indonesian Government/Government Decree No. 6 on Plant Protection  
 1997 Agricultural Ministerial Decree No. 887/Kpts/OT/9/1997 on Guideline of Pest Control.  
 1999 Law No. 22 on Autonomy  
 1999 Regulation No. 25 on Decentralization  
 2000 Law No. 25 on Conduct of Autonomy

Policies regarding pest management	Yes	No	Notes
Do you have policies encouraging organic or low-pesticide use production	x		Procedure standard on GAP including IPM implementation, development and implementation of bio-agents
Is IPM specifically mentioned in law or policy documents?	x		
Do you have official Good Agricultural Practices (GAP) or any other relevant food safety (ecofood, etc) standards for pest management ?	x		GAP guidance and IPM Farmer's Field School (FFS) guidance
Is pest management extension separate from general extension?	x	x	Yes, technology based implementation by Crop Protection Officers No, general extension by extension workers
Other policies (subsidies, production inputs, etc.): Fertilizer, seed, organic fertilizer subsidies			
Web source for further information : <a href="http://www.deptan.go.id">www.deptan.go.id</a>			

\* by 1. Directorate of Food Crop Protection, Directorate General of Food Crops, Ms Ati Wasiati (Email: [ati\\_wasiati@yahoo.com](mailto:ati_wasiati@yahoo.com))  
 2. Directorate of Horticulture Protection, Directorate General of Horticulture, Mr. Soekirno (Email: [soekirnopl@yahoo.com](mailto:soekirnopl@yahoo.com))  
 3. Directorate of Estate Crops Protection, Directorate General Estate Crops, Mr. Herdrajat (Email: [herdrajat@yahoo.com](mailto:herdrajat@yahoo.com))



Organization of pest management function	Responsible organizational unit (ministry/department/unit)
Policy development	MOA/Directorate of Plant Protection/IAQA
Pest management research	MOA/Agricultural Agency of Research Development (AARD)
Control recommendations	MOA/Directorate of Plant Protection
Pest management extension	MOA/Agricultural Agency of Human Resource Development (AAHRD)
IPM training	MOA/Directorate of Plant Protection
GAP training	MOA/Directorate of Plant Protection/Directorate General of Horticulture

Infrastructure	Years: 2007-2008
Number of technical officers for pest management (food crops and horticulture crop)	3,081 persons field technical staff (Pest Observers) and 1,288 persons Temporary Officers
Number of central, regional, provincial or state officers Protection Centre, 87 unit Field Laboratory of Plant Protection	32 unit Provincial Crop
Number of district and village level field officers	3,081 persons Pest Observers and 1,288 persons Temporary Officers
Number of field/extension agents for pest management advice	Same as above
Number of field/extension agents trained in IPM-FFS facilitation	More than 20,000 farmers field school (FFS) Alumniees of horticulture's FFS
Number of government biocontrol production/distribution facilities	500 Farmer's Group on Biocontrol Agents and 87 Field Laboratory of Biocontrol Agents
Number of government biopesticide production/distribution facilities	–
Number of general extension staff involved in pest management	More than 15,000 person of Field Extension Worker (FEW)
Number of designated plant protection technical officers for extension	At least 3,081 persons of Pest Observers

### Key situation and operation indicators

Pest management	Yes	No
Does the country have a National IPM programme ? <i>If yes, give Name and Address of IPM Programme</i> Directorate of Food Crop Protection, Directorate of Estate Protection, Directorate of Horticulture Crop Protection	x	
Does the country have specific IPM extension programme <i>If yes, in which crops ?</i> In food crops, horticulture crops, and estate crops	x	
Does the country have specific IPM research programme <i>If yes, in which crops ?</i> Agricultural Agency of Research Development (AARD) on food crops, horticulture crops, and estate crops	x	
Does the country have specific GAP extension programme <i>If yes, in which crops ?</i> Fruit crops, vegetable and Bio-medicine crops, ornamental crops.	x	
Does the country have specific GAP research programme <i>If yes, in which crops ?</i>	–	

Market shares (estimated value, volume or area under control)	Years: 2007-2008
Size of chemical pest control market	–
Size of biopesticides market	–
Size of biological control agents market	–

Major crops requiring most pesticide applications..... horticulture	1 <sup>st</sup>	2 <sup>nd</sup>
Affected crop	Shallot	Chilli
Names(s) of pest(s)	Armyworm	Antracnose
Estimated crop loss	70%	30%-70%
Affected area		
Number of pesticide application or amount of pesticide used	1 lt/ha	1 lt/ha
Government action taken	IPM implementation, FFS, non pesticides application, residue analyses	

Cooperation projects	Donor	Amount	Year (start-end)
– Fruit fly management control	ACIAR		2004-2009
– Post harvest technology on desinfestation of fruit fly, VHT used	IJ-EPA		2009-2013
Purpose/target of government follow-up programmes		Amount	Year (start-end)
– Wede Area of fruit fly management control	ACIAR		2010-2014
– Integrated of Pest Management: banana wilt	ACIAR		2010-2014

Pest management extension	Years: 2007-2008
Number of farmers trained in IPM during the year (on horticulture)	20 000 farmers
Number of IPM-FFS conducted during the year (on horticulture)	790 IPM FFS
Number of farmers trained in GAP standard during the year	–
Area under IPM/low pesticide management (ha)	–
Area under organic/pesticide-free management (ha)	–
Crops in which IPM or other ecology friendly programmes are successfully implemented:	Mango, salacca, banana, cabbage, chilli
Crops grown organic/pesticide-free:	Banana, mangos teen, salacca, durian, avocado, ginger

### Progress and constraints

Main progress in recent Years (legislation, policies, infrastructure, investments, training, etc.)
At present, Indonesia has been conducting a number of activities related to fulfillment of SPS/WTO requirements, namely: surveillance for pests of fruit crops (mango, salacca, mangosteen, papaya, lansium, dragon fruit, pineapple, avocado, durian, orchids, raphis, bell peper, ginger.
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
Human resources capabilities of personnel in identifying pests up to species.

## V. PESTICIDE MANAGEMENT

Last updated: December 2008

### Executive summary

The use of pesticide in Indonesia shall be registered through the centre for investment and permit, the Ministry of Agriculture. There are 3 kinds of permit of pesticide use, including trial permit, temporary permit and permanent permit. Technical requirements for the permit status of pesticide use include the evaluation such as quality assurance, safe for human and environment and effective control for specific pest. Permitted pesticides in Indonesia consist of 1,702 pesticides from different trademarks. 341 pesticide formulators and 38 active ingredients of pesticide are prohibited for distribution.

### List of key legislation/regulations/rules

- 1973 Pesticide Regulation No. 7.  
 1996 Joint Decree of the Minister of Health and Minister of Agriculture  
 No. 881/MENKES/SKB/8/1996 on Pesticides Maximum Residues No. 711/Kpts/TP.270/8/1996.  
 2001 Ministry of Agriculture Decree No. 434.1/Kpts/TP.270/7/2001: Pesticide Registration.  
 2002 Ministry of Agriculture Decree No. 517/Kpts/TP.290/9/2002 Supervision of storage, use and the distribution of pesticides.

### Web source for further information: –

Policies regarding pesticide management	Yes	No	Don't know
Do you have national pesticide reduction targets? <i>If yes, what is the target: _____</i>	x		
Have you ratified the Rotterdam (PIC) Convention?		x	
Have you ratified the Stockholm (POP) Convention?		x	
Have you ratified the Basel Convention? (hazardous wastes)	x		
Have you ratified the Montreal Protocol? (MeBr phasing-out)	x		
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?			
Have you adopted Good Laboratory Practices (GLP)?	x		
<i>Pesticide registration</i>			
Do you require pesticides to conform to relevant FAO or WHO specifications?	x		
Do you allow the "me-too" registration and sale of generic pesticides?			
Do you require data on product equivalence for generic registration?			
Do you conduct country-specific risk assessments for...			
occupational risks?	x		
consumer risks?	x		
environmental risks?	x		
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labelling?			
Do you accept evaluation results from other countries?			
Do you accept field studies conducted in other countries?			
Do you require environmental fate studies?			
<i>Incentives/disincentives</i>			

Do you have a special tax on pesticides to cover externality costs?			
Do you subsidize or provide low-cost pesticides?			
Do you subsidize or provide low-cost biopesticides?			
Other policies:			
Web source for further information:			

Organization of pesticide management function	Responsible organizational unit (ministry/department/unit)
Legislation	Pesticides Committee
Registration	MOA/Centre of Investment & Permit/Pesticide Registration
Licensing of shops	Pesticides Committee
Licensing of field applicators	Pesticides Committee
Enforcement/inspections	DG of Crops, DG of Horticulture, DG of Estate DG/Ministry of Environment
Testing of pesticide efficacy	Centre for Plant Quarantine/ DG of Crops, DG of Horticulture, DG of Estate DG
Development of pesticide use recommendations	
Safe use training/extension	
Food residue monitoring	Ministry of Health/ DG of Crops, DG of Horticulture
Environmental monitoring	DG of Crops, DG of Horticulture, DG of Estate DG/Ministry of Environment
Health monitoring	Ministry of Health
<i>Other Stakeholders:</i>	
Pesticide Industry Association	
Civil Society Organizations (NGO, etc.)	

Infrastructure	Years: 2007-2008
Number of registration officers	8
Number of enforcement officers	3 000
Number of department quality control laboratories	5
Number of quality control laboratory personnel	≥12
Number of department residue analysis laboratories	5
Number of residue laboratory personnel	≥10

### Key situation indicators

Pesticide trade: 2004	Tons	US\$ '000 Value
Imports	50 305	
Manufacture		
Export	48 759	
Domestic Use/Sales		
Pesticide use profile: 2004	Tons (a.i./formulation to be specified)	US\$ '000 Value
Agriculture		
Chem. Insecticides		
Chem. Fungicides		
Chem. Herbicides		

Chem. Others: e.g. molluscicide, acaricide		
Other: e.g. Avamectrin, Bt, Neem		
Other purposes		
TOTAL		

### Post registration monitoring

Testing, quality control and effects in the field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?	x		
Do you have significant problems with pesticide resistance?	x		
Do you have a list of pesticides under close observation for problems			
Source for more information: –			

Health and environmental information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?	x		
Do you have a system to monitor pesticide residues in food?	x		
Do you have a system to monitor pesticide residues in the environment?	x		
Do you have significant problems of environmental contamination from pesticides?		x	
Do you have data on pesticides effects on wildlife and ecosystems?		x	
Source for more information: –			

Pesticide disposal	Yes	No	Don't know
Do you have system to collect and safely dispose of used containers and small quantities of left-over pesticides?	x		
Do you have an inventory of outdated and obsolete pesticides in the country? (eg. banned and no longer traded, but still in storage)	x		
Do you have illegal trade in pesticides? if yes: what is the estimated amount: _____	x		
Source for more information: –			

### Key operation indicators

Registration/regulation/monitoring	Years: 2007-2008	
	a.i.*	Trade name
Number of registered pesticide products		1 158
Number of registered bio-pesticides (Avamectrin, Bt, Neem, etc.)	8	>25
Number of restricted-use pesticides/formulations	4	
Number of banned pesticides	36	
Number of licensed outlets		
Number of licensed field applicators (professional and/or farmers)		
Number of licensing violations reported during year		
Number of quality control analyses conducted during year		
Number of food samples analyzed for pesticide residues during year		
Number of samples exceeding MRL		
Number of environmental samples analyzed for pesticide residues		

\* active ingredient

Pesticides restricted in recent years	
Year	Name of active ingredient or hazardous formulation

Pesticides banned in recent years	
Year	Name of active ingredient

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

## VI. ADDITIONAL ISSUES OF INTEREST

Last updated: December 2008

Genetically Modified Crops	
Name of GMO Crop	Area under cultivation [ha]
Cotton	> 550 ha

## 2.9 JAPAN

### I. GENERAL INFORMATION

Last Updated: December 2010

#### Overall executive summary<sup>1</sup>

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 AP PPC.

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.

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.

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.

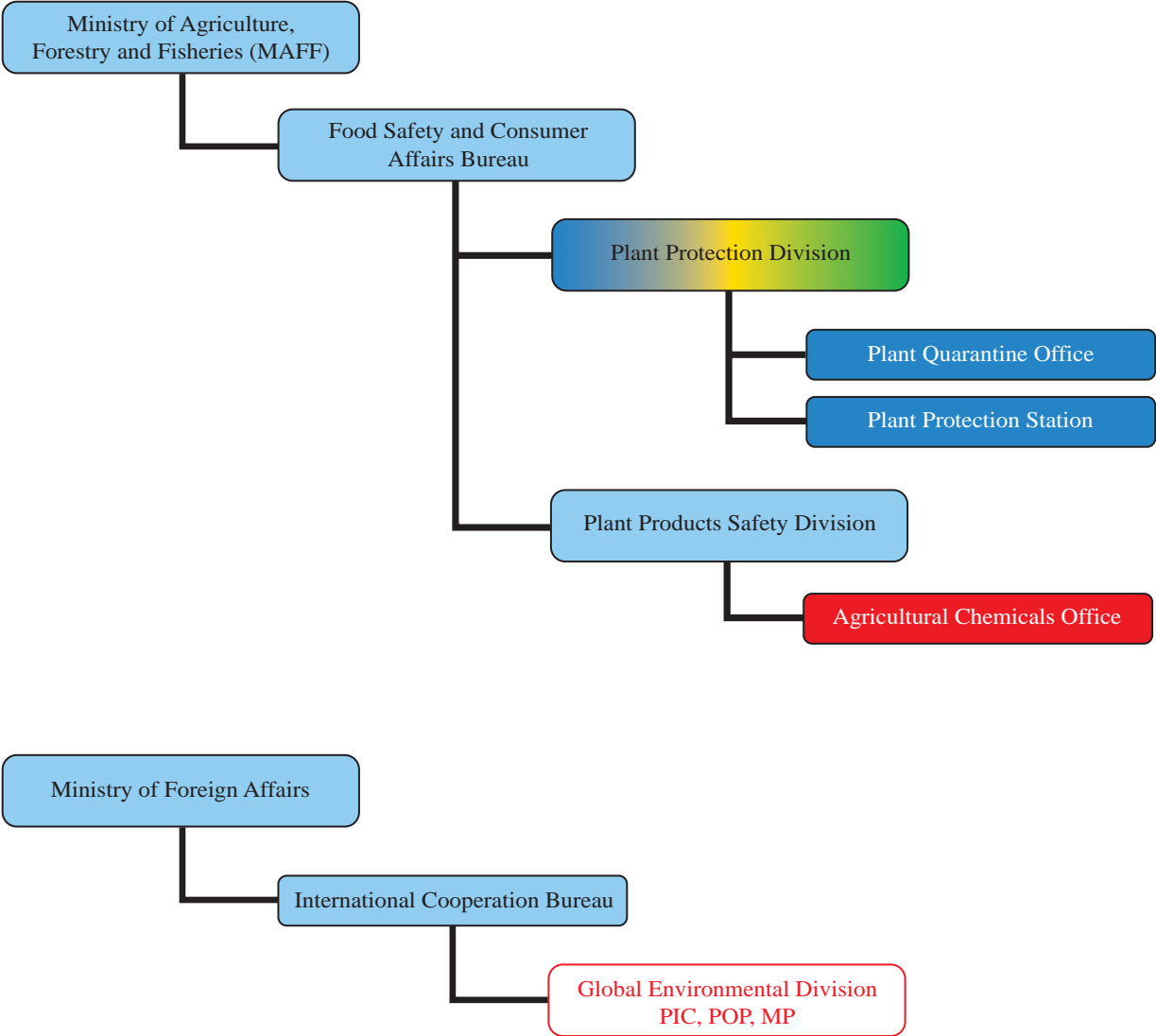
MAFF is going to review the Enforcement Ordinance of the Plant Protection Law. The contents are as follows: Establishment of the quarantine pest list, Amendment of non-quarantine pest list not subject to phytosanitary measures, Amendment of the current list of pest/plant/area combinations subject to 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.

The training course on disinfestation technique using thermal treatment on fruit fly has been organized since 1988 with trainees being invited from countries 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.

---

<sup>1</sup> by Motoi SAKAMURA, Director, Plant Quarantine Office, Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries, Email: [ippc\\_contact@mn.maff.go.jp](mailto:ippc_contact@mn.maff.go.jp)

Plant protection organization chart



Color Code: 

Phytosanitation	Outbreak Management	Pest Management	Pesticides	NPPO
-----------------	---------------------	-----------------	------------	------



---

---

## Important contact addresses

### Responsible ministry/ministries

Ministry of Agriculture, Forestry and Fisheries

*Mr Michihiko KANO, Minister*

Ministry of Agriculture, Forestry and Fisheries

1-2-1 Kasumigaseki, Chiyoda-ku

Tokyo 100-8950

### *Operational Offices:*

#### Plant protection

Plant Protection Division

*Mr Tomoyoshi FUKUMORITA, Director*

Food Safety and Consumer Affairs Bureau

Ministry of Agriculture, Forestry and Fisheries

1-2-1 Kasumigaseki, Chiyoda-ku

Tokyo 100-8950

#### Plant quarantine

Plant Quarantine Office

*Mr Motoi SAKAMURA, Director*

Plant Protection Division

Food Safety and Consumer Affairs Bureau

Ministry of Agriculture, Forestry and Fisheries

1-2-1 Kasumigaseki, Chiyoda-ku

Tokyo 100-8950

Tel: (+81) 3 3502-8111 / 3502-5978 (direct)

Fax: (+81) 3 3502-3386

#### Surveillance and pest outbreaks

Plant Protection Division

*Mr Tomoyoshi FUKUMORITA, Director*

Food Safety and Consumer Affairs Bureau

Ministry of Agriculture, Forestry and Fisheries

1-2-1 Kasumigaseki, Chiyoda-ku

Tokyo 100-8950

#### Invasive species management

Wildlife Division

Nature Conservation Bureau

Ministry of Environment

1-2-2 Kasumigaseki, Chiyoda-ku

Tokyo 100-8950

Tel: (+81) 3 3581 3351

**Pesticide registration**

Agricultural Chemicals Office

*Mr Hiromiki TERADA, Director*

Plant Products Safety Division

Food Safety and Consumer Affairs Bureau

Ministry of Agriculture, Forestry and Fisheries

1-2-1 Kasumigaseki, Chiyoda-ku, Tokyo, 100-8950

**Official international contact points****National Plant Protection Organisation (NPPO) contact point (for IPPC/APPPC)**

Plant Quarantine Office

*Mr Motoi SAKAMURA, Director*

Plant Protection Division

Food Safety and Consumer Affairs Bureau

Ministry of Agriculture, Forestry and Fisheries

1-2-1 Kasumigaseki, Chiyoda-ku

Tokyo 100-8950

Tel: (+81) 3 3502-8111 / 3502-5978(direct)

Fax: (+81) 3 3502-3386

Website: [www.pps.go.jp/english/index.html](http://www.pps.go.jp/english/index.html)

Language(s): English

Contact point received: 01/0710/20073 Source: Government Correspondence

**WTO SPS contact point**

Standards Information Service

International Trade Division

Economic Affairs Bureau

Ministry of Foreign Affairs

2-2-1 Kasumigaseki, Chiyoda-ku

Tokyo 100-8919

Tel: + (81) 3 5501 8344

Fax: + (81) 3 5501 8343

Email: [enquiry@mofa.go.jp](mailto:enquiry@mofa.go.jp)

**Rotterdam Convention (PIC) Designated National Authority (DNA)**

Global Environmental Division

International Cooperation Department

Ministry of Foreign Affairs

2-2-1 Kasumigaseki, Chiyoda-ku

Tokyo 100-8919

Tel: (+81) 3 5501 8245

Fax: (+81) 3 5501 8244

**Stockholm Convention (POP) national focal point (P)**

Global Environmental Division  
 International Cooperation Department  
 Ministry of Foreign Affairs  
 2-2-1 Kasumigaseki, Chiyoda-ku  
 Tokyo  
 Tel: (+81) 3 5501 8245  
 Fax: (+81) 3 55 01 8244

**Basel Convention Competent Authority (CA) and focal point**

Office of Waste Disposal Management  
 Waste Management and Recycling  
 Department  
 Ministry of the Environment  
 1-2-2 Kasumigaseki, Chiyoda-ku  
 Tokyo 100-8975  
 Tel: (+81) 3 5501 3157  
 Fax: (+81) 3 3593 8264  
 Email: env-basel@env.go.jp

Global Environment Division  
 International Cooperation Department  
 Ministry of Foreign Affairs  
 2-2-1 Kasumigaseki, Chiyoda-ku  
 Tokyo 100-8919  
 Tel: (+81) 3 5501 8245  
 Fax: (+81) 3 5501 8244

**Montreal Protocol Focal Point**

Global Environmental Division  
 International Cooperation Department  
 Ministry of Foreign Affairs  
 2-2-1 Kasumigaseki, Chiyoda-ku  
 Tokyo  
 Tel: (+81) 3 5501 8245  
 Fax: (+81) 3 55 01 8244

**Selected country statistics:**

Agricultural Population:	2.6 million	Agricultural Land:	4.6 million ha
GDP: JPY 492 067 000 million (2008)	Agric. GDP: 0.9% (2008)	GNI per capita: US\$ 38 080 (2008)	Undernourishment: – %
Main crops grown: Rice (8 483 000 ton)			

GDP = Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement

## II. PLANT QUARANTINE

Last Updated: December 2010

### List of key legislation/regulations/rules<sup>①</sup>

- Plant Protection Law
- Order for Enforcement of Plant Protection Law

**Web source for further information:** [www.maff.go.jp/pps/](http://www.maff.go.jp/pps/)

Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover domestic quarantine?	x		
Does phytosanitary legislation cover import quarantine?	x		
Does phytosanitary legislation cover export quarantine?	x		
Does phytosanitary legislation cover living modified organisms?		x	
Is plant quarantine a separate organization from animal quarantine?	x		
Other policy initiatives (under review/progress)			
Web source for further information: See the above web source			

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest Risk Assessment	Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries
National standards development	Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries
International notifications	Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries
<i>Import:</i>	
Import permits	Plant Protection Station, Ministry of Agriculture, Forestry and Fisheries
Import inspections	Plant Protection Station, Ministry of Agriculture, Forestry and Fisheries
Emergency action	Plant Protection Station, Ministry of Agriculture, Forestry and Fisheries
<i>Export:</i>	
Phytosanitary certificates	Plant Protection Station, Ministry of Agriculture, Forestry and Fisheries
Treatment of commodities	Plant Protection Station, Ministry of Agriculture, Forestry and Fisheries

Infrastructure	Year: 2009/2010
Number of plant quarantine officers authorized to inspect/certify	873/881
Total qualified personnel for plant pest risk assessment	9/9
Number of quarantine offices	77/72
entry points (sea/air/land/mail = total)	104/39/0/8=151[2009] 105/39/0/8=152[2010]
post-entry plant quarantine containment facilities	5/5
other offices	1/1
Number of quarantine service diagnosis laboratories	2/2
In-country recognized pest diagnostics capabilities (incl. universities, etc.)	
Number of laboratories for insect/mite (arthropod) samples	77/72
Number of laboratories for bacteria samples	77/72
Number of laboratories for virus samples	77/72
Number of laboratories for fungus samples	77/72
Number of laboratories for mycoplasma samples	77/72
Number of laboratories for nematode samples	77/72
Number of laboratories for plant/weed samples	77/72
Number of laboratories for other pests (snail, slug, rodents, etc.)	77/72

Pest-free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)
Overall management	Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries
– surveillance	Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries
– management	Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries
– certification	Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries
List of target pest species and crops ISPM 4	Number of sites in 2010
<i>Omphisa anastomosalis</i> western Islands in south of	All areas except South latitude 30 degree north
<i>Euscepes postfasciatus</i> western Islands in south of	All areas except South latitude 28 degree 40 minutes north and Ogasawara Islands
<i>Cylas formicarius Omphisa anastomosalis</i> western Islands in south of Ogasawara Islands	All areas except South latitude 30 degree north and
Citrus greening disease <i>Euscepes postfasciatus</i>	All areas except south western Islands in south of latitude 27 degree 10 minutes north
List of target pest species and crops ISPM 10	Number of sites in 2010

**Key situation indicators**

International trade		Year: 2010
Main import plant commodities	Main countries/areas of origin	Quantity (tons)
Maize	USA, Ukraine, Argentina	16 221 369 [2009]
Wheat	USA, Canada, Australia	4 864 780 [2009]
Soybean	USA, Canada, Brazil	3 433 316 [2009]
Main export plant commodities	Main destination countries	
Rice	Ghana, Djibouti, Senegal	190 718 [2009]
Wheat flour	Viet Nam, Singapore, Indonesia	34 800 [2009]
Apple	Taiwan	20 426 [2009]

Cooperation projects			
Title (Purpose/target)	Donor	Amount	Years (start-end)
Thermal treatment for the disinfection of fruit flies Target country: developing countries where fruit flies are present (5 trainees [2007], 5 trainees [2008])	JICA (Japan International Cooperation Agency)		[1988-]
Cooperation for the improvement of phytosanitary capacity in Asian countries through capacity building (GCP/RAS/226/JPN, FAO)	The Government of JAPAN		[2007-]
Improvement of plant quarantine treatment technique against fruit flies on fresh fruits Target country: Indonesia	JICA (Japan International Cooperation Agency)		[2009-]
Title of government follow-up programmes		Amount	Years (start-end)

**Key operation indicators**

Institutional functions	Years: 2009-2010
Number of import permits issued	0
Number of import inspections carried out	1 019 888/1 015 455
Number of emergency phytosanitary treatments taken on imports	0
Number notifications of non-compliance	408/380
Number of conventional phytosanitary certificates issued	19 524/20 555
Number of electronic phytosanitary certificates issued	0

Number of quarantine pests intercepted		Years: 2009-2010
Top three commodity	Top three pest/commodity	# of interceptions
Banana	<i>Pseudococcidae spp.</i>	4 859 [2009]
	<i>Diaspididae spp.</i>	3 814 [2009]
	<i>Aphididae spp.</i>	227 [2009]
Pineapple	<i>Pseudococcidae spp.</i>	2 733 [2009]
	<i>Diaspididae spp.</i>	124 [2009]
Rose	<i>Tetranychus spp.</i>	1 847 [2009]
	<i>Aphididae spp.</i>	227 [2009]
	<i>Frankliniella spp.</i>	73 [2009]

List of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of non-quarantine pests	2008	148 species	5 genus + 16 species	
Number of regulated non-quarantine pests				
Number of regulated import articles				
Website for the above information: –				

Pest risk analysis (PRA)	Insects	Pathogens	Plants
No. of PRA completed and documented (according to ISPM)	799	302	0
Web source for further information: –			

### Progress and constraints

<b>Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)</b>
<b>Main constraints (personnel, infrastructure, administrative, operational, training, etc.)</b>

Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
ISPM 01 Principles of plant quarantine as related to international trade			x				x	
ISPM 02 Guidelines for pest risk analysis			x				x	
ISPM 03 Guidelines for the export, shipment, import and release of biological control agents and other beneficial organisms			x				x	
ISPM 04 Requirements for the establishment of pest free areas			x				x	
ISPM 05 Glossary of phytosanitary terms			x				x	
ISPM 06 Guidelines for surveillance			x				x	
ISPM 07 Export certification system			x				x	
ISPM 08 Determination of pest status in an area			x				x	
ISPM 09 Guidelines for pest eradication programmes			x				x	
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites			x				x	
ISPM 11 Pest risk analysis for quarantine pests			x				x	
ISPM 12 Guidelines for phytosanitary certificates			x				x	
ISPM 13 Guidelines for the notification of noncompliance and emergency action			x				x	
ISPM 14 The use of integrated measures in a systems approach for pest risk management			x				x	
ISPM 15 Guidelines for regulating wood packaging material in international trade			x				x	
ISPM 16 Regulated non-quarantine pests: concept and application			x				x	
ISPM 17 Pest reporting			x				x	
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure		x						
ISPM 19 Guidelines on lists of regulated pests			x				x	
ISPM 20 Guidelines for a phytosanitary import regulatory system			x				x	
ISPM 21 Pest risk analysis for regulated non-quarantine pests			x				x	
ISPM 22 Requirements for the establishment of areas of low pest prevalence			x				x	
ISPM 23 Guidelines for inspection			x				x	
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures			x				x	
ISPM 25 Consignments in transit			x				x	
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)			x				x	
ISPM 27 Diagnostic protocols for regulated pests			x				x	
ISPM 28 Phytosanitary treatments for regulated pests			x				x	
ISPM 29 Recognition of pest free areas and areas of low pest prevalence			x				x	
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (tephritidae)			x				x	
ISPM 31 Methodologies for sampling of consignments			x				x	
ISPM 32 Categorization of commodities according to their pest risk			x				x	
ISPM 33 Pest free potato (Solanum spp.) micropropagative material and minitubers for international trade			x				x	
ISPM 34 Design and operation of post-entry quarantine stations for plants			x				x	
Comments/constraints: –								



### III. SURVEILLANCE, PEST OUTBREAKS AND INVASIVE SPECIES

Last updated: December 2010

#### List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions

- Plant Protection Law
- Order for Enforcement of Plant Protection Law

**Web source for further information:** [www.maff.go.jp/pps/](http://www.maff.go.jp/pps/)

Policies regarding invasive/migratory species management	Yes	No	Don't know
National strategy to control serious field pest outbreaks?	x		
National strategy to control migratory or periodically occurring pests?	x		
National strategy to eradicate serious newly invaded exotic pests?	x		
Other policies: (e.g. subsidies, etc.)			
Web source for further information: See the above web source			

Organization of functions related to surveillance pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field/storage pest outbreaks</i>	(e.g. BPH, boll worm, etc.)
Response strategy/plans	Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries
Surveillance	Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries
Control	Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries
Surveillance	Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries
Control	Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries
<i>New exotic pest eradication</i>	(e.g. coconut beetle)
Response strategy/plans	Ministry of Agriculture, Forestry and Fisheries / Ministry of the Environment
Surveillance	Ministry of Agriculture, Forestry and Fisheries / Ministry of the Environment
Control/eradication	Ministry of Agriculture, Forestry and Fisheries / Ministry of the Environment
Reporting to bilateral or international organizations	Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries

Infrastructure	Year: 2009	
Number of designated staff for <b>surveillance</b> of field pests of national importance	Prefecture	3 485
	Government	873
	Total	4 358
Number of designated staff for <b>surveillance</b> of migratory and periodically occurring pests	Prefecture	3 485
	Government	873
	Total	4 358
Number of designated staff for <b>surveillance</b> of invasive species		
Number of designated staff for <b>control</b> of field pests of national importance		
Number of designated staff for <b>control</b> of migratory and periodically occurring pests		
Number of designated staff for <b>eradication</b> of invasive species		

### Key situation and operation indicators

(Outbreaks and invasions in the past 2 years)

New exotic species found established in the country	Insects	Pathogens	Weeds
Total number for 2010 [most recent]			
Total number for 2009 [year before]		1	
Total number on record		1	

Eradication or internal quarantine actions taken against economically important species			
Name of species	<i>Plum Pox Virus</i>		
Year of first discovery	2009		
Pathway	Unknown		
Location of first discovery	Tokyo		
Area affected [ha]			
Area treated [ha]			
Control method	Destruction of host plants, movement restriction and containment from the regulated areas		
Expenditures			

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species			
Year of outbreak			
Area affected [ha]			
Estimated damage US\$			
Area treated by government [ha]			
Expenditures by government [US\$]			
Control method			
More information			

**Progress and constraints**

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

**IV. PEST MANAGEMENT**

Last updated: December 2010

**List of key legislation/regulations/rules for pest management**

- Plant Protection Law
- Order for Enforcement of Plant Protection Law

**Web source for further information:** [www.maff.go.jp/pps/](http://www.maff.go.jp/pps/)

Policies regarding pest management	Yes	No	Don't know
Do you have policies encouraging organic or low-pesticide use production	x		
Is IPM specifically mentioned in laws or policy documents?	x		
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?		x	
Is pest management extension separate from general extension?			
Other policies: (subsidies, production inputs, etc.)			
Web source for further information: See the above web source			

Organization of pest management function	Responsible organizational unit (ministry/department/unit)
Policy development	Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries
Pest management research	Agriculture, Forestry and Fisheries Research Council, Ministry of Agriculture, Forestry and Fisheries
Control recommendations	Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries
Pest management extension	Technology and Extension Division, Agricultural Production Bureau, Ministry of Agriculture, Forestry and Fisheries
IPM training	Plant Protection Division, Food Safety and Consumer Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries
GAP training	

Infrastructure	Year: 2009	
Number of technical officers for pest management	Prefecture	3 485
	Government	873
	Total	4 358
Number of central, regional, provincial or state offices	Central:	1
	Regional:	8
	Prefecture:	48
Number of district and village level field offices		
Number of field/extension agents for pest management advice		
Number of field/extension agents trained in IPM-FFS facilitation		
Number of government biocontrol production/distribution facilities		
Number of government biopesticide production/distribution facilities		
Number of general extension staff involved in pest management	7 341	
Number of designated plant protection technical officers for extension		

**Key situation and operation indicators**

Pest management	Yes	No	Don't know
Does the country have a National IPM programme? <i>If yes, give Name and Address of IPM Programme:</i>	x		
Does the country have specific IPM extension programmes? <i>If yes, in which crops?:</i>	x		
Does the country have specific IPM research programmes? <i>If yes, in which crops?:</i>	x		
Does the country have specific GAP extension programmes? <i>If yes, in which crops?:</i>		x	
Does the country have specific GAP research programmes? <i>If yes, in which crops?:</i>		x	

Market shares (estimated value, volume or area under control)	Year: 2010
Size of chemical pest control market	
Size of biopesticides market	
Size of biological control agents market	

Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop	Rice[2009]	Rice [2009]	Rice [2009]
Name(s) of pest(s)	Rice bug group	Blast (Ear)	White-backed rice planthopper
Estimated crop loss			
Affected area	1 102 000 ha	1 071 000 ha	952 000 ha
Number of pesticide applications or amount of pesticide used			
Government action taken			

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)

Pest management extension	Year: 2010
Number of farmers trained in IPM during the year	
Number of IPM-FFS conducted during the year	
Number of farmers trained in GAP standards during the year	
Area under IPM/low pesticide management [ha]	
Area under organic/pesticide-free management [ha]	
Crops in which IPM or other ecology friendly programmes are successfully implemented:Rice, indoor grown strawberry, orange and apple etc.	
Crops grown organic/pesticide-free:	

**Progress and constraints**

Main progress in recent Years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

## V. PESTICIDE MANAGEMENT

Last updated: December 2010

### List of Key Legislation/Regulations/Rules

- Agricultural Chemicals Regulation Law
- Order for Enforcement of Agricultural Chemicals Regulation Law
- Ordinance for Enforcement of Agricultural Chemicals Regulation Law
- Ministerial ordinance to provide for standard for users of Agricultural Chemicals
- Ministerial ordinance to provide for prohibition of distribution on Agricultural Chemicals

### Web sources for further information:

- The above laws are available on the website of MAFF in Japanese, [www.maff.go.jp/j/nouyaku/index.html](http://www.maff.go.jp/j/nouyaku/index.html)
- Agricultural Chemicals Regulation Law in English is available on the website of the Food and Agricultural Materials Inspection Center (FAMIC), [www.acis.famic.go.jp/eng/hourei/index.htm](http://www.acis.famic.go.jp/eng/hourei/index.htm)

Policies regarding pesticide management	Yes	No	Don't know
Do you have national pesticide reduction targets? <i>If yes, what is the target: _____</i>		x	
Have you ratified the Rotterdam (PIC) Convention?	x		
Have you ratified the Stockholm (POP) Convention?	x		
Have you ratified the Basel Convention? (hazardous wastes)	x		
Have you ratified the Montreal Protocol? (MeBr phasing-out)	x		
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?	x		
Have you adopted Good Laboratory Practices (GLP)?	x		
<i>Pesticide registration</i>			
Do you require pesticides to conform to relevant FAO or WHO specifications?		x	
Do you allow the "me-too" registration and sale of generic pesticides?		x	
Do you require data on product equivalence for generic registration?	x		
Do you conduct country-specific risk assessments for...			
occupational risks?	x		
consumer risks?	x		
environmental risks?	x		
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labelling?		x	
Do you accept evaluation results from other countries?		x	
Do you accept field studies conducted in other countries?		x	
Do you require environmental fate studies?	x		
<i>Incentives/disincentives</i>			
Do you have a special tax on pesticides to cover externality costs?		x	
Do you subsidize or provide low-cost pesticides?		x	
Do you subsidize or provide low-cost biopesticides?		x	
Other policies:			
Web source for further information: <b>See the above web sources</b>			

Organization of pesticide management function	Responsible organizational unit (ministry/department/unit)
Legislation	Agricultural Chemicals Office, Plant Products Safety Division, Food Safety and Consumer Affairs Bureau, MAFF
Registration	Agricultural Chemicals Office, Plant Products Safety Division, Food Safety and Consumer Affairs Bureau, MAFF
Licensing of shops	Prefectural government
Licensing of field applicators**	
Enforcement/inspections	Enforcement Agricultural Chemicals Office, Plant Products Safety Division, Food Safety and Consumer Affairs Bureau, MAFF Inspections Food and Agricultural Materials Inspection Center
Testing of pesticide efficacy	
Development of pesticide use recommendations	Agricultural Chemicals Office, Plant Products Safety Division, Food Safety and Consumer Affairs Bureau, MAFF
Safe use training/extension	Agricultural Chemicals Office, Plant Products Safety Division, Food Safety and Consumer Affairs Bureau, MAFF Prefectural government, etc.
Food residue monitoring	The Ministry of Health, Labour and Welfare
Environmental monitoring	The Ministry of the Environment
Health monitoring	
Other Stakeholders:	
Pesticide Industry Association	Japan Crop Protection Association
Civil Society Organizations (NGO, etc.)	

Infrastructure	Year: 2010
Number of registration officers <sup>a</sup>	[15]
Number of enforcement officers <sup>b</sup>	[Around 60]
Number of department quality control laboratories	
Number of quality control laboratory personnel	
Number of department residue analysis laboratories	
Number of residue laboratory personnel	

<sup>a</sup> Agricultural Chemicals Office, Plant Products Safety Division, Food Safety and Consumer Affairs Bureau, MAFF

<sup>b</sup> Incorporated Administrative Agency – the Food and Agricultural Materials Inspection Center, Agricultural Chemicals Inspection Station

### Key situation indicators

Pesticide trade: 2009 <sup>a</sup>	Tons	US\$ '000 Value
Imports	26 019	
Manufacture		
Export	29 239	
Domestic Use/Sales		
Pesticide sales profile <sup>b</sup> : 2009 <sup>a</sup>	Tons (a.i.)	US\$ '000 Value
Agriculture		
Chem. Insecticides	23 395	
Chem. Fungicides	24 231	
Chem. Herbicides	12 805	
Chem. Others: e.g. molluscicide, acaricide	528	
Other: e.g. Avamectrin, Bt, Neem		



Other purposes		
TOTAL	60 959	

<sup>a</sup> Data are counted on Japanese Agricultural Chemicals year ending September. (e.g. 2009 is from 1st October 2008 to 30<sup>th</sup> September 2009)

<sup>b</sup> 1) Data refer to sales of agricultural chemicals in Agricultural Chemicals handbook (Noyaku Yoran).

Figures are total A.I. sales amount (t) converted from formulated products with rate of A.I.

2) Data of biopesticides are not provided in this table.

### Post registration monitoring

Testing, quality control and effects in the field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?		x	
Do you have significant problems with pesticide resistance?			
Do you have a list of pesticides under close observation for problems		x	
Source for more information: –			

Health and environmental information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?	x		
Do you have a system to monitor pesticide residues in food?	x		
Do you have a system to monitor pesticide residues in the environment?	x		
Do you have significant problems of environmental contamination from pesticides?		x	
Do you have data on pesticides effects on wildlife and ecosystems?	x		
Source for more information: –			

Pesticide disposal	Yes	No	Don't know
Do you have system to collect and safely dispose of used containers and small quantities of left-over pesticides?	x		
Do you have an inventory of outdated and obsolete pesticides in the country? (eg. banned and no longer traded, but still in storage)		x	
Do you have illegal trade in pesticides? if yes: what is the estimated amount: _____		x	
Source for more information: –			

### Key operation indicators

Registration/regulation/monitoring	Year: As of 31 <sup>st</sup> December 2010	
	a.i.*	Trade name
NNumber of registered pesticide products (Total number including bio-pesticides)	540	4 509
Number of registered bio-pesticides (macrobial + microbial)	44	113
Number of restricted-use pesticides/formulations (Note that the use of the formulations including these active ingredients has been restricted due to water pollution.)	1	8
Number of banned pesticides	26	
Number of licensed outlets		
Number of licensed field applicators (professional and/or farmers)		

Number of licensing violations reported during year	
Number of quality control analyses conducted during year	
Number of food samples analyzed for pesticide residues during year	
Number of samples exceeding MRL	
Number of environmental samples analyzed for pesticide residues	

\* active ingredient

Pesticides restricted in recent years (2009-2010)	
Year	Name of active ingredient or hazardous formulation

Pesticides banned in recent years (2009-2010)	
Year	Name of active ingredient
2010	Lindane
2010	Kelthane or Dicofol
2010	Pentachlorobenzene
2010	alpha-Hexachlorocyclohexane
2010	beta-Hexachlorocyclohexane
2010	Chlordecone

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

## VI. ADDITIONAL ISSUES OF INTEREST

Genetically Modified Crops	
Name of GMO Crop	Area under cultivation [ha]

## 2.10 LAO PEOPLE'S DEMOCRATIC REPUBLIC

### I. GENERAL INFORMATION

Last updated: December 2010

#### Overall executive summary<sup>1</sup>

Lao PDR is a landlocked country. It occupies an area of 236,800 km<sup>2</sup> 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.

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.

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).

---

<sup>1</sup> by Phaydy Phixaysarakham, Deputy Director-General of the Department of Agriculture, Ministry of Agriculture and Forestry, Emails: doag@laotel.com; phaydy8@yahoo.com

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 programme 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.

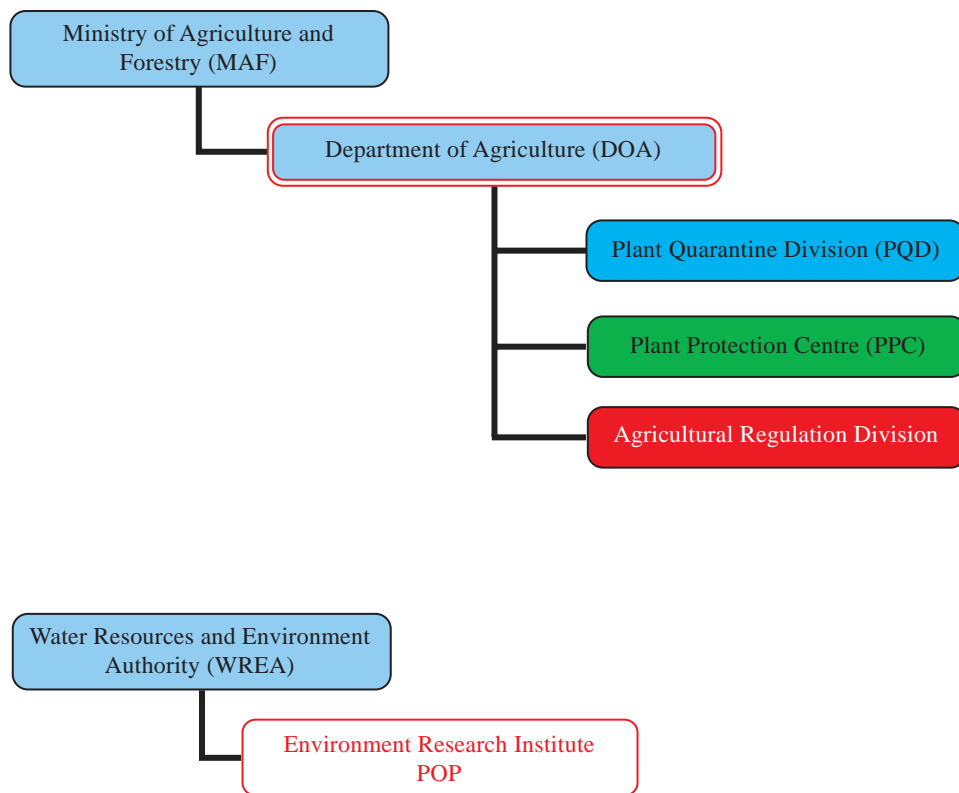
Protecting the Lao People's Democratic Republic's Plant Health Status and Facilitating Safe Trade in Plants and Plant Products, the NPPO of Lao PDR is dealing its mandates with the Prime Minister Decree on Plant Quarantine promulgated on 1993 and so far to be in compliance with the WTO-SPS Agreement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

### Plant protection organization chart



Color Code:



**Important contact addresses****Responsible ministry/ministries**

Ministry of Agriculture and Forestry

*Mr Sitaheng Rasphone, Minister*

P.O. Box 811

Vientiane 0100, Lao PDR

Tel: (+856) 21 412340

Fax: (+856) 21 412344

**Responsible department**

Department of Agriculture

*Dr Monthathip Chanphengxay, Director General*

Ministry of Agriculture and Forestry

Lanexang Avenue, Patuxay Square; P.O. Box 811

Vientiane, Lao PDR

Tel: (+856) 21 412 350

Fax: (+856) 21 412 349

Emails: doag@laotel.com

Monthathip\_cc@yahoo.com

**Address for nominations**

–

**Operational offices:****Plant protection**

Plant Protection Center

*Mr Somhak Vongvixay, Acting Director of Center*

Department of Agriculture, MAF

Thadeua Rd, Km 13

Vientiane, Lao PDR

Fax: (+ 856) 21 812164

Email: –

**Plant quarantine**

Department of Agriculture

*Dr Souraphone Inthavong, Director of Division*

Division of Plant Quarantine ,

Department of Agriculture, Ministry of Agriculture and Forestry

Lanexang Avenue, Patuxay Square, P.O. Box. 811

Vientiane, Lao PDR

Tel: (+856) 21 452649

Fax: (+856) 21452649

Email: su-inthavong@hotmail.com

**Surveillance, pest outbreaks and invasive species management**

Plant Protection Centre

*Mr Somhak Vongvixay, Acting Director of Plant Protection Centre*

Department of Agriculture, MAF

Thadeua Rd, Km 13

Vientiane, Lao PDR

Fax: (+856) 21 812164

Email: –

**Pesticide registration**

Director of Division

*Mr Khamphoui Louanglath*

Division of Agriculture Regulatory

Department of Agriculture, Ministry of Agriculture and Forestry

Lanexang Avenue, Patuxay Square, P.O.Box. 811

Vientiane, Lao PDR

Tel: (+856) 21 412350

Fax: (+856) 21412349

Emails: doag@laotel.com

phoui2@hotmail.com

**Official international contact points****National Plant Protection Organization (NPPO) contact points (for IPPC/APPPC)**

(1) Department of Agriculture

*Dr Monthathip Chanphengxay, Director General*

Department of Agriculture

Ministry of Agriculture and Forestry

Lanexang Avenue, Patuxay Square; P.O. Box 811

Vientiane, Lao PDR

Tel: (+856) 21 412 350

Fax: (+856) 21 412 349

Emails: doag@laotel.com

Monthathip\_cc@yahoo.com

(2) Department of Agriculture

*Mr Phaydy Phiaxaysarakham, Deputy Director-General*

Department of Agriculture

Ministry of Agriculture and Forestry

Lanexang Avenue, Patuxay Square; P.O. Box 811

Vientiane, Lao PDR

Tel: (+856) 21 412 350

Fax: (+856) 21 412 349

Emails: doag@laotel.com

phaydy8@yahoo.com



**WTO-SPS contact point****Implementing Coordination Committee for SPS and TBT related to TDF (Trade Development Facilitation under Ministry of Agriculture and Forestry), Plant Health Component**

Department of Agriculture

*Mr Phaydy Phixaysarakham, Deputy Director- General*

Department of Agriculture

Ministry of Agriculture and Forestry

Lanexang Avenue, Patuxay Square; P.O. Box 811

Vientiane, Lao PDR

Tel: (+856) 21 412 350

Fax: (+856) 21 412 349

Emails: doag@laotel.com

Phaydy8@yahoo.com

**Rotterdam Convention (PIC) DNA Pesticides**

Department of Agriculture

*Ms Khamphoui Louanglath, Director of Division*

Division of Agriculture Regulatory

Department of Agriculture, Ministry of Agriculture and Forestry

Lanexang Avenue, Patuxay Square

P.O. Box 811, Vientiane, Lao PDR

Tel: (+856) 21 412350

Fax: (+856) 21412349

Emails: doag@laotel.com

phoui2@hotmail.com

**Stockholm Convention (POP) National Focal Point**

Environment Research Institute (ERI)

*Mrs Monemany Nhoibouakong, Acting Director General*

Vientiane, Lao PDR

Tel: (+856 21) 213 470

Fax: (+856 21) 213 472

Email: mone\_many@yahoo.com

**Basel Convention Competent Authority (CA)**

—

**Montreal Protocol focal point**

—

**Selected country statistics:**

Last updated: December 2010

Agricultural Population	4.5 million	Agricultural Land	1.0 million ha
GDP: US\$ 2 321 million	Agric. GDP: 45.4%	GNI per capita: US\$ 500	Undernourishment: 22%
Main crops grown: Rice, maize, coarse grain, tube, vegetables, tea, coffee, tropical fruit trees.			

GDP = Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement

## II. Plant quarantine

Last updated: December 2010

### Executive summary<sup>2</sup>

#### Outline of plant quarantine in Lao PDR

Lao PDR is a least developing country, with agriculture being its main sector of natural economy. Lao PDR is a party member of international treaties such as International Plant Protection Convention (IPPC), which provides standards for phytosanitary measures on how to prevent the spread and introduction of pests of plants and plant products. Since the country has limited resources and lacks experience on how to deal with these subjects, both in the short term and the long term, it will place emphasis on securing common and effective action to prevent the spread and introduction of pests of plants and plant products, and to promote appropriate measures for their control. Its application is much wider than the protection of cultivated plants.

#### Legal framework

- “Prime Minister Decree on Plant Quarantine” No.66/PM, dated 21 March 1993.
- “Ministerial Agreement on Plant Quarantine Regulation” No.0369/MAF, dated 02 July 1993.
- “Ministerial Notice on Role and Function and Standard for Entry/exit Plant Quarantine Stations for implementing the Prime Minister Decree No.66/PM” No.0754/MAF.DoA.06, dated 14 July 2006.
- “Plant Protection and Quarantine Law, No. 06/NA” has been approved by the National Assembly on 9 December 2008 and promulgated by Presidential Decree No. 241 of 18 December 2008.

#### Set-ups

- 1999 Agricultural Regulatory Division, Department of Agriculture, MAF.
- 2002 Reformed Plant Protection Center.
- 2000 9 land border and river port plant quarantine border posts.
- 2008 15 international plant quarantine border posts located in 10 provinces

#### Assistance from donors

- **NZAID**  
NZAID conducted “NZAID Project on Phytosanitary Capacity Development” for three years (2001-2004) to establish strategic plan on phytosanitary and national phytosanitary database (NPD). Now “Phytosanitary Capacity Building Project for the Mekong Region” is ongoing as a second phase project focusing on specific training topics on pest surveillance, pest diagnostic, pest specimen curation and preservation.
- **AusAID**  
AusAID is implementing “Sanitary and Phytosanitary Capacity Building Programme” to enhance SPS capacity in Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines,

<sup>2</sup> by Phaydy Phixaysarakham, Deputy Director-General, Department of Agriculture, Ministry of Agriculture and Forestry, Emails: doag@laotel.com; phaydy8@yahoo.com

Thailand and Vietnam as a part of “Asia Regional Development Cooperation Programme”. The project is seeking to extend its activities.

- **JICA**

JICA is supporting an in-country and third country training programme on Phytosanitary aiming to train plant quarantine staffs in the area of plant quarantine inspection.

- **World Bank (WB)**

WB is producing a paper entitled “Sanitary and Phytosanitary (SPS) management Capacity Building Action Plan” which consolidates the methods to strengthen SPS in Lao PDR. The project is trade focused, not fully to strengthen or develop the capacity on phytosanitary development.

### **National goal and objectives**

1. Conduct physical and instrumental awareness on newly approved Plant Protection and Quarantine Law.
2. Continue using and improving (National Phytosanitary Database) NPD system, since it is already developed half way by the previous NZAID project.
3. Improve inspection system at the main entry/exit points.
4. Develop national guidelines and procedural manuals on plant quarantine and plant protection accordingly as stipulated in the new plant quarantine law in compliance with WTO/SPS requirements.
5. Improve pest surveillance systems as well as pest inventory and insect pest collection for major high economic potential crops.
6. Improve pest diagnostic capability.
7. Improve pest risk analysis capability.
8. Improve export certification system.
9. Develop eradication standards for national pests of plants and plant products.
10. Integration of plant and animal quarantine activities at the entry/exit points;
11. Develop a repository of plant pest information on selected major crops based on general surveillance data by collating data/information on all previously recorded pests in the country and entering the data/information in the pest status records component of the national phytosanitary database (NPD).
12. Develop and strengthen physical facilities (premise and equipment) required for plant pest diagnosis. These include a two-level reference laboratory capable for diagnosis of a wide range of plant pest in the various disciplines in central laboratory that should be set in the Plant Protection Center (PPC) in Vientiane, and the development of smaller regional laboratories furnishing with necessary rudimentary equipment capable for identification of plant pest at a more basic level at strategic location in the provincial offices near major entry/exit points and major crop production areas. In this context, the post-entry plant quarantine station should be also taken into account.
13. Develop the human resource capabilities for undertaking pest diagnosis in the various phytosanitary and plant health disciplines.

Lao PDR currently has minimal or no capabilities for the identification of some significant pest groups including virus like organisms, bacteria, fungi and weeds.

The capacity to identify arthropod pests is also mainly limited to a small number of common pests which are known to occur on rice in Lao PDR. Hence, this is another critical area which needs urgent attention but one which will take a few years for developing all the intangible assets (e.g. human resource, technical capabilities) and tangible assets (including laboratories and equipment).

The NPPO currently has very limited capacity to minimize the probability of new pest introductions or for early detection of new pest introduction and respond to such introductions before the pest becomes widely established. Hence this is another important area for capacity development.

The NPPO has virtually no capacity or competencies to raise PRA to international standards. The lack of technically skilled manpower in Lao PDR, at least in the short term, presents the NPPO with major challenges.

Strategic options to consider in the short term include awareness building and training programmes for the development of basic skills for undertaking PRA with management and technical staff from the NPPO, NAFRI, NAFES and the Faculty of Agriculture of the National University of Laos with donor agency assistance; development of computer assisted tools to facilitate learning and for undertaking PRAs, improving the resources required for undertaking PRAs (modern books, access to the internet, CD-ROMs with pest and crop information, etc.).

In the medium term to long term, the development of the capacity of the National University of Laos to teach PRA as part of its curriculum in plant protection would be a cost effective way of building sustainable systems in the country. Advanced level training for specialists from the University to acquire the skills and establish a course in PRA would assist in developing the foundation for capacity building in this fundamental area for phytosanitary activities.

The NPPO has also very limited capacity to undertake pest diagnosis in almost all the disciplines. The gaps are substantial in all areas: skilled human resources, systems, documented procedures, physical assets (including appropriate laboratories and equipment) and laboratory management capabilities.

The most serious area of concern is the shortage of technically skilled manpower in Lao PDR, leaving the NPPO with limited options for the rapid development of high level technical pest diagnostic skills in this critical or core area.

Specific surveys are procedures by which a NPPO obtains information on pests of concern on specific sites in an area over a defined period of time. The verified information acquired may be used to determine the presence or distribution of pests in an area or in a host or commodity, or their absence from an area (in the establishment of pest free areas).

Historically, specific survey programmes have mainly been focused on rice established under field based Integrated Pest Management (IPM) Programmes for a relatively small number of readily observable pests. Most of the data collected under these programmes were in the nature of monitoring surveys on pest-predator population levels especially on insect pests to determine if interventions were required to control the pest populations. Hence, the objectives of the IPM surveys and the methodologies employed were significantly different from what is required for developing a comprehensive pest surveillance system on a wide range of crops with stringent requirements for pest diagnosis (identification and verification) as outlined in the ISPMs.

Neither the NPPO nor any of the non-NPPO agencies can currently meet the technical requirements for diagnostic services in most of the disciplines. Capacity building for pest diagnosis is an urgent and high priority area of need but one in which substantial inputs are required both from the government and from donor agencies.

The NPPO needs a management system that ensures that all requirements, including certification specifications, legislative requirements and administrative requirements are satisfied; identify a person or office responsible for the export certification system; identify the duties and lines of communication of all personnel with certification related responsibilities; and ensure that adequate personnel and resources are available to undertake the following functions:

- maintenance of information on importing country phytosanitary requirements as needed;
- production of operational instructions to ensure that importing country phytosanitary requirements are satisfied;
- inspection and testing of consignments and associated conveyances;
- identification of organisms found during inspection of consignments;
- verification of the authenticity and integrity of phytosanitary procedures;
- completion and issue of phytosanitary certificates;
- document storage and retrieval;
- training;
- dissemination of certification-related information;
- review regularly the effectiveness of its export certification system; and
- development of bilateral protocols, if necessary.

#### List of key legislation/regulations/rules

- Prime Minister Decree on Plant Quarantine No.66/PM, dated 21 March 1993.
- Ministerial Agreement on Plant Quarantine Regulation No.0369/MAF, dated 2 July 1993.
- Ministerial Notice on Role and Function and Standard for entry/exit Plant Quarantine Station No.0754/MAF.DoA.06, dated 14 July 2006.
- Law on Plant Protection and Quarantine has been approved by National Assembly in 9 December 2008.

#### Web source for further information: –

Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover domestic quarantine?	x		
Does phytosanitary legislation cover import quarantine?	x		
Does phytosanitary legislation cover export quarantine?	x		
Does phytosanitary legislation cover living modified organisms?	x		
Is plant quarantine a separate organization from animal quarantine?	x		
Other policy initiatives (under review/progress)			
Web source for further information: –			

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest risk assessment (PRA)	MAF/DOA/PQD/PPC/NUOL
National standards development	MAF/DOA
International notifications	MAF/DOA/PQD
<i>Import:</i>	
Import permits	MAF/DOA/PQD/ARD
Import inspections	MAF/DOA/PQD/PAFO
Emergency action	MAF/DOA/PQD/PAFO
<i>Export:</i>	
Phytosanitary certificates	MAF/DOA/PQD/PAFO
Treatment of commodities	

Infrastructure	Year: 2010
Number of plant quarantine officers authorized to inspect/certify	27
Total qualified personnel for plant pest risk analysis	3
Number of quarantine offices	
entry points (sea/air/land/mail = total)	9
post-entry plant quarantine containment facilities	
other offices	
Number of quarantine service diagnosis laboratories	1
In-country recognized pest diagnostics capabilities (incl. universities, etc.)	
Number of laboratories for insect/mite (arthropod) samples	2
Number of laboratories for bacteria samples	1
Number of laboratories for virus samples	
Number of laboratories for fungus samples	2
Number of laboratories for mycoplasma samples	
Number of laboratories for nematode samples	1
Number of laboratories for plant/weed samples	1
Number of laboratories for other pests (snail, slug, rodents, etc.)	

Pest-free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)
Overall management	
– surveillance	
– management	
– certification	
List of target pest species and crops ISPM 4	Number of sites in 2010
List of target pest species and crops ISPM 10	Number of sites in 2010

**Key situation indicators**

International trade		Year: 2010
Main import plant commodities	Main countries/areas of origin	Quantity (tons)
Seed and planting material	Viet Nam, China, Thailand, India, UK, Australia	
Main export pPlant commodities	Main destination countries	
Vegetables, coffee, tea, rice, maize, soybean, mungbean	EU, America, Japan, China, Viet Nam, Thailand	

Cooperation Projects			
Title (Purpose/target)	Donor	Amount	Years (start-end)
Phytosanitary Capacity Development in CLMV countries	NZAID	Unknown	2000-2001
SPS Capacity Building Programme	AusAID	Unknown	2005-present
ASEAN Plant Health Capacity Project	AusAID	Unknown	2005-present
Title of government follow-up programmes		Amount	Years (start-end)
Plant Quarantine Strengthening		USD 17 600	2006-2007
Improving PQ entry/exit points		USD 35 200	2007-2008

**Key operation indicators**

Institutional functions	Year: 2010
Number of import permits issued	75
Number of import inspections carried out	
Number of emergency phytosanitary treatments taken on imports	
Number notifications of non-compliance	
Number of conventional phytosanitary certificates issued	1 604
Number of electronic phytosanitary certificates issued	

Number of quarantine pests intercepted		Year: 2010
Top three commodity	Top three pest/commodity	# of interceptions

List of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of quarantine pests				
Number of regulated non-quarantine pests				
Number of regulated import articles				
Website for the above information: –				

Pest risk analysis (PRA)	Insects	Pathogens	Plants
Number of PRA completed and documented (according to ISPM)			
Web source for further information: –			

**Progress and constraints****Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)**

Two in-country training courses on plant quarantine inspection (32 staffs have been trained basic level).

**Main constraints (personnel, infrastructure, administrative, operational, training, etc.)**

Lack of personnel, no adequate infrastructure, no operational budget, not enough training.



Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
<b>International measures</b>								
ISPM 01 Principles of plant quarantine as related to international trade	x			x				
ISPM 02 Guidelines for pest risk analysis	x			x				
ISPM 03 Code of conduct for the import and release of exotic biological control agents		x			x			
ISPM 04 Requirements for the establishment of pest free areas	x			x				
ISPM 05 Glossary of phytosanitary terms		x			x			
ISPM 06 Guidelines for surveillance	x			x				
ISPM 07 Export certification system			x			x		
ISPM 08 Determination of pest status in an area	x			x				
ISPM 09 Guidelines for pest eradication programmes	x			x				
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites	x			x				
ISPM 11 Pest risk analysis for quarantine pests		x		x				
ISPM 12 Guidelines for phytosanitary certificates			x		x			
ISPM 13 Guidelines for the notification of noncompliance and emergency action	x			x				
ISPM 14 The use of integrated measures in a systems approach for pest risk management	x			x				
ISPM 15 Guidelines for regulating wood packaging material in international trade			x				x	
ISPM 16 Regulated non-quarantine pests: concept and application	x			x				
ISPM 17 Pest reporting	x			x				
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure	x			x				
ISPM 19 Guidelines on lists of regulated pests	x			x				
ISPM 20 Guidelines for a phytosanitary import regulatory system	x			x				
ISPM 21 Pest risk analysis for regulated non-quarantine pests	x			x				
ISPM 22 Requirements for the establishment of areas of low pest prevalence	x			x				
ISPM 23 Guidelines for inspection	x			x				
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures	x			x				
ISPM 25 Consignments in transit	x			x				
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)	x			x				
ISPM 27 Diagnostic protocols for regulated pests	x			x				
ISPM 28 Phytosanitary treatments for regulated pests			x	x				
ISPM 29 Recognition of pest free areas and areas of low pest prevalence			x	x				
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (tephritidae)			x	x				
ISPM 31 Methodologies for sampling of consignments			x	x				
ISPM 32 Categorization of commodities according to their pest risk								
ISPM 33 Pest free potato (Solanum spp.) micropropagative material and minitubers for international trade								
ISPM 34 Design and operation of post-entry quarantine stations for plants								
Comments/constraints: See as determined in the management responsibilities requirements above.								

### III. SURVEILLANCE, PEST OUTBREAKS AND INVASIVE SPECIES MANAGEMENT

Last updated: December 2010

#### Executive summary<sup>3</sup>

Lao PDR has not established a national programme for pest outbreaks and invasive species management. Moreover, beside the forecast signal of a possible pest outbreak, the warning system is still weak, to the extent of being almost non-existent. Consequently, farmers are faced with invasive species that become established and cause damage to their cash crop such as coffee, sugar cane and coconut

The Department of Agriculture (DOA) has recently established a network of plant protection with a role to monitor and develop a database on the pest status of economic crops, which is further reported to the NPPO to identify proper control measures. Those mandates of the plant protection unit have been clearly defined in the Agreement of the DOA on the function and role of the Provincial Agricultural Sector.

Furthermore, with the support of NZAID Phytosanitary Capacity Building in the Mekong Region Project, surveillance work has started with the aim to build specimen-based pest lists on key crops (mango and maize) with potential for export.

During the programme, a number of key technical staff (entomologist and pathologist) were trained on pest diagnostic in New Zealand and Viet Nam. In addition, on-the-job training and technical assistance was also given on the use of the internet and digital technology (remote diagnostic) for identifying plant pests, the establishment of formal and informal networks for identifying plant pests in Lao PDR and the improvement of the sample collection system to ensure the capability of the trained staff in carrying out their tasks..

#### List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions

–

#### Web source for further information: –

Policies regarding invasive/migratory species management	Yes	No	Don't know
National strategy to control serious field pest outbreaks?		x	
National strategy to control migratory or periodically occurring pests?		x	
National strategy to eradicate serious newly invaded exotic pests?		x	
Other policies: (e.g. subsidies, etc.)			
Web source for further information: –			

<sup>3</sup> by Souliya Souvandouane, PRA team leader, Plant Quarantine Division, Department of Agriculture, Ministry of Agriculture and Forestry, Emails: Souliya\_ss@yahoo.com; pq\_division@yahoo.com

Organization of functions related to surveillance pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field/storage pest outbreaks</i>	(e.g. BPH, bollworm, etc.)
Response strategy/plans	MAF/DOA/PPC
Surveillance	MAF/DOA/PPC
Control	MAF/DOA/PPC
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	MAF/DOA/PPC
Surveillance	MAF/DOA/PPC
Control	MAF/DOA/PPC
<i>New exotic pest eradication</i>	(e.g. coconut beetle)
Response strategy/plans	MAF/DOA/PPC
Surveillance	MAF/DOA/PPC
Control/eradication	MAF/DOA/PPC
Reporting to bilateral or international organizations	MAF/DOA

Infrastructure	Year: 2010
Number of designated staff for <b>surveillance</b> of field pests of national importance	8
Number of designated staff for <b>surveillance</b> of migratory and periodically occurring pests	7
Number of designated staff for <b>surveillance</b> of invasive species	0
Number of designated staff for <b>control</b> of field pests of national importance	7
Number of designated staff for <b>control</b> of migratory and periodically occurring pests	7
Number of designated staff for <b>eradication</b> of invasive species	

### Key situation and operation indicators

(Outbreaks and invasions in the past 2 years)

New exotic species found established in the country	Insects	Pathogens	Weeds
Total number for 2010 [most recent]			
Total number for 2009 [year before]			
Total number on record:			

Eradication or internal quarantine actions taken against economically important species			
Name of species	Brontispa longissima		
Year of first discovery	2002		
Pathway			
Location of first discovery			
Area affected [ha]			
Area treated [ha]			
Control method			
Expenditures			

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species	Coffee berry borer	Phytoplasma (sugar cane)	
Year of outbreak		2010	
Area affected [ha]	25 000	< 5 000	
Estimated damage \$			
Area treated by government [ha]			
Expenditures by government [\$]			
Control method	parasitoids		
More information			

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
<ul style="list-style-type: none"> <li>• Knowledge and skill of key technical staffs on diagnostic and pest surveillance has been improved through NZAID and AusAID training programmes.</li> <li>• Surveillance programme of important crop (corn, mango, cabbage) was initiated to establish pest list and collection of specimen has been fully establish in Plant Protection Center.</li> <li>• Plant protection network in each province of Lao PDR and its role have been defined by DOA.</li> <li>• Capability development on quarantine inspection has been supported by JICA through the in-country and third –country training programme.</li> <li>• NPQS of Republic of Korea also provided training on plant quarantine in R of Korea through ASEAN programme</li> </ul>
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
<ul style="list-style-type: none"> <li>• Lack of personnel, no adequate infrastructure, no operational budget, and not enough training.</li> </ul>

## IV. PEST MANAGEMENT

Last updated: December 2010

### Executive summary<sup>4</sup>

Pest management is nationwide recognized in Lao PDR through the integrated pest management project (IPM) which has been implemented since 1995 under the technical cooperation programme between FAO and Lao PDR.

The national IPM project office which is based in the Plant Protection Center has the central and local networks within the line institutions aiming at promoting and educating farmers in sustainable and environmentally friendly pest management.

IPM activities play an important role in implementing the Lao government's current policies on agriculture with emphasis on increasing productivity, market-orientation, exports and household food security. At the same time, the policy also stresses the preservation of agriculture biodiversity and sustainability, equitable development, and the conservation of natural resources. Organic crops and production areas, and production for niche markets have also been advocated.

The strategy for pest management has focused on vegetables since 2005. The IPM activities in Lao PDR have focused on increasing the capacity of the IPM programme and policy support, and on increasing the participative role of stakeholders, especially farmers, in the planning and implementation.

The main development during 2007-2008 has focused on promotion of involvement of additional agencies in the programme support and implementation, including effective coordination among these agencies and strengthening technical and training capacities among field staff.

More than 14 farmer field schools were conducted in the target area with 231 farmers trained in the IPM. As well, 7 officers and local trainers of the IPM programme continue upgrading their capability on biological control and good agricultural practice of vegetable production through a series of training activities organized within the country and in the partnership countries (including China, Thailand, Cambodia and Viet Nam).

In collaboration with Oxfam-Belgium Project on the use and production of biological control agents, a number of biological control agents have been introduced into the programme and investigation is conducted on its potential to control important pests with possible field-level production. The knowledge on biocontrol practice of Diamond backmoth, using its major parasitoids (*Diadegma semiclausum* and *cotesia* sp.) and biopesticide (*Bacillus thuringiensis*), has been transferred to local trainers and farmer field schools in the target area where huge cabbage is produced for export.

In October 2007, the status of Coconut hispine beetle in Lao PDR was assessed through a FAO programme. The assessment formulated concrete recommendations for containing the spread of the beetle and for strengthening the biological management of beetle. The experiment to study potential of predatory earwigs and mass rearing of *Asecodes hispinarum* are being investigated under the lab condition of the PPC.

---

<sup>4</sup> by Souliya Souvandumane, PRA team leader, Plant Quarantine Division, Department of Agriculture, Ministry of Agriculture and Forestry, Emails: Souliya\_ss@yahoo.com; pq\_division@yahoo.com

Based on the IPM project's activities with its achievement, the Ministry of Agriculture and Forestry as well as the Department of Agriculture have been promoting the Integrated Pest Management (IPM/FAO) as basis for implementation of clean agricultural production which comprises 3 steps including (i) good agricultural practice, (ii) pesticide-free production and (iii) organic agriculture.

### List of key legislation/regulations/rules for pest management

(In preparation) Regulation on Organic Farming Standard

### Web source for further information: –

Policies regarding pest management	Yes	No	Don't know
Do you have policies encouraging organic or low-pesticide use production?	x		
Is IPM specifically mentioned in laws or policy documents?	x		
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?	x		
Is pest management extension separate from general extension?	x		
Other policies: (subsidies, production inputs, etc.)			
Web source for further information: –			

Organization of pest management function	Responsible organizational unit (ministry/department/unit)
Policy development	MAF/DOA/PPC
Pest management research	MAF/DOA/PPC
Control recommendations	MAF/DOA/PPC
Pest management extension	MAF/DOA/PPC
IPM training	MAF/DOA/PPC
GAP training	MAF/DOA/CADC

Infrastructure	Year: 2010
Number of technical officers for pest management	
Number of central, regional, provincial or state offices	10
Number of district and village level field offices	
Number of field/extension agents for pest management advice	
Number of field/extension agents trained in IPM-FFS facilitation	106
Number of government biocontrol production/distribution facilities	1
Number of government biopesticide production/distribution facilities	1
Number of general extension staff involved in pest management	
Number of designated plant protection technical officers for extension (TOT from 3 provinces has been implemented during IPM programme)	50

**Key situation and operation indicators**

Pest management	Yes	No	Don't know
Does the country have a National IPM programme? <i>If yes, give Name and Address of IPM Programme: PPC</i>	x		
Does the country have specific IPM extension programmes? <i>If yes, in which crops: Vegetables</i>	x		
Does the country have specific IPM research programmes? <i>If yes, in which crops?:</i>	x		
Does the country have specific GAP extension programmes? <i>If yes, in which crops?:</i>	x		
Does the country have specific GAP research programmes? <i>If yes, in which crops?:</i>	x		

Market shares (estimated value, volume or area under control)	Year: 2010
Size of chemical pest control market	
Size of biopesticides market	
Size of biological control agents market	

Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop			
Name(s) of pest(s)			
Estimated crop loss			
Affected area			
Number of pesticide applications or amount of pesticide used			
Government action taken			

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Integrated Pest Management	FAO		2008-2009
Purpose/target of government follow-up programmes		Amount	Years (start-end)

Pest management extension	Year: 2010
Number of farmers trained in IPM during the year	231
Number of IPM-FFS conducted during the year	38
Number of farmers trained in GAP standards during the year	
Area under IPM/low pesticide management [ha]	
Area under organic/pesticide-free management [ha]	
Crops in which IPM or other ecology friendly programmes are successfully implemented: Head cabbage, rice	
Crops grown organic/pesticide-free: Rice	

**Progress and constraints****Main progress in recent Years (legislation, policies, infrastructure, investments, training, etc.)**

- Knowledge on using of biological control agent was introduced in to FFS of IPM programme.
- Clean agriculture development center (CADC) was established and number of work on organic farm and good agricultural practice (GAP) was initiated.
- Frame work on pest management was newly defined in the function and role of provincial agricultural and forestry office (PAFO).

**Main constraints (personnel, infrastructure, administrative, operational, training, etc.)**

Lack of personnel, no adequate infrastructure, no operational budget, not enough training.



## V. PESTICIDE MANAGEMENT

Last updated: March 2011

### Executive summary<sup>5</sup>

The first regulation on the control and use of pesticide was promulgated by the Ministry of Agriculture and Forestry in 1992 and then revised in 1998 and 2000. The final version of the new Regulation on the Control of Pesticides No 2860\MAF was promulgated on 10 February 2010. The new Regulation on the Control of Pesticides is an important tool in regulating activities related to pesticide including import, export, transit, trade and use of pesticide in Lao PDR. Proper regulatory control of pesticides is an important factor in enhancing food safety and obtaining the WTO accession.

So far, 55 kinds of pesticides in Lao PDR are prohibited to use in the country. Presently, 123 trade names of the pesticides (mainly imported from Viet Nam, China and Thailand) have been registered with the DOA.

### List of key legislation/regulations/rules for pesticide management

2010 Regulation on the Control of Pesticides No 2860\MAF was promulgated on 10 February 2010

### Web source for further information: –

Policies regarding pesticide management	Yes	No	Don't know
Do you have national pesticide reduction targets? <i>If yes, what is the target: _____</i>	x		
Have you ratified the Rotterdam (PIC) Convention?	x		
Have you ratified the Stockholm (POP) Convention?	x		
Have your ratified the Basel Convention? (hazardous wastes)	x		
Have your ratified the Montreal Protocol? (MeBr phasing-out)			
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?			
Have you adopted Good Laboratory Practices (GLP)?		x	
<i>Pesticide registration</i>			
Do you require pesticides to conform to relevant FAO or WHO specifications?	x		
Do you allow the "me-too" registration and sale of generic pesticides?			
Do you require data on product equivalence for generic registration?	x		
Do you conduct country-specific risk assessments for...			
occupational risks?		x	
consumer risks?		x	
environmental risks?		x	
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labelling?	x		
Do you accept evaluation results from other countries?	x		
Do you accept field studies conducted in other countries?	x		

<sup>5</sup> by Ms Khamphoui Louanglath, Director of Division, Division of Regulatory, Department of Agriculture, Ministry of Agriculture and Forestry, Emails: doag@laotel.com; phoui2@hotmail.com

Do you require environmental fate studies?	x		
<i>Incentives/disincentives</i>			
Do you have a special tax on pesticides to cover externality costs?		x	
Do you subsidize or provide low-cost pesticides?		x	
Do you subsidize or provide low-cost biopesticides?			
Other policies:			
Web source for further information: –			

Organization of pesticide management function	Responsible organizational unit (ministry/department/unit)
Legislation	
Registration	MAF/DOA
Licensing of shops	PAFO
Licensing of field applicators	
Enforcement/inspections	MAF/DOA/PPC
Testing of pesticide efficacy	MAF/DOA/PPC
Development of pesticide use recommendations	MAF/DOA/NAFRI
Safe use training/extension	MAF/DOA/PPC/NAFES
Food residue monitoring	MOH/FDD
Environmental monitoring	MAF/DOA/NAFRI
Health monitoring	MOH/FDD
<i>Other Stakeholders:</i>	
Pesticide Industry Association	
Civil Society Organizations (NGO, etc.)	

Infrastructure	Year: 2010
Number of registration officers	5
Number of enforcement officers	2
Number of department quality control laboratories	
Number of quality control laboratory personnel	
Number of department residue analysis laboratories	1
Number of residue laboratory personnel	2

### Key situation indicators

Pesticide trade: 2010	Tons	US\$ '000 Value
Imports	<10	
Manufacture	0	
Export	0	
Domestic use/sales		
Pesticide use profile: 2010	Tons (a.i./formulation to be specified)	US\$ '000 Value
Agriculture	<10	
Chem. Insecticides	1.23	
Chem. Fungicides	1.96	
Chem. Herbicides	0.30	
Chem. Others: e.g. molluscicide, acaricide		

Other: e.g. Avamectrin, Bt, Neem		
Other purposes		
TOTAL		

### Post registration monitoring

Testing, quality control and effects in the field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?	x		
Do you have significant problems with pesticide resistance?		x	
Do you have a list of pesticides under close observation for problems?		x	
Source for more information: DOA			

Health and environmental information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?		x	
Do you have a system to monitor pesticide residues in food?	x		
Do you have a system to monitor pesticide residues in the environment?			x
Do you have significant problems of environmental contamination from pesticides?	x		
Do you have data on pesticides effects on wildlife and ecosystems?			x
Source for more information: DOA			

Pesticide disposal	Yes	No	Don't know
Do you have system to collect and safely dispose of used containers and small quantities of left-over pesticides?		x	
Do you have an inventory of outdated and obsolete pesticides in the country? (eg. banned and no longer traded, but still in storage)		x	
Do you have illegal trade in pesticides?if yes: what is the estimated amount: < 50 Tons of formulated product	x		
Source for more information: DOA			

### Key operation indicators

Registration/regulation/monitoring	Year: 2010	
	a.i.*	Trade name
Number of registered pesticide products	6 846	123 112
Number of registered bio-pesticides (Avamectrin, Bt, Neem, etc.)	2	
Number of restricted-use pesticides/formulations		
Number of banned pesticides	5 526	
Number of licensed outlets		
Number of licensed applicators		
Number of licensing violations reported during year		
Number of quality control analyses conducted during year		29
Number of food samples analyzed for pesticide residues during year		
Number of samples exceeding MRL		
Number of environmental samples analyzed for pesticide residues		

\* active ingredient

**Pesticides restricted in recent years (2009-2010)**

Year	Name of active ingredient or hazardous formulation

**Pesticides Banned in Recent Years (2009-2010)**

Year	Name of active ingredient

**Cooperation Projects**

Purpose/target	Donor	Amount	Years (start-end)
Regional Programme for Pesticide Risk Reduction in South East Asia	GCP/RAS/224/SWE	Unknown	2007-2013
Pesticide Regulatory Harmonization	TCP/RAS/3212	Unknown	2010-2011
Purpose/target of government follow-up programmes	Amount	Years (start-end)	

**Progress and constraints****Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)**

- New Regulation on the Control of Pesticides in Lao PDR, No. 2860/MAF, dated 10 June 2010.
- Awareness on Regulation on the Control of Pesticides.

**Main constraints (personnel, infrastructure, administrative, operational, training, etc.)**

- Lack of personnel, no adequate infrastructure, limited of budget, not enough training.

**VI. ADDITIONAL ISSUES OF INTEREST****Genetically Modified Crops**

Name of GMO Crop	Area under cultivation [ha]
Nil	

## 2.11 MALAYSIA

### I. GENERAL INFORMATION

Last updated: March 2011

#### Overall executive summary<sup>1</sup>

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.

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.

In order to facilitate trade and market access of agriculture produces/products, Malaysia had also carried out the following phytosanitary measures:

- 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 *Erwinia papayae* on papaya
- Implementing contingency plan to control red palm weevil (*Rhynchophorus ferrugineus*).
- New regulations were imposed on importation of logs, sawn timber and other wood articles.

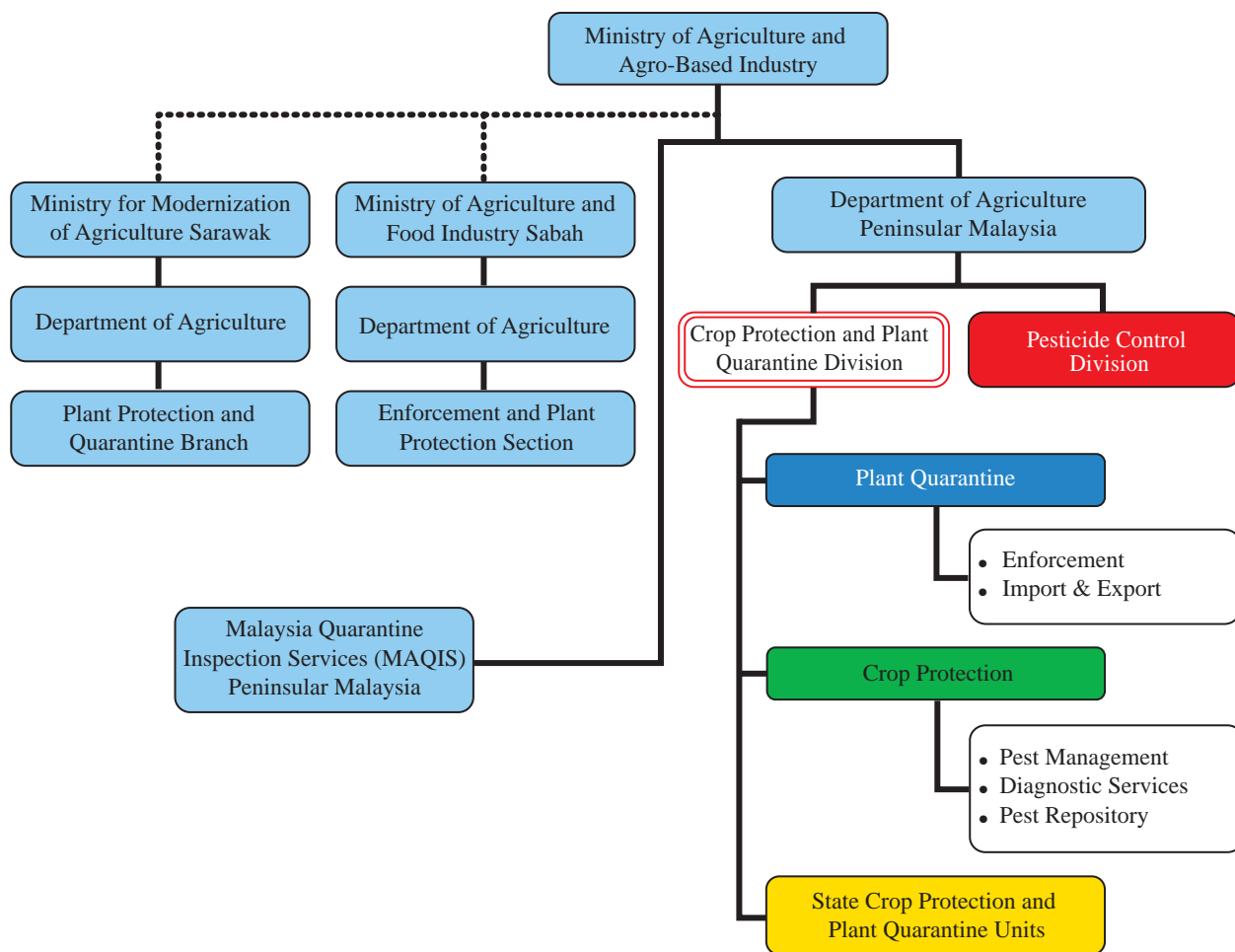
Several significant events that had taken place in the area of crop protection are:

- 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 *Asecodes hispanarium* to control *Brontispa* sp. with cooperation and assistance from DOA Thailand.
- Hosting a Workshop on the Prevention of Introduction of South American Leaf Blight in line with the decision of 26<sup>th</sup> 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.

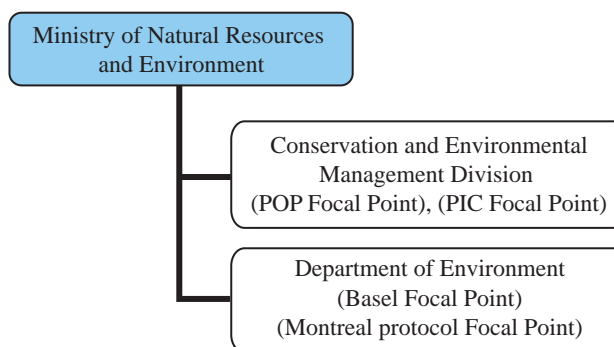
<sup>1</sup> by Director, Office of the Crop Protection and Plant Quarantine Division, Department of Agriculture, Kuala Lumpur, Malaysia, Emails: wanis@doa.gov.my or wann54@yahoo.com

- 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.

**Plant protection organization chart**



**DNA/Focal Point on Environment**



Color Code:



**Important contact addresses**

Last updated: December 2010

**Ministry/Department of Agriculture**

Department of Agriculture

*Director General of Agriculture*

Aras 17, Wisma Tani, Lot 4G2, Presint 4

Pusat Pentadbiran Persekutuan

62623 Putrajaya, Malaysia

Tel: 6 03 8870 3001

Fax: 6 03 8888 5069

Email: [roseley@doa.gov.my](mailto:roseley@doa.gov.my)Website: [www.doa.gov.my](http://www.doa.gov.my)**Plant protection office**

Crop Protection and Plant Quarantine Division

*Director*

Department of Agriculture

3<sup>rd</sup> Floor Wisma Tani Kuala Lumpur

Jalan Sultan Salahuddin

50632 Kuala Lumpur

Tel: 6 03 20301401

Fax: 6 03 26913530

Email: [wanis@doa.gov.my](mailto:wanis@doa.gov.my)Website: [www.doa.gov.my/web/guest/pqnet](http://www.doa.gov.my/web/guest/pqnet)**Crop protection office**

Crop Protection and Plant Quarantine Division

*Director*

Department of Agriculture

3<sup>rd</sup> Floor Wisma Tani Kuala Lumpur

Jalan Sultan Salahuddin

50632 Kuala Lumpur

Tel: 6 03 20301401

Fax: 6 03 26913530

Email: [wanis@doa.gov.my](mailto:wanis@doa.gov.my)Website: [www.doa.gov.my/web/guest/pqnet](http://www.doa.gov.my/web/guest/pqnet)**Surveillance, pest outbreaks and invasive species management**

Crop Protection and Plant Quarantine Division

*Director*

Department of Agriculture

3<sup>rd</sup> Floor Wisma Tani Kuala Lumpur

Jalan Sultan Salahuddin

50632 Kuala Lumpur

Tel: 6 03 20301401

Fax: 6 03 26913530

Email: [wanis@doa.gov.my](mailto:wanis@doa.gov.my)Website: [www.doa.gov.my/web/guest/pqnet](http://www.doa.gov.my/web/guest/pqnet)



**Pesticide registration**

Pesticides Control Division

*Secretary Pesticides Board*

Department of Agriculture

4th Floor Wisma Tani

Jalan Sultan Salahuddin

50632 Kuala Lumpur

Tel: (+603) 20301504

Fax: (+603) 26917551

Email: nursiah@doa.gov.my

**Official international contact points**

Last updated: December 2010

**National Plant Protection Organisation (NPPO) contact point (for IPPC/APPPC)**

Crop Protection and Plant Quarantine Division

*Director*

Department of Agriculture

3<sup>rd</sup> Floor, Wisma Tani Kuala Lumpur

Jalan Sultan Salahuddin

50632 Kuala Lumpur

Tel: 6 03 20301401

Fax: 6 03 26913530

Email: wanis@doa.gov.my

Website: <http://www.doa.gov.my/pqnet>

Language(s): English

Contact point received: 30/05/2005 Source: Government Correspondence

**WTO SPS contact point**

Strategic Planning and International Division

*Secretary General*

Ministry of Agriculture and Agro-Based Industry

Aras 17, Wisma Tani, Lot 4, G 1,

No. 28, Persiaran Perdana, Percint 4

62623 Putrajaya, Malaysia

Tel: + (603) 88701000

Fax: + (603) 88886020

Website: [www.moa.gov.my/](http://www.moa.gov.my/)**Rotterdam Convention (PIC) DNA Pesticides (P)**

Pesticides Control Division

*Secretary Pesticides Board*

Department of Agriculture

4 th Floor Wisma Tani

Jalan Sultan Salahuddin

50632 Kuala Lumpur

Tel: (+603) 20301504

Fax: (+603) 26917551

Email: nursiah@doa.gov.my

**Rotterdam Convention (PIC) DNA Industrial Chemical (I)**

Department of Environment

*Director General*

Ministry of Natural Resources and Environment  
 Level 3-7. Block C4,  
 Federal Government Administrative Centre  
 82662 Putrajaya,  
 Tel: (603) 88 71 20 00  
 Fax: (603) 88 89 10 36  
 Email: zat@doe.gov.my

**Stockholm Convention (POP) National Focal Point (S)**

Conservation and Environmental Management Division

*Teddy Lian Kok Fei, Undersecretary*

Ministry of Natural Resources and Environment  
 6<sup>th</sup> Floor, Tower Block 4G3, Precint 4  
 Federal Government Administrative Center  
 62574 Putrajaya  
 Tel: (+603) 8886 1111/1125  
 Fax: (+603) 8888 4473  
 Email: drlian@nre.gov.my

**Basel Convention Competent Authority (CA) and Focal Point (FP)**

Department of Environment

*Director General*

Ministry of Natural Resources and Environment  
 Level 3-7. Block C4,  
 Federal Government Administrative Centre  
 82662 Putrajaya,  
 Tel: (603) 88 71 20 00  
 Fax: (603) 88 89 10 36  
 Email: zat@doe.gov.my

**Selected country statistics:**

Last updated:

Agricultural Population:		Agricultural Land:	
GDP:	Agric. GDP:	GNI per capita: US\$	Undernourishment:
Main crops grown:			

GDP = Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement

## II. PLANT QUARANTINE

Last updated: December 2010

### List of key legislation/regulations/rules for plant quarantine

1976 Plant Quarantine Act (under revision)

1981 Plant Quarantine Regulations

**Web source for further information:** [www.doa.gov.my/web/guest/pqnet](http://www.doa.gov.my/web/guest/pqnet)

Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover both domestic and import/export quarantine?	Yes		
Is plant quarantine a separate organization from animal quarantine?	Yes		
Does phytosanitary legislation cover non-cultivated plants (wild flora)	Yes		
Does phytosanitary legislation cover living modified organisms?		No	
Other policy goals:			
Web source for further information: <a href="http://www.doa.gov.my/web/guest/pqnet">www.doa.gov.my/web/guest/pqnet</a>			

Organization of plant protection functions	Responsible organizational unit (ministry/department/unit)
Pest risk assessment (PRA)	Crop Protection and Plant Quarantine Division (CPPQ)
Standards development	CPPQ
International notifications	Department of Agriculture (DOA)
<i>Import:</i>	
Import permits/inspections	CPPQ Malaysia Quarantine Inspection Services (MAQIS)
Emergency action	DOA, CPPQ
<i>Export:</i>	
Phytosanitary certificates	CPPQ
Treatment of commodities	CPPQ

Infrastructure	Year: 2010
Total number of plant quarantine officers	681
Total number of plant quarantine officers authorized to inspect/certify	520
Total qualified personnel for plant pest risk assessment CPPQ	26
Number of quarantine offices/stations	110
Number of post-entry plant quarantine containment facilities	4
Number of quarantine service diagnosis laboratories	4
Number of entry points (sea/air/land/mail)	91
<i>In-country recognized pest diagnostics capabilities (incl. universities, etc.)</i>	
Number of laboratories for insect/mites (arthropod) samples	28
Number of laboratories for pathogen samples (Virus)	8
Number of laboratories for pathogen samples (Bacteria)	21
Number of laboratories for pathogen samples (Fungus)	21
Number of laboratories for nematode samples	8
Number of laboratories for plant/weed samples	4
Number of laboratories for other pest (slug, rodent, snails, etc)	6

Pest-free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)
Overall management	CPPQ
– surveillance	CPPQ
– management	CPPQ
– certification	CPPQ
List of target pest species and crops ISPM 4	Number of sites in 2010
<i>Trogoderma granarium</i>	Whole country
<i>Sternochetus mangiferae</i> – Mango	Whole country
<i>Bactrocera correcta</i>	Whole country
<i>B.musae</i>	Whole country
<i>Ceratitidis capitata</i>	Whole country
<i>B.tryoni</i>	Whole country
List of target pest species and crops ISPM 10	Number of sites in 2010

### Key situation indicators

International trade		Year: 2010
Main import plant commodities	Main countries of origin	Quantity (tons)
Fruits	Thailand, China, Australia, USA, New Zealand, South Africa, Indonesia, India, Pakistan	
Vegetables	Thailand, China, Indonesia, Australasia, USA,	
Main export plant commodities	Main destination countries	Quantity (tons)
Ornamental	Japan, Netherlands, Australia, Korea, Singapore	
Fruits	China, Singapore, Thailand, Hong Kong, EU, Middle East Countries	
Vegetable	EU, Middle East Countries,	
Herbs, Spices	EU, East Asia, Middle East,	

Cooperation projects			
Title (Purpose/target)	Donor	Amount	Years (start-end)
Title of government follow-up programmes		Amount	Years (start-end)

### Key operation indicators

Institutional functions	Year: 2010
Number of import permits issued	44 628
Number of import inspections carried out	536 472
Number of emergency phytosanitary treatments taken on imports	394
Number of pests intercepted	798
Number notifications of non-compliance	148
Number of phytosanitary certificates issued	60 849
<i>Do you have an electronic certification system?: Yes ___ No ___</i>	

Number of quarantine pests intercepted		Year: 2010
Top three commodity	Top three pest/commodity	# of interceptions
Mango	<i>Sternochetus mangiferae</i>	3
	<i>Sternochetus oliverae</i>	86
Rose apple	B.correcta	57
Chilli	B.latifons	143

Lists of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of regulated quarantine pests	2010	79	164	17
Number of regulated non-quarantine pests	–	–	–	–
Number of regulated import commodities	2010	28		

Pest risk analysis (PRA)	Insects	Pathogens	Plants
Number of PRA completed and documented (according to ISPM)	–	–	–
Web source for further information: –			

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
<ul style="list-style-type: none"> <li>• Legislation: A Bill name as Plant Biosecurity Act has been drafted to replace the existing Plant Quarantine Act 1976</li> <li>• Infrastructure: Construction of Export Centre for food Agriculture produce have been completed and in operation since early 2010</li> <li>• Malaysia have hosted the following workshops in 2010:               <ol style="list-style-type: none"> <li>1. Workshop on Project Preparation Grant STDF/PPG/328 “Developing Trade Opportunities: An Integrated Systems Approach For Pest Risk Management”</li> <li>2. APEC Workshop: Enhancing Food Security through a Regional Approach and Wide Stakeholders Participation to Plant Biosecurity</li> <li>3. Workshop on the Prevention of Introduction of South American Leaf Blight</li> </ol> </li> </ul>
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
<p><b>Personnel:</b> Lack of technically qualified PRA personnel.</p> <p><b>Operational:</b> Lack of financial fund</p>

Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
ISPM 01 Principles of plant quarantine as related to international trade			x		x			
ISPM 02 Guidelines for pest risk analysis			x			x		Plan 2013
ISPM 03 Code of conduct for the import and release of exotic biological control agents		x			x			Plan 2012
ISPM 04 Requirements for the establishment of pest free areas			x		x			Plan 2013
ISPM 05 Glossary of phytosanitary terms			x				x	Actual 2009
ISPM 06 Guidelines for surveillance			x			x		Plan 2012
ISPM 07 Export certification system			x			x		Plan 2012
ISPM 08 Determination of pest status in an area			x			x		Plan 2012
ISPM 09 Guidelines for pest eradication programmes			x			x		Plan 2012
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites			x				x	Actual 2009
ISPM 11 Pest risk analysis for quarantine pests			x		x			Plan 2012
ISPM 12 Guidelines for phytosanitary certificates			x				x	Actual 2009
ISPM 13 Guidelines for the notification of noncompliance and emergency action			x			x		Plan 2012
ISPM 14 The use of integrated measures in a systems approach for pest risk management			x		x			Plan 2012
ISPM 15 Guidelines for regulating wood packaging material in international trade (export& import)			x				x	Actual 2010
ISPM 16 Regulated non-quarantine pests: concept and application		x				x		Plan 2012
ISPM 17 Pest reporting			x			x		Plan 2012
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure		x			x			Plan 2012
ISPM 19 Guidelines on lists of regulated pests			x			x		Plan 2012
ISPM 20 Guidelines for a phytosanitary import regulatory system			x				x	Actual 2009
ISPM 21 Pest risk analysis for regulated non-quarantine pests		x			x			Plan 2012
ISPM 22 Requirements for the establishment of areas of low pest prevalence			x			x		Plan 2013
ISPM 23 Guidelines for inspection			x				x	Actual 2011
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures			x			x		Plan 2013
ISPM 25 Consignments in transit		x				x		Plan 2013
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)		x		x				Plan 2013
ISPM 27 Diagnostic protocols for regulated pests		x				x		Plan 2013
ISPM 28 Phytosanitary treatments for regulated pests			x			x		Plan 2012
ISPM 29 Recognition of pest free areas and areas of low pest prevalence			x	x				Plan 2013
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (Tephritidae)			x		x			Plan 2013
ISPM 31 Methodologies for sampling of consignments			x		x			Plan 2013
ISPM 32 Categorization of commodities according to their pest risk			x			x		Plan 2013

ISPM 33 Pest free potato ( <i>Solanum</i> spp.) micropropagative material and minitubers for international trade	x			x				NA
ISPM 34 Design and operation of post-entry quarantine stations for plants			x				x	Actual 2007
Comments/constraints <ol style="list-style-type: none"> <li>1. Lack of competent human resources for full implementation.</li> <li>2. Require adequate budget for implementation of certain ISPM.</li> <li>3. Require training on implementation of adopted ISPM.</li> </ol>								

**III. SURVEILLANCE, PEST OUTBREAKS AND INVASIVE SPECIES MANAGEMENT**

Last updated: December 2010

**List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions:****Surveillance** – None**Pest reporting** – Plant Quarantine Act 1976 and Plant Quarantine Regulations 1981**Emergency actions** – Plant Quarantine Act 1976 and Plant Quarantine Regulations 1981**Web source for further information:** [www.doa.gov.my/web/guest/pqnet](http://www.doa.gov.my/web/guest/pqnet)

Policies regarding invasive/migratory species management	Yes	No	Don't know
National strategy to control serious field pest outbreaks?	x		
National strategy to control migratory or periodically occurring pests?	x		
National strategy to eradicate serious newly invaded exotic pests?	x		
Other policies: (e.g. subsidies, etc.)			
Web source for further information: <a href="http://www.doa.gov.my/web/guest/pqnet">www.doa.gov.my/web/guest/pqnet</a>			

Organization of functions related to surveillance, pest outbreaks and invasive species management*	Responsible organizational unit (ministry/department/unit)
<i>Field pest outbreaks</i>	(e.g. BPH, boll worm, rice leaf blast, rice brown spot etc.)
Response strategy/plans	Plant Pest Management Section, Dept. of Agriculture
Surveillance	Plant Pest Management Section, Dept. of Agriculture
Control	Plant Pest Management Section, Dept. of Agriculture
<i>Migratory pest outbreaks or periodically occurring pests</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	Plant Pest Management Section, Dept. of Agriculture
Surveillance	Plant Pest Management Section, Dept. of Agriculture,
Control	Plant Pest Management Section, Dept. of Agriculture,
<i>New exotic pest eradication</i>	(e.g. coconut beetle, kaphra beetle)
Response strategy/plans	DOA
Surveillance	DOA
Control/eradication	DOA
Reporting to international organizations	DOA

\* All crops except oil palm, rubber, cocoa, pineapple.

Infrastructure	Year: 2010*
Number of designated staff for surveillance and control of field pests of national importance	165
Number of designated staff for surveillance and control of migratory and periodically occurring pests	162
Number of designated staff for surveillance and eradication of invasive species	50

\* All crops except oil palm, rubber, cocoa, pineapple.



**Key situation and operation indicators**

(Outbreaks and invasions in the past 2 years)

New exotic species found established in country	Insects	Pathogens	Weeds
Total number for year: 2009		1	
Total number for year: 2010	1		
Total number on record			

Eradication or internal quarantine actions taken against economically important species			
Name of species	<i>Rhynchophorus ferrugineus</i>	Papaya Dieback	
Year of first discovery	2010	2003	
Pathway	Smuggling of live dates palm	Under study...	
Location of first discovery	Terenganu	Johor	
Area affected [ha]	500 plants	879	
Area treated by government [ha]	500 plants	868	
Control method	Chemical spray, pheromone, GAP	Remove of the host plant and Good Agriculture Practice	
Expenditures	RM 100 000	RM 2 371 630	

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species	<i>Pomacea</i> sp	<i>Nilaparvata lugens</i> (BPH)	<i>Rattus Argentiventer</i> (Rat )
Year of outbreak	2010	2010	2010
Area affected [ha]	4 247.08	3 213.41	2 896.34
Estimated damage \$	5.5 m	44.2 m	3.7 m
Area treated by government [ha]	152.53	125.85	34.40
Control method	spray	spray	bait
Expenditures			
Add more if necessary			

**Progress and constraints**

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main Constraints (personnel, infrastructure, administrative, operational, training, etc.)
<ol style="list-style-type: none"> <li>1. Inadequate diagnostic tools</li> <li>2. Sample for identification have to be send to other country.</li> </ol>

**IV. PEST MANAGEMENT**

Last updated: December 2010

**List of key legislation/regulations/rules for pest management**

1976 Plant Quarantine Act 1976

1981 Plant Quarantine Regulations 1981

**Web source for further information:** [www.doa.gov.my/web/guest/pqnet](http://www.doa.gov.my/web/guest/pqnet)

Policies (regarding pest management)	Yes	No	Don't know
Do you have policies encouraging organic or low-pesticide production	x		
Is IPM specifically mentioned in laws or policy documents?		x	
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?	x		
Is pest management extension separate from general extension?		x	
Other policies:			
Production of safe and quality food. Judicious use of pesticide Off-label use of pesticide is an offence			
Web source for further information: <a href="http://www.doa.gov.my/web/guest/pqnet">www.doa.gov.my/web/guest/pqnet</a>			

Organization of pest management function	Responsible organizational unit* (ministry/department/unit)
Policy development	MOA-(DOA/Malaysia Pineapple Industry Board ); Ministry of Plantation Industries and Commodities-(MPOB, Malaysian rubber board (MRB), Malaysian Pepper Board, Cocoa Board); Min. Natural Resources and Environment-( Department of Forestry)Ministry of Rural and Regional Development-(FELDA, FELCRA, RISDA) Sabah MOA-(Sabah Rubber Board)
Pest management research	MARDI (Malaysian Agriculture Research Development Inst.), MRB, MPOB, FRIM, FELDA,
Control recommendations	DOA/MARDI/FELDA/FELCRA/RISDA/MRB/MPOB/MPIB
Pest management extension	DOA/MARDI/FELDA/FELCRA/RISDA/MRB/MPOB/MPIB
IPM training	DOA/MARDI/FELDA/FELCRA/RISDA/MRB/MPOB/MPIB
GAP training	DOA/MARDI/FELDA/FELCRA/RISDA/MRB/MPOB/MPIB

\* only as applicable; leave box empty if no institution exists; indicate if one institution has multiple responsibilities\*\*Information provided does not include plantation and private sectors

Infrastructure	Year: 2010*
Number of officers for pest management	75
Number of regional offices	12
Number of field offices	10
Number of field/extension agents for pest management advice	125
Number of field/extension agents trained in IPM-FFS facilitation	200
Number of government biocontrol labs	2
Number of government biopesticide labs	2

\* For all crops except rubber, palm oil, pepper, cocoa and forest plant.

## Key situation and operation indicators

Pest Management*	Yes	No	Don't know
Does the country have a National IPM programme? <i>If yes, give Name and Address of IPM Programme:</i>			
<ul style="list-style-type: none"> <li>• National IPM in RICE, Sungai Burong, Selangor</li> <li>• IPM in highlands vegetable, Cameron Highlands, Pahang</li> <li>• IPM in flowers farm, Cameron Highlands, Pahang</li> <li>• IPM in papaya farm, Lanchang, Pahang.</li> <li>• IPM in coconut farm, Besut, Terengganu</li> <li>• IPM in star fruit farm, Negeri Sembilan</li> <li>• IPM in mango farm, Bukit Temiang, Perlis</li> </ul>	x		
Does the country have specific IPM extension programmes? <i>If yes, in which crops?: Rice/paddy</i>	x		
Does the country have specific IPM research programmes? <i>If yes, in which crops?: vegetable,</i>	x		
Does the country have specific GAP extension programmes? <i>If yes, in which crops?: vegetable, Fruits and Rice</i>	x		
Does the country have specific GAP research programmes? <i>If yes, in which crops?:</i>			x

\* For all crops except rubber, palm oil, pepper, cocoa and forest plant

Market shares (estimated value, volume or area under control)	Year: 2010
Size of chemical pest control market	95%
Size of biopesticides market	4.9%
Size of biological control agents market	<0.1%

Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop	Plantation crop (oil palm/rubber)	Paddy (rice)	Cut flowers
Name(s) of pest(s)	Weed	<i>Pomacea caniculata and Pomacea insularis</i>	<i>Leaf minerthrips</i>
Estimated crop loss	Na	5.5 million	Na
Affected area	Throughout Malaysia	Kedah, Perak, Selangor, Perlis	Cameron Highland
Number of pesticide applications or amount of pesticide used	4-7 times rounds/year	4 times round/year	Varies 5-6 times rounds
Government action taken		IPM approach	

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)

<b>Pest management extension</b>	<b>Year: 2010*</b>
Number of farmers trained in IPM during the year	22 000 farmers
Number of IPM-FFS conducted during the year	44 programmes
Number of farmers trained in GAP standards during the year	22 000 farmers
Area under IPM/low pesticide management [ha]	13 000
Crops in which successful IPM technologies are implemented:rice, vegetables (DBM), fruit, plantation crops (coconut), star fruit	
Area under organic/pesticide-free management [ha]	1 182
Crops grown organic/pesticide-free: Leafy vegetables, banana, star fruit, maize, stevia, paddy, longan, herbs, dragon fruit, mushroom, papaya	

\* For all crops except rubber, palm oil, pepper, cocoa and forest plant.

### **Progress and constraints**

<b>Main progress in recent years (legislation, policies, infrastructure ,investments, training, etc.)</b>
1. Establishment of low pest prevalence area (Lanchang)
<b>Main constraints (personnel, infrastructure, administrative, operational, training, etc.)</b>
1. Lack of personnel to inspect and certify GAP farm. 2. Lack of price incentive for GAP farm produce.

## V. PESTICIDE MANAGEMENT

Last updated: December 2010

### List of key legislation/regulations/rules for pesticide management

- 1949 Sodium Arsenate Regulations 1949
- 1956 Hydrogen Cyanide (Fumigation) Act 1956
- 1974 Pesticides Act 1974, (Amendment) 2004
- i. Pesticides (Registration) Rules 1976 (Amendment 2008)
  - ii. Pesticides (Importation For Research and Education Purposes) Rules 1981, (Amendment) 1987
  - iii. Pesticides (Importation For Research and Education Purposes Rules (to be amended)
  - iv. Pesticides (Labeling) Regulation 1984
  - v. Pesticides (Licensing For Sale And Storage For Sale) Rules 1988, (Amendment 2007)
  - vi. Pesticides (Highly Toxic Pesticides) Regulation 1996, (Amendment 2004)
  - vii. Pesticides (Advertisement) Regulation 1996
  - viii. Pesticides (Pest Control Operators)) Rules 2004
- 1974 Occupational Safety & Health Act 1974
- i. The Occupational Safety & Health (Use of Standard of Exposure of Chemical Hazardous to Health) Regulations 2000
- 1974 Environmental Quality Act 1974
- i. Environmental Quality (Prescribed Premises)(Scheduled Waste Treatment and Disposal Facilities) Order 1989
- 1983 Food Act 1983
- i. Food Regulations 1985
- 2010 Strategic Trade Act, 2010
- i. Strategic Trade Regulation, 2010
  - ii. Strategic Trade (strategic items) Order (2010)
  - iii. Strategic trade (Restricted End-Users and Prohibited End User) Order 2010

### Web source for further information:

[www.doa.gov.my/main.php?Content=vertsections&SubVertSectionID=17&VertSectionID=1&CurLocation=1&IID=](http://www.doa.gov.my/main.php?Content=vertsections&SubVertSectionID=17&VertSectionID=1&CurLocation=1&IID=)

Policies regarding pesticide management	Yes	No	Don't know
Do you have national pesticide reduction targets? <i>If yes, what is the target: _____</i>		x	
Have you ratified the Rotterdam (PIC) Convention?	x		
Have you ratified the Stockholm (POP) Convention?		x	
Have you ratified the Basel Convention? (hazardous wastes)	x		
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?	x		
Have you adopted Good Laboratory Practices (GLP)?	x		
<i>Pesticide registration</i>			
Do you require pesticides to conform to relevant FAO or WHO specifications?	x		
Do you allow the “me-too” registration and sale of generic pesticides?	x		

Do you require data on product equivalence for generic registration?	x		
Do you conduct country-specific risk assessments for... occupational risks?		x	
consumer risks?		x	
environmental risks?		x	
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labeling? (In preparation for adoption)	x		
Do you accept evaluation results from other countries?	x		
Do you accept field studies conducted in other countries? (except for Paddy, Oil palm ,Rubber ,Cocoa)	x		
Do you require environmental fate studies?	x		
Incentives/Disincentives			
Do you have a special tax on pesticides to cover externality costs?		x	
Do you subsidize or provide low-cost pesticides?	x		
Do you subsidize or provide low-cost biopesticides?		x	
Other policies:			
Web source for further information: –			

Organization of pesticide management function	Responsible organizational unit (ministry/department/unit)
Legislation	MOA/DOA/PCD (Pesticides Control Division)
Registration	MOA/DOA/PCD
Licensing of shops	MOA/DOA/PCD
Licensing of applicators	MOA/DOA/PCD (PCO only)
Enforcement/inspections	MOA/DOA/PCD
Testing of pesticide efficacy	MOA/(DOA, MARDI ), University Sciences Malaysia (USM)
Development of pesticide use recommendations	DOA/MARDI//FRIM/USM/MRB/MPOB/FELDA
Safe use training/extension	MOA/DOA/MARDI/MRB/MPOB/FELDA/RISDA/MPIB/ Farmers' Organization Authority (FOA)
Food residue monitoring	MOA/DOA/PCD + MOH/Department Public Health (DPH)
Environmental monitoring	NRE/Department of Environment (DE)+MOA/DOA/PCD
Health monitoring	MOH/DPH
<i>Other Stakeholders:</i>	
Pesticide Industry Association	Malaysian Crop Care and Public Health Association (MCPA)
Civil Society Organizations (NGO, etc.)	Pesticide Action Network (PAN), Center for Environmental Technologies (CETDEM)

Infrastructure	Year: 2010
Number of registration officers	12
Number of enforcement officers	24
Number of department quality control laboratories	1
Number of quality control laboratory personnel	11
Number of department residue analysis laboratories	5
Number of residue laboratory personnel	28

**Key situation indicators**

Pesticide Trade: 2010	Tons	US\$ '000 Value
Imports	72 000	320 000
Manufacture		
Export		
Sales		
Pesticide Use Profile: 2010	Tons	US\$ '000 Value
Agriculture		166 780
Insecticides		38 710
Fungicides		8 390
Herbicides		113 550
Other		6 130
Veterinary		–
Public Health		–
Household		64 230
Other		3 360
TOTAL		234 370

**Post registration monitoring**

Testing, quality control and effects in the field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?	x		
Do you have significant problems with pesticide resistance? (Crop protection?)			x
Do you have a list of pesticides under close observation for problems? (Tetracycline)	x		

Health and Environmental Information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?	x		
Do you have a system to monitor pesticide residues in food?	x		
Do you have a system to monitor pesticide residues in the environment?	x		
Do you have significant problems of environmental contamination from pesticides?		x	
Do you have data on pesticides effects on wildlife and ecosystems?		x	

Pesticide disposal	Yes	No	Don't know
Do you have services to collect and safely dispose of used containers and small quantities of left-over pesticides?	x		
Do you have an inventory of outdated and obsolete pesticides in the country?			x
Do you have illegal trade in pesticides?if yes: what is the estimated amount: _____	x		
Source for more information: Malaysia Crop Care & Public Health Association (MCPA)			

**Key operation indicators**

Registration/Regulation/Monitoring	Year: 2010	
	a.i.*	Trade name
Number of registered pesticide products	470	616
Number of registered bio-pesticides	7	47
Number of restricted-use pesticides	4	74
Number of banned pesticides	25	
Number of licensed outlets	814	
Number of licensed applicators	457	
Number of licensing violations reported during year	25	
Number of quality control analyses conducted during year	164	
Number of food samples analyzed for pesticide residues during year (2009)	2 548	
Number of samples exceeding MRL	60	
Number of environmental samples analyzed for pesticide residues	305	

\* active ingredient

Pesticides restricted in recent years	
Years	Name of active ingredient or hazardous formulation

Pesticides banned in recent years	
Years	Name of active ingredient

Cooperation projects			
Purpose/Target	Donor	Amount	Years (start-end)
TCP on Pesticide Regulatory Harmonization	FAO	USD 12 000	2010-2011
Purpose/Target of government follow-up programmes	Amount	Years (start-end)	
Implementation Globally Harmonised System in pesticide labelling	USD 110 000	2012-2014	

**Progress and constraints**

Main progress in recent years (legislation, policies, infrastructure ,investments, training, etc.)
<ol style="list-style-type: none"> <li>Propose a new pesticide residue laboratory to be established in 2011.</li> <li>Sub regional training and awareness-raising workshop for Designated National Authorities (DNA) and relevant stakeholders on the implementation of the Rotterdam convention and other multilateral environment agreements such as Stockholm Convention and Basel Convention in 2010 in Hanoi City, Viet Nam.</li> </ol>
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
Request for technical assistance in capacity building in the fields of risk evaluation of chemicals, technical expertise and training in the use of the Principle of Equivalence in future pesticides evaluation as well as in developing legal expertise in the enforcement section.



## 2.12 MYANMAR

### I. GENERAL INFORMATION

Last updated: December 2008

#### Overall executive summary<sup>1</sup>

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.

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 manner.

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.

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.

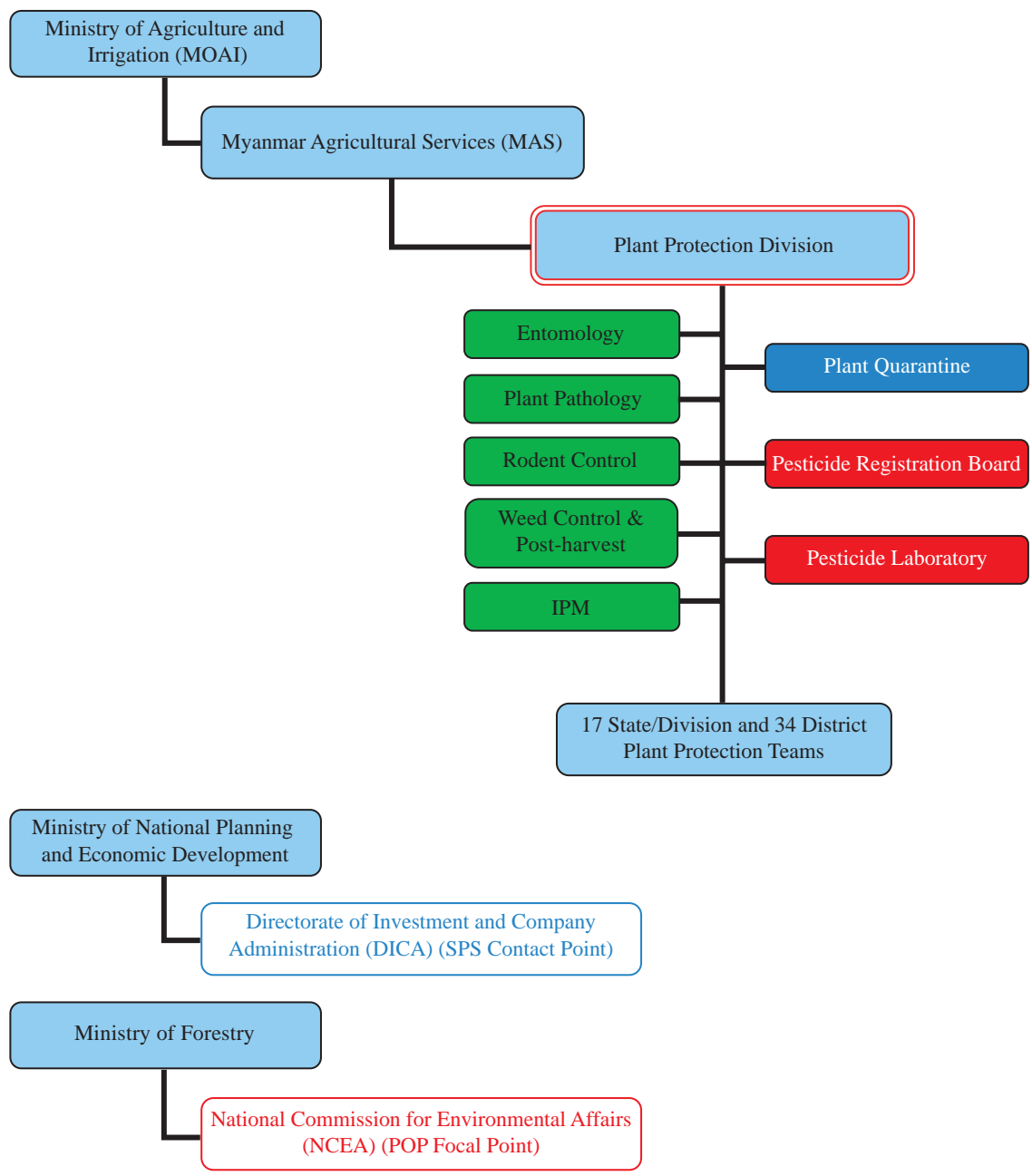
The biological control research which is part of the Integrated Pest Management (IPM) Program is being carried out for cotton, groundnut and vegetables. While the Farmer's Field Schools (FFS) have been established since 2000, emphasis was placed only on the rice farmers during the beginning stage.

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.

---

<sup>1</sup> by Phyu Phyu Lwin, Manager, Plant Protection Division, Myanmar Agriculture Service, Email: ppmas.moai@mptmail.net.mm

**Plant protection organization chart**



*Color Code:*

Phytosanitation	Outbreak Management	Pest Management	Pesticides	NPPO
-----------------	---------------------	-----------------	------------	------

---

---

**Important contact addresses****Responsible ministry/ministries**

—

**Responsible department**

Myanmar Agriculture Service

*Mr Ohn Than, Managing Director*

Ministry of Agriculture and Irrigation

Building No: 15,

Nay Pyi Taw, Myanmar

Tel: (+95) 067-410007

Fax: (+95) 067-410118

**Operational offices:****Plant protection****Plant quarantine****Surveillance, pest outbreaks and invasive species management****Pesticide registration**

Plant Protection Division

*Mr Aye Tun, Deputy General Manager*

Myanmar Agriculture Service, Ministry of Agriculture and Irrigation

Bayintnaung Road, West Gyogone

Insein P.O. 11011

Yangon, Myanmar

Tel: (+95) 01 644214 / 640459

Fax: (+95) 01 644019

Email: ppmas.moai@mptmail.net.mm

**Official international contact points****National Plant Protection Organization (NPPO) contact point (for IPPC/APPPC)***Unofficial NPPO*

Plant Protection Division

*Mr Aye Tun, Deputy General Manager, Head of Plant Protection*

Myanmar Agriculture Service, Ministry of Agriculture and Irrigation

Bayintnaung Road, West Gyogone

Insein P.O. 11011

Yangon, Myanmar

Tel: (+95) 01 644214 / 640459 /

Fax: (+95) 01 644019

Email: ppmas.moai@mptmail.net.mm

**WTO-SPS contact point**

Directorate of Investment and Company Administration (DICA)  
 Ministry of National Planning and Economic Development  
 Nay Pyi Taw, Myanmar  
 Tel: (+95) 067-41  
 Fax: (+95) 067-41  
 Tel: (+95) 067-41  
 Fax: (+95) 01 821 01

**Rotterdam Convention (PIC) DNA Pesticides (P)**

Department of Agricultural Planning  
*Director General*

MOAI  
 Nay Pyi Taw, Myanmar  
 Tel: (+95) 67-410005  
 Fax: (+95) 67-410119  
 Email: dap.moai.@mptmail.net.mm

**Stockholm Convention (POP) National Focal Point (P)**

National Commission for Environmental Affairs (NCEA)  
*Dr San Win: Dy. Director, Joint Secretary (unofficial)*

Nay Pyi Taw, Myanmar  
 Emails: env.myan@mptmail.net.mm and timpert.com@mptmail.net.mm

**Basel Convention Competent Authority (CA) and Focal Point**

—

**Selected country statistics:**

Agricultural population:	39.274 million	Agricultural land:	11.67 million ha
GDP US\$ 15 551 million	Agric. GDP: 7.6%	GNI per capita: US\$	Undernourishment: 5%
Main crops grown: Rice, black gram, green gram, pigeon pea, sesame, groundnut, and maize.			

GDP = Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement

## II. PLANT QUARANTINE

Last updated: December 2008

### Executive summary<sup>2</sup>

The Plant Protection Division, Myanmar Agriculture Service of the Ministry of Agriculture and Irrigation, is legally responsible for issuing phytosanitary certificates and import certificates, according to the Plant Pest Quarantine Law.

The certificates for import and export are issued at the headquarters of the Plant Protection Division as well as at the eight border entry points and two inspection stations. As regards the consignment transits, the post entry quarantine studies have been carried out with limitations.

In relation to the ISPMs, Myanmar, as a developing country, has some technical barriers to implement the ISPMs. Myanmar has a very limited number of experts in the field of entomology, plant pathology, weed science and post-harvest quarantine. That in fact is a major obstacle for the implementation of ISPMs. Capacity building and human resource development are absolutely critical issues in Myanmar.

### List of key legislation/regulations/rules

1993 Plant Pest Quarantine Law (updating in progress)

### Web source for further information: –

Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover domestic quarantine?	x		
Does phytosanitary legislation cover import quarantine?	x		
Does phytosanitary legislation cover export quarantine?	x		
Does phytosanitary legislation cover living modified organisms?	x		
Is plant quarantine a separate organization from animal quarantine?	x		
Other policy initiatives (under review/progress)			
Web source for further information: –			

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest risk analysis	MOAI/MAS/PPD
National standards development	MOAI/MAS/PPD
International notifications	MOAI/MAS
<i>Import:</i>	
Import permits	MOAI/MAS/PPD
Import inspections	MOAI/MAS/PPD
Emergency action	MOAI/MAS/PPD
<i>Export:</i>	
Phytosanitary certificates	MOAI/MAS/PPD
Treatment of commodities	MOAI/MAS/PPD

<sup>2</sup> by Phyu Phyu Lwin, Manager, Plant Protection Division, Myanmar Agriculture Service Email: ppmas.moai@mptmail.net.mm

Infrastructure	Years: 2007-2008
Number of plant quarantine officers authorized to inspect/certify	14
Total qualified personnel for plant pest risk analysis	5
Number of quarantine offices	
entry points (sea/air/land/mail = total)	10
post-entry plant quarantine containment facilities	1
other offices	
Number of quarantine service diagnosis laboratories	1
In-country recognized capability (incl. universities, etc.)	3
Number of laboratories for insect/mite (arthropod) samples	3
Number of laboratories for bacteria samples	
Number of laboratories for virus samples	
Number of laboratories for fungus samples	3
Number of laboratories for mycoplasma samples	
Number of laboratories for nematode samples	3
Number of laboratories for plant/weed samples	2
Number of laboratories for other pests (snail, slug, rodents, etc.)	

Pest-free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)
Overall management	MAS, PPD
– surveillance	PPD
– management	PPD
– certification	PPD
List of target pest species and crops ISPM 4	Number of sites in 2008
	0
List of target pest species and crops ISPM 10	Number of sites in 2008
	0

### Key situation indicators

International trade		Years: 2007-2008
Main import plant commodities	Main countries/areas of origin	Quantity (tons)
Germinated oil palm seeds	Costa Rica, South Africa	865 000 units
Orchid Plant, Ornamental Plant, Vegetables and Fruits Seeds, Cut Flowers.	Thailand	15 020 plant(s) 296 m. tons
Grape Cutting,	Spain;	200 000 pcs
Main export plant commodities	Main destination countries	
Pulses, Oil Seed Crops	India, Malaysia, Indonesia, Pakistan, China, Bangladesh, Philippines; China, Japan,	1 171 410 m. tons
Maize, Cereal	Malaysia, China, Singapore, Bangladesh	397 131 m. tons
Timber	India	719 257 h. tons

Cooperation projects			
Title (Purpose/target)	Donor	Amount	Years (start-end)
Sanitary and Phytosanitary Capacity Building Programme	AusAID		2007-2009
Phytosanitary Capacity Building Project for the Mekong Region, Phase II	NZAID		2006-2009
Quality Assurances System for ASEAN Fruit and Vegetables Project	AADCP		2005-2008
In-country outreach Programme (Irrigated Rice Research Consortium)	IRRI		2006-2008
Title of government follow-up programmes		Amount	Years (start-end)

### Key operation indicators

Institutional functions	Years: 2007-2008
Number of import permits issued	1 090
Number of import inspections carried out	120
Number of emergency phytosanitary treatments taken on imports	–
Number notifications of non-compliance	5
Number of conventional phytosanitary certificates issued	228
Number of electronic phytosanitary certificates issued	23 040

Number of quarantine pests intercepted		Years: 2007-2008
Top three commodity	Top three pest/commodity	# of interceptions
Germinated Oil Palm Seeds		
Rubber Budwood		
Grape Cutting		

List of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of quarantine pests				
Number of regulated non-quarantine pests				
Number of regulated import articles				
Website for the above information: –				

Pest risk analysis (PRA)	Insects	Pathogens	Plants
Number of PRA completed and documented (according to ISPM)			
Web source for further information: –			

**Progress and constraints****Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)**

Myanmar became contracting party to IPPC in May 2006. Concerning the plant quarantine activities, plant quarantine stations have been established at the respective regions like land borders, seaport and airports since 1995. The post-entry quarantine studies have been carried out with limitations, due to shortages of plant quarantine inspectors. On-the-job trainings have been conducted every year since 1998.

**Main constraints (personnel, infrastructure, administrative, operational, training, etc.)**

The implementation of existing international and regional standards of phytosanitary measures still needs to be further strengthened. Being faced with financial limitations, it needs infrastructure development support.



Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
ISPM 01 Principles of plant quarantine as related to international trade			x			x		
ISPM 02 Guidelines for pest risk analysis		x			x			
ISPM 03 Code of conduct for the import and release of exotic biological control agents		x			x			
ISPM 04 Requirements for the establishment of pest free areas		x		x				
ISPM 05 Glossary of phytosanitary terms		x			x			
ISPM 06 Guidelines for surveillance		x			x			
ISPM 07 Export certification system			x			x		
ISPM 08 Determination of pest status in an area		x			x			
ISPM 09 Guidelines for pest eradication programmes		x			x			
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites		x			x			
ISPM 11 Pest risk analysis for quarantine pests		x			x			
ISPM 12 Guidelines for phytosanitary certificates			x			x		
ISPM 13 Guidelines for the notification of noncompliance and emergency action		x			x			
ISPM 14 The use of integrated measures in a systems approach for pest risk management		x			x			
ISPM 15 Guidelines for regulating wood packaging material in international trade		x				x		
ISPM 16 Regulated non-quarantine pests: concept and application		x			x			
ISPM 17 Pest reporting		x			x			
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure		x		x				
ISPM 19 Guidelines on lists of regulated pests			x		x			
ISPM 20 Guidelines for a phytosanitary import regulatory system		x				x		
ISPM 21 Pest risk analysis for regulated non-quarantine pests		x			x			
ISPM 22 Requirements for the establishment of areas of low pest prevalence		x			x			
ISPM 23 Guidelines for inspection		x				x		
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures		x				x		
ISPM 25 Consignments in transit		x			x			
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)		x				x		
ISPM 27 Diagnostic protocols for regulated pests		x			x			
ISPM 28 Phytosanitary treatments for regulated pests		x			x			
ISPM 29 Recognition of pest free areas and areas of low pest prevalence		x			x			
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (Tephritidae)		x			x			
ISPM 31 Methodologies for sampling of consignments		x			x			
ISPM 32 Categorization of commodities according to their pest risk								
ISPM 33 Pest free potato ( <i>Solanum</i> spp.) micropropagative material and minitubers for international trade								
ISPM 34 Design and operation of post-entry quarantine stations for plants								
Comments/constraints: Myanmar is trying its best to implement the ISPMs. However, in view of the human resource shortages, it makes every effort to obtain opportunities for its staff to participate in human resource development and training programmes.								

### III. SURVEILLANCE, PEST OUTBREAKS AND INVASIVE SPECIES MANAGEMENT

Last updated: December 2008

#### Executive summary<sup>3</sup>

The survey of pests and diseases occurred in Myanmar has been carried out and data entries are in progress. However, due to lack of expert verification of the collected specimens, it is not feasible yet to publish the updated list of pests in Myanmar.

There were rodent outbreaks in the northern part of Myanmar in 2008. A rodent control team was dispatched to study the situation and discuss the results of the study. As the outbreaks occurred in the forestry area (bamboo), they were of no agricultural importance.

There was no insect pest outbreak in agricultural areas. There was no invasive species management in Myanmar.

#### List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions

–

#### Web source for further information: –

Policies regarding invasive/migratory species management	Yes	No	Don't know
National strategy to control serious field pest outbreaks?	x		
National strategy to control migratory or periodically occurring pests?	x		
National strategy to eradicate serious newly invaded exotic pests?		x	
Other policies: (e.g. subsidies, etc.)			
Web source for further information: –			

Organization of functions related to surveillance pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field/storage pest outbreaks</i>	(e.g. BPH, bollworm, etc.)
Response strategy/plans	MOAI/MAS/PPD, State and Divisional Plant Protection Teams
Surveillance	MOAI/MAS/PPD, State and Divisional Plant Protection Teams
Control	MOAI/MAS/PPD, State and Divisional Plant Protection Teams
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	MOAI/MAS/PPD
Surveillance	MOAI/MAS/PPD, State and Divisional Plant Protection Teams
Control	MOAI/MAS/PPD
<i>New exotic pest eradication</i>	(e.g. coconut beetle)
Response strategy/plans	MOAI/MAS/PPD
Surveillance	MOAI/MAS/PPD, State and Divisional Plant Protection Teams
Control/eradication	MOAI/MAS/PPD
Reporting to bilateral or international organizations	

<sup>3</sup> by Phyu Phyu Lwin, Manager, Plant Protection Division, Myanmar Agriculture Service Email: ppmas.moai@mptmail.net.mm

Infrastructure	Years: 2007-2008
Number of designated staff for <b>surveillance</b> of field pests of national importance	27
Number of designated staff for <b>surveillance</b> of migratory and periodically occurring pests	17
Number of designated staff for <b>surveillance</b> of invasive species	27
Number of designated staff for <b>control</b> of field pests of national importance	27
Number of designated staff for <b>control</b> of migratory and periodically occurring pests	27
Number of designated staff for <b>eradication</b> of invasive species	–

### Key situation and operation indicators

(Outbreaks and invasions in the past 2 years)

New exotic species found established in the country	Insects	Pathogens	Weeds	Rodents
Total number for 2007 [most recent]				
Total number for 2008 [year before]				850 ha
Total number on record				850 ha

Eradication or internal quarantine actions taken against economically important species				
Name of species				
Year of first discovery				
Pathway				
Location of first discovery				
Area affected [ha]				
Area treated [ha]				
Control method				
Expenditures				

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species	Rodents ( <i>Bandicota spp.</i> )		
Year of outbreak	2008		
Area affected [ha]	850		
Estimated damage US\$			
Area treated by government [ha]	850		
Expenditures by government [US\$]	1 750		
Control method	Baiting, Trapping, Manual		
More information			

### Progress and constraints

<b>Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)</b>
<b>Main constraints (personnel, infrastructure, administrative, operational, training, etc.)</b>
Financial and technical assistance for compilation of existing quarantine pest lists in Myanmar is essential and requested for selected crops.

#### IV. PEST MANAGEMENT

Last updated: December 2008

##### Executive summary<sup>4</sup>

Myanmar has a national IPM policy. IPM is one of the main pillars to the development of the Plant Protection Division.

The Plant Protection Division was established by a steering committee in 1999. The Division advocates the need for Integrated Pest Management to be adopted as a national crop protection policy. It also makes decision on crop information exchange between Myanmar and other ASEAN countries and international association.

Currently, the IPM practices are being adopted to mitigate pest damage. The other aspect of the botanical insecticide such as neem pesticide has been tested against vegetable pests in the field condition.

The Farmer's Field School has been established since 2000. However, during the beginning stage, emphasis was placed only on the rice farmers.

##### List of key legislation/regulations/rules for pest management

–

##### Web source for further information: –

Policies regarding pest management	Yes	No	Don't know
Do you have policies encouraging organic or low-pesticide use production	x		
Is IPM specifically mentioned in laws or policy documents?		x	
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?	x		
Is pest management extension separate from general extension?	x		
Other policies: (subsidies, production inputs, etc.) Promotion of IPM programme, biopesticides, botanical pesticides, safe and environmental friendly formulation pesticides			
Web source for further information: –			

Organization of pest management function	Responsible organizational unit (ministry/department/unit)
Policy development	MOAI
Pest management research	MOAI/MAS/PPD
Control recommendations	MOAI/MAS/PPD
Pest management extension	MOAI/MAS/PPD
IPM training	MOAI/MAS/PPD
GAP training	MOAI/MAS/PPD

<sup>4</sup> by Phyu Phyu Lwin, Manager, Plant Protection Division, Myanmar Agriculture Service Email: ppmas.moai@mptmail.net.mm

Infrastructure	Years: 2007-2008
Number of technical officers for pest management	39
Number of central, regional, provincial or state offices	17
Number of district and village level field offices	71
Number of field/extension agents for pest management advice	61
Number of field/extension agents trained in IPM-FFS facilitation	17
Number of government biocontrol production/distribution facilities	2
Number of government biopesticide production/distribution facilities	3
Number of general extension staff involved in pest management	61
Number of designated plant protection technical officers for extension	17-Districts, 10-Headquarters

### Key situation and operation indicators

Pest management	Yes	No	Don't know
Does the country have a National IPM Programme? <i>If yes, give Name and Address of IPM Programme:</i>		x	
Does the country have specific IPM extension programmes? <i>If yes, in which crops?:</i>		x	
Does the country have specific IPM research programmes? <i>If yes, in which crops?:</i> Biological control on Chickpea Pod Borer <i>Helicoverpa armigera</i> with predator <i>Eocanthecona furcellata</i> and larval parasite <i>Campoletis chloridae</i> .	x		
Does the country have specific GAP extension programmes? <i>If yes, in which crops?:</i> –	x		
Does the country have specific GAP research programmes? <i>If yes, in which crops?:</i> Mango, Rock Melon ( <i>Just started residue survey based on GAP</i> )	x		

Market shares (estimated value, volume or area under control)	Years: 2007-2008
Size of chemical pest control market	6 185 m. tons
Size of biopesticides market	36 000 litre Neem
Size of biological control agents market	limited

Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop	Cotton	Pulses	Vegetable
Name(s) of pest(s)	Spodoptera, sucking, bollworms	Spodoptera, sucking, bollworms and pod borers.	Spodoptera, sucking and beetles
Estimated crop loss	No valid data	No valid data	No valid data
Affected area	No valid data	No valid data	No valid data
Number of pesticide applications or amount of pesticide used	Three times	Two times	One times
Government action taken	Train the effective use of pesticides to applicators; Field visit and recommendation.	Train the effective use of pesticides to applicators; Field visit and recommendation.	Train the effective use of pesticides to applicators; Field visit and recommendation.

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Ecology-based management of rodents in rainfed cropping systems	CSIRO (Australia Govt.)		2003-2005
Sealed storage systems for grain and milled rice	IRRI		2004-2005
Purpose/target of government follow-up programmes		Amount	Years (start-end)

Pest management extension	Years: 2007-2008
Number of farmers trained in IPM during the year	945
Number of IPM-FFS conducted during the year	29
Number of farmers trained in GAP standards during the year	–
Area under IPM/low pesticide management [ha]	14 531 000 ha
Area under organic/pesticide-free management [ha]	–
Crops in which IPM or other ecology friendly programmes are successfully implemented: Rice, pulses, cotton	
Crops grown organic/pesticide-free: –	

### Progress and constraints

Main progress in recent Years (legislation, policies, infrastructure, investments, training, etc.)
FFS trainings programme in rice started in 2000. During the last two years, there was no report on outbreak of major pests and disease. The country's overall pest control system also takes into consideration the ecological aspect of pest management, the biology, behaviour and taxonomy of pests symptomatology and the favourable climatic condition to the disease.
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
The research activities of IPM are carried out, subject to the limited financial resources available from the government and other source of funds or from the related technical cooperation.

## V. PESTICIDE MANAGEMENT

Last updated: December 2008

### Executive summary<sup>5</sup>

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.

### List of key legislation/regulations/rules for pesticide management

- 1990 Pesticide Law  
 1991 Implementation Rules to the Pesticide Law  
 1995 National Food Law

### Web source for further information: –

Policies regarding pesticide management	Yes	No	Don't know
Do you have national pesticide reduction targets? <i>If yes, what is the target: _____</i>		x	
Have you ratified the Rotterdam (PIC) Convention?		x	
Have you ratified the Stockholm (POP) Convention?	x		
Have you ratified the Basel Convention? (hazardous wastes)		x	
Have you ratified the Montreal Protocol? (MeBr phasing-out)			
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?		x	
Have you adopted Good Laboratory Practices (GLP)?	x		
<i>Pesticide registration</i>			
Do you require pesticides to conform to relevant FAO or WHO specifications?	x		
Do you allow the "me-too" registration and sale of generic pesticides?	x		
Do you require data on product equivalence for generic registration?			
Do you conduct country-specific risk assessments for...			
occupational risks?	x		
consumer risks?	x		
environmental risks?	x		
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labelling?		x	
Do you accept evaluation results from other countries?	x		
Do you accept field studies conducted in other countries?	x		
Do you require environmental fate studies?	x		
<i>Incentives/disincentives</i>			
Do you have a special tax on pesticides to cover externality costs?		x	
Do you subsidize or provide low-cost pesticides?		x	
Do you subsidize or provide low-cost biopesticides?		x	
Other policies:			
Web source for further information: –			

<sup>5</sup> by Phyu Phyu Lwin, Manager, Plant Protection Division, Myanmar Agriculture Service Email: ppmas.moai@mptmail.net.mm

Organization of pesticide management function	Responsible organizational unit (ministry/department/unit)
Legislation	PRB
Registration	PRB
Licensing of shops	MOAI/MAS
Licensing of field applicators	MOAI/MAS/PPD
Enforcement/inspections	MOAI/MAS/PPD
Testing of pesticide efficacy	MOAI/MAS/PPD
Development of pesticide use recommendations	MOAI/MAS/PPD
Safe use training/extension	MOAI/MAS/PPD
Food residue monitoring	MOAI/MAS/PPD
Environmental monitoring	MOAI/MAS/PPD
Health monitoring	MOH
<i>Other stakeholders:</i>	
Pesticide Industry Association	
Civil Society Organizations (NGO, etc.)	

Infrastructure	Years: 2007-2008
Number of registration officers	10
Number of enforcement officers	12
Number of department quality control laboratories	1
Number of quality control laboratory personnel	5
Number of department residue analysis laboratories	1
Number of residue laboratory personnel	5

### Key situation indicators

Pesticide trade:	Tons	US\$ '000 Value
Imports	6 185	
Manufacture		
Export		
Domestic use/sales		
Pesticide use profile:	Tons (a.i./formulation to be specified)	US\$ '000 Value
Agriculture		
Chem. Insecticides	3 165	
Chem. Fungicides	2 065	
Chem. Herbicides	462	
Chem. Others: e.g. molluscicide, acaricide	40	
Other: e.g. Avamectrin, Bt, Neem	441	
Other purposes	12	
TOTAL	6 185	



**Post registration monitoring**

Testing, quality control and effects in the field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?	x		
Do you have significant problems with pesticide resistance?			
Do you have a list of pesticides under close observation for problems			
Source for more information: –			

Health and environmental information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?	x		
Do you have a system to monitor pesticide residues in food?	x		
Do you have a system to monitor pesticide residues in the environment?	x		
Do you have significant problems of environmental contamination from pesticides?	x		
Do you have data on pesticides effects on wildlife and ecosystems?		x	
Source for more information: –			

Pesticide disposal	Yes	No	Don't know
Do you have system to collect and safely dispose of used containers and small quantities of left-over pesticides?		x	
Do you have an inventory of outdated and obsolete pesticides in the country? (e.g. banned and no longer traded, but still in storage)	x		
Do you have illegal trade in pesticides? if yes: what is the estimated amount: _____	x		
Source for more information: –			

**Key operation indicators**

Registration/regulation/monitoring	Years: 2007-2008	
	a.i.*	Trade names
Number of registered pesticide products		955
Number of registered biopesticides (Avamectrin, Bt, Neem, etc.)		15
Number of restricted-use pesticides/formulations	7	
Number of banned pesticides	19	
Number of licensed outlets	2 270	
Number of licensed field applicators (professional and/or farmers)	9 721	
Number of licensing violations reported during year		
Number of quality control analyses conducted during year	103	
Number of food samples analyzed for pesticide residues during year	52	
Number of samples exceeding MRL	None	
Number of environmental samples analyzed for pesticide residues		

\* active ingredient

Pesticides restricted in recent years	
Year	Name of active ingredient or hazardous formulation

Pesticides banned in recent years	
Year	Name of active ingredient

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)
The survey of pesticides use on important crops			

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Myanmar now has access to the Rotterdam Convention and observes the International Code of Conduct on the Distribution and Use of Pesticides to implement the PIC procedures.
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
Control and monitoring mechanism including selling of extremely hazardous, low standard and banned pesticides in the market. Transboundary issues long, open and porous border with neighbouring countries. Due to the shortage of technical staff, inadequate legal and regulatory framework have occurred.

### VI. Additional issues of interest

Genetically Modified Crops	
Name of GMO Crop	Area under cultivation [ha]

## 2.13 NEPAL

### I. GENERAL INFORMATION

Last updated: March 2011

#### Overall executive summary

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%.

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.

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 programmes through its different outfits as follows:

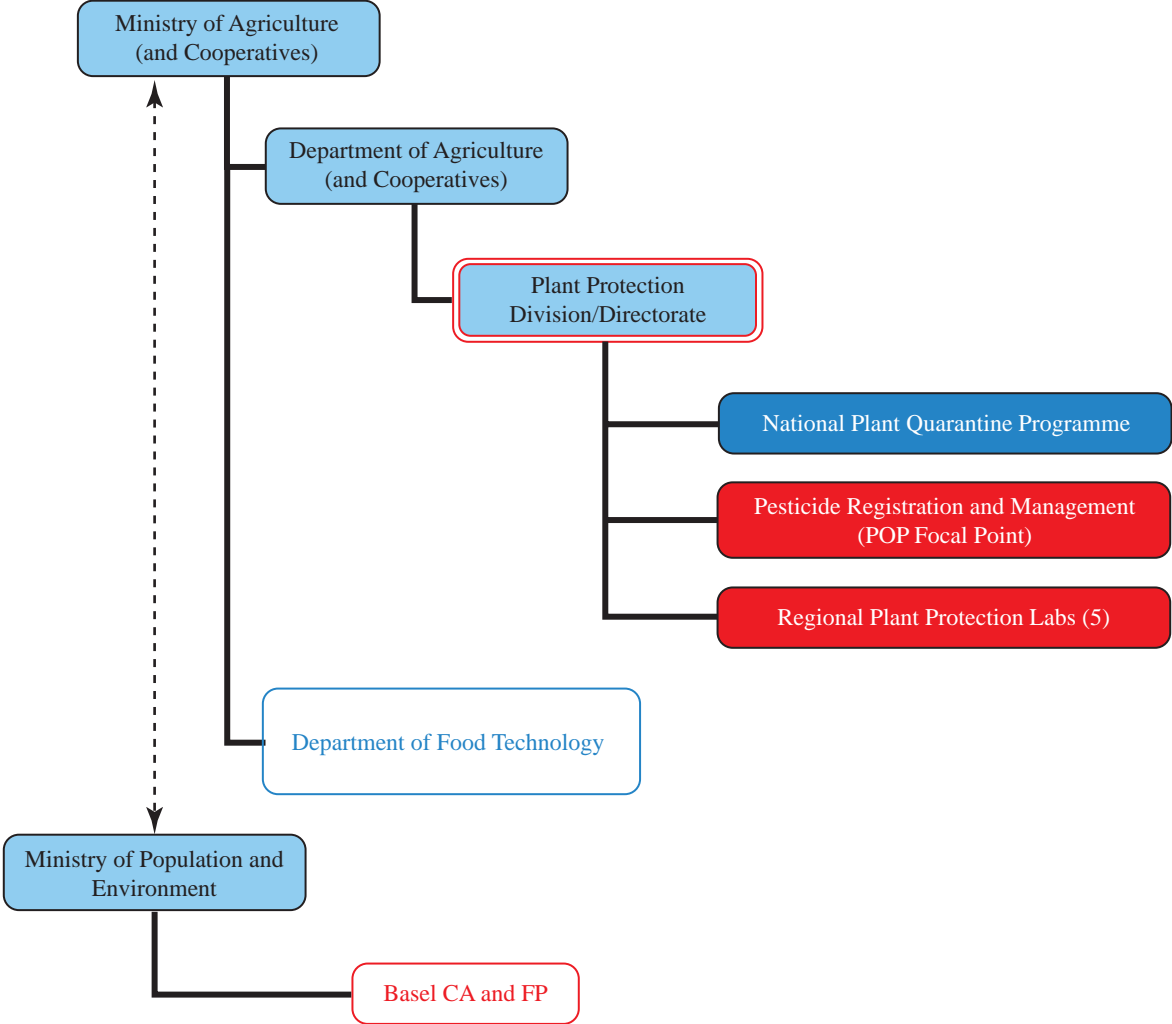
1. National Plant Quarantine Programme (with five regional plant quarantine check posts, eight check posts and two sub-check posts),
2. National IPM Programme,
3. Pesticide Registration and Management Office,
4. Five regional plant protection laboratories located in five development regions of the country.

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.

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/APPPC 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 (*Department of Food Technology and Quality Control under MOAC*), international treaties and conventions such as Rotterdam Convention, Stockholm Convention (*Pesticide Registration and Management Office*) as well as a competent authority (CA) and a focal point for Basel Convention (*Ministry of population and Environment*).

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).

**Plant protection organization chart**



*Color Code:*

Phytosanitation	Outbreak Management	Pest Management	Pesticides	NPPO
-----------------	---------------------	-----------------	------------	------

**Important contact addresses**

Last updated: December 2010

**Ministry/Department of Agriculture**

Department of Agriculture

*Mr Vijaya Kumar Mallic, Director General*

Ministry of Agriculture and cooperatives

Harihar Bhawan, Lalitpur

Tel: (+997 1) 552 1323

Fax: (+997 1) 5524093

Email: DoA@vianet.com.np

Website: www.DoAnepal.gov.np

**Plant protection**

Plant Protection Directorate

*Dr Yubak Dhoj G.C., Program Director*

Ministry of Agriculture and Cooperatives

Harihar Bhawan, Lalitpur

Tel: (+997 1) 552 1597

Fax: (+997 1) 553 9376

Email: director@ppdnepal.gov.np

Website: www.ppdnepal.gov.np

**Plant quarantine**

National Plant Quarantine Program

*Mr Ishwor Prasad Rijal, Program Chief*

Plant Protection Directorate

Ministry of Agriculture and Cooperatives

Harihar Bhawan, Lalitpur

Tel: (+997 1) 552 4352

Fax: (+997 1) 555 3798

Email: rijal\_I.P.@yahoo.com

**Surveillance, pest outbreaks and invasive species management**

—

**Pesticide registration**

Pesticide Registration and Management Section

*Mr Sabitri Baral, Registrar of Pesticides*

Plant Protection Division

Ministry of Agriculture and Cooperatives

Harihar Bhawan, Lalitpur

Tel: (+997 1) 501 0111

Fax: (+997 1) 554 1601

Email: barals07@yahoo.com

**Official international contact points**

Last updated: December 2010

**National Plant Protection Organization (NPPO) contact point (for IPPC/APPPC)**

Plant Protection Directorate

*Dr Yubak Dhoj G.C.*

Department of Agriculture (DOA)

Ministry of Agriculture and Cooperatives

P.O. Box 45

Harihar Bhawan, Lalitpur

Tel: (+977 1) 552 1597, 555 5312

Fax: (+977 1) 553 9376

Emails: director@ppdnepal.gov.np, karmabishal@yahoo.com

**WTO SPS contact point**

Department of Food Technology and Quality Control

Babarmahal, Kathmandu

Tel: (+977 1) 426 2369/425 6947

Fax: (+977 1) 426 2337

Email: dftqc@mail.com.np

Website: www.spsenquiry.gov.np

**Rotterdam Convention (PIC) DNA Pesticides**

—

**Stockholm Convention (POP) National Focal Point (S)**

Pesticide Registration and Management Division

*Mr Sabitri Baral, Pesticide Expert*

Department of Agriculture

Ministry of Agriculture and Cooperatives, Kathmandu

Tel: (+977 1) 501 0111

Fax: (+977 1) 554 1601

Email: barals07@yahoo.com

**Basel Convention Competent Authority (CA) and Focal Point**

Ministry of Population and Environment

*Secretary*

Singh Durbar, Kathmandu

Tel: (+977 1) 424 1586 or 424 15 88

Fax: (+977 1) 424 2138

Email: info@mope.gov.np

**Selected country statistics:**

Last updated: December 2010

Agricultural Population: 17.71 million		Agricultural Land: 3.091 million ha	
GDP: US\$ 10 562 million	Agric. GDP: 34.1%	GNI per capita: US\$ 240	Undernourishment: 17%

GDP = Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement

## II. PLANT QUARANTINE

Last updated: December 2010

### List of key legislation/regulations/rules for plant quarantine

2007 Plant Protection Act, 2064

2009 Plant Protection Regulation, 2066 (under process of approval)

### Web source for further information: –

Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover both domestic and import/export quarantine?	x		
Is plant quarantine a separate organization from animal quarantine?	x		
Does phytosanitary legislation cover non-cultivated plants (wild flora)	x		
Does phytosanitary legislation cover living modified organisms?	x		
Other policy goals:			
Web source for further information: –			

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest risk assessment	MOAC/DOA/PPD
Standards development	MOAC/DOA/PPD
International notifications	MOAC/DOA/PPD
<i>Import:</i>	
Import permits/inspections	MOAC/DOA/PPD/NPQP
Emergency action	
<i>Export:</i>	
Phytosanitary certificates	NPQP
Treatment of commodities	PPD/NPQP

Infrastructure	Year: 2010
Total number of plant quarantine officers	19
Total qualified personnel for plant pest risk assessment	
Number of quarantine offices/stations	16
Number of post-entry plant quarantine containment facilities	1*
Number of quarantine service diagnosis laboratories	5
Number of entry points (sea/air/land/mail = total)	15
In-country pest diagnostics capabilities (incl. universities, etc.)	10
Number of laboratories for insect samples	13
Number of laboratories for pathogen samples	13
Number of laboratories for plant/weed samples	4

\* Regional Plant Quarantine Office, Birgunj

Pest-free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)	
Overall management		
– surveillance	NPPO	
– management	NPPO	
– certification	NPQP	
List of target pest species and crops ISPM 4	Number of sites in 2010	
Citrus (62 Pest list)		
Tea? (20 Pest list)		
List of target pest species and crops ISPM 10	Number of sites in 2010	

### Key situation indicators

International trade		Year: 2010
Main import plant commodities	Main countries of origin	No. of phytosanitary inspections
Paddy, Maize, Onion, Potato	India	
Garlic, Apple	China	
Main export plant commodities	Main destination countries	
Cardamom, Tea <sup>+</sup> , Coffee <sup>o</sup>	India, Pakistan, Japan <sup>o</sup> , USA <sup>+</sup>	
Ginger, Lentil <sup>*</sup>	German, Bangladesh <sup>*</sup>	

Cooperation projects			
Title (Purpose/target)	Donor	Amount	Years (start-end)
National Integrated Pest Management Programme in Nepal Phase II	Norway	US\$ 5 million	2009-2013
Title of government follow-up programmes		Amount	Years (start-end)
Not yet			

### Key operation indicators

Institutional functions	Years: 2009-2010
Number of import permits issued/inspections	
Number of emergency phytosanitary treatments taken on imports	None
Number of pests intercepted	One (2007)**
Number notifications of non-compliance	None
Number of phytosanitary certificates issued	
Do you have an electronic certification system?: Yes ✓, No __	

\*\* Embellesia alli in garlic



Number of quarantine pests intercepted		Years: 2009-2010
Top three commodity	Top three pest/commodity	# of interceptions

List of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of regulated quarantine pests	2006	90	45	Apple
Number of regulated non-quarantine pests	2006	3	45	Ginger
Number of regulated import commodities	2007	8	29	Lentil

Pest risk analysis (PRA)	Insects	Pathogens	Plants
No. of PRA completed and documented (according to ISPM)			7 (Potato, Citrus, Lentil, Ginger, Garlic, Apple, Mustard)
Web source for further information: –			

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
New Plant Protection Act regulated since 2007. Membership & IPPC since 8 May 2006.
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
ISPM 01 Principles of plant quarantine as related to international trade			x			x		2009
ISPM 02 Guidelines for pest risk analysis			x			x		2007
ISPM 03 Code of conduct for the import and release of exotic biological control agents			x	x				
ISPM 04 Requirements for the establishment of pest free areas			x		x			2006
ISPM 05 Glossary of phytosanitary terms			x				x	2006
ISPM 06 Guidelines for surveillance			x			x		2008
ISPM 07 Export certification system			x			x		2005
ISPM 08 Determination of pest status in an area			x		x			2008
ISPM 09 Guidelines for pest eradication programmes			x		x			2008
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites			x	x				
ISPM 11 Pest risk analysis for quarantine pests			x	x				
ISPM 12 Guidelines for phytosanitary certificates			x			x		2006
ISPM 13 Guidelines for the notification of noncompliance and emergency action			x	x				
ISPM 14 The use of integrated measures in a systems approach for pest risk management			x		x			
ISPM 15 Guidelines for regulating wood packaging material in international trade			x		x			2006
ISPM 16 Regulated non-quarantine pests: concept and application			x	x				
ISPM 17 Pest reporting			x			x		2006
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure				x				
ISPM 19 Guidelines on lists of regulated pests			x				x	2006
ISPM 20 Guidelines for a phytosanitary import regulatory system			x			x		2006
ISPM 21 Pest risk analysis for regulated non-quarantine pests		x		x				
ISPM 22 Requirements for the establishment of areas of low pest prevalence			x	x				
ISPM 23 Guidelines for inspection			x			x		2008
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures		x			x			2006
ISPM 25 Consignments in transit			x	x				
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)			x	x				
ISPM 27 Diagnostic protocols for regulated pests			x	x				
ISPM 28 Phytosanitary treatments for regulated pests			x					
ISPM 29 Recognition of pest free area and areas of low pest prevalence			x		x			
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (Tephritidae)			x	x				
ISPM 31 Methodologies for sampling of consignments, 2008			x		x			
ISPM 32 Categorization of commodities according to their pest risk								
ISPM 33 Pest free potato ( <i>Solanum</i> spp.) micropropagative material and minitubers for international trade								
ISPM 34 Design and operation of post-entry quarantine stations for plants								
Comments/constraints: –								

### III. SURVEILLANCE, PEST OUTBREAKS AND INVASIVE SPECIES MANAGEMENT

Last updated: December 2010

#### List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions

Survey Surveillance Guidelines

Web source for further information: –

Policies regarding invasive/migratory species management	Yes	No	Don't know
National strategy to control serious field pest outbreaks?	x		
National strategy to control migratory or periodically occurring pests?	x		
National strategy to eradicate serious newly invaded exotic pests?			x
Other policies:			
Web source for further information: –			

Organization of functions related to surveillance pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field pest outbreaks</i>	(e.g. BPH, boll worm, etc.)
Response strategy/plans	PPD, RPPL, DADO
Surveillance	PPD, RPPL, DADO
Control	PPD, RPPL, DADO, RAD
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	PPD, RPPL, DADO
Surveillance	PPD, RPPL, DADO
Control	PPD, RPPL, DADO
<i>New exotic pest eradication</i>	(e.g. coconut beetle)
Response strategy/plans	
Surveillance	
Control/eradication	
Reporting to international organizations	NPPO, ABPSD/WTO section

Infrastructure	Year: 2010
Number of designated staff for <b>surveillance</b> of field pests of national importance	
Number of designated staff for <b>surveillance</b> of migratory and periodically occurring pests	
Number of designated staff for <b>surveillance</b> of invasive species	
Number of designated staff for <b>control</b> of field pests of national importance	
Number of designated staff for <b>control</b> of migratory and periodically occurring pests	
Number of designated staff for <b>eradication</b> of invasive species	

**Key situation and operation indicators**

(Outbreaks and invasions in the past 2 years)

New exotic species found established in the country	Insects	Pathogens	Weeds
Total number for 2010 [most recent]		Maize – Grey leaf spot ( <i>Cercospora</i> )	
Total number for 2009 [year before]		Colecrops – Diamond backmoth ( <i>Plutella xylostella</i> )	
Total number on record			

Eradication or internal quarantine actions taken against economically important species			
Name of species			
Year of first discovery			
Pathway			
Location of first discovery			
Area affected [ha]			
Area treated [ha]			
Control method			
Expenditures			

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species			
Year of outbreak			
Area affected [ha]			
Estimated damage \$			
Area treated by government [ha]			
Expenditures by government [\$]			
Control method			
More information			

**Progress and constraints**

<b>Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)</b>
Pesticide Policy (in progress for the draft)
<b>Main constraints (personnel, infrastructure, administrative, operational, training, etc.)</b>
Lack of accredited laboratory for pesticide and crop pesticide residues monitoring and analysis. Lack of technical manpower to run these labs. Lack of technical manpower for Pest Risk Analysis (PRA) tasks.

#### IV. PEST MANAGEMENT

Last updated: December 2010

##### Executive summary

Crop pests are important biotic agents to reduce crop loss accounting with 25-35%. Pesticide dominates major components of pest management in Nepal. However, very poor graded pesticides dominate Nepalese markets. Haphazard use, unnecessary use and their likely effects are common in major rural areas. In order to combat this situation, the Plant Protection Directorate (PPD) in association with line agency programmes is active in the country. The PPD has been giving its services by applying effective quarantine and pesticide management approaches in the country. The Integrated Pest Management (IPM) is one of the major programmes of the Directorate, which is also technically backstopping by FAO, Nepal.

##### List of key legislation/regulations/rules for pest management

- Pesticide Act
- Pesticide Rules
- Crop Protection Act

**Web source for further information:** [www.ppdnepal.gov.np](http://www.ppdnepal.gov.np)

Policies regarding pest management	Yes	No	Don't know
Do you have policies encouraging organic or low-pesticide production	x		
Is IPM specifically mentioned in laws or policy documents?	x		
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?		x	
Is pest management extension separate from general extension?		x	
Other policies:			
Web source for further information: –			

Organization of pest management function	Responsible organizational unit (ministry/department/unit)
Policy development	MOAC/DOA/NPPO/PPD
Pest management research	NARC
Control recommendations	NARC
Pest management extension	MOAC/DOA/PPD & NAES with DADO
IPM training	DOA/PPD/RATC/RPPL/DADO
GAP training	

Infrastructure	Year: 2011
Number of officers for pest management	150
Number of regional offices	5
Number of field offices	75
Number of field/extension agents for pest management advice	150
Number of field/extension agents trained in IPM-FFS facilitation	1 014
Number of government biocontrol labs	None
Number of government biopesticide labs	None

**Key situation and operation indicators**

Pest management	Yes	No	Don't know
Does the country have a National IPM Programme? <i>If yes, give Name and Address of IPM Programme: PPD</i>	x		
Does the country have specific IPM extension programmes? <i>If yes, in which crops?: Rice, vegetable, potato, tea, coffee and citrus</i>	x		
Does the country have specific IPM research programmes? <i>If yes, in which crops?: Rice, vegetables, potato</i>	x		
Does the country have specific GAP extension programmes? <i>If yes, in which crops?:</i>			
Does the country have specific GAP research programmes? <i>If yes, in which crops?:</i>			

Market shares (estimated value, volume or area under control)	Year: 2011
Size of chemical pest control market	[98.98%]
Size of biopesticides market	1.02%
Size of biological control agents market	Negligible

Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop	Tomato	Potato	Tea
Name(s) of pest(s)			
Estimated crop loss			
Affected area			
Number of pesticide applications or amount of pesticide used			
Government action taken			

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Support to National IPM Project, UTF/NEP/055/NEP	Norway	1.2 million	2003-2007
Support to National IPM Programme in Nepal, UTF/NEP/059/NEP	Norway	5 million	2009-2013
Purpose/target of government follow-up programmes		Amount	Years (start-end)

Pest management extension	Year: 2011
Number of farmers trained in IPM during the year till 2008	69 207
Number of IPM-FFS conducted during the year till 2008	2 623
Number of farmers trained in GAP standards during the year	None
Area under IPM/low pesticide management [ha]	N/A
Area under organic/pesticide-free management [ha]	N/A
Crops in which successful IPM technologies are implemented: Rice, vegetables, potato, fruit, tea, coffee	
Crops grown organic/pesticide-free: N/A	

**Progress and constraints**

Main progress in recent Years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

## V. PESTICIDE MANAGEMENT

Last updated: December 2010

### List of key legislation/regulations/rules

- 1991 Pesticide Act
- 1993 Pesticide Rules
- 1997 Environment Protection Act
- 1997 Environment Protection Rules

### Web source for further information: –

Policies regarding pesticide management	Yes	No	Don't know
Do you have national pesticide reduction targets? <i>If yes, what is the target: _____</i>		x	
Have you ratified the Rotterdam (PIC) Convention?	x		
Have you ratified the Stockholm (POP) Convention?	x		
Have you ratified the Basel Convention? (hazardous wastes)	x		
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?			x
Have you adopted Good Laboratory Practices (GLP)?			x
<i>Pesticide registration</i>			
Do you require pesticides to conform to relevant FAO or WHO specifications?	x		
Do you allow the "me-too" registration and sale of generic pesticides?			x
Do you require data on product equivalence for generic registration?	x		
Do you conduct country-specific risk assessments for...			
occupational risks?		x	
consumer risks?		x	
environmental risks?		x	
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labeling?		x	
Do you accept evaluation results from other countries?	x		
Do you accept field studies conducted in other countries?	x		
Do you require environmental fate studies?	x		
<i>Incentives/disincentives</i>			
Do you have a special tax on pesticides to cover externality costs?	x		
Do you subsidize or provide low-cost pesticides?		x	
Do you subsidize or provide low-cost biopesticides?		x	
Other policies:			
Web source for further information: –			



Organization of pesticide management function	Responsible organizational unit (ministry/department/unit)
Legislation	
Registration	MOAC/DOA/PPD/PRMD
Licensing of shops	MOAC/DOA/PPD/PRMD/DADO
Licensing of applicators	MOAC/DOA/PPD/PRMD
Enforcement/inspections	MOAC/DOA/PPD/PRMD & DADO
Testing of pesticide efficacy	NARC/NAST/UNIVERSITIES
Development of pesticide use recommendations	NARC
Safe use training/extension	MOAC/DOA/PPD/PRMD & DADO
Food residue monitoring	MOAC/DFTQC
Environmental monitoring	MOAC/MOE
Health monitoring	MOAC/MOH
<i>Other stakeholders:</i>	
Pesticide Industry Association	Pesticide Association of Nepal
Civil Society Organizations (NGO, etc.)	Society of Environmental Journalists, Nepal Forum of Environmental Journalists

Infrastructure	Year: 2011
Number of registration officers	1
Number of enforcement officers	75
Number of department quality control laboratories (DFTQC)	1
Number of quality control laboratory personnel (DFTQC)	4
Number of department residue analysis laboratories	1
Number of residue laboratory personnel	4

### Key Situation Indicators

Pesticide trade: 2010/2011	Tons	US\$ '000 Value
Imports	166.46 a.i. mt	2.59 million
Formulation in the country	44.543 a.i. mt.	0.34 million
Manufacture	–	–
Export	–	–
Sales	(ai) 211.0 mt.	2.9 million
Pesticide use profile: 2009/2011	Tons (a.i./formulation to be specified)	US\$ Value
Agriculture		
Insecticides	61.62 mt ai	1.19 million \$
Fungicides	129.57 mt ai	1.29 million \$
Herbicides	15.68 mt ai	0.194 million \$
Other (acaricides, bactericides, biopesticides, nematicides, rodenticides) with Public Health	4.21 mt ai	0.24 million \$
Veterinary	–	
Household	–	
Other purposes	–	
TOTAL	211.0	2.9

**Post registration monitoring**

Testing, quality control and effects in the field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?	x		
Do you have significant problems with pesticide resistance?	x		
Do you have a list of pesticides under close observation for problems			
Source for more information: –			

Health and environmental information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?		x	
Do you have a system to monitor pesticide residues in food?	x		
Do you have a system to monitor pesticide residues in the environment?			x
Do you have significant problems of environmental contamination from pesticides?	x		
Do you have data on pesticides effects on wildlife and ecosystems?			x
Source for more information: –			

Pesticide disposal	Yes	No	Don't know
Do you have services to collect and safely dispose of used containers and small quantities of left-over pesticides?		x	
Do you have an inventory of outdated and obsolete pesticides in the country?	x		
Do you have illegal trade in pesticides? if yes: what is the estimated amount: _____		x	x
Source for more information: –			

**Key operation indicators**

Registration/regulation/monitoring	Years: 2010-2011	
	Trade name	Common name
Number of registered pesticide products	651	107
Number of registered biopesticides	16	6
Number of restricted-use pesticides		13
Number of banned pesticides		14
Number of licensed outlets	1	
Number of licensed applicators	4	
Number of licensing violations reported during year	–	
Number of quality control analyses conducted during year	8	
Number of food samples analyzed for pesticide residues during year		
Number of samples exceeding MRL		
Number of environmental samples analyzed for pesticide residues		

\* active ingredient

Pesticides restricted in recent years (2010-2011)	
Year	Name of active ingredient or hazardous formulation

Pesticides banned in recent years (2010-2011)	
Year	Name of active ingredient

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Pesticide national policy draft is prepared and in the process of finalization. Pesticide regulation 1993 is amended in 2006. Monocrotophous & methyl parathion have already been banned since 2007.
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
<p>We faced the following constraints for effective implementation of pesticide management activities.</p> <ul style="list-style-type: none"> <li>• Lack of skilled &amp; sufficient manpower</li> <li>• Lack of sufficient resources</li> <li>• Lack of keen attention towards the pesticide issue from the policy level of the government</li> <li>• Lack of quality assurance and residue monitoring plan</li> <li>• Lack of well equipped pesticide analysis laboratory</li> <li>• Lack of skilled manpower to operationalize the pesticide laboratory</li> </ul>

## VI. ADDITIONAL ISSUES OF INTEREST

Genetically Modified Crops	
Name of GMO Crop	Area under cultivation [ha]

### Abbreviation

ABPSD	: Agriculture Business Promotion and Statistics Division
DADO	: District Agriculture Development Office
DOA	: Department of Agriculture
MOAC	: Ministry of Agriculture and Cooperatives
NARC	: Nepal Agriculture Research Council
NPPO	: National Plant Protection Organization
NPQP	: National Plant Quarantine Programme
PPD	: Plant Protection Directorate
RATC	: Regional Agriculture Training Centre
RAD	: Regional Agriculture Directorate
RPPL	: Regional Plant Protection Laboratory
WTO	: World Trade Organization

## 2.14 NEW ZEALAND

### I. GENERAL INFORMATION

Last updated: March 2011

#### Overall executive summary

Since the last session of the Asia and Pacific Plant Protection Commission, 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 effect on 1 July 2011.

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.

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.

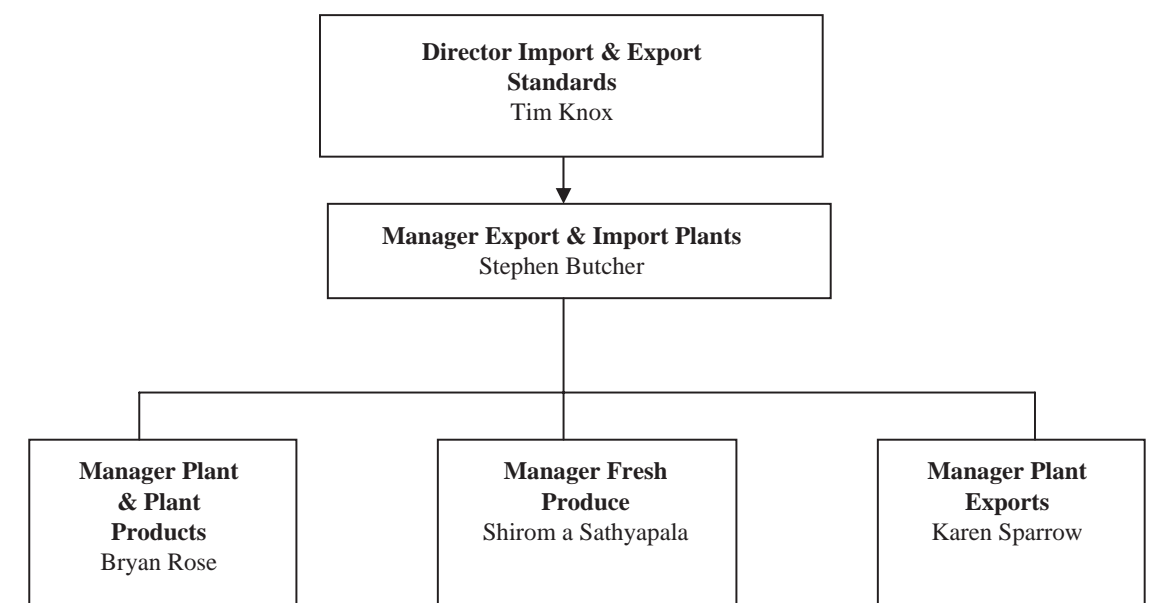
Response Tracker is a database designed to support the maintenance and tracking of MAF responses. It is used to report on individual responses or to provide data on response activities for a given period. Responses are created and maintained by response managers.

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.

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 organizations have implemented a compliance structure to support the approvals framework.

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.

New Zealand continues to be active in the development, implementation and promotion of international and regional standards.

**Plant protection organization chart****Important contact addresses****Responsible ministry**

Ministry of Agriculture and Forestry (MAF)  
 P.O. Box 2526  
 Wellington  
 Tel: +64 4 894 0100  
 Fax: +64 4 894 0720  
 Email: [info@maf.govt.nz](mailto:info@maf.govt.nz)  
 Website: [www.maf.govt.nz/mafnet/index.htm](http://www.maf.govt.nz/mafnet/index.htm)

**Former MAF Biosecurity New Zealand (MAF BNZ)****Standards Directorate**

*Ms Carol Barnao, Deputy Director General*

P.O. Box 2526  
 Wellington  
 Tel: +64 4 894 0100  
 Fax: +64 4 894 0720  
 Email: [carol.barnao@maf.govt.nz](mailto:carol.barnao@maf.govt.nz)  
 Website: [www.biosecurity.govt.nz/](http://www.biosecurity.govt.nz/)

**Investigation, Readiness and Response Directorate**

*Mr Peter Thomson, Deputy Director-General*

MAF New Zealand  
 P.O. Box 2526  
 Wellington  
 Tel: +64 4 894 0100  
 Fax: +64 4 894 0728  
 Email: [peter.thomson@maf.govt.nz](mailto:peter.thomson@maf.govt.nz)  
 Website: [www.maf.govt.nz/mafnet/index.htm](http://www.maf.govt.nz/mafnet/index.htm)

**Official international contact points****National Plant Protection Organization (NPPO) contact point (for IPPC/APPPC)**

*Mr Tim Knox*

Director Import & Export Standards

*Mr John Hedley*

Principal International Advisor

MAF New Zealand

P.O. Box 2526

Wellington

Tel: +64 4 894 0428 (JH); + 64 4 894 0165 (TK)

Fax: +64 4 894 0731 (JH); +64 4 894 0720 (TK)

Email: [nppo@maf.govt.nz](mailto:nppo@maf.govt.nz)

Website: [www.biosecurity.govt.nz/](http://www.biosecurity.govt.nz/)

Language(s): English

**WTO SPS contact point**

*Ms Sally Jennings, SPS Coordinator*

MAF New Zealand

Pastoral House

P.O. Box 2526

Wellington

Tel: +64 4 894 0431

Fax: +64 4 894 0731

Email: [sps@maf.govt.nz](mailto:sps@maf.govt.nz)

Website: [www.maf.govt.nz/biosecurity/sps/](http://www.maf.govt.nz/biosecurity/sps/)

**Ministry of Agriculture and Forestry (MAF )****Pesticide registration**

Approvals & ACVM Group

*Ms Debbie Morris, Director*

MAF (Standards Branch)

P.O. Box 2835

Wellington

Tel: +64 4 894 2500

Fax: +64 4 894 2501

Email: [debbie.morris@maf.govt.nz](mailto:debbie.morris@maf.govt.nz)

Website: [www.foodsafety.govt.nz/](http://www.foodsafety.govt.nz/)

**ERMA NZ**

Tel : +64 4 916 2426

Fax: +64 4 914 0433

Email: [info@ermanz.govt.nz](mailto:info@ermanz.govt.nz)

**Rotterdam Convention (PIC) DNA Industrial Chemicals and Pesticides (CP)****Plant residues**

ACVM Standards

*Mr Warren Hughes, Manager*

MAF New Zealand

P.O. Box 2835

Wellington

Tel: +64 4 463 2654

Fax: +64 4 463 2675

Email: *Warren.Hughes@maf.govt.nz***Working with Central Government***Mr Todd Kriebel, General Manager*

Ministry for the Environment

P.O. Box 10362

Wellington

Tel: +64 4 439 7400

Fax: +64 4 439 7700

Email: *todd.kriebel@mfe.govt.nz***Stockholm Convention (POP) National Focal Point***Mr Howard Ellis, Senior Policy Analyst*

Ministry for the Environment

P.O. Box 10 362

Wellington

Tel: +64 4 917 74 37

Fax: +64 4 917 75 28

Email: *howard.ellis@mfe.govt.nz***Basel Convention Competent Authority (CA) and focal point****Environmental Issues, Effective Markets Branch**

Ministry of Economic Development

P.O. Box 1473

Wellington

Tel: +64 4 474 28 76

Fax: +64 4 470 25 33

Email: *robyn.washbourne@med.govt.nz***Basel Convention Focal Point**

Ministry for the Environment

P.O. Box 10362

Wellington

Tel: +64 4 917 74 00

Fax: +64 4 917 75 23

Email: *basel@mfe.govt.nz*



**Selected country statistics:**

Last updated: March 2011

Agricultural population: –	Agricultural land: –		
GDP: US\$ 149.214 billion	Agric. GDP: 4.3%	GNI per capita: –	Undernourishment: –
Main items grown: Dairy, Forestry, Sheep and Beef			

GDP = Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement

## II. PLANT QUARANTINE

Last updated: December 2011

### List of key legislation/regulations/rules

1993 *Biosecurity Act 1993* – is the principal legislation for the exclusion, eradication and management of pests and unwanted organisms in New Zealand. Biosecurity New Zealand administers this legislation

**Web source for further information:** [www.biosecurity.govt.nz/](http://www.biosecurity.govt.nz/)

1981 *Food Act 1981*

A new Bill that overhauls the outdated Food Act 1981 has been introduced to Parliament.

The Food Act has not been updated for 30 years and the current regulatory system is not as effective and efficient as it could be.

The new Food Bill has been developed over the past three years and is aligned with the New Zealand Standard platform, which provides the basis for our food exports. After its first reading the Food Bill will be referred to the Primary Production Select Committee and is expected to be enacted by 31 March 2011.

**Web source for further information:** [www.foodsafety.govt.nz/industry/importing/legislation/](http://www.foodsafety.govt.nz/industry/importing/legislation/)

Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover domestic quarantine?	x		
Does phytosanitary legislation cover import quarantine?	x		
Does phytosanitary legislation cover export quarantine?		x	
Does phytosanitary legislation cover living modified organisms?	x		
Is plant quarantine a separate organization from animal quarantine?		x	
Other policy initiatives (under review/progress)			
Web sources for further information: <a href="http://www.maf.govt.nz/quarantine/">www.maf.govt.nz/quarantine/</a> <a href="http://www.biosecurity.govt.nz/">www.biosecurity.govt.nz/</a> <a href="http://www.biosecurity.govt.nz/pests/registers">www.biosecurity.govt.nz/pests/registers</a>			

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest risk assessment	MAF Standards Directorate
National standards development	MAF Standards Directorate
International notifications	MAF Policy, Science and Economics
<i>Import:</i>	
Import permits	MAF Standards Directorate
Import inspections	MAF Standards Directorates
Emergency action	MAF
<i>Export:</i>	
Phytosanitary certificates	MAF Standards Directorate
Treatment of commodities	MAF Standards Directorate

Infrastructure	Year: 2011
Number of plant quarantine officers authorized to inspect/certify (exports)	
Number of plant quarantine officers authorized to inspect/certify (imports)	Approximately 600
Total qualified personnel for plant pest risk assessment	8
Entry points (sea/air/land/mail = total)	21
Post-entry plant quarantine containment facilities	68
Number of quarantine service diagnosis laboratories	2
In-country recognized pest diagnostics capabilities (incl. universities, etc.)	
Number of laboratories for insect/mite (arthropod) samples	2
Number of laboratories for bacteria samples	2
Number of laboratories for virus samples	2
Number of laboratories for fungus samples	2
Number of laboratories for mycoplasma samples	2
Number of laboratories for nematode samples	2
Number of laboratories for plant/weed samples	2
Number of laboratories for other pests (snail, slug, rodents, etc.)	2

Pest-free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)
Overall management	MAF Standards
– surveillance	Independent Verification Agencies
– management	Independent Verification Agencies
– certification	MAF Standards
List of target pest species and crops ISPM 4	Number of sites in 2011
All fruit flies attracted to Cuelure, Methyl eugenol, and Trimedlure. All fruit fly host crops.	7 572 traps at 3 510 sites nationwide
List of target pest species and crops ISPM 10	Number of sites in 2011
Potato cyst nematodes ( <i>Globodera rostochiensis</i> and <i>Globodera pallida</i> )	250
Oriental fruit moth ( <i>Graphiolita molesta</i> )	50

### Key situation indicators

Main commodities	Main destination countries	Year: 2010
Kiwifruit	Japan, Europe, USA, Taiwan, Korea, Australia	367 152
Apples	USA, Europe, Taiwan	233 099
Citrus	Japan, Korea	2 531
Squash	Japan, Korea	81 764
Flowers	Japan Europe, USA, Asia	N/A
Avocado	Australia	10 307
Stone fruit	Australia, Japan, Taiwan, Europe	3 096
Onions	Europe, Japan	180 333
Vegetable seed	Europe, Asia	N/A
Forestry products	Australia, China, Japan, India, USA, Korea	7 772 000 m <sup>3</sup>

Cooperation projects			
Title (Purpose/Target)	Donor	Amount	Years (start-end)
N/A			
Title of government follow-up programmes		Amount	Years (start-end)
N/A			

### Key operation indicators

Institutional functions	Years: 2010-2011
Number of import permits issued (commercial consignments of nursery stock and seed)	190
Number of import inspections carried out	10 000+
Number of emergency phytosanitary treatments taken on imports	Approx 1 000
Number of conventional phytosanitary certificates issued	55 000
Number of electronic phytosanitary certificates issued	0

Number of quarantine pests intercepted		Years: 2010-2011
Top three commodity	Top three pest/commodity	# of interceptions
		N/A

List of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of quarantine pests	Refer to web page below			
Number of regulated non-quarantine pests				
Number of regulated import articles				
Website for the above information: <a href="http://www.maf.govt.nz/biosecurity/pests-diseases/registers-lists/boric/">www.maf.govt.nz/biosecurity/pests-diseases/registers-lists/boric/</a>				

Pest risk analysis (PRA)	Insects	Pathogens	Plants
No. of PRA completed and documented (according to ISPM)	Refer to web page below		
Web source for further information: <a href="http://www.biosecurity.govt.nz/regs/imports/ihs/risk">www.biosecurity.govt.nz/regs/imports/ihs/risk</a>			

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
ISPM 01 Principles of plant quarantine as related to international trade			x				x	
ISPM 02 Guidelines for pest risk analysis			x				x	
ISPM 03 Code of conduct for the import and release of exotic biological control agents			x				x	
ISPM 04 Requirements for the establishment of pest free areas			x				x	
ISPM 05 Glossary of phytosanitary terms			x				x	
ISPM 06 Guidelines for surveillance			x				x	
ISPM 07 Export certification system			x				x	
ISPM 08 Determination of pest status in an area			x				x	
ISPM 09 Guidelines for pest eradication programmes			x				x	
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites			x				x	
ISPM 11 Pest risk analysis for quarantine pests			x				x	
ISPM 12 Guidelines for phytosanitary certificates			x				x	
ISPM 13 Guidelines for the notification of noncompliance and emergency action			x				x	
ISPM 14 The use of integrated measures in a systems approach for pest risk management			x				x	
ISPM 15 Guidelines for regulating wood packaging material in international trade			x				x	
ISPM 16 Regulated non-quarantine pests: concept and application			x				x	
ISPM 17 Pest reporting			x				x	
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure			x	x				N/A
ISPM 19 Guidelines on lists of regulated pests			x				x	
ISPM 20 Guidelines for a phytosanitary import regulatory system			x				x	
ISPM 21 Pest risk analysis for regulated non-quarantine pests			x				x	
ISPM 22 Requirements for the establishment of areas of low pest prevalence			x		x			N/A
ISPM 23 Guidelines for inspection			x				x	
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures			x				x	
ISPM 25 Consignments in transit			x				x	
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)			x				x	
ISPM 27 Diagnostic protocols for regulated pests			x				x	
ISPM 28 Phytosanitary treatments for regulated pests			x					
ISPM 29 Recognition of pest free areas and areas of low pest prevalence								
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (Tephritidae)	x			x				
ISPM 31 Methodologies for sampling of consignments			x		x			
ISPM 32 Categorization of commodities according to their pest risk								
ISPM 33 Pest free potato ( <i>Solanum</i> spp.) micropropagative material and minitubers for international trade								
ISPM 34 Design and operation of post-entry quarantine stations for plants								
Comments/constraints: * Third party agencies utilized to verify compliance of export product.								

### III. SURVEILLANCE, PEST OUTBREAKS AND INVASIVE SPECIES MANAGEMENT

Last updated: March 2011

#### List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions

1993 Biosecurity Act 1993

1996 Hazardous Substances and New Organisms (HSNO) Act 1996

**Web source for further information:** [www.biosecurity.govt.nz/](http://www.biosecurity.govt.nz/)

Policies regarding invasive/migratory species management	Yes	No	Don't know
National strategy to control serious field pest outbreaks?		x	
National strategy to control migratory or periodically occurring pests?		x	
National strategy to eradicate serious newly invaded exotic pests?	x		
Other policies: (e.g. subsidies, etc.)			
<ul style="list-style-type: none"> <li>• New Zealand Biosecurity Strategy <a href="http://www.biosecurity.govt.nz/files/bio-strategy/biostrategy.pdf">www.biosecurity.govt.nz/files/bio-strategy/biostrategy.pdf</a></li> <li>• Policy for MAF's Responses to Risk Organisms (July 2008) <a href="http://www.biosecurity.govt.nz/files/biosec_consult/response-policy-risk-organisms.pdf">www.biosecurity.govt.nz/files/biosec_consult/response-policy-risk-organisms.pdf</a></li> </ul>			
Web source for further information: <a href="http://www.biosecurity.govt.nz/">www.biosecurity.govt.nz/</a>			

Organization of functions related to surveillance pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field/storage pest outbreaks</i>	(e.g. BPH, boll worm, etc.)
Response strategy/plans	Pest outbreaks are generally managed by the Industry or the Agency most affected. MAF Biosecurity New Zealand may take a lead or coordinating role for National Interest Pests
Surveillance	
Control	
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	N/A
Surveillance	
Control	
<i>New exotic pest eradication</i>	(e.g. coconut beetle)
Response strategy/plans	MAF Biosecurity New Zealand with the support of affected industries and/or other central/local government agencies
Surveillance	
Control/eradication	
Reporting to bilateral or international organizations	MAF Biosecurity New Zealand

Infrastructure	Year: 2010
Number of designated staff for <b>surveillance</b> of field pests of national importance	3 FTEs within MAFBNZ Surveillance Group to coordinate National Programmes for pests and diseases affecting Plant Health. Note: Field operations are generally contracted out and the number of staff at any one time will depend on what programmes are currently being run.
Number of designated staff for <b>surveillance</b> of migratory and periodically occurring pests	
Number of designated staff for <b>surveillance</b> of invasive species	
Number of designated staff for <b>control</b> of field pests of national importance	16 FTEs within MAFBNZ Response (8 FTE) and Incursion Investigation Groups (8 FTE) to coordinate response programmes and operations to exotic plant pest/disease incursions. (This includes Environment Group and 2 Response Managers). 6 FTEs within MAFBNZ Pest Management Group to coordinate programmes for National Interest Pests (already established in New Zealand). Note: Field operations are generally contracted out and the number of staff at anyone time will depend on what programmes are currently being run.
Number of designated staff for <b>control</b> of migratory and periodically occurring pests	
Number of designated staff for <b>eradication</b> of invasive species	

### Key situation and operation indicators

(Outbreaks and invasions in the past 2 years)

New exotic species found established in the country	Insects	Pathogens	Weeds
Total number for 2010 [most recent]: 21	14	7	0
Total number for 2009 [year before]: 28	6	22	
Total number on record:	20	29	

**Note:** Numbers represent cases that have been assessed and declared established in New Zealand. Some of these may represent endemic species or species that have likely been present in the country for decades, but just never before been detected.

Eradication or internal quarantine actions taken against economically important species			
Name of species	<i>Pseudomonas syringae actinidiae</i> (Psa)	<i>Pieris brassicae</i> (Great White Cabbage or Large white butterfly)	<i>Coptotermes acinaciformis</i> (subterranean termites)
Year of first discovery	2010 (Te Puke)	2010 (Nelson)	2006 (Nelson) 2007 (Auckland) 2009 (Nelson) 2010 (Pukekohe)
Pathway	Unknown	Unknown	Railway sleepers
Location of first discovery	Te Puke	Nelson	Nelson, Auckland Nelson, Pukekohe
Area affected [ha]	Psa haplotype 2 now known to be widespread across the country (with the exception of Northland) Psa V (Italian isolate) restricted to Te Puke	Unknown, but considered limited	<ul style="list-style-type: none"> <li>• Nelson – 2 neighbouring residential properties</li> <li>• Auckland – planter boxes and shed on rural property</li> </ul>

	region and so far affects 106 orchards covering 660 hectares		<ul style="list-style-type: none"> <li>• Nelson (2) In structures near railway sleepers.</li> <li>• Pukekohe</li> </ul>
Area treated [ha]	<p>Large areas of orchards (both affected and unaffected) have been sprayed</p> <p>Accurate measures of level of cutting v difficult to ascertain as many orchardists are doing this on their own back.</p>	None	<ul style="list-style-type: none"> <li>• Nelson – the 2 affected properties plus 4 adjacent properties</li> <li>• Auckland – affected property</li> <li>• Nelson (2) affected property</li> <li>• Pukekohe</li> </ul>
Control method	Aggressive pruning and spraying with Copper or biological sprays Hygiene measures and movement controls	Eradication of populations located during surveillance.	Hexaflumuron bait stations, surveillance of wider area, and (Auckland) netting to contain alates
Expenditure NZD 2010	\$2.5 M	Approx. \$50 000	NZ\$ 61 679
Status	Active control programme	Present, limited distribution. Unwanted Organism.	Under eradication

**Eradication or internal quarantine actions taken against economically important species**

Name of species	Candidatus Liberibacter species (undescribed)	<i>Solenopsis invicta</i> (Red Imported Fire Ant)	Dampwood termites
Year of first discovery	2010	2006	2007, 2008, 2011
Pathway	Probably vectored by insect pest, the tomato potato psyllid ( <i>Bactericera cockerelli</i> ). The vector is already established in New Zealand	Suspect USA	Australia – suspect historically-imported hardwood timber
Location of first discovery	Commercial potato crop Auckland	Napier	Kaipara Flats Auckland Wellington
Area affected [ha]		Single nest found on property of forest products processing plant	Likely to be one or two isolated nests (not yet located) at Kaipara. Infestations at Auckland from unknown sources. Wellington infestations in



			hardwood wharf timbers.
Area treated [ha]		c.750 ha	
Control method	Surveillance – considered to be widely distributed	Surveillance, movement controls, application of fire ant insecticidal baits.	Surveillance and two nests destroyed at Kaipara.
Expenditure NZD 2010		NZ\$ 8.63 million for the entire programme.	NZ\$ 23 000
Status	Established	Eradicated	Under investigation

Eradication or internal quarantine actions taken against economically important species		
Name of species	Hadda beetle ( <i>Epilachna vigintioctopunctata</i> )	Australian Pasture Tunnel Moth ( <i>Philobota</i> sp.)
Year of first discovery	2010	2010
Pathway	Potential hitchhiker	Unknown, potential wind-blown migrant
Location of first discovery	Auckland	Waikato
Area affected [ha]		1 known site, however considered to likely be widespread.
Area treated [ha]		
Control method	Surveillance and destruction of detected populations. Response closed	Surveillance conducted
Expenditure NZD 2010		\$23 300
Status	Established	Established

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species			
Year of outbreak			
Area affected [ha]			
Estimated damage \$			
Area treated by government [ha]			
Expenditures by government [\$]			
Control method			
More information			

## Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
<p><b>SURVEILLANCE</b></p> <ul style="list-style-type: none"> <li>MAFBNZ has developed a Biosecurity Surveillance Strategy. The strategy document has completed final public consultation and final approval is being sought. The strategy develops a cohesive vision and consistent principles and approaches for the future biosecurity surveillance system. Now that the main principles have been agreed an implementation plan is being prepared to establish a path that will successfully move New Zealand from the current state to the preferred future biosecurity surveillance system.</li> </ul>

**RESPONSE**

- A Biosecurity Response Model which includes web-based process maps, supporting procedures, tools and templates, and a people capability framework has been fully implemented and is used in the management of responses.
- MAF is continuing to work towards a Government-Industry Agreement for joint decision-making and resourcing. It will cover biosecurity readiness (including surveillance) and response. Benefits MAF hopes to achieve from an agreement include:
  - better planning, resourcing and delivery of biosecurity readiness and response activities;
  - more accurate signals from industries on their priorities (they will identify what they most want to invest in);
  - more certainty on whether and how the Government will be involved in readiness/response activities that benefit industries; and
  - incentives for all parties to mitigate biosecurity risks within their control.
- If the Government and industries decide to proceed, an agreement could be in place by December 2011. However, timing will depend on how long it takes to negotiate a final agreement, put in place levies to secure resource contributions from industry, and amend legislation to enable the agreement to operate.

**RESPONSE FOUNDATIONS**

To build generic preparedness planning tools and guidelines to improve response effectiveness and efficiency. These include:

1. Developing preparedness planning and prioritisation processes (drafted, piloted and currently under final review) using a common agreed list of risk organisms;
2. Developing response plan guidelines under a hierarchy of fundamental (generic) plans, sector level, organism type and organism specific plans (drafted, under review);
3. Developing a response exercise/simulation framework for the best practice in planning, scheduling and delivering exercises against response plans.
4. Developing a generic scalability framework and guidelines for preparedness for to be used for specific response organisms and for analysis of needs and options (including developing formal or informal external relationships) to obtain the identified capability and capacity required to achieve the response outcomes.

The project is expected to deliver these components by June 2012 with assisted implementation into the business during this period for nearly completed work and by June 2013 for the remainder of the work programme.

**PEST ERADICATION MANAGEMENT**

- Eleven National Interest Pests were identified and have MAF-led responses underway. The goal for all for but three of the responses is total eradication from New Zealand, with containment/exclusion and zero density for the other three. Delivery of the responses is managed through partnerships with other biosecurity agencies.
- Pest species that are being managed on a long term basis include *Didymo* and Gum leaf skeletoniser. The recent outbreak of *Phytophthora Taxon Agathis* has affected the iconic Kauri tree (*Agathis australis*).

**Main constraints (personnel, infrastructure, administrative, operational, training, etc.)**

#### IV. PEST MANAGEMENT

Last updated: December 2010

##### List of key legislation/regulations/rules for pest management

1993 Biosecurity Act 1993

1996 Hazardous Substances and New Organisms (HSNO) Act 1996

Agricultural Compounds and Veterinary Medicines (ACVM) Act 1997 – controls agricultural compounds and veterinary medicines used in association with animals and plants, and is a companion measure to the Hazardous Substances and New Organisms (HSNO) Act, Animal Products Act (1999) Dairy Industry Act (1952), Food Act (1981), Animal Welfare Act (1993) and Biosecurity Act (1993).

**Web source for further information:** [www.foodsafety.govt.nz/](http://www.foodsafety.govt.nz/)

Policies regarding pest management	Yes	No	Don't know
Do you have policies encouraging organic or low-pesticide use production	N/A		
Is IPM specifically mentioned in laws or policy documents?	N/A		
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?	N/A		
Is pest management extension separate from general extension?	N/A		
Other policies: (subsidies, production inputs, etc.)			
Web source for further information:			

Organization of pest management function	Responsible organizational unit (ministry/department/unit)
Policy development	N/A
Pest management research	
Control recommendations	
Pest management extension	
IPM training	
GAP training	

Infrastructure	Year: 2010
Number of technical officers for pest management	N/A
Number of central, regional, provincial or state offices	N/A
Number of district and village level field offices	N/A
Number of field/extension agents for pest management advice	N/A
Number of field/extension agents trained in IPM-FFS facilitation	N/A
Number of government biocontrol production/distribution facilities	N/A
Number of government biopesticide production/distribution facilities	N/A
Number of general extension staff involved in pest management	N/A
Number of designated plant protection technical officers for extension	N/A

**Key situation and operation indicators**

Pest management	Yes	No	Don't know
Does the country have a National IPM Programme? <i>If yes, give Name and Address of IPM Programme:</i>		x	
Does the country have specific IPM extension programmes? <i>If yes, in which crops?:</i> Kiwifruit, apples, stone fruit, avocados.	x		
Does the country have specific IPM research programmes? <i>If yes, in which crops?:</i> Kiwifruit, apples, stone fruit, avocados, potatoes.	x		
Does the country have specific GAP extension programmes? <i>If yes, in which crops?:</i> Kiwifruit, apples.	x		
Does the country have specific GAP research programmes? <i>If yes, in which crops?:</i> –	x		

Market shares (estimated value, volume or area under control)	Year: 2010
Size of chemical pest control market	N/A
Size of biopesticides market	N/A
Size of biological control agents market	N/A

Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop	N/A		
Name(s) of pest(s)	N/A		
Estimated crop loss	N/A		
Affected area	N/A		
Number of pesticide applications or amount of pesticide used	N/A		
Government action taken	N/A		

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
N/A			
Purpose/target of government follow-up programmes		Amount	Years (start-end)
N/A			

Pest management extension	Year: 2010
Number of farmers trained in IPM during the year	N/A
Number of IPM-FFS conducted during the year	N/A
Number of farmers trained in GAP standards during the year	N/A
Area under IPM/low pesticide management [ha]	N/A
Area under organic/pesticide-free management [ha]	N/A
Crops in which IPM or other ecology friendly programmes are successfully implemented: N/A	
Crops grown organic/pesticide-free: N/A	

**Progress and constraints**

<b>Main progress in recent Years (legislation, policies, infrastructure, investments, training, etc.)</b>
<b>Main constraints (personnel, infrastructure, administrative, operational, training, etc.)</b>

## V. PESTICIDE MANAGEMENT

Last updated: March 2011

### List of key legislation/regulations/rules about pesticide management

1993 Resource Management Act 1993 (RMA) (administered by the Ministry for the Environment (MfE))

**Web source for further information:** [www.mfe.govt.nz/](http://www.mfe.govt.nz/)

1996 Hazardous Substances and New Organisms (HSNO) Act 1996 (administered by MfE)

**Web sources for further information:** [www.mfe.govt.nz/](http://www.mfe.govt.nz/)  
and [www.ermanz.govt.nz/](http://www.ermanz.govt.nz/)

1997 Agricultural Compounds and Veterinary Medicines (ACVM) Act 1997

**Web source for further information:** [www.foodsafety.govt.nz/](http://www.foodsafety.govt.nz/)

Policies regarding pesticide management	Yes	No	Don't know
Do you have national pesticide reduction targets? <i>If yes, what is the target: _____</i>		x	
Have you ratified the Rotterdam (PIC) Convention?	x		
Have you ratified the Stockholm (POP) Convention?	x		
Have you ratified the Basel Convention? (hazardous wastes)	x		
Have you ratified the Montreal Protocol? (MeBr phasing-out)	x		
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?	x		
Have you adopted Good Laboratory Practices (GLP)?	x		
<i>Pesticide registration</i>			
Do you require pesticides to conform to relevant FAO or WHO specifications?	x		
Do you allow the "me-too" registration and sale of generic pesticides?	x		
Do you require data on product equivalence for generic registration?	x		
Do you conduct country-specific risk assessments for...			
occupational risks?	x		
consumer risks?	x		
environmental risks?	x		
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labelling?	x		
Do you accept evaluation results from other countries?		x	
Do you accept field studies conducted in other countries?	x		
Do you require environmental fate studies?	x		
<i>Incentives/disincentives</i>			
Do you have a special tax on pesticides to cover externality costs?		x	
Do you subsidize or provide low-cost pesticides?		x	
Do you subsidize or provide low-cost biopesticides?		x	
Other policies:			
Web source for further information: <a href="http://www.foodsafety.govt.nz/">www.foodsafety.govt.nz/</a>			

Organization of pesticide management function	Responsible organizational unit (ministry/department/unit)
Legislation	<ul style="list-style-type: none"> <li>MAF (ACVM Act) – residues and efficacy and (Food Act) MRLs</li> <li>Ministry for the Environment (HSNO Act/RMA) – human and environmental health and safety</li> </ul>
Registration	<ul style="list-style-type: none"> <li>MAF and Environmental Risk Management Authority (ERMA New Zealand)</li> </ul>
Licensing of shops	
Licensing of field applicators**	<ul style="list-style-type: none"> <li>ERMA New Zealand</li> </ul>
Enforcement/inspections	<ul style="list-style-type: none"> <li>MAF (ACVM &amp; Food Acts)</li> <li>Department of Labour (DoL) (HSNO Act)</li> <li>Regional Councils and Territorial Authorities (RMA/HSNO Act)</li> </ul>
Development of pesticide use recommendations	<ul style="list-style-type: none"> <li>MAF</li> <li>ERMA New Zealand</li> </ul>
Safe use training/extension	<ul style="list-style-type: none"> <li>ERMA New Zealand (in association with ITOs)</li> </ul>
Food residue monitoring	<ul style="list-style-type: none"> <li>MAF</li> </ul>
Environmental monitoring	<ul style="list-style-type: none"> <li>Regional Councils</li> </ul>
Health monitoring	<ul style="list-style-type: none"> <li>Ministry of Health, District Health Boards</li> </ul>
<i>Other stakeholders:</i>	
Pesticide Industry Association	<ul style="list-style-type: none"> <li>AGCARM</li> <li>ARPPA</li> </ul>
Civil Society Organizations (NGO, etc.)	Includes: <ul style="list-style-type: none"> <li>Pesticides Action Network</li> <li>Toxics Action Group</li> <li>Soil and Health Association</li> <li>Greenpeace</li> <li>Research providers</li> </ul>

Infrastructure	Year: 2010
Number of registration officers	MAF (20), ERMA (15)
Number of enforcement officers	MAF (1) plus MAF Border Inspectors (604), DoL (8)
Number of department quality control laboratories	N/A
Number of quality control laboratory personnel	N/A
Number of department residue analysis laboratories	N/A
Number of residue laboratory personnel	N/A

**Key situation indicators**

Pesticide trade: 2010	Tons	US\$ '000 Value
Imports <sup>1</sup>	N/A	N/A
Manufacture	N/A	N/A
Export <sup>1</sup>	N/A	N/A
Domestic Use/Sales <sup>2</sup>	4 683	N/A
Pesticide use profile: 2010	Tons (a.i./formulation to be specified)	US\$ '000 Value
Agriculture		
Chem. Insecticides	252	N/A
Chem. Fungicides	1 108	N/A
Chem. Herbicides	2 868	N/A
Chem. Others: e.g. molluscicide, acaricide	164	N/A
Other: e.g. Avamectrin, Bt, Neem	Included in chemicals above	N/A
Other purposes	N/A	
TOTAL		

<sup>1</sup> NZ Statistics for 2005/06 (figures are for all pesticides, including disinfectants, rodenticides etc...).

<sup>2</sup> Based on Agcarm sales data 2005/06 for active ingredient only

**Post registration monitoring**

Testing, quality control and effects in the field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?		x	
Do you have significant problems with pesticide resistance?		x	
Do you have a list of pesticides under close observation for problems	x		
Source for more information: <a href="http://www.ermanz.govt.nz/hs/reassessment/index.html">www.ermanz.govt.nz/hs/reassessment/index.html</a>			

Health and environmental information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?	x		
Do you have a system to monitor pesticide residues in food?	x		
Do you have a system to monitor pesticide residues in the environment?		x	
Do you have significant problems of environmental contamination from pesticides?			
Do you have data on pesticides effects on wildlife and ecosystems?	x		
Source for more information: –			

Pesticide disposal	Yes	No	Don't know
Do you have system to collect and safely dispose of used containers and small quantities of left-over pesticides?	x		
Do you have an inventory of outdated and obsolete pesticides in the country? (e.g. banned and no longer traded, but still in storage)	x		
Do you have illegal trade in pesticides? if yes: what is the estimated amount: _____		x	
Source for more information: –			

**Key operation indicators**

Registration/regulation/monitoring	Year: 2010	
	a.i.*	Trade name
Number of registered pesticide products	343	1 328
Number of registered biopesticides (Avamectrin, Bt, Neem, etc.)	See above	See above
Number of restricted-use pesticides/formulations		
Number of banned pesticides	11	
Number of licensed outlets	N/A	
Number of licensed field applicators (professional and/or farmers)	~ 40 000	
Number of licensing violations reported during year	N/A	
Number of quality control analyses conducted during year	N/A	
Number of food samples analyzed for pesticide residues during year	N/A	
Number of samples exceeding MRL	N/A	
Number of environmental samples analyzed for pesticide residues	N/A	

\* active ingredient

Pesticides restricted in recent years (2009-2010)	
Year	Name of active ingredient or hazardous formulation
	N/A

Pesticides banned in recent years (2009-2010)	
Year	Name of active ingredient
2009	Endosulfan

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
N/A			
Purpose/target of government follow-up programmes		Amount	Years (start-end)
N/A			

**Progress and constraints**

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
<ul style="list-style-type: none"> <li>Funding implications to implement pesticide management and risk reduction strategies in a quicker manner.</li> </ul>

**VI. ADDITIONAL ISSUES OF INTEREST**

Genetically Modified Crops	
Name of GMO Crop	Area under cultivation [ha]
No GMO crops are commercially grown in New Zealand	0



## 2.15 PAKISTAN

### I. GENERAL INFORMATION

Last updated: December 2008

#### Overall executive summary

During the period 2007-2008, Pakistan has made steady progress in all areas of plant protection.

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.

As regards the plant quarantine, in 2008, the number of phytosanitary inspections amounted to 70 244. The country's international trade in 2008 increased significantly with the export of rice amounting to 2.7 million metric tons while the export of fresh and dry fruits amounted to almost 600 000 metric tons. The number of conventional phytosanitary certificates which were issued amounted to 70 244.

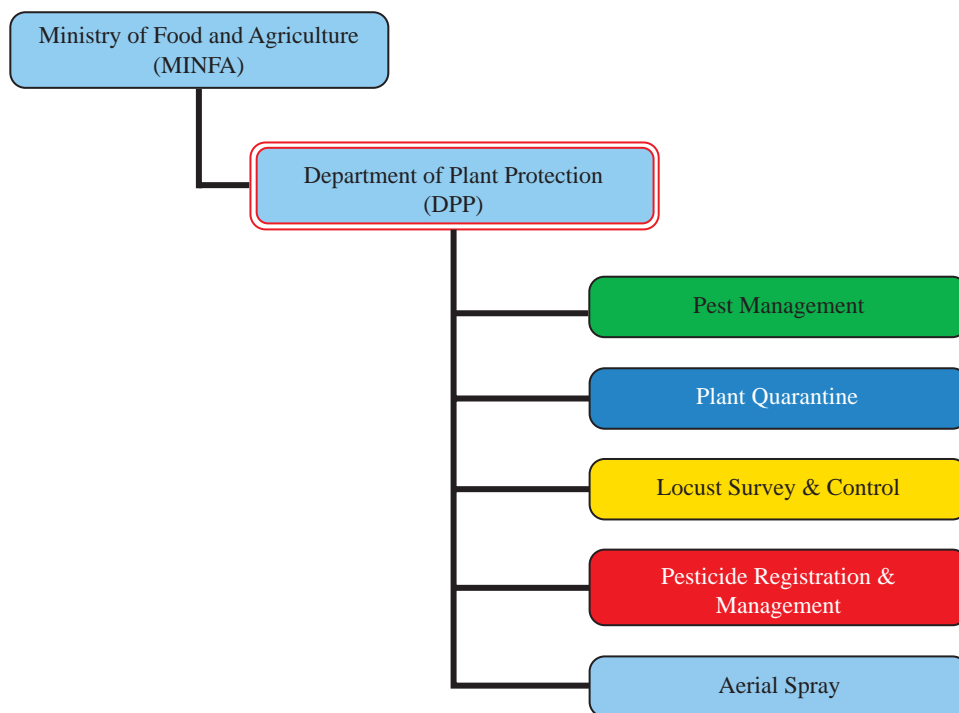
Pakistan Plant Quarantine Act and Rules are being revised. The Central Plant Quarantine Laboratory and three regional labs are being completed. Equipment is being installed and recruitment of personnel is under process. A total of 8 PRA of different crops are completed for 52 insects, 72 pathogens and 8 plants but they are being made in conformity of ISPM 4.

The main constraint faced by the country is lack of trained personnel for PRA preparation. Training of personnel is also required in collection of information and preparation of different PRA's according to ISPM and surveillance lab analysis.

In relation to the implementation of ISPMs, although many areas have been identified for full implementation, few are not fully implemented, mainly due to lack of resources and personnel.

**Plant protection organization chart**

Last updated: December 2008



*Color Code:*

Phytosanitation	Outbreak Management	Pest Management	Pesticides	NPPO
-----------------	---------------------	-----------------	------------	------

### Important contact addresses

#### Responsible ministry/ministries

Federal Ministry of Food and Agriculture  
*Mr Muhammad Zia-ur-Rehman, Secretary*  
Government of Pakistan, Ministry of Food and Agriculture  
B-Block, Pakistan Secretariat, Islamabad  
Tel: 092-051-9210351  
Fax: 092-051-9210616  
Website: [www.pakistan.gov.pk](http://www.pakistan.gov.pk)

#### Address for nominations

Department of Plant Protection  
*Dr Tasneem Ahmad, Adviser and Director General*  
Ministry of Food and Agriculture  
Jinnah Avenue, Malir Halt  
Karachi 751000, Pakistan  
Tel: 0092-021-9248607 & 092-021-9248612-15  
Fax: 092-021-9248673  
Email: [dgl@plantprotection.gov.pk](mailto:dgl@plantprotection.gov.pk)  
Website: [www.plantprotection.gov.pk](http://www.plantprotection.gov.pk)

#### Operational offices:

#### Plant protection and plant quarantine

Office, Department of Plant Protection  
*Mr Zafar Ali, Deputy Director (Quarantine)*  
Ministry of Food and Agriculture  
Jinnah Avenue, Malir Halt  
Karachi 751000, Pakistan  
Tel: 092-021-9248612-15  
Fax: 092-021-9248673  
Email: [quarantine@plantprotection.gov.pk](mailto:quarantine@plantprotection.gov.pk)  
Website: [www.plantprotection.gov.pk](http://www.plantprotection.gov.pk)

#### Surveillance, pest outbreaks and invasive species management

1. Department of Plant Protection
2. Provincial Agriculture Departments

#### Agriculture Department, Punjab

Office, Department of Agriculture  
*Mr Javed Iqbal Awan, Secretary Agriculture*  
Punjab Secretariat  
Davis Road  
Lahore, Pakistan  
Tel: (+92 42) 9210499  
Fax: (+92 42) 9211796

**Agriculture Department, Sindh**

Office, Department of Agriculture

*Mr Sabhago Khan Jattoi, Secretary Agriculture*

Sindh Secretariat

Toghlaque House

Karachi, Pakistan

Tel: (+92 21) 9211468

Fax: (+92 21) 9211469

**Agriculture Department, NWFP**

Office, Department of Agriculture

*Mr Atta Ullah Khan, Secretary Agriculture*

Civil Secretariat, NWFP

Peshawar, Pakistan

Tel: 0092-091-9210025

**Agriculture Department, Balochistan**

Office, Department of Agriculture

*Mr Iktiar Khan, Secretary Agriculture*

Civil Secretariat, Balochistan

Quetta, Pakistan

Tel: 0092-081-9201261

**Official international contact points****National Plant Protection Organization (NPPO) contact point (for IPPC/APPPC)**

Department of Plant Protection

*Mr Zafar Ali, Deputy Director (Q)*

Ministry of Food and Agriculture

Jinnah Avenue, Malir Halt

Karachi, Pakistan

Tel: (+92 21) 9248072 / 9248612-15

Fax: (+92 21) 9248673

Emails: quarantine@plantprotection.gov.pk and zafarali\_khan@hotmail.com

Website: www.plantprotection.gov.pk

**WTO SPS contact point**

Department of Plant Protection

*Dr Tasneem Ahmad, Adviser and Director General*

Ministry of Food and Agriculture

Jinnah Avenue, Malir Halt

Karachi 751000, Pakistan

Tel: (+92 21) 924 8612 / 924 8607

Fax: (+92 21) 924 8673

Email: dg1@plantprotection.gov.pk

**Rotterdam Convention (PIC) DNA Pesticides (P)**

Department of Plant Protection

*Dr Tasneem Ahmad, Adviser and Director General*

Ministry of Food and Agriculture

Jinnah Avenue, Malir Halt

Karachi 75100, Pakistan

Tel: (+92 21) 924 8607

Fax: (+92 21) 924 8673

Email: dg1@plantprotection.gov.pk

**Stockholm Convention (POP) National Focal Point**

Joint Secretary and Director General (Environment)

Ministry of Environment

Islamabad, Pakistan

Tel: (92 51) 920 25 74

Fax: (92 51) 920 22 11

**Basel Convention Competent Authority (CA) and Focal Point**

Joint Secretary and Director General (Environment)

Ministry of Environment

Islamabad, Pakistan

Tel: (92 51) 920 25 74

Fax: (92 51) 920 22 11

Email: ahameed1951@hotmail.com

**Selected country statistics:**

Agricultural Population	67.5 million	Agricultural Land	22.1 million ha
GDP US\$ 148 000 million	Agric. GDP: 22%	GNI per capita: US\$ 925	Undernourishment: 23%

GDP = Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement

## II. PLANT QUARANTINE

Last updated: December 2008

### List of key legislation/regulations/rules

1976 Pakistan Plant Quarantine Act, 1976

1967 Pakistan Plant Quarantine Rules, 1967

2005 Bio-Safety Rules, 2005 and Bio-Safety Guidelines

### Web source for further information: –

Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover domestic quarantine?	x		
Does phytosanitary legislation cover import quarantine?	x		
Does phytosanitary legislation cover export quarantine?	x		
Does phytosanitary legislation cover living modified organisms?		x	
Is plant quarantine a separate organization from animal quarantine?	x		
Other policy initiatives (under review/progress) <i>Revision and updating of Pakistan Plant Quarantine Act and Rules according IPPC/SPS</i>			
Web source for further information: <a href="http://www.plantprotection.gov.pk">www.plantprotection.gov.pk</a>			

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest risk assessment	DPP/PLANT QUARANTINE, MINFA
Standards development	DPP/PLANT QUARANTINE, MINFA
International notifications	DPP/PLANT QUARANTINE, MINFA
<i>Import:</i>	
Import permits	DPP/PLANT QUARANTINE
Import inspections	DPP/PLANT QUARANTINE
Emergency action	DPP/PLANT QUARANTINE
<i>Export:</i>	
Phytosanitary certificates	DPP/PLANT QUARANTINE
Treatment of commodities	DPP/PLANT QUARANTINE

Infrastructure	Years: 2008-2009
Total number of plant quarantine officers	22
Total qualified personnel for plant pest risk assessment	3
No. of quarantine offices/stations	14
Entry points (sea/air/land/mail = total)	13
Post-entry plant quarantine containment facilities	10
Other Offices	24
No. of quarantine service diagnosis laboratories	4
In-country specialist capacity to analyze samples (incl. universities, etc.)	12
No. of laboratories for insect/mite (arthropod) samples	9*
No. of laboratories for bacteria samples	2
of laboratories for virus samples	1
of laboratories for fungus samples	9*
of laboratories for mycoplasma samples	1
of laboratories for nematode samples	3
No. of laboratories for plant/weed samples	9*
of laboratories for other pests (snail, slug, rodents, etc.)	1

\* four Agriculture Universities and five (one NARC) agriculture research institutes and DPP

Pest-free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)	
Overall management	Department of Plant Protection/Provincial Agriculture Department	
– surveillance	DPP, Plant Protection	
– management	DPP, Plant Protection	
– certification	DPP, Plant Protection	
List of target pest species and crops ISPM 4	Number of sites in [year]	
<i>Fruitfly (Mango, citrus, guava, melon etc.)</i>	–	
<i>Boll worm (Cotton)</i> (Mealy Bug)	–	
<i>Powdery Mildew (Mango, citrus, melon etc.)</i>	–	
<i>Weeds (Rice, wheat and cotton)</i> (Kernal Bunt)	–	
List of target pest species and crops ISPM 10	Number of sites in [year]	

### Key situation indicators

International trade		Year: 2008
Main import plant commodities	Main countries of origin	No. of phytosanitary inspections
Lint Cotton	Central Independent States (CIS), USA, Egypt etc.	70 244
Pulses	Australia, Malaysia, China, India, Iran, USA and Canada etc.	
Medicinal Herbs	Indonesia, Sri Lanka, China, Thailand and India.	
Vegetables Seeds	Europe, Egypt, etc.	
Main export plant commodities	Main destination countries	Quantity (tons)
Rice	United Arab Emirates, U.K., African countries, Iran, China, Bahrain, Oman, Kuwait.	2 749 566 m. tons
Fresh and dry Fruits	Middle East, European Countries and Russia, Far East	599 866 m. tons
Fresh Vegetables	Middle East and European Countries	
Medicinal Herbs	Indonesia, Sri Lanka	

Cooperation projects			
Title (Purpose/target)	Donor	Amount	Years (start-end)
None			
Title of government follow-up programmes		Amount	Years (start-end)
None			

### Key operation indicators

Institutional functions	Year: 2008
No. of import permits issued/inspections	16 137
No. of import inspections carried out	16 137
No. of emergency phytosanitary treatments taken on imports	
No. notifications of non-compliance	01
No. of conventional phytosanitary certificates issued	70 244
No. of electronic phytosanitary certificates issued	None

Number of quarantine pests intercepted		Year: 2008
Top three commodity	Top three pest/commodity	# of interceptions

List of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of regulated quarantine pests	1994*	59	68	–
Number of regulated non-quarantine pests	1994*	14	57	3
Number of regulated import commodities		15**		

\* All the pests included in the A-1 List of the Asia and Pacific region are quarantine pests of Pakistan. Lists A-1 & A-2 of the Asia Pacific Plant Protection Agreement. Compiled as per the recommendation of the working group for A1 & A2 Pests in the 18<sup>th</sup> Session of APPPC. Pp. 181

\*\* Pakistan Plant Quarantine Rules elaborates details of these plants

Pest risk analysis (PRA)	Insects	Pathogens	Plants
No. of PRA completed and documented (according to ISPM). <i>A total of 8 PRA of different crops including Apple, citrus, grapes, mango, onion, potato, rice, date and wheat are completed for different insects and pathogens but they are being made in conformity ISPM 4</i>	52	72	8
Web source for further information: <a href="http://www.plantprotection.gov.pk">www.plantprotection.gov.pk</a>			

## Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Pakistan Plant Quarantine Act and Rules are under revision. Central Plant Quarantine Laboratory and three regional labs are being completed. Equipment is being installed and recruitment of personnel is under process. A total of 8 PRA of different crops including Apple, citrus, grapes, mango, onion, potato, rice, date and wheat are completed for different insects and pathogens but they are being made in conformity ISPM. Disinfestation fruit by hot water treatment plant.
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
Lack of trained personnel is the major constraints for PRA preparation. Training of personnel is required in collection of information and preparation of different PRA's according to ISPM, surveillance lab analysis.



Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
ISPM 01 Principles of plant quarantine as related to international trade			x			x		
ISPM 02 Guidelines for pest risk analysis		x				x		
ISPM 03 Code of conduct for the import and release of exotic biological control agents		x				x		
ISPM 04 Requirements for the establishment of pest free areas	x				x			
ISPM 05 Glossary of phytosanitary terms			x			x		
ISPM 06 Guidelines for surveillance		x				x		
ISPM 07 Export certification system			x				x	
ISPM 08 Determination of pest status in an area		x			x			
ISPM 09 Guidelines for pest eradication programmes	x				x			
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites		x			x			
ISPM 11 Pest risk analysis for quarantine pests			x			x		
ISPM 12 Guidelines for phytosanitary certificates			x			x		
ISPM 13 Guidelines for the notification of noncompliance and emergency action		x			x			
ISPM 14 The use of integrated measures in a systems approach for pest risk management		x			x			
ISPM 15 Guidelines for regulating wood packaging material in international trade			x			x		
ISPM 16 Regulated non-quarantine pests: concept and application		x			x			
ISPM 17 Pest reporting		x			x			
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure		x			x			
ISPM 19 Guidelines on lists of regulated pest		x			x			
ISPM 20 Guidelines for a phytosanitary import regulatory system			x				x	
ISPM 21 Pest risk analysis for regulated non-quarantine pests		x				x		
ISPM 22 Requirements for the establishment of areas of low pest prevalence		x			x			
ISPM 23 Guidelines for inspection			x				x	
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures		x				x		
ISPM 25 Consignments in transit			x			x		
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)		x				x		
ISPM 27 Diagnostic protocols for regulated pests		x			x			
ISPM 28 Phytosanitary treatments for regulated pests								
ISPM 29 Recognition of pest free areas and areas of low pest prevalence								
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (Tephritidae)								
ISPM 31 Methodologies for sampling of consignments								
ISPM 32 Categorization of commodities according to their pest risk								
ISPM 33 Pest free potato ( <i>Solanum</i> spp.) micropropagative material and minitubers for international trade								
ISPM 34 Design and operation of post-entry quarantine stations for plants								
Comments/constraints: Many areas are identified for full implementation of all ISPM, however, lack of resources/personnel few areas are not fully implemented.								

### III. SURVEILLANCE, PEST OUTBREAKS AND INVASIVE SPECIES MANAGEMENT

Last updated: December 2008

#### List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions

Pest reporting is made on weekly and fortnightly basis during the crop season and farmers are advised for rational use of pesticides for controlling of pests.

Policies regarding invasive/migratory species management	Yes	No	Don't know
National strategy to control serious field pest outbreaks?	x		
National strategy to control migratory or periodically occurring pests?	x		
National strategy to eradicate serious newly invaded exotic pests?		x	
Other policies: (e.g. subsidies, etc.) Pest outbreaks are managed by Provincial Agriculture Departments. However, Federal Government extends advice for controlling these outbreaks.			
Web source for further information: –			

Organization of functions related to surveillance pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field pest outbreaks</i>	(e.g. BPH, boll worm, etc.)
Response strategy/plans	Provincial Agriculture Departments
Surveillance	Provincial Agriculture Departments
Control	Provincial Agriculture Departments
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	DPP
Surveillance	DPP/Locust Control
Control	DPP/Locust Control
<i>New exotic pest eradication</i>	(e.g. coconut beetle)
Response strategy/plans	DPP/Provincial Agriculture Departments
Surveillance	DPP/Provincial Agriculture Departments
Control/eradication	DPP/Provincial Agriculture Departments
Reporting to bilateral international organizations	DPP

Infrastructure	Years: 2008-2009
Number of permanent personal for <b>surveillance</b> of field pests of national importance	~ 900
Number of permanent personal for <b>surveillance</b> of migratory and periodically occurring pests	43
Number of permanent personal for <b>surveillance</b> of invasive species	–
Number of designated staff for <b>control</b> of field pests of national importance	1 500
Number of designated staff for <b>control</b> of migratory and periodically occurring pests	43
Number of designated staff for <b>eradication</b> of invasive species	–

**Key situation and operation indicators**

(Outbreaks and invasions in the past 3 years)

New exotic species found established in the country	Insects	Pathogens	Weeds
Total number for [most recent]	–	–	–
Total number for [year before]	–	–	–
Total number on record	–	–	–

Eradication or internal quarantine actions taken against economically important species			
Name of species			
Year of first discovery			
Pathway			
Location of first discovery			
Area affected [ha]			
Area treated [ha]			
Control method			
Expenditures			

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species			
Year of outbreak			
Area affected [ha]			
Estimated damage \$			
Area treated by government [ha]			
Control method			
Expenditures			
Add more if necessary			

**Progress and constraints**

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Survey of fruit fly in different provinces is being undertaken to identify the pests and its distribution. Plant quarantine rules are being updated to accommodate surveillance and eradication of different economic pests. Plant quarantine laboration are being strengthened with new equipment. Three projects for establishment of post-entry quarantine, disinfestations of mango fruit fly through vapour heat treatment and recruitment of qualified staff for these projects are under implementation. It will enhance the capability of the department in surveillance, preparation of PRA and eradication of target pests. Huge investment in establishment atmosphere control store, heat treatment, cold treatment for export of fruit.
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
There is shortage of qualified trained personnel for surveillance and PRA preparation.

**IV. PEST MANAGEMENT**

Last updated: December 2008

**List of key legislation/regulations/rules for pest management**

1997 Punjab Agriculture Pest Ordinance

**Web source for further information:** [www.agripunjab.gov.pk](http://www.agripunjab.gov.pk)

Policies regarding pest management	Yes	No	Don't know
Do you have policies encouraging organic or low-pesticide use production	x		
Is IPM specifically mentioned in laws or policy documents?	x		
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?			
Is pest management extension separate from general extension?	x		
Other policies: (subsidies, production inputs, etc.) Encouragement of biopesticide and banning of extremely hazardous pesticides			
Web source for further information: –			

Organization of pest management function	Responsible organizational unit (ministry/department/unit)
Policy development	MINFA
Pest management research	NARC + Provincial Agriculture Research Departments
Control recommendations	MINFA/DPP + Provincial Agriculture Departments
Pest management extension	Agriculture Departments/Extension Dept.
IPM training	NARC + Provincial Agriculture Departments
GAP training	Provincial Agriculture Departments

Infrastructure	Years: 2008-2009
Number of technical officers for pest management	~ 150
Number of central, regional, provincial or state offices	5
Number of district and village level field offices	150
Number of field/extension agents for pest management advice	~ 1 500
Number of field/extension agents trained in IPM-FFS facilitation	627
Number of government biocontrol/distribution facilities	–
Number of government biopesticide production/distribution facilities	8
Number of general extension staff involved in pest management	3 500
Number of designated plant protection technical officers for extension	1 500

**Key situation and operation indicators**

Pest management	Yes	No	Don't know
Does the country have a National IPM Programme? <i>If yes, give Name and Address of IPM Programme:</i> Dr Iftikhar Ahmad, Dep. Dir., NARC, Park Road, Islamabad.	x		
Does the country have specific IPM extension programmes? <i>If yes, in which crops?:</i> Cotton, Wheat, Rice, Mango, Apple, Citrus, Tomato, Okra, Onion, Peaches.	x		
Does the country have specific IPM research programmes? <i>If yes, in which crops?:</i> Cotton, Wheat, Rice, Mango, Apple, Citrus, Tomato, Okra, Onion.	x		
Does the country have specific GAP extension programmes? <i>If yes, in which crops?:</i>			
Does the country have specific GAP research programmes? <i>If yes, in which crops?:</i>			

Market shares (estimated value, volume or area under control)	Years: 2008-2009
Size of chemical pest control market	\$173 million
Size of biopesticides market	\$30 million
Size of biological control agents market	

Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop	Cotton	Rice	Sugarcane
Name(s) of pest(s)	<i>Helicoverpa armigera</i> <i>Earias insulana</i> <i>Earias vittella</i> <i>Pectinophora gossypiella</i>	<i>Scirpophaga incertulas</i> <i>Scirpophaga nivella</i>	<i>Scirpophaga</i> spp. <i>Pyrilla</i> spp.
Estimated crop loss	5-10%	2-3%	2-3%
Affected area	3 million ha	2.5 million ha	1.07 million ha
Number of pesticide applications or amount of pesticide used	6 (200-1 000 ml/application)	2 (10 kg/application)	1 (10 kg/application)
Government action taken	Continuous weekly pests survey reports, guidance to farmers about weather and pests/diseases, availability of pesticide to the farmers and advised for rational use of pesticides.		

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
FAO-EU IPM Programme for Cotton in Asia	EU	US\$ 0.660 m	2000-2004
Cotton IPM Programme	ADB	US\$ 0.400 m	2000-2004
Purpose/target of government follow-up programmes		Amount	Years (start-end)
National IPM Project	GOP	Rs. 197.4 mill	2004-2009
Community IPM Project for Cotton, Punjab	GOP	Rs. 201.0 mill	2004-2008
Pest Management Plan, SOFWM, Sindh	WB	Rs. 33.1 mill	2004-2008
FFS/Farm Services Centres, NWFP	GOP	Rs. 38.8 mill	2004-2009

Pest management extension	Year:
Number of farmers trained in IPM during the year	1 224
Number of IPM-FFS conducted during the year	
Number of farmers trained in GAP standards during the year	
Area under IPM/low pesticide management [ha]	
Crops in which successful IPM technologies are implemented:	Cotton
Area under organic/pesticide-free management [ha]	
Crops grown organic/pesticide-free: –	

### Progress and constraints

Main progress in recent Years (legislation, policies, infrastructure, investments, training, etc.)
Federal Government with the coordination of provincial agriculture departments has devised different strategies for pest management of cotton, wheat and rice crop. IPM project is being implemented in cotton in Punjab and Sindh Provinces. A record production of 14.6 million bales of cotton was obtained during 2004-2005.
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
Cotton leaf curl virus and mealy bug are becoming main constraints in production of cotton which is spreading on all the varieties throughout cotton growing areas.

**V. PESTICIDE MANAGEMENT**

Last updated: December 2008

**List of key legislation/regulations/rules for pesticide management**

- 1971 & 73 Pesticide Ordinance and Rules.  
 1992 Amendment in Pesticide Ordinance; relaxation in pesticide import:  
 i. Introduction of generics  
 ii. Import of Pesticide registered in the country of origin.  
 1997 Amendment in the Pesticide Ordinance to strengthen the punishment provision for pesticide adulteration.  
 2006 Review of Pesticide Ordinance & Act and Rules for adoption

**Web source for further information:** [www.plantprotection.gov.pk](http://www.plantprotection.gov.pk)

Policies regarding pesticide management	Yes	No	Don't know
Do you have national pesticide reduction targets? <i>If yes, what is the target:</i> <i>Encouragement of biopesticide and banning of extremely hazardous pesticides.</i>	x		
Have you ratified the Rotterdam (PIC) Convention?	x		
Have you ratified the Stockholm (POP) Convention?	x		
Have your ratified the Basel Convention? (hazardous wastes)	x		
Have your ratified the Montreal Protocol? (MeBr phasing-out)			
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?	x		
Have you adopted Good Laboratory Practices (GLP)?	x		
<i>Pesticide registration</i>			
Do you require pesticides to conform to relevant FAO or WHO specifications?	x		
Do you allow the "me-too" registration and sale of generic pesticides?	x		
Do you require data on product equivalence for generic registration?	x		
Do you conduct country-specific risk assessments for...			
occupational risks?	x		
consumer risks?	x		
environmental risks?	x		
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labelling?	x		
Do you accept evaluation results from other countries?	x		
Do you accept field studies conducted in other countries?	x		
Do you require environmental fate studies?	x		
<i>Incentives/disincentives</i>			
Do you have a special tax on pesticides to cover externality costs?	x		
Do you subsidize or provide low-cost pesticides?		x	
Do you subsidize or provide low-cost biopesticides?		x	
Other policies: To encourage IPM			
Web source for further information: <a href="http://www.plantproection.gov.pk">www.plantproection.gov.pk</a>			

Organization of pesticide management function	Responsible organizational unit (ministry/department/unit)
Legislation	MINFA
Registration	MINFA/DPP
Licensing of shops	Agriculture Departments/Provincial
Licensing of applicators	–
Enforcement/inspections	Federal/Provinces/District Government
Testing of pesticide efficacy	Agriculture Departments/Provincial
Development of pesticide use recommendations	Federal/Provinces/District Government
Safe use training/extension	Public/Private sector
Food residue monitoring	Provincial
Environmental monitoring	Federal/Provincial
Health monitoring	Federal/Provincial
<i>Other stakeholders:</i>	
Pesticide Industry Association	Private sector
Civil Society Organizations (NGO, etc.)	

Infrastructure	Years: 2008-2009
Number of registration officers	3
Number of enforcement officers	621
Number of department quality control laboratories	8
Number of quality control laboratory personnel	~ 50
Number of department residue analysis laboratories	1
Number of residue laboratory personnel	7

### Key situation indicators

Pesticide trade: 2008-2009	Tons	US\$ '000 Value
Imports	43 577	98 000
Manufacture		
Export	0	0
Domestic Use/Sales	80 000	132 525
Pesticide use profile: 2008-2009	Tons (a.i./formulation to be specified)	US\$ '000 Value
Agriculture	60 000	132 525
Chem. Insecticides	94%	
Chem. Fungicides	2%	
Chem. Herbicides	5%	
Chem. Others: e.g. molluscicide, acaricide	0%	
Other: e.g. Amamectin, Bt, Neem		
TOTAL	80 000	132 525

**Post registration monitoring**

Testing, quality control and effects in the field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?		x	
Do you have significant problems with pesticide resistance?		x	
Do you have a list of pesticides under close observation for problems			
Source for more information: –			

Health and environmental information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?		x	
Do you have a system to monitor pesticide residues in food?		x	
Do you have a system to monitor pesticide residues in the environment?		x	
Do you have significant problems of environmental contamination from pesticides?			
Do you have data on pesticides effects on wildlife and ecosystems?		x	
Source for more information: –			

Pesticide disposal	Yes	No	Don't know
Do you have system to collect and safely dispose of used containers and small quantities of left-over pesticides?	x		
Do you have an inventory of outdated and obsolete pesticides in the country? (e.g. banned and no longer traded, but still in storage)	x		
Do you have illegal trade in pesticides? if yes: what is the estimated amount: _____		x	
Source for more information: –			

**Key operation indicators**

Registration/regulation/monitoring	Years: 2008-2009	
	a.i.*	Trade name
Number of registered pesticide products	220	
Number of registered biopesticides	10	
Number of restricted-use pesticides	0	
Number of banned pesticides	25	
Number of licensed outlets	~ 2 600	
Number of licensed applicators	–	
Number of licensing violations reported during year	145 [2008]	
Number of quality control analyses conducted during year	2 790 [2008]	
Number of food samples analyzed for pesticide residues during year		
Number of samples exceeding MRL		
Number of environmental samples analyzed for pesticide residues		

\* active ingredient



Pesticides restricted in recent years	
Year	Name of active ingredient or hazardous formulation
2008	Nil

Pesticides banned in recent years	
Year	Name of active ingredient
2005	Monocrotophos and Methamidophos

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
<p>Agriculture Pesticides Ordinance is revised and ready to place before the Parliament for its approval. Agriculture Pesticides Rules have been amended and two new rules are added viz. pre-shipment inspection of pesticides in the country of origin and waiving of condition of sample analysis in registration of generic pesticide from the source/manufacturer already registered with the department.</p> <p>A new pesticide lab is established in Balochistan province for quality check of agriculture pesticides.</p>
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
<p>Manufacturing of pesticides in the country is still in infancy and country has to be dependent on import from China and other countries. This has resulted in shortage of pesticides during epidemic situation.</p> <p>Application of pesticides at appropriate stage of crop in proper dosage on vulnerable stage of pest is also needed to be guided to the farmers. Training of farmers and extension workers is required for proper application of pesticides.</p>

## VI. ADDITIONAL ISSUES OF INTEREST

Genetically Modified Crops	
Name of GMO Crop	Area under cultivation [ha]

## 2.16 PHILIPPINES

### I. GENERAL INFORMATION

Last updated: April 2011

#### Overall executive summary<sup>1</sup>

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.

#### 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.

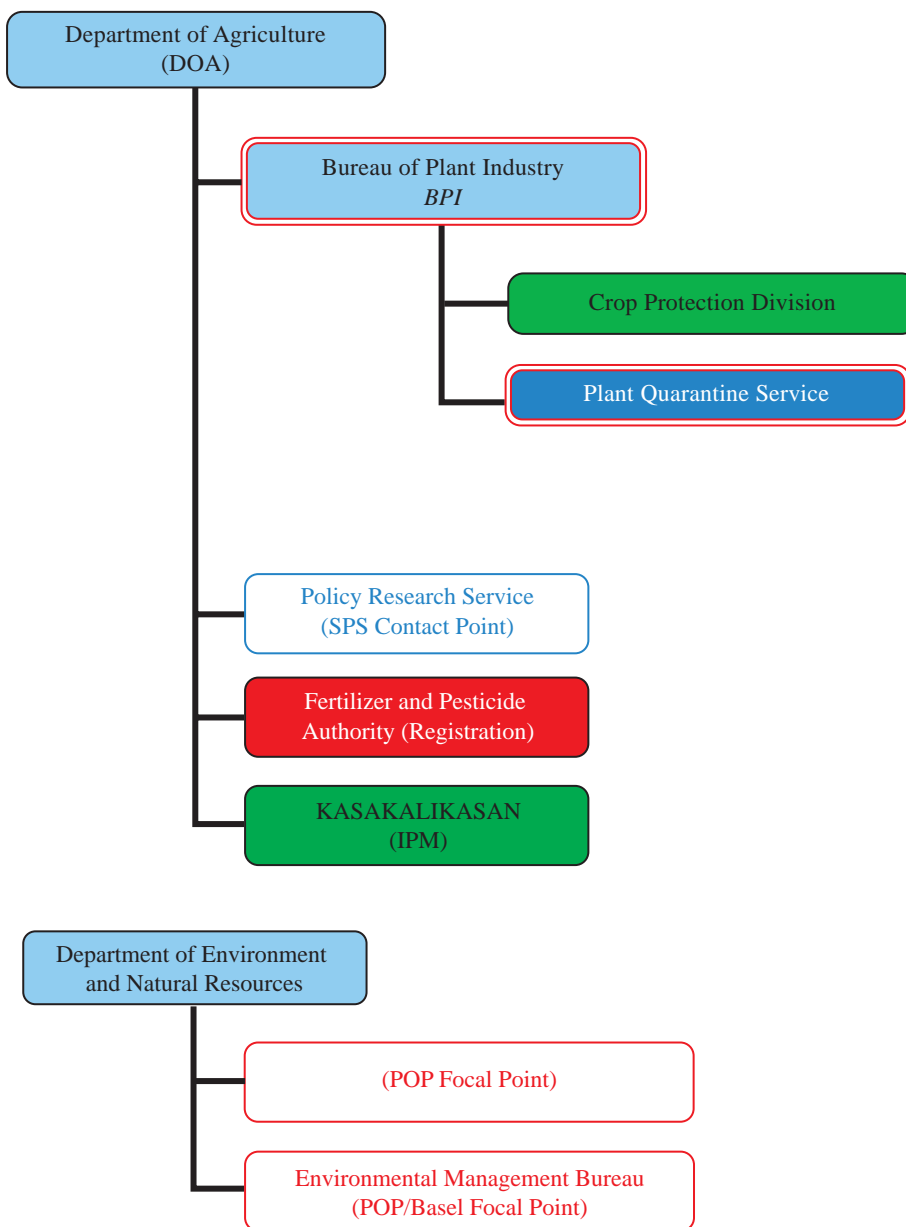
---

<sup>1</sup> by Bureau of Plant Industry

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.

**National plant protection organization chart**

Last updated: April 2011



Color Code:

Phytosanitation	Outbreak Management	Pest Management	Pesticides	NPPO
-----------------	---------------------	-----------------	------------	------

**Important contact addresses****Department of Agriculture**

Department of Agriculture

*Mr Proceso J. Alcala, Secretary*

Office of the Secretary

Elliptical Road, Diliman

Quezon City, Philippines

Tel/Fax: (+632) 926-6426 / 929-8183

Website: [www.da.gov.ph](http://www.da.gov.ph)

**Operational offices:****Bureau of Plant Industry**

*Dr Clarito M. Barron, CESO IV, Director*

692 San Andres St.

Malate, Manila, Philippines

Tel: (+632) 525-7857 / 525-7909 / 521-9291

Fax: (+632) 521-7650

Email: [buplant@yahoo.com](mailto:buplant@yahoo.com)

Website: [www.da.bpi.gov.ph](http://www.da.bpi.gov.ph)

**Plant Quarantine**

Plant Quarantine Service

*Mr Luben Q. Marasigan, Chief*

Bureau of Plant Industry

692 San Andres St.

Malate, Manila, Philippines

Tel: (+632) 524-3749 / 404-0409

Fax: (+632) 524-2812 / 404-0409

Emails: [bpipqs.phil@yahoo.com](mailto:bpipqs.phil@yahoo.com); [gerald\\_glenn97@hotmail.com](mailto:gerald_glenn97@hotmail.com)

**Surveillance, pest outbreaks and invasive species management**

Crop Protection Division

*Ms Wilma R. Cuaterno, Chief*

692 San Andres St.

Malate, Manila, Philippines

Tel: (+632) 524-7353 / 523-3853

Fax: (+632) 523-2426

Email: [wilmanemesio@yahoo.com](mailto:wilmanemesio@yahoo.com)

Website: [www.da.bpi.gov.ph](http://www.da.bpi.gov.ph)

**Pesticide residue analysis**

Laboratory Services Division/National Pesticide Analytical Laboratory

*Ms Maria Lourdes M. De Mata, Chief*

692 San Andres St.

Malate, Manila, Philippines

Tel: (+632) 524-0708

Fax: (+632) 523-7154

Email: [lsdbpi@yahoo.com](mailto:lsdbpi@yahoo.com)

Website: [www.da.bpi.gov.ph](http://www.da.bpi.gov.ph)

**Pesticide registration**

Fertilizer and Pesticide Authority

*Mr Augusto Canlas, Executive Director*

FPA Building, BAI Compound

Visayas Avenue

Diliman, Quezon City 1101, Philippines

Tel: (+632) 920-8173

Fax: (+632) 920-8173

Email: fpa\_77@yahoo.com

Website: <http://fpa.da.com.ph>**Official international contact points****National Plant Protection Organization (NPPO) Contact Point (for IPPC/APPPC)**

Bureau of Plant Industry

*Dr Clarito M. Barron, CESO IV, Director*

692 San Andres St.

Malate, Manila, Philippines

Tel: (+632) 524-2812 / 523-9132 / 525-7909

Fax: (+632) 521-7650 / 524-2812

Email: [buplant@yahoo.com](mailto:buplant@yahoo.com)Website: [www.da.bpi.gov.ph](http://www.da.bpi.gov.ph)

Language(s): English

Plant Quarantine Service

*Mr Luben Q. Marasigan*

Tel: (+632) 524-3749 / 404-0409

Fax: (+632) 524-2812

Email: [bpipqs.phil@yahoo.com](mailto:bpipqs.phil@yahoo.com)**WTO-SPS contact point**

Policy Research Service

*Office of the Director*

Department of Agriculture

Elliptical Road, Diliman

Quezon City, Philippines

Tel: (+632) 926-7439 / 928-8741 (local 2317, 2319) Fax: (+632) 928-0590

Email: [epad.polreser@lycos.com](mailto:epad.polreser@lycos.com)**Rotterdam Convention (PIC) DNA Pesticides**

Department of Agriculture

*Ms Aida Ordas, Chief, Pesticide Regulatory Services Division*

Fertilizer and Pesticide Authority (FPA)

Visayas Ave.

Quezon City 1116, Philippines

Tel: (+632) 484-9720

Fax: (+632) 920-8173

**Stockholm Convention (POP) National Focal Point (P)**

Department of Environment and Natural Resources

*Mr Ramon J.P. Paje, Secretary*

DENR Bldg., Visayas Avenue

Diliman, Quezon City 1116

Philippines

Tel: (+632) 926-2688 / 925-2329

Fax: (+632) 920-4301

Environmental Management Bureau

*Atty. Juan Miguel Cuna, Director*

Department of Environment and

Natural Resources

DENR Compound, Visayas Avenue

Diliman, Quezon City 1116

Philippines

Tel: (+632) 92-3782 / 920-2246

Fax: (+632) 927-1518

Email: emb@emb.gov.ph

**Basel Convention Competent Authority (CA) and Focal Point**

Environmental Management Bureau

Department of Environment and Natural Resources

Visayas Avenue

Diliman, Quezon City 1116

Philippines

Tel: (+632) 928-1185 or 920-2263

Fax: (+632) 920-2263

Email: emb@emb.gov.ph

**Selected country statistics:**

Last updated: April 2011

**Selected country statistics:**

Last updated: December 2010

Source: www.bas.gov.ph

Agricultural Population:		Agricultural Land	9.56 million ha
GDP: P 7 679 billion	Agric. GDP: 18%	GNI per capita: US\$	Undernourishment:
Main crops grown: Palay (rice grain), coconut, banana, corn, and sugarcane			

GDP = Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement

## II. PLANT QUARANTINE

Last updated: April 2011

### Executive summary

The Bureau of Plant Industry's Plant Quarantine Service (BPI-PQS) is the office under the Office of the Director mandated to implement national laws and international guidelines regarding phytosanitary issues and concerns. Among these are the importation, exportation, domestic movement of agricultural plant and plant products phytosanitary risk management activities prior to trade and maintenance of the integrity of the plant industry of the country. To fulfill this mandate, the BPI-PQS embarked on various physical and institutional capacity building activities in 2009-2010 and has remained proactive in developing the capacity of its personnel and physical capital.

The BPI-PQS has remained vigilant in securing the country's borders from pests as it has reinforced the capacity of its ports of entry by training Plant Quarantine Officers locally and abroad. The BPI-PQS has been a recipient of training programmes which cover Sanitary and Phytosanitary matters, especially times of emergency, such as pest outbreaks and food safety risks. Specific topics are prevention of pest incursion, pest eradication and risk management. This is in addition to its function of issuing Plant Quarantine Certificates (Import Permit) for plants, plant products and planting materials.

In the field of export, the BPI-PQS has continued to search for market opportunities for its agricultural commodities. Bilateral relations are created and the existing ones are enhanced through information exchange and mutual cooperation. The export programmes of the Philippines (mangoes, pineapples, papayas, etc.) to different trading partners have continued to prosper despite some adjustments to Phytosanitary measures of the international phytosanitary community.

Domestic movement of plants and plant products is continuously monitored by the BPI-PQS to maintain the integrity of the plant industry and protect the spread of pests on-shore. This is done since the Philippines maintains pest-free areas and areas of low pest prevalence. Pest eradication programmes were also launched in order to minimize, if not eliminate, the risks that existing pests pose. This paves the way for the opening up of possible markets for the high-value commodities of the country.

The BPI-PQS has remained active in its participation in different national and international SPS forums, seminars and training activities. This approach is done through coordination with other government departments (e.g. the Department of Trade and Industry, the Bureau of Customs, the Department of Health) and international organizations (the WTO, FAO, ASEAN, and the EU).

### List of key legislation/regulations/rules for plant quarantine

BPI Quarantine Administrative Order No. 01 Series of 2010

Subject: Revised Regulation for Wood Packaging Material in International Trade

DA Administrative Order No. 09 Series of 2010

Subject: Department of Agriculture Administrative Order No. 08 Series of 2009, As Amended

Memorandum Order No. 01 Series of 2009

Subject: 2009 Revised Protocol for the Export of Fresh Asparagus to Japan

Memorandum Order No. 61 Series of 2009

Subject: Supplement for Memorandum Order No. 103 “Revised Protocol for the Export of Fresh Okra to Japan.”

Memorandum Order No. 83 Series of 2009

Subject: Rules and Regulations for the Accreditation of New Asparagus and Mango Exporters

Memorandum Order No. 206 Series of 2009

Subject: Requirement for Fresh Vegetables Importation

Memorandum Circular No. 01 Series of 2010

Subject: Full Implementation of the DA Trade System: Electronic Processing of the Application and Issuance of Sanitary and Phytosanitary (SPS) Import Clearance

DA Administrative Order No. 10 Series of 2010

Subject: Rules and Regulations Governing the Importation of Fresh Unshu Orange from Jeju Island, Korea into the Philippines

Memorandum Order No. 19 Series of 2010

Subject: Amendment to Memorandum Order No. 36 Series of 2008 “Revised Protocol for the Export of Fresh Cavendish Banana.”

Memorandum Order No. 40 Series of 2010

Subject: Amendment to Memorandum Order No. 50 Series of 2008 “Regional Accreditation Screening Committee (ASC) Members for Cavendish Banana Exporter Accreditation”

**Web source for further information:** [www.pqs.da.gov.ph](http://www.pqs.da.gov.ph)

Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover both domestic and import/export quarantine?	x		
Is plant quarantine a separate organization from animal quarantine?	x		
Does phytosanitary legislation cover non-cultivated plants (wild flora)	x		
Does phytosanitary legislation cover living modified organisms?	x		
Other policy goals:			
Web source for further information: <a href="http://www.da.gov.ph">www.da.gov.ph</a>			

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest risk analysis	DA/BPI
Standards development	DA/BPI-PQS
International notifications	DA-Policy, DA/BPI
<i>Import:</i>	
Import permits/inspections	DA/BPI-PQS
Emergency action	DA/BPI-PQS
<i>Export:</i>	
Phytosanitary certificates	DA/BPI-PQS
Treatment of commodities	DA/BPI-PQS



Infrastructure	Year: 2010
Total number of plant quarantine officers	164
Total qualified personnel for plant pest risk assessment	100
Number of quarantine offices/stations	30
Number of post-entry plant quarantine containment facilities	3
Number of quarantine service diagnosis laboratories	11
Number of entry points (sea/air/land/mail = total)	141/26/5/1 = 173
In-country pest diagnostics capabilities (incl. universities, etc.)	
Number of laboratories for insect samples	11
Number of laboratories for pathogen samples	11
Number of laboratories for plant/weed samples	11

Pest-free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)
Overall management	
– surveillance	DA-BPI-PQS
– management	DA-BPI-PQS
– certification	DA-BPI-PQS
List of target pest species and crops ISPM 4	Number of sites in 2010
Mango Pulp and Seed Weevil (Mango)	4/year
List of target pest species and crops ISPM 10	Number of sites in 2010
Web source for further information: <a href="http://pqs.da.gov.ph">http://pqs.da.gov.ph</a>	

### Key situation indicators

International trade		Year
Main import plant commodities	Main countries of origin	Quantity (tons) Year 2009
Rice	Viet Nam, Thailand	1 217 842.000
Wheat	USA, Ukraine, Australia, Canada	1 100 854.239
Soybean Meal	Argentina, USA	793 918.663
Corn (GMO)	Argentina	182 579.500
Corn Grain (dried)	Brazil	126 949.180
Tapioca Starch	Thailand	121 978.140
Apples	China	57 393.228
Timber	Malaysia	44 328.158
Garlic	China	43 685.000
Oranges Mandarin	China	41 736.646
Main import plant commodities	Main countries of origin	Quantity (tons) Year: 2010
Wheat	USA, Russia, Brazil	288 701.010
Rice	Thailand, Viet Nam, Pakistan	240 255.000
Soybean Meal	USA, Argentina	161 586.730
Timber	Malaysia	16 590.200
Oranges (Mandarin)	China	12 857.000
Apples	China	12 098.300
Tapioca Starch	Thailand, Viet Nam	9 816.000

Wheat Flour	Turkey	5 459.000
Lokan	China	4 955.000
Garlic	China	4 483.000
Main export plant commodities	Main destination countries	Quantity (tons) Year: 2009
Banana	Japan, Iran, Singapore, Hong Kong, China, Korea	3 319 660.319
Falcata Lumber	China	2 924 117.330
Coconut Products (assorted)	USA	213 510.392
Pineapple	Japan, Korea	186 199.041
Wood Products	China	157 750.221
Abaca	China	148 500.000
Ornamental Plants	Japan	143 172.000
Copra Pellets	Korea	75 150.000
Veneer Sheets	China	45 389.130
Mango Halves	France	36 730.324
Main export plant commodities	Main destination countries	Quantity (tons) Year: 2010
Banana	Japan, Iran, China, Korea, South Korea	1 425 449.967
Wood Products	China	168 410.101
Calla Lily Bulbs	Netherlands	118 856.000
Copra Pellets	Korea, South Korea	118 179.23
Pineapple	Japan	70 193.616
Non Plant	Various Destinations	55 950.096
Copra Meal	China	48 037.188
Copra Expeller Cake/Meal	Korea, China	55 346.016
Coconut Oil (crude)	China	21 541.300
Falcata Lumber	China	13 722.089

Cooperation projects			
Title (Purpose/target)	Donor	Amount	Years (start-end)
Regional Training Workshop on Phytosanitary Inspection of Plants for Planting and Planting Materials	UN-FAO	Php 400 000	March 2010
Title of government follow-up programmes		Amount	Years (start-end)

### Key operation indicators

Institutional functions	Years: 2009-2010
Number of import permits issued	22 033/25 679
Number of import inspections carried out	–
Number of emergency phytosanitary treatments taken on imports	–
Number of notifications of non-compliance	–
Number of conventional phytosanitary certificates issued	425/347
Number of electronic phytosanitary certificates issued	–

Number of quarantine pests intercepted		Years: 2009-2010
Top three commodity	Top three pest/commodity	# of interceptions

List of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of regulated quarantine pests				
Number of regulated non-quarantine pests				
Number of regulated import commodities				
Website for the above information: –				

Pest risk analysis (PRA)	Insects	Pathogens	Plants
Number of PRA completed and documented (according to ISPM)			17
Web source for further information: <a href="http://www.da.gov.ph">www.da.gov.ph</a> (*PRA is done by commodity.)			

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
<ol style="list-style-type: none"> <li>1. Strengthening of the Department of Agriculture's SPS Focal Group.</li> <li>2. Coordination of the Department of Agriculture's regulatory agencies with other government agencies on issues of plant and animal health and food safety (e.g. the Department of Trade and Industry, the Department of Health, the Department of Science and Technology, the Bureau of Customs, etc.)</li> <li>3. Construction of Plant Quarantine Service Treatment Facility at the BPI Central Office.</li> <li>4. Capacity building activities: <ul style="list-style-type: none"> <li><b>2009</b> <ul style="list-style-type: none"> <li>• Training on the Basic Understanding of the WTO SPS Agreement.</li> <li>• Training on the Australian Fumigation and Accreditation Scheme.</li> </ul> </li> <li><b>2010</b> <ul style="list-style-type: none"> <li>• Regional Training Workshop on Phytosanitary Inspection of Plants and Planting Materials for Planting (in collaboration with the FAO).</li> <li>• Attendance to various local and international trainings and workshops on SPS.</li> </ul> </li> </ul> </li> </ol>
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
<ol style="list-style-type: none"> <li>1. Personnel – National Legislation on Rationalization of the Bureaucracy of the Philippine Government limits the hiring of new and permanent personnel. There is a need to have additional manpower in consideration of the growing volume of trade, especially with regards to agricultural plant commodities.</li> <li>2. Infrastructure – Plant quarantine stations in the Philippines need to be upgraded. Development of diagnostic laboratories in the major ports is also wanting.</li> <li>3. Training – Continuity of the capacity building programme of the Bureau of Plant Industry should be established.</li> </ol>

Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
ISPM 01 Principles of plant quarantine as related to international trade			x				x	
ISPM 02 Guidelines for pest risk analysis			x				x	
ISPM 03 Code of conduct for the import and release of exotic biological control agents			x				x	
ISPM 04 Requirements for the establishment of pest free areas			x				x	
ISPM 05 Glossary of phytosanitary terms			x				x	
ISPM 06 Guidelines for surveillance			x				x	
ISPM 07 Export certification system			x				x	
ISPM 08 Determination of pest status in an area			x	x				
ISPM 09 Guidelines for pest eradication programmes			x		x			
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites			x	x				
ISPM 11 Pest risk analysis for quarantine pests			x				x	
ISPM 12 Guidelines for phytosanitary certificates			x				x	
ISPM 13 Guidelines for the notification of noncompliance and emergency action			x				x	
ISPM 14 The use of integrated measures in a systems approach for pest risk management			x				x	
ISPM 15 Guidelines for regulating wood packaging material in international trade			x				x	
ISPM 16 Regulated non-quarantine pests: concept and application			x		x			
ISPM 17 Pest reporting			x				x	
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure			x		x			
ISPM 19 Guidelines on lists of regulated pests			x		x			
ISPM 20 Guidelines for a phytosanitary import regulatory system			x		x			
ISPM 21 Pest risk analysis for regulated non-quarantine pests	x							
ISPM 22 Requirements for the establishment of areas of low pest prevalence			x	x				
ISPM 23 Guidelines for inspection			x				x	
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures	x							
ISPM 25 Consignments in transit			x				x	
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)			x		x			
ISPM 27 Diagnostic protocols for regulated pests			x		x			
ISPM 28 Phytosanitary treatments for regulated pests			x				x	
ISPM 29 Recognition of pest free areas and areas of low pest prevalence			x				x	
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (Tephritidae)			x	x				
ISPM 31 Methodologies for sampling of consignments			x		x			
ISPM 32 Categorization of commodities according to their pest risk			x		x			
ISPM 33 Pest free potato ( <i>Solanum</i> spp.) micropropagative material and minitubers for international trade		x		x				
ISPM 34 Design and operation of post-entry quarantine stations for plants		x		x				
Comments/constraints:								

### III. SURVEILLANCE, PEST OUTBREAKS AND INVASIVE SPECIES MANAGEMENT

Last updated: April 2011

#### List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions

–

#### Web source for further information: –

Policies regarding invasive/migratory species management	Yes	No	Don't know
National strategy to control serious field pest outbreaks?	x		
National strategy to control migratory or periodically occurring pests?	x		
National strategy to eradicate serious newly invaded exotic pests?			x
Other policies:			
List of legislation/regulations/rules for surveillance, pest reporting and emergency actions: <b>Presidential Decree 936</b>			
Web source for further information: <a href="http://www.da.gov.ph">www.da.gov.ph</a>			

Organization of functions related to surveillance pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field pest outbreaks</i>	(e.g. BPH, bollworm, etc.)
Response strategy/plans	DA-RFU's, PhilRice, DA, BPI
Surveillance	CPD-BPI, DA, RCPC
Control	CPD-BPI, PhilRice, CDA, LGU's
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	CPD-BPI, DA-RCPC, LGU's
Surveillance	CPD-BPI, DA-RFU's, LGU's
Control	DA-RCPC, CPD-BPI, PhilRice
<i>New exotic pest eradication</i>	(e.g. coconut beetle)
Response strategy/plans	PCA, CPD-BPI, DA-KASAKALIKASAN, LGU's
Surveillance	CPD-BPI, PCA
Control/eradication	PCA, CPD-BPI, DA-KASAKALIKASAN
Reporting to international organizations	BPI-CPD, PQS, NCPC

Infrastructure	Year: 2010
Number of designated staff for <b>surveillance and control</b> of field pests of national importance	17 plus 16 RCPC's
Number of designated staff for <b>surveillance and control</b> of migratory and periodically occurring pests	15 plus 16 RCPC's
Number of designated staff for <b>surveillance and eradication</b> of invasive species	15 plus 16 RCPC's

**Key situation and operation indicators**

(Outbreaks and invasions in the past 2 years)

New exotic species found established in the country	Insects	Pathogens	Weeds
Total number for 2010 [most recent]			
Total number for 2009 [year before]			
Total number on record:			

Eradication or internal quarantine actions taken against economically important species			
Name of species	Brontispa longissima	Stenocranus pacificus corn plant hopper	
Year of first discovery	2004	2003	
Pathway			
Location of first discovery	Luzon, Visayas, Mindanao	Whole Mindanao Region and Bicol Region	
Area affected [ha]			
Area treated by government [ha]			
Control method		Biological, cultural, chemical	
Expenditures			

Note: National Brontispa action team was set up in 2004.

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species	CPH	Brontispa, coconut leaf beetle	
Year of outbreak	2003	2004	
Area affected [ha]	Mindanao, Bicol Region	Luzon, Visayas, Mindanao	
Estimated damage US\$			
Area treated by government [ha]			
Expenditures by government [US\$]			
Control method	Biological, physical, cultural/chemical		
Expenditures			
More information			

**Progress and constraints**

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

## IV. PEST MANAGEMENT

Last updated: April 2011

### Executive summary

The vision of the Crop Protection Division of the BPI is to strengthen crop protection services in the country. This is done by employing biological and cultural technologies which are effective, safe and environment friendly. To adequately address pest problems and ensure increase in farm productivity, food sufficiency and security, the Crop Protection Division develops and formulates guidelines and policies in the implementation of improved crop protection strategies.

The major functions of the Division are the implementation of sustainable biological control technologies, generation of pest management strategies and improvement of crop protection technologies adapted for the local farmers. The Crop Protection Division provides technical assistance, coordination, and where necessary, supervision over regional facilities, e.g. Regional Crop Protection Centers (RCPCs) and surveillance and early warning system (SEWS). IPM-related national, as well as bilateral/multinational programme implementations are involved.

It provides facilities for plant pests and disease diagnosis, mass production and rearing of biological agents for field distribution, training for crop protection staff and extension agents, and proper evaluation of national programmes and projects on crop protection. It works in tandem with the Plant Quarantine Service since it supervises and evaluates researches and other development projects on exotic pests of special national considerations and acts as central monitoring arm and repository of regional pest data information.

Crop protection is vital to the success of sustainable agriculture. If pests are left unabated, the benefits of crop production will be futile, even if proper fertilization, good water management, and sound cultural practices are followed. Thus, crop protection is a key component of agricultural production.

### List of key legislation/regulations/rules for pest management

—

#### Web sources for further information:

<http://bpi.da.gov.ph>

<http://aseanipm.da.gov.ph>

Policies regarding pest management	Yes	No	Don't know
Do you have policies encouraging organic or low-pesticide production	x		
Is IPM specifically mentioned in laws or policy documents?	x		
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?	x		
Is pest management extension separate from general extension?	x		
Other policies: (subsidies, production inputs, etc.)			
List of legislation/regulations/rules for pest management: <b>PD 936</b>			
Web source for further information: <a href="http://www.da.gov.ph">www.da.gov.ph</a>			

Organization of pest management function	Responsible organizational unit (ministry/department/unit)
Policy development	Department of Agriculture
Pest management research	BAR/SCU's/BPI/NCPC
Control recommendations	RFU's/BPI/LGU's
Pest management extension	Crop Protection Division BPI/NCPC-UPLB/LGU's
IPM training	DA-KASAKALIKASAN, RFU's, LGU's
GAP training	DA-RFU's/LGU's/BPI

Infrastructure	Year: 2010
Number of technical officers for pest management	1 000
Number of central, regional, provincial or state offices	16
Number of district and village level field offices	11 Regions/77 provinces
Number of field/extension agents for pest management advice	6 000
Number of field/extension agents trained in IPM-FFS facilitation	6 184 IPM-FFS facilities
Number of government biocontrol labs	47
Number of government biopesticide labs	17
Number of general extension staff involved in pest management	6 000
Number of designated plant protection technical officers for extension	60

### Key situation and operation indicators

Pest management	Yes	No	Don't know
Does the country have a National IPM Programme? <i>If yes, give Name and Address of IPM Programme:</i> <b>KASAKALIKASAN, Department of Agriculture, Elliptical Rd. Diliman, Quezon City, Philippines</b>	x		
Does the country have special IPM extension programmes? <i>If yes, in which crops?:</i> <b>Rice, corn, vegetables, abaca, coconut, banana, citrus, cotton, IPM for individual pest</b>	x		
Does the country have special IPM research programmes? <i>If yes, in which crops?:</i> <b>Rice, corn, vegetables, cotton, banana, abaca, coconut</b>	x		
Does the country have specific GAP extension programmes? <i>If yes, in which crops?:</i>			
Does the country have specific GAP research programmes? <i>If yes, in which crops?:</i>			

Market shares (estimated value, volume or area under control)	Year: 2010
Size of chemical pest control market	
Size of biopesticides market	
Size of biological control agents market	
Does the country have specific GAP research programmes? <i>If yes, in which crops?:</i>	



Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop	Rice	Mango	Coconut
Name(s) of pest(s)	RBB, rodents	Mango hoppers	brontispa
Estimated crop loss	–	–	–
Affected area	–	–	–
Number of pesticide applications or amount of pesticide used	–	–	–
Government action taken	Training, Management, Pest Surveillance & Monitoring		

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
PSLP – Australia	Australia	AUS\$ 22 000	2011
Purpose/target of government follow-up programmes		Amount	Years (start-end)
Village-type biocontrol laboratories for RBB, rodents, beetles, etc.		Php 5 000 000	Annual/Regular Programme

Pest management extension	Year: 2010
Number of farmers trained in IPM during the year	1 000
Number of IPM-FFS conducted during the year	35
Number of farmers trained in GAP standards during the year	
Area under IPM/low pesticide management [ha]	Estimated 4M ha (Rice/Corn)
Area under organic/pesticide-free management [ha]	
Crops in which IPM or other ecology friendly programmes are successfully implemented: –	
Crops grown organic/pesticide-free: Rice, corn, vegetables, coconut	

### Progress and constraints

Main progress in recent Years (legislation, policies, infrastructure, investments, training, etc.)
<ul style="list-style-type: none"> <li>Local Government Unit Coordination to support programmes (trainings, workshops, seminar) at the local level.</li> <li>Advocacy for organic farming.</li> </ul>
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
<ul style="list-style-type: none"> <li>Funding for Monitoring activities needed</li> <li>Logistics and manpower support are needed</li> <li>No recent legislations regarding pest management is done. Crop protection policies are needed.</li> </ul>

## V. PESTICIDE MANAGEMENT

Last updated: April 2011

### Executive summary<sup>2</sup>

Fertilizers and pesticides are vital agricultural inputs in food production and must be supplied in adequate quantities at reasonable costs at all times. The fertilizer and pesticide industries have much in common in terms of clientele, distribution channels, system of application in farmers' fields and technical supervision by the same farm management technicians under the government's food production programme. The FPA is mandated to assure adequate supplies of fertilizers and pesticides at reasonable prices; rationalize the manufacture and marketing of fertilizers; protect the public from the risks inherent in the use of pesticides; and educate the agricultural sector in the use of these inputs.

### Institutional Activities

1. Regulation of the fertilizer and pesticide industries
  - efficacy and quality standards
  - environmental impact
  - product safety and agricultural occupational health
2. Outreach services for farmers/fishermen
  - plant Health Clinics
  - capability-building programmes
3. Research and Development
  - organic fertilizers
  - natural pesticides
4. Monitoring of pesticide residues in selected crops
5. Public Information Campaign
  - health and environmental information
  - technological information
6. Crop Pest Infestation Monitoring

### List of key legislation/regulations/rules for pesticide management

- Presidential Degree No. 114
- Letter of Instruction No. 986
- Magna Carta Act for Small farmers
- Consumer Act of the Philippines.

---

<sup>2</sup> by Fertilizer and Pesticide Authority

**Web source for further information:** <http://fpa.da.gov.ph>

Policies regarding pesticide management	Yes	No	Don't know
Do you have national pesticide reduction targets? <i>If yes, what is the target: _____</i>	x		
Have you ratified the Rotterdam (PIC) Convention?	x		
Have you ratified the Stockholm (POP) Convention?	x		
Have you ratified the Basel Convention? (hazardous wastes)	x		
Have you ratified the Montreal Protocol? (MeBr phasing-out)	x		
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?	x		
Have you adopted Good Laboratory Practices (GLP)?	x		
<i>Pesticide registration</i>			
Do you require pesticides to conform to relevant FAO or WHO specifications?	x		
Do you allow the “me-too” registration and sale of generic pesticides?	x		
Do you require data on product equivalence for generic registration?	x		
Do you conduct country-specific risk assessments for...			
occupational risks?	x		
consumer risks?	x		
environmental risks?	x		
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labelling?		x	
Do you accept evaluation results from other countries?	x		
Do you accept field studies conducted in other countries?	x		
Do you require environmental fate studies?	x		
<i>Incentives/disincentives</i>			
Do you have a special tax on pesticides to cover externality costs?			x
Do you subsidize or provide low-cost pesticides?		x	
Do you subsidize or provide low-cost biopesticides?		x	
Other policies:			
Web source for further information: –			

Organization of pesticide management function	Responsible organizational unit (ministry/department/unit)
Legislation	DA/BPI/FPA
Registration	DA/FPA
Licensing of shops	DA/FPA
Licensing of applicators	DA/FPA
Enforcement/inspections	BPI-PQS
Testing of pesticide efficacy	NCPC
Development of pesticide use recommendations	FPA
Safe use training/extension	DA/FPA
Food residue monitoring	BFAD/BPI-NPAL
Environmental monitoring	DENR
Health monitoring	DOH
<i>Other stakeholders:</i>	
Pesticide Industry Association	Crop Life Philippines, Philippine Manufacturing Association
Civil Society Organizations (NGO, etc.)	

Infrastructure	Year: 2010
Number of registration officers	4
Number of enforcement officers	100
Number of department quality control laboratories	1
Number of quality control laboratory personnel	7
Number of department residue analysis laboratories	N/A (Function of BPI)
Number of residue laboratory personnel	

### Key situation indicators

Pesticide trade: 2010	Tons	US\$ '000 Value
Imports	31 735 (formulated)	
Manufacture		
Export		
Sales		
Pesticide use profile: 2010	Tons (a.i./formulation to be specified)	US\$ '000 Value
Agriculture	22 470	
Insecticides	32%	
Fungicides	33%	
Herbicides	34%	
Other		
Veterinary		
Public Health		
Household		
Other purposes	9 265	
TOTAL	31 735	

### Post registration monitoring

Testing, quality control and effects in the field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?		x	
Do you have significant problems with pesticide resistance?			x
Do you have a list of pesticides under close observation for problems?		x	
Source for more information: –			

Health and environmental information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?	x		
Do you have a system to monitor pesticide residues in food?	x		
Do you have a system to monitor pesticide residues in the environment?		x	
Do you have significant problems of environmental contamination from pesticides?		x	
Do you have data on pesticides effects on wildlife and ecosystems?		x	
Source for more information: –			

Pesticide disposal	Yes	No	Don't know
Do you have services to collect and safely dispose of used containers and small quantities of left-over pesticides?	x		
Do you have an inventory of outdated and obsolete pesticides in the country?	x		
Do you have illegal trade in pesticides? if yes: what is the estimated amount: _____		x	
Source for more information: –			

### Key operation indicators

Registration/regulation/monitoring	Year: 2010	
	a.i.*	Trade name
Number of registered pesticide products		
Number of registered biopesticides		
Number of restricted-use pesticides		
Number of banned pesticides	28	
Number of licensed outlets		
Number of licensed applicators		
Number of licensing violations reported during year		
Number of quality control analyses conducted during year		
Number of food samples analyzed for pesticide residues during year		
Number of samples exceeding MRL		
Number of environmental samples analyzed for pesticide residues		

\* active ingredient

Pesticides restricted in recent years (2009-2010)	
Year	Name of active ingredient or hazardous formulation

Pesticides banned in recent years (2009-2010)	
Year	Name of active ingredient

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)

**Progress and constraints**

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

**VI. ADDITIONAL ISSUES OF INTEREST**

Last updated: April 2011

Genetically Modified Crops	
Name of GMO Crop	Area under Cultivation [ha]
1. Bt corn (MON810)	130 839
2. Bt corn (Bt11)	7 422
3. RR corn (NK603)	138 690
4. Corn GA21	
5. Corn MON89034	
6. Stacked Corn (MON810 x NK603)	86 087
7. Stacked corn Bt11 x GA21	
8. Stacked corn MON89034 x NK603	

## 2.17 REPUBLIC OF KOREA

### I. GENERAL INFORMATION

Last updated: April 2011

#### Overall executive summary<sup>1</sup>

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.

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.

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.

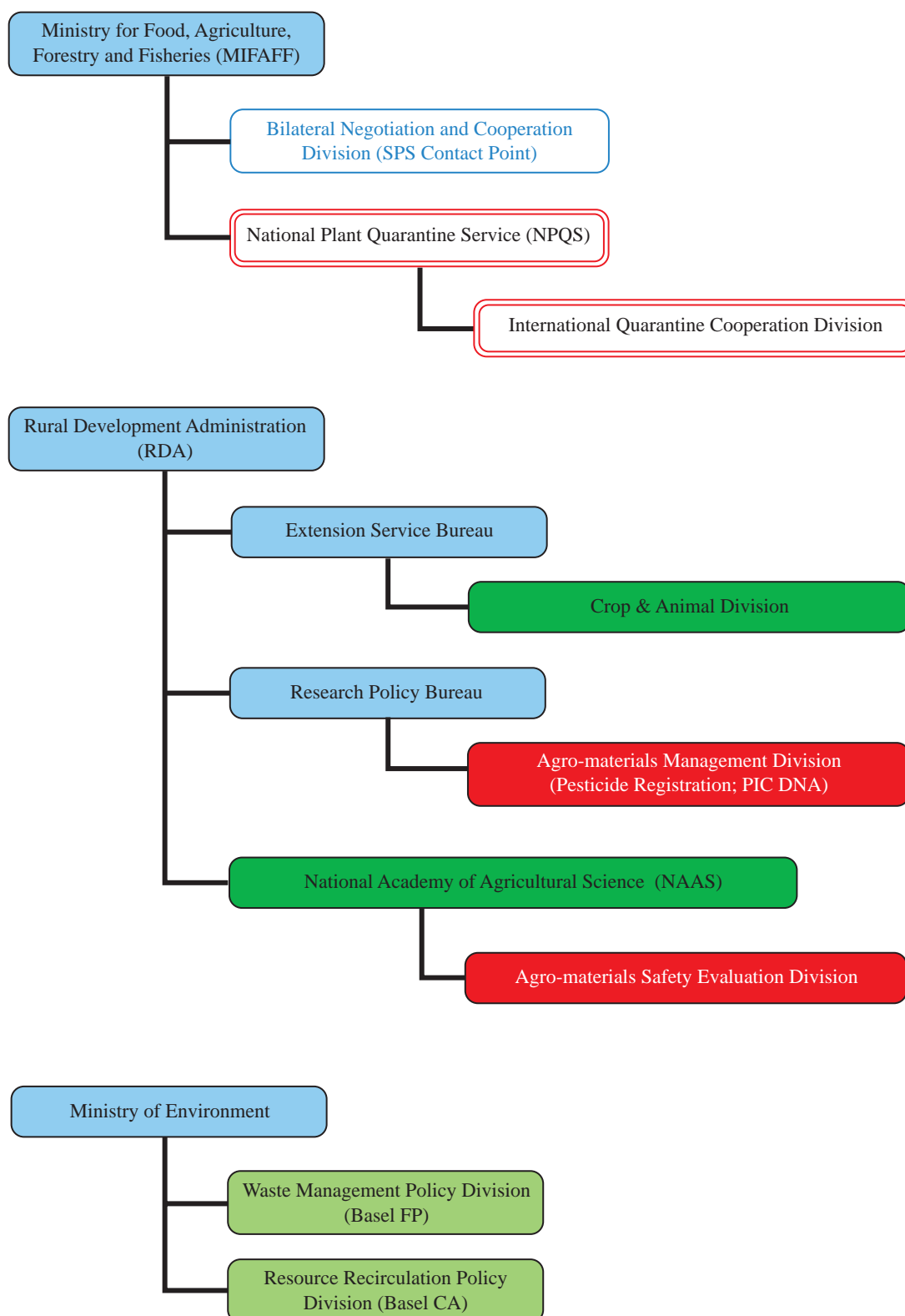
The National Plant Quarantine Service (NPQS)’s vision for 2011 is “World top class quarantine for customer satisfaction” and its strategies are (1) creating green development engine through prevention of exotic pest introduction, (2) enhancing competitiveness of agricultural products through quarantine service, (3) increasing customer satisfaction and (4) strengthening quarantine based on technology development.

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.

---

<sup>1</sup> by Hyun-Kwan SHIN, Director, International Quarantine Cooperation Division, National Plant Quarantine Service/MIFAFF, Email: boseyo58@korea.kr

**Plant protection organization chart**



Color Code: Phytosanitation Outbreak Management Pest Management Pesticides NPPO



---

---

**Important contact addresses****Responsible ministry**

Ministry for Food, Agriculture, Forestry and Fisheries  
Government Complex Gwacheon  
Jungang-dong 1, Gwacheon, Gyeonggi-do  
Republic of Korea  
Tel: 82-2-500-1868  
Website: [www.maffaf.go.kr](http://www.maffaf.go.kr)

**Responsible department**

Bilateral Negotiation and Cooperation Division  
Government Complex Gwacheon  
Jungang-dong 1, Gwacheon, Gyeonggi-do  
Republic of Korea  
Tel & Fax: 82-2-504-6659

**National plant protection organization**

National Plant Quarantine Service  
Division of International Quarantine Cooperation  
433-1, Anyang 6-dong, Manan-gu  
Anyang-City, Kyunggi-do  
Republic of Korea  
Tel: +82-31-420-7664  
Fax: +82-31-420-7605  
Email: [jcheong@npqs.go.kr](mailto:jcheong@npqs.go.kr)  
Website: [www.npqs.go.kr](http://www.npqs.go.kr)

***Operational offices:*****Plant quarantine**

National Plant Quarantine Service (NPQS)  
Ministry of Agriculture and Forestry  
433-1, Anyang 6-dong, Manan-gu  
Anyang-City (430-016)  
Republic of Korea  
Tel: (+82) 31 420-7664  
Fax: (+82) 31 420-7605  
Emails: [npqs@npqs.go.kr](mailto:npqs@npqs.go.kr); [ycjeong@npqs.go.kr](mailto:ycjeong@npqs.go.kr)  
Website: [www.npqs.go.kr](http://www.npqs.go.kr) (en)

**Surveillance, pest outbreaks and invasive species management**

For exotic pests:

MAF/NPQS (see above)

For other outbreaks:

Crop & Animal Division, Extension Service Bureau

Rural Development Administration

150 Suinro, Gwonseon-gu

Suwon 441-707

Republic of Korea

**Pesticide registration**

Agro-materials Management Division

Research Policy Bureau

Rural Development Administration

150 Suinro, Gwonseon-gu

Suwon 441-707

Republic of Korea

Website: [www.rda.go.kr](http://www.rda.go.kr)

**Official international contact points****National Plant Protection Organization (NPPO) contact point (for IPPC/APPPC)****International Quarantine Cooperation Division,**

*Mr Hyun-Kwan SHIN, Director*

National Plant Quarantine Service (NPQS)

Ministry of Agriculture and Forestry

433-1, Anyang 6-dong, Manan-gu

Anyang-City (430-016)

Republic of Korea

Tel: (+82) 31 420-7660

Fax: (+82) 31 420-7605

Emails: [npqs@korea.kr](mailto:npqs@korea.kr); [ycjeong9@korea.kr](mailto:ycjeong9@korea.kr)

Website: [www.npqs.go.kr](http://www.npqs.go.kr) (en)

Language(s): English

Contact point received: March 2011 Source: Government Correspondence

**International Technology Cooperation Center**

*Dr Sang-Jae LEE, Director*

150 Suinro, Gwonseon-gu

Suwon 441-707

Republic of Korea

Tel: +82 31 299 2279

Fax: +82 31 293 9359

Email: [jihyuk@rda.go.kr](mailto:jihyuk@rda.go.kr)

**WTO SPS contact point**

Bilateral Cooperation Division  
 Ministry of Agriculture and Forestry (MAF)  
 1 Joongang-dong, Kwachon  
 Kyunggi-do, 427-719  
 Republic of Korea  
 Tel: + (822) 500 1877  
 Fax: + (822) 504 6659  
 Email: bcd@maf.go.kr

**Rotterdam Convention (PIC) DNA Pesticides (P)**

Agro-materials Management Division  
 Research Policy Bureau  
 Rural Development Administration  
 150 Sunro, Gwonseon-gu  
 Suwon 441-707  
 Republic of Korea  
 Tel: +82 31 299 2590  
 Fax: +82 31 299 2607

**Stockholm Convention (POP) National Focal Point**

–

**Basel Convention Competent Authority (CA) and Focal Point (FP)**

Resource Recirculation Bureau (CA)  
 Resource Recirculation Policy Division  
 Ministry of Environment  
 Gwacheon Government Complex  
 Gwacheon Si  
 Gyeonggi-do, 427-729  
 Republic of Korea  
 Tel: (82 2) 504 92 88  
 Fax: (82 2) 504 60 68

Waste Management Policy Division (FP)  
 Ministry of Environment  
 1 Joonang-dong  
 Kwacheon-Si, Kyunggi-do  
 Republic of Korea  
 Tel: (82 2) 504 92 59  
 Fax: (82 2) 504 92 80  
 Email: djuca2@me.go.kr

**Montreal Protocol focal point**

–

**Selected country statistics:**

Last updated: March 2011

Agricultural population:	3.4 million	Agricultural land:	1.8 million ha
GDP: US\$ 887 400 million	Agric. GDP: 4.0%	GNI per capita: US\$ 18 372	Undernourishment: 0%
Main crops grown: Rice			

GDP = Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement

## II. PLANT QUARANTINE

Last updated: April 2011

### Executive summary<sup>2</sup>

National Plant Quarantine Service (NPQS) of the Ministry for Food, Agriculture, Forestry and Fisheries (MIFAFF) developed a '10-year plan for plant quarantine development' in 2007. There are 3 goals: (1) prevention of exotic pest, (2) protection of agricultural and natural resources and (3) contribution to agricultural competitiveness and national development.

Since 2008, NPQS has placed strong emphasis on increasing work efficiency with differentiation of inspection methods according to pest risk and adaptation of IT to plant quarantine management system. NPQS has also facilitated export of agricultural products through active negotiation with trading partners and customer friendly inspection for export.

### List of key legislation/regulations/rules

- 1961 Plant Quarantine Act (30/12/1961)
- 2004 Guidelines for PRA for Import permission on prohibited plants and plant products
- 2005 Quarantine requirements on wood packing materials of imported consignments
- 2009 Revision of plant quarantine act.

### Web source for further information: –

Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover domestic quarantine?	x		
Does phytosanitary legislation cover import quarantine?	x		
Does phytosanitary legislation cover export quarantine?	x		
Does phytosanitary legislation cover living modified organisms?	x		
Is plant quarantine a separate organization from animal quarantine?	x		
Other policy initiatives (under review/progress):			
Web source for further information: <a href="http://www.npq.s.go.kr">www.npq.s.go.kr</a> (en)			

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest risk assessment (PRA)	MIFAFF/NPQS
National standards development	MIFAFF/NPQS
International notifications	MIFAFF/NPQS
<i>Import:</i>	
Import permits	MIFAFF/NPQS
Import inspections	MIFAFF/NPQS
Emergency action	MIFAFF/NPQS
<i>Export:</i>	
Phytosanitary certificates	MIFAFF/NPQS
Treatment of commodities	MIFAFF/NPQS

<sup>2</sup> by Hyun-Kwan SHIN, Director, International Quarantine Cooperation Division, National Plant Quarantine Service/MIFAFF, Email: [boseyo58@korea.kr](mailto:boseyo58@korea.kr)

Infrastructure	Year: 2011
Number of plant quarantine officers authorized to inspect/certify	432
Total qualified personnel for plant pest risk assessment	13
Number of quarantine offices	29
entry points (sea/air/land/mail = total)	26
post-entry plant quarantine containment facilities	2
other offices	1
Number of quarantine service diagnosis laboratories	7
In-country recognized pest diagnostics capabilities (incl. universities, etc.)	More than 50
Number of laboratories for insect/mite (arthropod) samples	More than 30
Number of laboratories for bacteria samples	More than 20
Number of laboratories for virus samples	More than 30
Number of laboratories for fungus samples	More than 30
Number of laboratories for mycoplasma samples	More than 10
Number of laboratories for nematode samples	More than 10
Number of laboratories for plant/weed samples	More than 10
Number of laboratories for other pests (snail, slug, rodents, etc.)	More than 10

Pest-free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)
Overall management	
– surveillance	NPQS/MIFAFF, RDA
– management	NPQS/MIFAFF, RDA
– certification	NPQS/MIFAFF
List of target pest species and crops ISPM 4	Number of sites in 2010
List of target pest species and crops ISPM 10	Number of sites in 2010

### Key situation indicators

International trade		Year: 2010
Main import plant commodities	Main countries/areas of origin	Quantity (tons)
Banana	Philippines	272 697
Orange	USA	125 919
Hay		599 763
Main export plant commodities	Main destination countries	
Bell pepper	Japan	13 898
Sand pear	various	19 493
Pepper	various	832

Cooperation projects			
Title (Purpose/target)	Donor	Amount	Years (start-end)
ASEAN plant quarantine expert training programme	NPQS/MAF	\$100 000	2006, 2008
ISPM workshop in APPPC	NPQS/MAF	\$80 000	2006, 2008
Title of government follow-up programmes		Amount	Years (start-end)

**Key operation indicators**

Institutional functions	Year: 2010
Number of import permits issued	N/A
Number of import inspections carried out	3 829 543
Number of emergency phytosanitary treatments taken on imports	23 414
Number notifications of non-compliance	175
Number of conventional phytosanitary certificates issued	81 510
Number of electronic phytosanitary certificates issued	

Number of quarantine pests intercepted		Years: 2009-2010
Top three commodity	Top three pest/commodity	# of interceptions
Banana fruit	<i>Dysmicoccus neobrevipes</i>	998
	<i>Aspidiotus excisus</i>	297
	<i>Dysmicoccus brevipes</i>	12
Pineapple fruit	<i>Dysmicoccus brevipes.</i>	783
	<i>Dysmicoccus neobrevipes</i>	3
	<i>Dolichotetranychus floridanus</i>	2
Lauan lumber	<i>Brachypeplus sp</i>	51
	<i>Silvanus bidentatus</i>	42
	<i>Xyleborus cognatus</i>	35

List of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of quarantine pests	2008	1 474	446	13
Number of regulated non-quarantine pests	2005	2	42	16
Number of regulated import articles				
Website for the above information: <a href="http://www.NPQS.go.kr">www.NPQS.go.kr</a> (en)				

Pest risk analysis (PRA)	Insects	Pathogens	Plants
Number of PRA completed and documented (according to ISPM)	1 476	488	29
Web source for further information: –			

**Progress and constraints**

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
<ul style="list-style-type: none"> <li>• 5<sup>th</sup> Training Programme on Plant Quarantine for ASEAN Countries</li> <li>• 10<sup>th</sup> IPPC ISPM draft workshop for APPPC</li> </ul>
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
ISPM 01 Principles of plant quarantine as related to international trade			x				x	
ISPM 02 Guidelines for pest risk analysis			x				x	
ISPM 03 Code of conduct for the import and release of exotic biological control agents			x				x	
ISPM 04 Requirements for the establishment of pest free areas			x				x	
ISPM 05 Glossary of phytosanitary terms			x				x	
ISPM 06 Guidelines for surveillance			x				x	
ISPM 07 Export certification system			x				x	
ISPM 08 Determination of pest status in an area			x				x	
ISPM 09 Guidelines for pest eradication programmes			x				x	
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites			x				x	
ISPM 11 Pest risk analysis for quarantine pests			x				x	
ISPM 12 Guidelines for phytosanitary certificates			x				x	
ISPM 13 Guidelines for the notification of noncompliance and emergency action			x				x	
ISPM 14 The use of integrated measures in a systems approach for pest risk management			x				x	
ISPM 15 Guidelines for regulating wood packaging material in international trade			x				x	2005
ISPM 16 Regulated non-quarantine pests: concept and application			x				x	
ISPM 17 Pest reporting			x			x		
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure		x		x				
ISPM 19 Guidelines on lists of regulated pests			x				x	
ISPM 20 Guidelines for a phytosanitary import regulatory system			x				x	
ISPM 21 Pest risk analysis for regulated non-quarantine pests			x				x	
ISPM 22 Requirements for the establishment of areas of low pest prevalence			x				x	
ISPM 23 Guidelines for inspection			x				x	
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures			x				x	
ISPM 25 Consignments in transit			x				x	
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)			x				x	
ISPM 27 Diagnostic protocols for regulated pests			x				x	
ISPM 28 Phytosanitary treatments for regulated pests			x				x	
ISPM 29 Recognition of pest free areas and areas of low pest prevalence			x			x		
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (Tephritidae)		x				x		
ISPM 31 Methodologies for sampling of consignments			x				x	
ISPM 32 Categorization of commodities according to their pest risk			x				x	
ISPM 33 Pest free potato ( <i>Solanum</i> spp.) micropropagative material and minitubers for international trade		x			x			
ISPM 34 Design and operation of post-entry quarantine stations for plants			x			x		
Comments/constraints:								

### III. SURVEILLANCE, PEST OUTBREAKS AND INVASIVE SPECIES MANAGEMENT

Last updated: April 2011

#### Executive summary<sup>3</sup>

The Rural Development Administration (RDA) monitored and observed the pest outbreaks and invasive species. Total 690 observation stations located in 137 cities and counties have been operational.

Two species of insect, a katydid *Paratlanticus ussuriensis* and a cicada *Lycorma delicatula*, broke out both in 2007 and 2008. And an invasive disease, TYLCV, also broke out in a limited area and it was under official control.

Provincial governments, the RDA and the KFS collaborated to manage these pests and disease employing all sorts of methods currently in use. They also tried to develop an effective strategy.

In 2007 a rice pest, smaller brown planthopper *Laodelphax striatellus*, occurred in extraordinarily high population causing severe damage in areas in the vicinity of the western coast because of the rice stripe virus disease it transmitted. In 2008 the disease incidence decreased greatly in comparison to that of 2007, even though it was still severe showing 205% occurrence compared to the average year.

#### List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions

–

#### Web source for further information: –

Policies regarding invasive/migratory species management	Yes	No	Don't know
National strategy to control serious field pest outbreaks?	x		
National strategy to control migratory or periodically occurring pests?	x		
National strategy to eradicate serious newly invaded exotic pests?	x		
Other policies: (e.g. subsidies, etc.)			
Web source for further information: –			

Organization of functions related to surveillance pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field/storage pest outbreaks</i>	(e.g. BPH, boll worm, etc.)
Response strategy/plans	RDA NAQS
Surveillance	RDA NAQS
Control	RDA NAQS
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	RDA
Surveillance	RDA

<sup>3</sup> by Man Young CHOI, Senior Researcher, Crop Protection Division, National Academy of Agricultural Science, Rural Development Administration, Email: choimy@rda.go.kr



Control	RDA
<i>New exotic pest eradication</i>	(e.g. coconut beetle)
Response strategy/plans	NPQS/MIFAFF
Surveillance	MAF/NPQS with 201 farmers; declaration center for exotic pests: www.npqs.go.kr
Control/eradication	NPQS/MIFAFF
Reporting to bilateral or international organizations	NPQS/MIFAFF

Infrastructure	Year: 2010
Number of designated staff for <b>surveillance</b> of field pests of national importance	unspecified
Number of designated staff for <b>surveillance</b> of migratory and periodically occurring pests	
Number of designated staff for <b>surveillance</b> of invasive species	
Number of designated staff for <b>control</b> of field pests of national importance	
Number of designated staff for <b>control</b> of migratory and periodically occurring pests	
Number of designated staff for <b>eradication</b> of invasive species	

### Key situation and operation indicators

(Outbreaks and invasions in the past 2 years)

New exotic species found established in the country	Insects	Pathogens	Weeds
Total number for 2010 [most recent]	–	–	
Total number for 2009 [year before]	–	–	
Total number on record:	33	22	

Eradication or internal quarantine actions taken against economically important species			
Name of species			
Year of first discovery			
Pathway			
Location of first discovery			
Area affected [ha]			
Area treated [ha]			
Control method			
Expenditure			

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species	<i>Laodelphax striatellus</i>	<i>Paratlanticus ussuriensis</i>	<i>Lycorma delicatula</i>
Year of outbreak	2007	2007	2008
Area affected [ha]	14 300	30	91
Estimated damage US\$			
Area treated by government [ha]			
Expenditures by government [US\$]			
Control method	Chemical spray	Chemical spray	Chemical spray
More information			

**Progress and constraints**

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

#### IV. PEST MANAGEMENT

Last updated: April 2011

##### Executive summary<sup>4</sup>

The Rural Development Administration (RDA) conducted the demonstration projects for rice and citrus to promote the IPM practice. Demonstration farms operated in 2008 consisted of 284 sites for rice and 16 sites for citrus and contributed to reduce the chemical spray times by 4 from 12 times to 8 times in average for citrus, and for rice the chemical application reduced to 2 times from 3 times as well.

The Ministry for Food, Agriculture, Forestry and Fisheries (MIFAFF) started a supporting programme in 2005 for the growers who used natural enemies to control insect pests occurring in 9 greenhouse crops including strawberry. The Government gives a subsidy (about 50% of the cost for purchasing natural enemies) to the growers who satisfy the requirement set by the programme with a goal that 50% of horticultural crop area use biological control methods by 2013.

The RDA carried out research to determine economic threshold levels for about 13 major pests, 11 major diseases and 7 major weeds in cooperation with 8 provincial research institutes in 2008.

##### List of key legislation/regulations/rules for pest management

–

##### Web source for further information: –

Policies regarding pest management	Yes	No	Don't know
Do you have policies encouraging organic or low-pesticide use production	x		
Is IPM specifically mentioned in laws or policy documents?	x		
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?	x		
Is pest management extension separate from general extension?		x	
Other policies: (subsidies, production inputs, etc.)			
Web source for further information: –			

Organization of pest management function	Responsible organizational unit (ministry/department/unit)
Policy development	MIFAFF
Pest management research	RDA
Control recommendations	RDA
Pest management extension	Local government
IPM training	RDA/local gov
GAP training	MIFAFF

<sup>4</sup> by Man Young CHOI, Senior Researcher, Crop Protection Division, National Academy of Agricultural Science, Rural Development Administration, Email: choimy@rda.go.kr

Infrastructure	Year: 2010
Number of technical officers for pest management	300
Number of central, regional, provincial or state offices	169 incl country level
Number of district and village level field offices	600
Number of field/extension agents for pest management advice	159
Number of field/extension agents trained in IPM-FFS facilitation	40 <i>per annum</i>
Number of government biocontrol production/distribution facilities	23
Number of government biopesticide production/distribution facilities	–
Number of general extension staff involved in pest management	170
Number of designated plant protection technical officers for extension	170

### Key situation and operation indicators

Pest management	Yes	No	Don't know
Does the country have a National IPM Programme? <i>If yes, give Name and Address of IPM Programme: MAF, Extension Service Bureau of RDA</i>	x		
Does the country have specific IPM extension programmes? <i>If yes, in which crops?: Rice, citrus, and other crops</i>	x		
Does the country have specific IPM research programmes? <i>If yes, in which crops?: Pepper, tomato, strawberry, apple</i>	x		
Does the country have specific GAP extension programmes? <i>If yes, in which crops?: Training programme for 96 agri. Crops and 4 forest products</i>	x		
Does the country have specific GAP research programmes? <i>If yes, in which crops?: Horticultural crops</i>	x		

Market shares (estimated value, volume or area under control)	Year: 2010
Size of chemical pest control market	\$1 074
Size of biopesticides market	\$2.6 mil
Size of biological control agents market	\$5.8 mil

Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop	Rice	Rice	Rice
Name(s) of pest(s)	Brown planthopper	Smaller Brown planthopper	Rice leaf folder
Estimated crop loss	0.06%	0.01% (RSV)	0.20%
Affected area	16 429 ha	18 490 ha (SBPH) 6 006 ha (RSV)	85 176 ha
Number of pesticide applications or amount of pesticide used	3	3	3
Government action taken	–	–	–

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Economic threshold level/ 31 major crop	RDA	\$0.6 million/2008	2006
Purpose/target of government follow-up programmes		Amount	Years (start-end)
Extension of Technology/Demonstration project of IPM		\$0.12 million/2008	2005

Pest management extension	Year: 2010
Number of farmers trained in IPM during the year	15 846
Number of IPM-FFS conducted during the year	464
Number of farmers trained in GAP standards during the year	5 800 (2007)
Area under IPM/low pesticide management [ha]	2 842
Area under organic/pesticide-free management [ha]	
Crops in which IPM or other ecology friendly programmes are successfully implemented: Rice and citrus	
Crops grown organic/pesticide-free: Rice (field crop), strawberry, red pepper, tomato, cucumber, watermelon, vegetables including lettuce etc. (green house crops)	

### Progress and constraints

Main progress in recent Years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

## V. PESTICIDE MANAGEMENT

Last updated: April 2011

### Executive summary<sup>5</sup>

Agro-chemical production increased 11% from 22 168 tons to 24 621 tons in 2009. Among the 1 431 items enlisted in Rep of Korea as pesticides, above 99% are low or moderately toxic. Hazardous chemicals including highly toxic pesticides are specifically regulated through many measures including a restriction standard on handling those materials.

In case of agro-chemicals which are toxic to live organisms in nature, pictorial warning-mark and cautionary directions will be clearly printed on the label of the container. Especially, nowadays the safety standard for Korean ecological indicators including fish and loach has been strengthened.

The Rural Development Administration (RDA) deposited the instrument of ratification to the Rotterdam convention on the Prior Informed Consent (PIC) Procedures for Certain Hazardous Chemicals and Pesticides on International Trade in August 2003, and improved related regulations or systems. As such, Rep of Korea has been fulfilling its duties as a contracting party.

Also, Rep of Korea signed the Stockholm Convention on the production, usage and discharge prohibition of organic pollutants (POPs) in 2001, and ratified in February 2007.

### List of key legislation/regulations/rules for pesticide management

- **Agrochemicals Control Act**

The purpose of this Act is to help enhance the quality of agrochemicals, establish order in their distribution, promote safety in their use, and further contribute to the development of agricultural production and the conservation of the living environment by providing for such matters as related to the manufacture, importation, sales, and use of agro-chemicals.

- **Hazardous Material management Law**

**Web source for further information:** –

Policies regarding pesticide management	Yes	No	Don't know
Do you have national pesticide reduction targets? <i>If yes, what is the target: _____</i>	x		
Have you ratified the Rotterdam (PIC) Convention?	x		
Have you ratified the Stockholm (POP) Convention?	x		
Have your ratified the Basel Convention? (hazardous wastes)	x		
Have your ratified the Montreal Protocol? (MeBr phasing-out)	x		
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?	x		
Have you adopted Good Laboratory Practices (GLP)?	x		
<i>Pesticide registration</i>			
Do you require pesticides to conform to relevant FAO or WHO specifications?	x		
Do you allow the "me-too" registration and sale of generic pesticides?	x		

<sup>5</sup> by Yang Bin IHM, Agro-Material Management Division, Research Policy Bureau, Rural Development Administration, Email: Agrochem@korea.kr

Do you require data on product equivalence for generic registration?	x		
Do you conduct country-specific risk assessments for...			
occupational risks?	x		
consumer risks?	x		
environmental risks?	x		
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labelling?		x	
Do you accept evaluation results from other countries?	x		
Do you accept field studies conducted in other countries?		x	
Do you require environmental fate studies?	x		
<i>Incentives/disincentives</i>			
Do you have a special tax on pesticides to cover externality costs?		x	
Do you subsidize or provide low-cost pesticides?	x		
Do you subsidize or provide low-cost biopesticides?	x		
Other policies:			
Web sources for further information: <a href="http://www.koreacpa.org">www.koreacpa.org</a> , <a href="http://www.rda.go.kr">www.rda.go.kr</a>			

Organization of pesticide management function	Responsible organizational unit (ministry/department/unit)
Legislation	MIFAFF/Food Safety & Consumer Affairs Policy Bureau/Food Safety & Sanitation Div.
Registration	RDA/Research Policy Bureau/Agro-materials Management Div.
Licensing of shops	RDA/Research Policy Bureau/Agro-materials Management Div.
Licensing of field applicators**	
Enforcement/inspections	RDA/Research Policy Bureau/Agro-materials Management Div. RDA/National Academy of Agricultural Science (NAAS), Region Government
Testing of pesticide efficacy	RDA/NAAS/Agro-materials Safety Evaluation Div.
Development of pesticide use recommendations	RDA/NAAS/Agro-materials Safety Evaluation Div.
Safe use training/extension	RDA/Research Policy Bureau/Agro-materials Management Div.
Food residue monitoring	KFDA
Environmental monitoring	ME/NIER
Health monitoring	RDA/NAAS
<i>Other stakeholders:</i>	
Pesticide Industry Association	Korea Crop Protection Assoc. (KCPA)
Civil Society Organizations (NGO, etc.)	Consumers Korea

Infrastructure	Year: 2010
Number of registration officers	26
Number of enforcement officers	Approx. 200
Number of department quality control laboratories	2
Number of quality control laboratory personnel	10
Number of department residue analysis laboratories	20
Number of residue laboratory personnel	130

**Key situation indicators**

Pesticide trade: 2009	Tons	US\$ '000 Value
Imports	26 575	473 309
Manufacture	24 621	1 475 404 (1 000 Won/US\$)
Export	905	25 266
Domestic Use/Sales	22 790	1 351 755 (1 000 Won/US\$)
Pesticide use profile: 2009	Tons (a.i./formulation to be specified)	US\$ '000 Value
Agriculture	22 790	1 351 755
Chem. Insecticides	38.7%	38.5%
Chem. Fungicides	26.9%	33.5%
Chem. Herbicides	25.9%	25.1%
Chem. Others: e.g.: molluscicide, acaricide	8.5%	3.0%
Other: e.g. Avamectrin, Bt, Neem	Trace amount	Trace amount
Other purposes		
TOTAL		

**Post registration monitoring**

Testing, quality control and effects in the field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?		x	
Do you have significant problems with pesticide resistance?	x		
Do you have a list of pesticides under close observation for problems?	x		
Source for more information: RDA Notification No. 2010-12.			

Health and environmental information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?		x	
Do you have a system to monitor pesticide residues in food?	x		
Do you have a system to monitor pesticide residues in the environment?			
Do you have significant problems of environmental contamination from pesticides?		x	
Do you have data on pesticides effects on wildlife and ecosystems?	x		
Source for more information: –			

Pesticide disposal	Yes	No	Don't know
Do you have system to collect and safely dispose of used containers and small quantities of left-over pesticides?	x		
Do you have an inventory of outdated and obsolete pesticides in the country? (e.g. banned and no longer traded, but still in storage)		x	
Do you have illegal trade in pesticides? if yes: what is the estimated amount: _____	x		
Source for more information: –			



**Key operation indicators**

Registration/megulation/monitoring	Year: 2009	
	a.i.*	Trade name
Number of registered pesticide products	440	2 434 (1 431 Items)
Number of registered biopesticides (Avamectrin, Bt, Neem, etc.)	21	33
Number of restricted-use pesticides/formulations		6
Number of banned pesticides	62	
Number of licensed outlets		
Number of licensed field applicators (professional and/or farmers)		
Number of licensing violations reported during year	More than 50	
Number of quality control analyses conducted during year	700	
Number of food samples analyzed for pesticide residues during year		
Number of samples exceeding MRL		
Number of environmental samples analyzed for pesticide residues		

\* active ingredient

Pesticides restricted in recent years (2009-2010)	
Year	Name of active ingredient or hazardous formulation

Pesticides banned in recent years (2009-2010)	
Year	Name of active ingredient

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)

**Progress and constraints**

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

**VI. ADDITIONAL ISSUES OF INTEREST**

<b>Genetically Modified Crops</b>	
<b>Name of GMO Crop</b>	<b>Area under cultivation [ha]</b>
None	N/A

## 2.18 SRI LANKA

### I. GENERAL INFORMATION

Last updated: December 2008

#### Overall executive summary

Some key organizational changes took place during 2007-2008. Some senior officers were transferred to other work places while some retired or were promoted.

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.

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.

A number of quarantine pests were intercepted during the import of planting materials. In 2008, almost 800 questionable consignments were intercepted and destroyed. The pest reference collection at the NPQS was upgraded with 80 more specimens added.

Pest Risk Analysis (PRA) on powdery scab on potato was completed while PRAs on import of dragon fruit and mangosteen from Thailand and in vitro cultures of banana from the Philippines were started.

A new exotic invasive species namely Papaya Mealy Bug – *Paracoccus marginatus* was first observed in the country's western region in August 2008. The bug caused significant losses to the papaya plants. A package of control practices was recommended and the biological control agent *Acerophagus papayae* was imported from Puerto Rico APHIS and released into several infested locations. The damage is currently under control.

The country embarked on several pest management programmes for control of specific pests. While shortage in resources always hindered the progress of the programme, most targets were achieved.

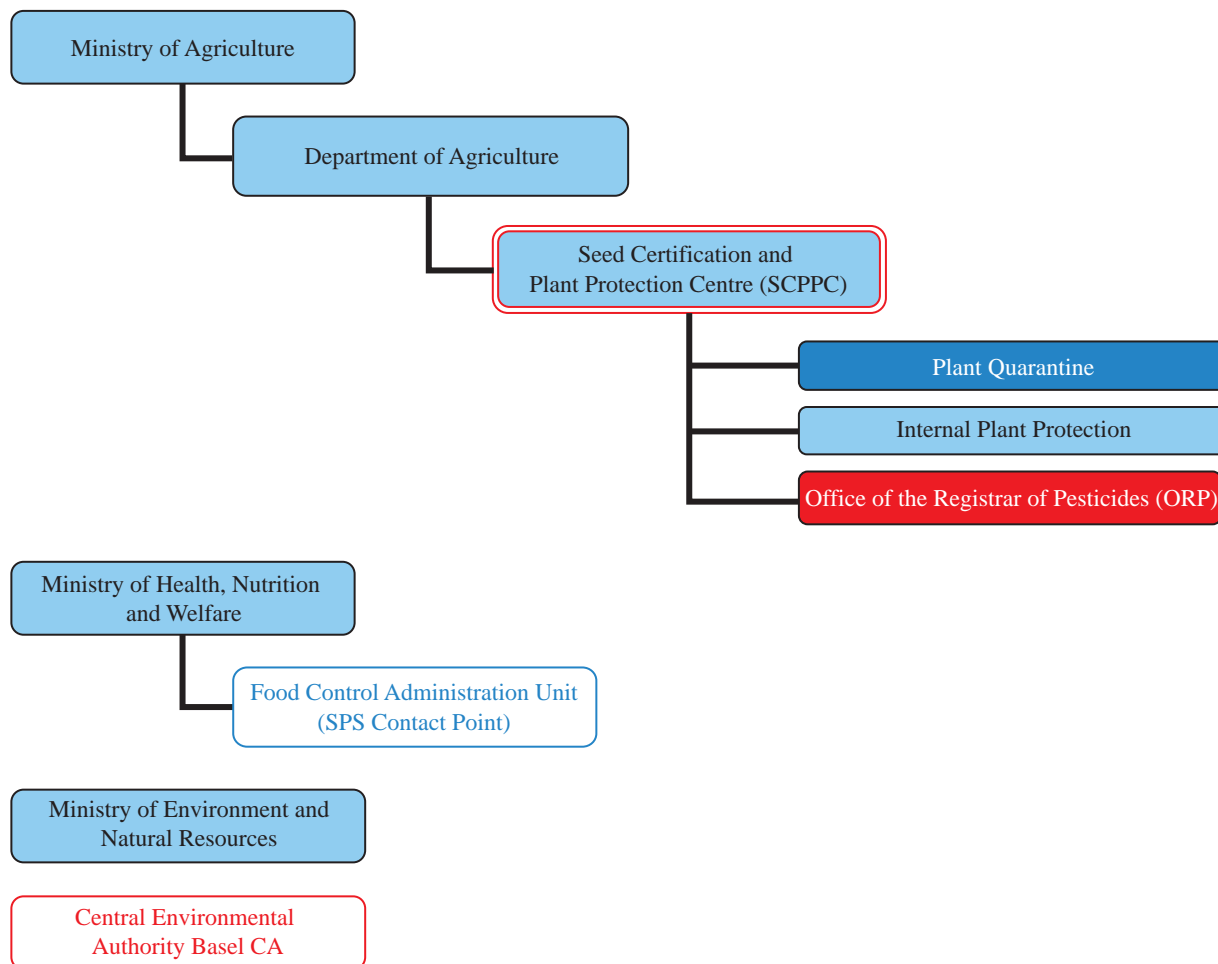
The Integrated Pest Management (IPM) strategy on rice cultivation is now extended to vegetables and other crops, using Farmer Field School (FFS) training approach.

Funded by UNEP, a new programme namely Integrated Pest and Vector Management (IPVM) Programme was initiated. Due to its multidisciplinary nature, the programme involved several stakeholders including the Department of Agriculture, the Department of Health and Mahaweli Authority of Sri Lanka (MASL). This represented a unique experience of integrating agriculture with health, with an aim of improving the livelihoods of rural communities.

The mandate of the Office of the Registrar of Pesticides is to execute statutory provisions of the Control of Pesticides Act No. 33 of 1980. The pesticides registration is the key provision in the course of life cycle management of pesticides in the country from importation through marketing

of crops treated with pesticides. The issuance of import approvals is entertained on certain quality assuring protocols for pesticide products entering into the country. Apart from procedural control measures, more than 2,000 formulation analyses were carried out, prior to marketing.

**Plant protection organization chart**



*Color Code:*

Phytosanitation	Outbreak Management	Pest Management	Pesticides	NPPO
-----------------	---------------------	-----------------	------------	------

---

---

### Important contact addresses

#### Ministry/Department of Agriculture

Seed Certification & Plant Protection Centre

*Dr D.H. Muthukudaarachchi, Director*

Department of Agriculture, Ministry of Agricultural Development

P.O. Box 74, Gannoruwa, Peradeniya, Sri Lanka

Tel: (+94) 81 2388044

Fax: (+94) 81 2388077

Email: [scppc@sltnet.lk](mailto:scppc@sltnet.lk)

Website: [www.agridept.gov.lk](http://www.agridept.gov.lk)

#### Plant protection

Plant Protection Service

*Mr K. Piyasena, Deputy Director*

Seed Certification & Plant Protection Centre

Department of Agriculture, Ministry of Agricultural Development

Gannoruwa, Peradeniya, Sri Lanka

Tel: (+94) 81 2388316

Fax: (+94) 81 2388316

Email: [ppsdoa@sltnet.lk](mailto:ppsdoa@sltnet.lk)

Website: [www.agridept.gov.lk](http://www.agridept.gov.lk)

#### Plant quarantine

National Plant Quarantine Service

*Mr R.S.Y. de Silva, OIC*

Seed Certification & Plant Protection Centre

Department of Agriculture, Ministry of Agricultural Development

Canada Friendship Road, Katunayake, Sri Lanka

Tel: (+94) 11 2253709

Fax: (+94) 11 2253709

Website: [www.agridept.gov.lk](http://www.agridept.gov.lk)

#### Surveillance, pest outbreaks and invasive species management

–

#### Pesticide registration

Office of the Registrar of Pesticides

*Dr G.K. Manuweera, Registrar of Pesticides*

Department of Agriculture

P.O. Box 49

Peradeniya 20400, Sri Lanka

Tel: (+94) 81 238 8134

Email: [pest@slt.lk](mailto:pest@slt.lk)

### Official international contact points

#### National Plant Protection Organization (NPPO) contact point (for IPPC/APPPC) unofficial

Seed Certification and Plant Protection Centre

*D.H. Muthukudaarachchi, Director*

Ministry of Agriculture, Livestock, Land and Irrigation

P.O. Box 74, Gannoruwa

Peradeniya, Sri Lanka

Tel: (+94) 81 238 4226 / 238 8044

Fax: (+94) 81 238 8077

Emails: scppc@sltnet.lk; nimik@sltnet.lk

Website: www.agridept.gov.lk (en)

Language(s): English

Contact point received: 07/07/2004 Source: Government correspondence/country report

#### WTO-SPS contact point

Food Control Administration Unit

*Mr S. Nagiah*

Ministry of Health, Nutrition and Welfare

385, Baddegama Wimalawansa Mawatha

Colombo 10, Sri Lanka

Tel: (+94) 11 267 2073

Fax: (+94) 11 267 2073

Emails: foodadmin@sltnet.lk; nagiah.s@health.gov.lk

Website: www.health.gov.lk

#### Rotterdam Convention (PIC) DNA Pesticides (P)

Registrar of Pesticides

Pesticides Registration Office

Getambe

P.O. Box 49

Peradeniya 20400, Sri Lanka

Tel: (+94) 812 388 135 / 2388076

Fax: (+94) 812 388 635

Email: pest@slt.lk

#### Stockholm Convention (POP) National Focal Point

—

#### Basel Convention Competent Authority (CA) and Focal Point

Central Environmental Authority

*Chairman*

No. 104 Denzil Kobbekaduwa

Mawatha, Battaramulla, Sri Lanka

Tel: (+94) 11 287 23 48

Fax: (+94) 11 287 23 47

Emails: kgdband@cea.lk or

manelj@cea.lk or chaircea@cea.lk

Ministry of Environment and Natural

Resourcesx

*Secretary*

No. 104 Denzil Kobbekaduwa Mawatha

Battaramulla, Sri Lanka

Tel: (+94) 11 287 72 90 or 288 74 53

Fax: (+94) 11 287 72 92 or 286 11 96

Emails: pops@sltnet.lk or

scefe@sltnet.lk or

envpolmg@sltnet.lk

**Selected country statistics:**

Agricultural Population	8.6 million	Agricultural Land	1.9 million ha
GDP US\$ 286 billion	Agric. GDP: 16.5%	GNI per capita: US\$ 1 600	Under nourishment: 15%

GDP = Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement

## II. PLANT QUARANTINE

Last updated: December 2008

### Executive summary<sup>1</sup>

There were some important changes in the organization during the period under review, Dr D. H. Muthukudaarachchi was appointed as the Director of the Seed Certification and Plant Protection Centre and thus became the official contact point person for IPPC. The most senior officers working in plant quarantine stations were transferred out of their work places giving way to new officers. There was a policy decision to replace two most senior officers in every three years by other competent officials. The officer holding the Deputy Director post of the National Plant Quarantine Service (NPQS) retired from public service in 2007 and the following year, I was appointed as the Deputy Director.

Necessary discussions and the consultations were held to revise the regulations made under the Plant Protection Act. The draft was submitted to the World Trade Organization to revise comments from stakeholders. The required changes were made and the draft of regulations is under review for consistency with the Act. Legal implications on certain decision taken under the provisions of the Plant Protection Act resulted in discovery of some loopholes and the authorities appointed a committee to revise the act. The committee had several discussions on changes to meet the present day requirements and to make the act and the regulations consistent with IPPC recommendations.

Quarantine pest intercepted during the import of planting material included *Phoma foveata*, *Clavieacter michiganensis spp.*, *scpedonicus*, and *Geotrichum candidum*, on sweet potato *Ralastonia solanacearum* on ginger. In 2008, 757 questionable consignments were intercepted and destroyed due to unacceptable phytosanitary states. Upgrading of pest reference collection at the NPQS was done adding 80 specimens of insect pests found in the country.

Pest Risk Analysis (PRA) on powdery scab on potato was completed and PRAs on import of dragon fruit and mangosteen from Thailand and in vitro cultures of banana from the Philippines were started. After careful study and bilateral negotiations fresh grapes from Chile were allowed to enter into the country.

### List of key legislation/regulations/rules for plant quarantine

1999 Plant Protection Act No. 35

New regulations under preparation

**Web source for further information:** [www.agridept.gov.lk](http://www.agridept.gov.lk)

<sup>1</sup> by R.S.Y. De Silva, Deputy Director, National Plant Quarantine Service, Email: npqs@sltnet.lk



Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover both domestic and import/export quarantine?	x		
Is plant quarantine a separate organization from animal quarantine?	x		
Does phytosanitary legislation cover non-cultivated plants (wild flora)	x		
Does phytosanitary legislation cover living modified organisms?		x	
Other policy initiatives: (under review/progress)			
Web source for further information: –			

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest risk analysis	MOA, SCPPC, NPQS
National Standards development	MOA, DOA, SCPPC, NPQS
International notifications	MOA, DOA, SCPPC
<i>Import:</i>	
Import permits/inspections	MOA/DOA/SCPPC MOA/DOA/SCPPC/NPQS/Entry points
Emergency action	MOA, DOA, SCPPC, Entry points (Seaport, Airport)
<i>Export:</i>	
Phytosanitary certificates	MOA/DOA/SCPPC/Plant Quarantine
Treatment of commodities	MOA, DOA, SCPPC, NPQS, PQU (Seaport, Airport), Private

Infrastructure	Years: 2007-2008
Total number of plant quarantine officers legally authorized to inspect & certify	80
Total qualified personnel for plant pest risk analysis	2
Number of quarantine offices/stations	5
Number of post-entry plant quarantine containment facilities	2
Number of quarantine service diagnosis laboratories	1
Number of entry points (sea/air/land/mail = total)	2
<i>In-country recognized pest diagnostics capabilities (incl. universities, etc.)</i>	
Number of laboratories for insect samples	~10
Number of laboratories for pathogen samples	~10
Number of laboratories for plant/weed samples	~4

Pest-free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)
Overall management	MOA, DOA, SCPPC
– surveillance	MOA, DOA, SCPPC, PPS
– management	MOA, DOA, SCPPC, PPS
– certification	MOA, DOA, SCPPC
List of target pest species and crops ISPM 4	Number of sites in 2008
<i>Synchytrium endobioticum</i> (in ornamental plants)	Not available
<i>Rhadopholus similes</i> (in foliage plants)	Not available
<i>Globoderapallida pallida</i> , <i>Globodera rostochiensis</i>	Not available
<i>Bemisia tabasi</i> , <i>Thrips palmi</i> , <i>Liriomyza sativai</i>	Not available
List of target pest species and crops ISPM 10	Number of sites in 2008

**Key situation indicators**

International trade		Years: 2007-2008
Main import plant commodities	Main countries of origin	No. of phytosanitary inspections
Plants and planting materials	Thailand, Netherlands, India, France, China, Germany, USA	Not available
Plant products	India, USA, China	Not available
Animal feed and fresh fruits	India, Pakistan, USA, Italy, China, Thailand, Australia, New Zealand, Iran, Israel, France, South Africa, USA	Not available
Main export plant commodities	Main destination countries	
Vegetables	Middle East, Europe	600/month
Ornamental plants	Middle East, Europe, Japan, South Korea	500/month
Tea, coir products	Middle East, Europe, New Zealand	75/month

Cooperation projects			
Title (Purpose/target)	Donor	Amount	Years (start-end)
Pest surveillance and compilation of data	Local funds	SL Rs. 2 million	2006 August to 2006 December
IPVM	FAO	SL Rs.1 274 732	2002-2006
Title of government follow-up programmes		Amount	Years (start-end)
Development of scientific information for quality seed production		SL Rs. 0.5 million	2007

**Key operation indicators**

Institutional functions	Years: 2007-2008
Number of import permits issued/inspections	2 443
Number of emergency phytosanitary treatments taken on imports	15
Number of quarantine pests intercepted	
Number notifications of non-compliance	18
Number of phytosanitary certificates issued	63 634
Number of electronic certificates issued: Yes___ No ✓	0
Number of conventional certificates issued: Yes ✓ No___	50 000

List of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of regulated quarantine pests	1994	132		
Number of regulated non-quarantine pests	1994	81		
Number of regulated import commodities		41		
Website for the above information: –				

Pest risk analysis (PRA)	Insects	Pathogens	Plants
No. of PRA completed and documented (according to ISPM)	1	10	1
Web source for further information: –			

**Progress and constraints**

<b>Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)</b>
Legislation, policies and infrastructure have been improved in recent years.
<b>Main constraints (personnel, infrastructure, administrative, operational, training, etc.)</b>
Administrative, operational, training, etc. could be considered as main constraints.

Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
<b>International measures</b>								
ISPM 01 Principles of plant quarantine as related to international trade			x				x	
ISPM 02 Guidelines for pest risk analysis			x			x		
ISPM 03 Code of conduct for the import and release of exotic biological control agents		x			x			
ISPM 04 Requirements for the establishment of pest free areas								
ISPM 05 Glossary of phytosanitary terms			x				x	
ISPM 06 Guidelines for surveillance			x			x		
ISPM 07 Export certification system			x				x	
ISPM 08 Determination of pest status in an area		x			x			
ISPM 09 Guidelines for pest eradication programmes		x			x			
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites		x			x			
ISPM 11 Pest risk analysis for quarantine pests			x			x		
ISPM 12 Guidelines for phytosanitary certificates			x				x	
ISPM 13 Guidelines for the notification of noncompliance and emergency action		x			x			
ISPM 14 The use of integrated measures in a systems approach for pest risk management								
ISPM 15 Guidelines for regulating wood packaging material in international trade			x			x		
ISPM 16 Regulated non-quarantine pests: concept and application								
ISPM 17 Pest reporting								
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure		x				x		
ISPM 19 Guidelines on lists of regulated pests								
ISPM 20 Guidelines for a phytosanitary import regulatory system			x				x	
ISPM 21 Pest risk analysis for regulated non-quarantine pests			x			x		
ISPM 22 Requirements for the establishment of areas of low pest prevalence								
ISPM 23 Guidelines for inspection			x			x		
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures								
ISPM 25 Consignments in transit								
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)								
ISPM 27 Diagnostic protocols for regulated pests								
ISPM 28 Phytosanitary treatments for regulated pests								
ISPM 29 Recognition of pest free areas and areas of low pest prevalence								
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (Tephritidae)								
ISPM 31 Methodologies for sampling of consignments								
ISPM 32 Categorization of commodities according to their pest risk								
ISPM 33 Pest free potato ( <i>Solanum</i> spp.) micropropagative material and minitubers for international trade								
ISPM 34 Design and operation of post-entry quarantine stations for plants								
Comments/constraints:								

### III. Surveillance, pest outbreaks and invasive species management

Last updated: December 2008

#### Executive summary<sup>2</sup>

During the period under review, a new exotic invasive species was reported from the western region of Sri Lanka. It was first observed in August 2008 by field extension officers of Gampaha District, and species was identified as Papaya Mealy Bug – *Paracoccus marginatus* and confirmed by the senior Biosystematics of the Plant Pest Diagnostic Center, USA. This species was observed in the host plant more than sixty and it caused significant losses to the papaya plants and ornamental plants in home garden.

A detailed survey of the area was carried out with the assistance of Extension officers of the relevant district. A package of control practices were recommended and Biological control agent *Acerophagus papayae* was imported from Puerto Rico APHIS and released into several infested locations. At present damage is under control.

#### List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions

–

#### Web source for further information: –

Policies regarding invasive/migratory species management	Yes	No	Don't know
National strategy to control serious field pest outbreaks?	x		
National strategy to control migratory or periodically occurring pests?		x	
National strategy to eradicate serious newly invaded exotic pests?	x		
Other policies: (e.g. subsidies, etc.) –			
Web source for further information: –			

Organization of functions related to surveillance pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field pest outbreaks</i>	(e.g. BPH, bollworm, etc.)
Response strategy/plans	MOA/DOA/SCPPC/PPS
Surveillance	MOA, DOA, SCPPC, PPS, DD (District)
Control	MOA, DOA, SCPPC, PPS, DD (District)
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	MOA, DOA, SCPPC, PPS, MOE, CEA
Surveillance	MOE
Control	MOA, DOA, SCPPC, PPS, DD (District)
<i>New exotic pest eradication</i>	(e.g. coconut beetle)
Response strategy/plans	MOA, DOA, SCPPC, PPS, MOE, CEA, MOP
Surveillance	MOA, DOA, SCPPC, PPS, CRI
Control/eradication	MOA, DOA, SCPPC, PPS, CRI
Reporting to international organizations	

<sup>2</sup> by K. Piyasena, Deputy Director, Plant Protection Service, Email: ppsdoasl@sltnet.lk

Infrastructure	Years: 2007-2008
Number of designated staff for <b>surveillance</b> of field pests of national importance	
Number of designated staff for <b>surveillance</b> of migratory and periodically occurring pests	
Number of designated staff for <b>surveillance</b> of invasive species	
Number of designated staff for <b>control</b> of field pests of national importance	
Number of designated staff for <b>control</b> of migratory and periodically occurring pests	
Number of designated staff for <b>eradication</b> of invasive species	

### Key situation and operation indicators

(Outbreaks and invasions in the past 2 years)

New exotic species found established in the country	Insects	Pathogens	Weeds
Total number for 2007 [most recent]			
Total number for 2008 [year before]			
Total number on record	–	–	–

Eradication or internal quarantine actions taken against economically important species			
Name of species			
Year of first discovery			
Pathway			
Location of first discovery			
Area affected [ha]			
Area treated [ha]			
Control method			
Expenditures			

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species	<i>Paracoccus marginatus</i> (Papaya Mealy Bug)		
Year of outbreak	2008		
Area affected [ha]	600 ha		
Estimated damage \$			
Area treated [ha]			
Control method	*		
Expenditures			
Add more if necessary			

- \*
- Remove & burn heavily infested plants & plant parts
  - Collect & burn leaves and debris found under infested cultivations
  - Wash off the insects from slightly infested plants using a garden hose
  - Spray a mixture of 2 tsp of washing powder, 1 tsp of kerosene oil in 1 litre of water for valuable foliage plants
  - Released parasitoid (*Acerophagus papaye*) in 2009 May

### Progress and Constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
Lack of trained staff and infrastructure.

#### IV. PEST MANAGEMENT

Last updated: December 2008

##### Executive summary<sup>3</sup>

During the period under review, the most significant change in the Pest Management in Sri Lanka is the appointment of a National committee to revise the Plant Protection Act No. 35 of 1999, to make the necessary changes to meet the present day requirements and submission of new set of regulations under the Act.

The country has embarked on several Pest Management Programmes for control of specific pests. Shortage in resource like funds, trained staff, machinery, and equipments always hindered the progress of the programme. Despite the problems encountered the centre has achieved most of the targets.

The Integrated Pest Management (IPM) strategy that was practiced in rice cultivation is now extended to vegetable and other plantation crops by using Farmer Field School (FFS) training approach. After the successful implementation of IPM Programme, a new programme was initiated in the country incorporating mosquito vector management into the IPM Programme, called Integrated Pest and Vector Management (IPVM) Programme, funded by UNEP.

Due to multidisciplinary nature of the programme it required the involvement of several stakeholder Departments, like the Department of Agriculture, Department of Health and Mahaweli Authority of Sri Lanka (MASL). This itself was a unique experience, integrating Agriculture with Health for the purpose of providing a better service and upgrading the livelihoods of rural communities.

In order to sustain the programme IPVM clubs were formed in village where FFS training were conducted so that farmers themselves could continue the activities they learnt at the FFS while disseminating that knowledge to other farmers.

Another development in the past two years is the preparation of regulations under Plant Protection Act No. 35, 1999, to control of Coconut Leaf Rot Disease and Weligama Cocconut Wilt Disease in southern region of Sri Lanka.

Water hyacinth and *Salvinia molasta*, have been identified as principal invasive weeds that require adoption of biological control methods. Rearing facilities of biocontrol agent *Cytobagous salviniae* has been improved and four regional rearing units were also established during the last two years for biological control programme of salvinia.

In addition, biocontrol agent of water hyacinth, *Neochatina bruchi* was imported from Thailand and introduced into water bodies after completing the necessary host specific test.

<sup>3</sup> by K. Piyasena, Deputy Director, Plant Protection Service, Email: ppsdoasl@sltnet.lk

## List of key legislation/regulations/rules for pest management

### Web source for further information: –

Policies regarding pest management	Yes	No	Don't know
Do you have policies encouraging organic or low-pesticide use	x		
Is IPM specifically mentioned in laws or policy documents?	x		
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?	x		
Is pest management extension separate from general extension?		x	
<i>Other policies:</i>			
List of legislation/regulations/rules for pest management: 1999 Plant Protection Act No. 35			
Web source for further information: <a href="http://www.agridept.gov.lk">www.agridept.gov.lk</a>			

Organization of pest management function	Responsible organizational unit (ministry/department/unit)
Policy development	MOA, DOA, SCPPC, PPS, ROP
Pest management research	HORDI, RRI
Control recommendations	MOA, DOA, SCPPC, PPS, ROP, HORDI, RRI
Pest management extension	MOA, DOA, SCPPC, PPS, D/Extension, DD/Extension (District)
IPM training	MOA, DOA, SCPPC, PPS
GAP training	MOA, DOA, SCPPC, PPS, ROP

Infrastructure	Years: 2007-2008
Number of officers for pest management	15
Number of regional offices	2
Number of field/provincial/state	
Number of field/extension agents for pest management advice	4 200
Number of field/extension agents trained in IPM-FFS facilitation	300
Number of government biocontrol facilities	3
Number of government biopesticide production facilities	01
Number of general extension staff involved in pest management	
Number of designated plant protection technical officers for extension	

### Key situation and operation indicators

Pest management	Yes	No	Don't know
Does the country have a National IPM Programme? <i>If yes, give Name and Address of IPM Programme: PPS</i>	x		
Does the country have special IPM extension programmes? <i>If yes, in which crops?: Rice, vegetables</i>	x		
Does the country have special IPM research programmes? <i>If yes, in which crops?: Leafy vegetables</i>	x		

Market shares (estimated value, volume or area under control)	Years: 2007-2008
Size of chemical pest control market	
Size of biopesticides market	
Size of biological control agents market	Not available



Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop	Chilli	Potato	Bitter gourd
Name(s) of pest(s)	Leaf curl, Pod borer, Blight, Anthracnose	Blight, Aphids, Cutworm, Leaf miner	Fruit fly, Curling of leaves, Mites, Leaf miner
Estimated crop loss			
Affected area			
Number of pesticide applications or amount of pesticide used	14	15.2	14
Government action taken			

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
REAP – Vegetable IPM	FAO	SL Rs.1 000 000	1984-2003
IPVM – Rice	UNEP		2002-2007
Purpose/target of government follow-up programmes		Amount	Years (start-end)

Pest management extension	Years: 2007-2008
Number of farmers trained in IPM during the year	4 500
Number of IPM-FFS conducted during the year	250
Number of farmers trained in GAP standards during the year	60
Area under IPM/low pesticide management [ha]	Not available
Area under organic/pesticide-free management [ha]	
Crops in which successful IPM Programmes are implemented: Paddy, cabbage, tomato	
Crops grown organic/pesticide-free: Tea, fruits, most of vegetables	

### Progress and constraints

Main progress in recent Years (legislation, policies, infrastructure, investments, training, etc.)
<p>Training in IPM has been increased.</p> <p>Number of crops adopting IPM has been increased.</p> <p>Integrated Pest Vector Management (IPVM) Programme has been implemented.</p>
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
<p>Lack of trained staff and technical knowledge.</p>

## V. PESTICIDE MANAGEMENT

Last updated: December 2008

### Executive summary<sup>4</sup>

The mandate of the Office of the Registrar of Pesticides is to execute statutory provisions of the Control of Pesticides Act No. 33 of 1980. The pesticides registration is the key provision in the course of life cycle management of pesticides in the country from importation through marketing of crops treated with pesticides. During the period 182 registration applications and 319 re-registrations have been completed conforming to the international guidelines and test protocols ensuring acceptability on safety, efficacy and environmental grounds.

The issuance of import approvals is entertained on certain quality assuring protocols for pesticide products entering into the country. Apart from procedural control measures, 2 093 formulation analyses have been carried out, prior to marketing, covering 1 118 import consignments during the above period. Under the National Organic Standard Certification Project, the laboratory was upgraded with a number of analytical and ancillary instruments including GCs and GCMS for over Rs. 20 mn. Further, Rs. 11.3 million was contracted for lab space expansion which is under construction.

Regulatory decisions were taken to phase out two insecticides (viz dimethoate and fenthion) and a weedicide (viz paraquat) based on unacceptable risks, especially acute poisoning associated with liberal use of these pesticides within the country.

### List of key legislation/regulations/rules about pesticide management

1989 Control of Pesticides Act No. 33

1994 Control of Pesticides (Amendment) Act No. 06.

### Web source for further information: –

Policies regarding pesticide management	Yes	No	Don't know
Do you have national pesticide reduction targets? <i>If yes, what is the target: _____</i>		x	
Have you ratified the Rotterdam (PIC) Convention?	x		
Have you ratified the Stockholm (POP) Convention?	x		
Have you ratified the Basel Convention? (hazardous wastes)	x		
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?	x		
Have you adopted Good Laboratory Practices (GLP)?		x	
<i>Pesticide registration</i>			
Do you require pesticides to conform to relevant FAO or WHO specifications?	x		
Do you allow the "me-too" registration and sale of generic pesticides?		x	
Do you require data on product equivalence for generic registration?	x		
Do you conduct country-specific risk assessments for...			
occupational risks?		x	
consumer risks?	x		
environmental risks?	x		

<sup>4</sup> by Mr B.P. Chaminda Sampath, Programme Assistant and Office of the Registrar of Pesticides, Email: pest@slt.lk

Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labeling?		x	
Do you accept evaluation results from other countries?	x		
Do you accept field studies conducted in other countries?	x		
Do you require environmental fate studies?	x		
<i>Incentives/disincentives</i>			
Do you have a special tax on pesticides to cover externality costs?		x	
Do you subsidize or provide low-cost pesticides?		x	
Do you subsidize or provide low-cost biopesticides?			
Other policies:			
Web source for further information: agridept.gov.lk			

Organization of pesticide management function	Responsible organizational unit (ministry/department/unit)
Legislation	MOA/DOA/SCPPC/ROP
Registration	MOA/DOA/SCPPC/ROP
Licensing of shops	MOA/DOA/SCPPC/ROP
Licensing of field professional applicators	MOA/DOA/SCPPC/ROP
Enforcement/inspections	MOA/DOA/SCPPC/ROP
Testing of pesticide efficacy	MOA/DOA/SCPPC/ROP and Research Institutes
Development of pesticide use recommendations	MOA/DOA/SCPPC/ROP
Safe use training/extension	MOA/DOA
Food residue monitoring	MOA/DOA, MOH
Environmental monitoring	MOA/DOA, MOE, CEA
Health monitoring	MOH
<i>Other stakeholders:</i>	
Pesticide Industry Association	Crop Life Sri Lanka
Civil Society Organizations (NGO, etc.)	VIKALPANI Federation; Centre for Environmental Justice

Infrastructure	Years: 2007-2008
Number of registration officers	28 (total)
Number of enforcement officers	380
Number of department quality control laboratories	01
Number of quality control laboratory personnel	02
Number of department residue analysis laboratories	01
Number of residue laboratory personnel	02

### Key situation indicators

Pesticide trade: 2007	Tons	US\$ '000 Value
Imports (Agro-pesticides)	6 265.13	23 151.03
Manufacture (Agro-pesticides)	205.45	1 367.43
Export	480	37.38
Sales (Agro-pesticides)	7 615.85	

Pesticide use profile: 2007	Tons (a.i./formulation to be specified)	US\$ '000 Value
Agriculture		
– Chemical pesticides Insecticides	1 309.39	Not available
Fungicides	723.75	Not available
Herbicides	4 231.94	Not available
– Other (Biopesticides)	Not available	Not available
Veterinary	Not available	Not available
Public Health	Not available	Not available
Household	Not available	Not available
Other	Not available	Not available
TOTAL	6 265.13	Not available

### Post registration monitoring

Testing, quality control and effects in the field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?	x		
Do you have significant problems with pesticide resistance?	x		
Do you have a list of pesticides under close observation for problems			
Source for more information: –			

Health and environmental information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?	x		
Do you have a system to monitor pesticide residues in food?	x		
Do you have a system to monitor pesticide residues in the environment?		x	
Do you have significant problems of environmental contamination from pesticides?			x
Do you have data on pesticides effects on wildlife and ecosystems?		x	
Source for more information: –			

Pesticide disposal	Yes	No	Don't know
Do you have services to collect and safely dispose of used containers and small quantities of left-over pesticides?		x	
Do you have an inventory of outdated and obsolete pesticides in the country?	x		
Do you have illegal trade in pesticides? if yes: what is the estimated amount: _____		x	
Source for more information: –			

### Key operation indicators

Registration/regulation/monitoring	Year: 2008	
	a.i.*	Trade name
Number of registered pesticide products	259	1 093
Number of registered biopesticides (Abamectrin, BT)	02	05
Number of restricted-use pesticides	53	110
Number of banned pesticides	43	185

Number of licensed outlets	1 454
Number of licensed field applicators (Professionals or farmers)	32
Number of licensing violations reported during year	Not available
Number of quality control analyses conducted during year	1 333
Number of food samples analyzed for pesticide residues during year	121
Number of samples exceeding MRL	None
Number of environmental samples analyzed for pesticide residues	07

\* active ingredient

Pesticides restricted in recent years	
Year	Name of active ingredient or hazardous formulation

Pesticides banned in recent years	
Year	Name of active ingredient

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
<ul style="list-style-type: none"> <li>Decision to phase out paraquat, dimethoate, fenthion.</li> <li>Prohibition of use of chlorpyrifos in household environment.</li> <li>Regulations on pest control operators.</li> </ul>
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
<ul style="list-style-type: none"> <li>Technical staff for registration evaluations, and chemical analysis.</li> <li>Financial support for chemical analyses and field enforcements.</li> </ul>

### VI. ADDITIONAL ISSUES OF INTEREST

Genetically Modified Crops	
Name of GMO Crop	Area under cultivation [ha]

## 2.19 THAILAND

### I. GENERAL INFORMATION

Last updated: December 2010

#### Overall executive summary

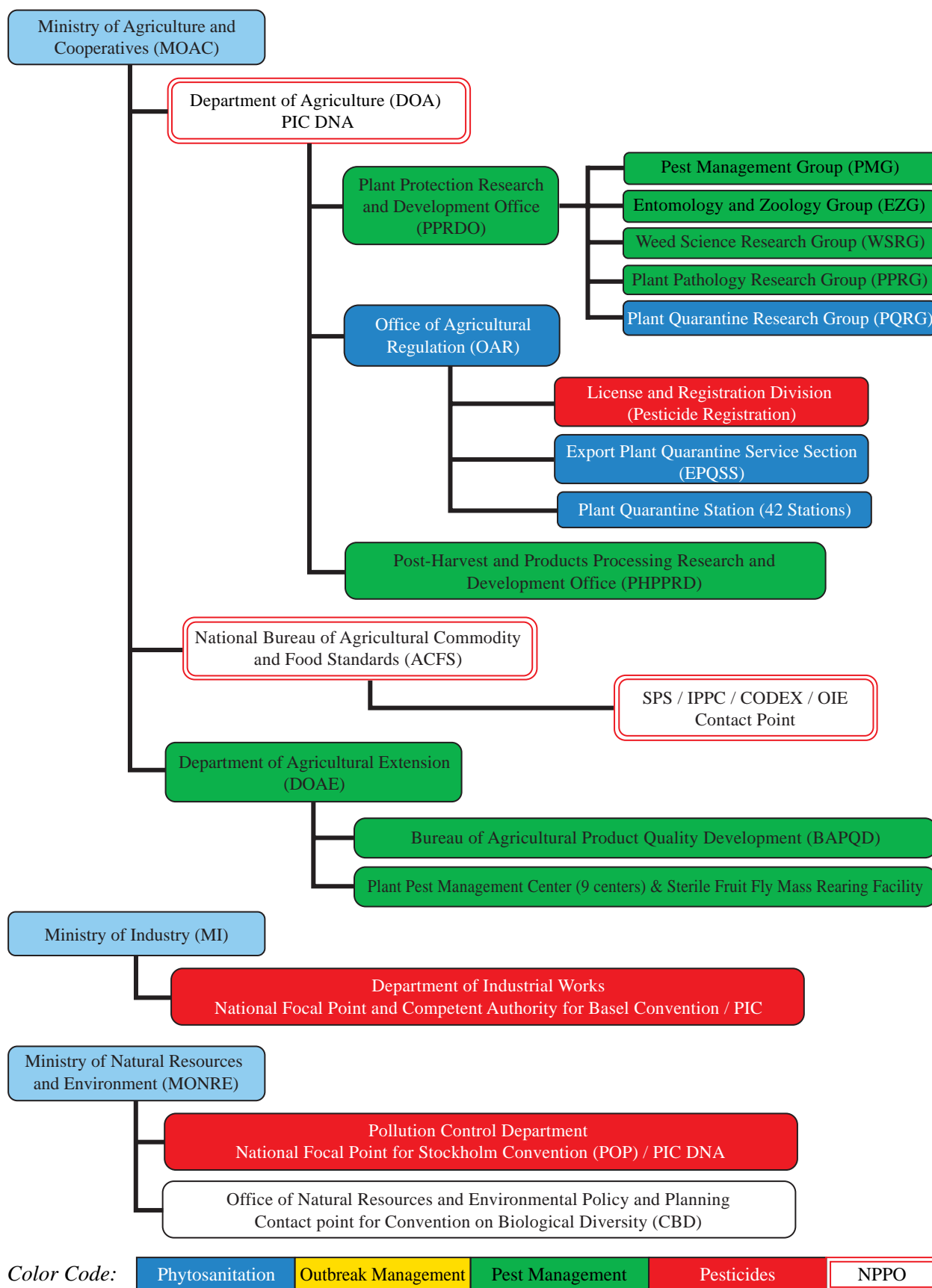
Thailand's phytosanitary measures have been implemented in compliance with the Plant Quarantine Act B.E. 2507 (1952) amended by the Plant Quarantine Act (No. 2) B.E. 2542 (1999) and the Plant Quarantine Act (No. 3) B.E. 2551 (2008). The Department of Agriculture (DOA) is the agency in charge of the implementation 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 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.

During the period 2009-2010, there were outbreaks of pests including *Phenococcus manihoti* (Pink cassava mealybug), *Opisina orenosella* (Black headed caterpillar), and *Salvinia molesta* (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 *Bacillus thuringiensis* (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, *Sternochetus mangiferae*. The purpose is to confirm that Thailand is free from this weevil and to expand the export market for Thai mango.

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.

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.

**Plant protection organization chart**



---

---

### Important contact addresses

**Responsible ministry**

Ministry of Agriculture and Cooperatives (MOAC)

*Permanent Secretary*

Ministry of Agriculture and Cooperatives  
Rajadamnern Nok Rd., Bangkok 10200  
Tel: 662-281-5955 # 206, 662 281 0858 # 259  
Fax: 662-281-3513  
Website: [www.moac.go.th](http://www.moac.go.th)

**Responsible department**

Department of Agriculture (DOA)

*Director General*

Department of Agriculture  
50 Phaholyothin Rd., Chatuchak, Bangkok 10900  
Tel: 662-579-9636  
Fax: 662-940-5528  
Website: [www.doa.go.th](http://www.doa.go.th)

**Address for nominations**

–

**National Plant Protection Organization (NPPO) of Thailand**

Department of Agriculture (DOA)

*Director General*

Department of Agriculture  
Ministry of Agriculture and Cooperatives  
50 Phaholyothin Rd., Chatuchak, Bangkok 10900  
Tel: 662-579-9636  
Fax: 662-940-5528  
Website: [www.doa.go.th](http://www.doa.go.th)

***Operational Offices of Plant Protection in DOA:*****Plant quarantine**

Director, Office of Agricultural Regulation (OAR)  
Department of Agriculture  
Ministry of Agriculture and Cooperatives  
50 Phaholyothin Rd., Chatuchak, Bangkok 10900  
Tel: 662-579-8576  
Fax: 662-579-5084  
Website: [www.doa.go.th](http://www.doa.go.th)



**Technical Support Group of plant quarantine**

Plant Quarantine Research Group (PQRG)

Plant Protection Research and Development Office (PPRDO)

Department of Agriculture

50 Phaholyothin Rd., Chatuchak, Bangkok 10900

Tel: 662-579-8516

Fax: 662-561-0744

Website: [www.doa.go.th](http://www.doa.go.th)

**Contact point (for IPPC/APPPC)**

Director, Office of Commodity and System Standards

National Bureau of Agricultural Commodity and Food Standards (ACFS)

Ministry of Agriculture and Cooperatives

50 Phaholyothin Rd., Chatuchak, Bangkok 10900

Tel: 662-561-2277

Fax: 662-561-3373, 662-561-3357

Email: [ippc@acfs.go.th](mailto:ippc@acfs.go.th)

Website: [www.acfs.go.th](http://www.acfs.go.th)

**Surveillance, pest outbreaks and invasive species management**

1. Director, Plant Protection Research and Development Office (PPRDO)  
Department of Agriculture  
Ministry of Agriculture and Cooperatives  
50 Phaholyothin Rd., Chatuchak, Bangkok 10900  
Tel: 662-579-8540  
Fax: 662-579-8540  
Website: [www.doa.go.th](http://www.doa.go.th)
2. Director, Post-Harvest and Products Processing Research and Development Office (PHPPRD)  
Department of Agriculture  
Ministry of Agriculture and Cooperatives  
50 Phaholyothin Rd., Chatuchak, Bangkok 10900  
Tel: 662-940-6362  
Fax: 662-940-6364  
Website: [www.doa.go.th](http://www.doa.go.th)
3. Director, Bureau of Agricultural Product Quality Development (BAPQD)  
Department of Agricultural Extension  
2143/1 Phaholyothin Rd., Chatuchak, Bangkok 10900  
Tel: 662-940-6190  
Fax: 662-940-6190  
Website: [www.doae.go.th](http://www.doae.go.th)

**Pest management**

1. Director, Plant Protection Research and Development Office (PPRDO)  
Department of Agriculture  
Ministry of Agriculture and Cooperatives  
50 Phaholyothin Rd., Chatuchak, Bangkok 10900  
Tel: 662-579-5583 # 249  
Fax: 662-940-5396  
Website: [www.doa.go.th](http://www.doa.go.th)
2. Director, Post-Harvest and Products Processing Research and Development Office (PHPPRD)  
Department of Agriculture  
Ministry of Agriculture and Cooperatives  
50 Phaholyothin Rd., Chatuchak, Bangkok 10900  
Tel: 662-940-6362  
Fax: 662-940-6364  
Website: [www.doa.go.th](http://www.doa.go.th)
3. Director, Bureau of Agricultural Product Quality Development (BAPQD)  
Department of Agricultural Extension  
2143/1 Phaholyothin Rd., Chatuchak, Bangkok 10900  
Tel: 662-940-6190  
Fax: 662 940-6190  
Website: [www.doe.go.th](http://www.doe.go.th)

**Pesticide management**

License and Registration Division  
Director, Office of Agricultural Regulation (OAR)  
Department of Agriculture  
Ministry of Agriculture and Cooperatives  
50 Phaholyothin Rd., Chatuchak, Bangkok 10900  
Tel: 662-579-8576  
Fax: 662-579-5084  
Website: [www.doa.go.th](http://www.doa.go.th)

**Official international contact points****WTO SPS contact point**

National Bureau of Agricultural Commodity and Food Standards (ACFS)  
Ministry of Agriculture and Cooperatives  
50 Phaholyothin Rd., Chatuchak, Bangkok 10900  
Tel: 662-561-4034  
Fax: 662-561-4204  
Email: [sps@acfs.go.th](mailto:sps@acfs.go.th)  
Website: [www.acfs.go.th](http://www.acfs.go.th)

**Rotterdam Convention (PIC) DNA Pesticides (P)**

Director, Office of Agricultural Regulation (OAR)  
Department of Agriculture  
Ministry of Agriculture and Cooperatives  
50 Phaholyothin Rd., Chatuchak, Bangkok 10900  
Tel: 662-579-8576  
Fax: 662-579-5084  
Website: [www.doa.go.th](http://www.doa.go.th)

**Stockholm Convention (POP) national focal point (P)**

Pollution Control Department  
Ministry of Natural Resources and Environment  
92 Soi Phaholyothin 7 Sam Sen Nai, Phayathai, Bangkok 10400  
Tel: 662-298-2457 / 298 2766  
Fax: 662-298-2425  
Website: [www.pcd.go.th](http://www.pcd.go.th)

**Basel Convention Competent Authority (CA) and Focal Point (FP)**

1. Department of Industrial Works  
Ministry of Industry  
75/6 Rama VI Road, Ratchatewi  
Bangkok 10400  
Tel: 662-202-4228 or 662-245-7874  
Fax: 662-202-4015  
Website: [www.diw.go.th](http://www.diw.go.th)
2. Pollution Control Department  
Ministry of Natural Resources and Environment  
92 Soi Phaholyothin 7, Phaholyothin Rd.  
Phayathai District  
Bangkok 10400  
Tel: 662-298-2238, 2427 or 2447  
Fax: 662-298-2425  
Website: [www.pcd.go.th](http://www.pcd.go.th)

**Montreal Protocol focal point**

1. Director, Office of Agricultural Regulation (OAR)  
Department of Agriculture  
Ministry of Agriculture and Cooperatives  
50 Phaholyothin Rd., Chatuchak, Bangkok 10900  
Tel: 662-579-8576  
Fax: 662-579-5084  
Website: [www.doa.go.th](http://www.doa.go.th)

2. Department of Industrial Works  
 Ministry of Industry  
 75/6 Rama VI Road, Ratchatewi  
 Bangkok 10400  
 Tel: 662-202-4228 or 245-7874  
 Fax: 662-202-4015  
 Email: basel@narai.diw.go.th

### Selected country statistics

Last updated: December 2010

Agricultural Population:	29.7 million	Agricultural Land:	20.85 million ha
GDP: US\$ 121 703 million	Agric. GDP: 11.40%	GNI per capita: \$ 3 400	Undernourishment: 20%
Main crops grown: Rice, para rubber tree, orchids, corn			

GDP = Gross Domestic Product; GNI = Gross National Income; Hunger = Population below minimum energy requirement

## II. PLANT QUARANTINE

Last updated: December 2010

### List of key legislation/regulations/rules

- 1. Plant Quarantine Act B.E. 2507 (1964) amended by the Plant Quarantine Act (No. 2) B.E. 2542 (1999) and the Plant Quarantine Act (NO. 3) B.E. 2551(2008).**
- 2. Notifications of Ministry of Agriculture and Cooperatives on the following:**
  - 2.1 Specification of plants and carriers from certain sources as prohibited articles, of exceptions and conditions under the Plant Quarantine Act B.E. 2507 (1964) (No. 5) B.E. 2550 (2007)
    - a. Specification of plants from certain sources as restricted articles, of exceptions and conditions under the Plant Quarantine Act B.E. 2507 (1964) B.E. 2550 (2007)
    - b. Specification of plant pests as prohibited articles under the Plant Quarantine Act B.E. 2507 (1964) (No. 6) B.E. 2550 (2007)
    - c. Specification of plant pests as prohibited articles under the Plant Quarantine Act B.E. 2507 (1964) (No. 7) B.E. 2550 (2007)
    - d. Specification of plant from certain sources as prohibited articles, of exceptions and conditions under the Plant Quarantine Act B.E. 2507 (1964) (No. 8) B.E. 2550 (2007)
    - e. Specification of plant of plants as controlled plants B.E. 2552 (2009)
    - f. Specification of plant of plants as controlled plants (No. 2) B.E. 2552 (2009)
    - g. Specification of plant from certain sources as prohibited articles, of exceptions and conditions under the Plant Quarantine Act B.E. 2507 (1964) (No. 10) B.E. 2553 (2010)
- 3. Notifications of Department of Agriculture on the following:**
  - 3.1 Specifications, methods and conditions of pest risk analysis for the importation of prohibited articles
  - 3.2 Request for issuance of phytosanitary certificate for export fresh fruit and vegetable to European Union B.E. 2550 (2007)
  - 3.3 Criteria, procedures and conditions for the request for and issuance of phytosanitary certificate for export fresh fruits and vegetables to European Union B.E. 2550 (2007)
  - 3.4 Criteria, procedures and conditions for the request for and issuance of phytosanitary certificate for export fresh fruits and vegetables to Norway B.E. 2551 (2008)
  - 3.5 Specifications, methods and conditions for the importation of bat feces B.E. 2551 (2008)
  - 3.6 Criteria, procedures and conditions for the importation or bringing in transit of prohibited, restricted and unprohibited articles B.E. 2551 (2008)
  - 3.7 Criteria procedure and condition for the request for and issuance of phytosanitary certificate and phytosanitary certificate for re-export B.E. 2551 (2008)
  - 3.8 Criteria, procedures and conditions for the importation of prohibited articles after the completion of pest risk analysis B.E. 2551 (2008)

- 3.9 Criteria procedure and conditions for the request for and issuance of phytosanitary certificate (2009)
- 3.10 Specification of plant pest control area (2009)
- 3.11 Certified weed free in export motor vehicles to Australia B.E. 2552 (2009)
- 3.12 Criteria, procedures and conditions for registration as place of production of controlled plants for export to European Union B.E. 2552 (2009)
- 3.13 Criteria, procedures and conditions for registration as controlled plants exporter B.E. 2552 (2009)
- 3.14 Criteria, procedures and conditions for the request for and issuance of phytosanitary certificate for export controlled plants export to European Union B.E. 2552 (2009)
- 3.15 Criteria, procedures and conditions for request for and issuance of phytosanitary certificate for export fresh fruits through third country to Republic of China B.E. 2552 (2009)
- 3.16 Criteria, procedures and conditions for the importation of prohibited articles after the completion of pest risk analysis B.E. 2552 (2009)
- 3.17 Criteria, procedures and conditions for the importation of prohibited articles after the completion of pest risk analysis (No. 2) B.E. 2552 (2009)
- 3.18 Criteria, procedures and conditions for the importation of prohibited articles after the completion of pest risk analysis (No. 3) B.E. 2552 (2009)
- 3.19 Criteria, procedures and conditions for the importation of prohibited articles after the completion of pest risk analysis (No. 4) B.E. 2552 (2009)
- 3.20 Criteria, procedures and conditions for the importation of prohibited articles after the completion of pest risk analysis (No. 5) B.E. 2552 (2009)
- 3.21 Criteria, procedures and conditions for the importation of prohibited articles after the completion of pest risk analysis (No. 6) B.E. 2552 (2009)
- 3.22 Criteria, procedures and conditions for the importation of prohibited articles after the completion of pest risk analysis (No. 7) B.E. 2553 (2010)
- 3.23 Criteria, procedures and conditions for the request for and issuance of phytosanitary certificate and phytosanitary certificate for re-export (No. 2) B.E. 2553 (2010)
- 3.24 Criteria, procedures and conditions for registration the fresh fruits and vegetables exporter B.E. 2553 (2010).

**Web source for further information:** [www.doa.go.th](http://www.doa.go.th)

Policies regarding plant quarantine	Yes	No	Don't know
Does phytosanitary legislation cover domestic quarantine?	x		
Does phytosanitary legislation cover import quarantine?	x		
Does phytosanitary legislation cover export quarantine?	x		
Does phytosanitary legislation cover living modified organisms?	x		
Is plant quarantine a separate organization from animal quarantine?	x		
Other policy initiatives (under review/progress)			
Web source for further information: <a href="http://www.doa.go.th">www.doa.go.th</a>			

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest risk assessment	MOAC/DOA/PPRDO/PQRG
National standards development	MOAC/DOA/OAR, PPRDO, MOAC/ACFS
International notifications	MOAC/DOA/OAR, PPRDO/PQRG, MOAC/ACFS
<i>Import:</i>	
Import permits	MOAC/DOA/OAR
Import inspections	MOAC/DOA/OAR/PQ Stations MOAC/DOA/PPRDO/PQRG
Emergency action	MOAC/DOA/OAR/PPRDO/PQ Stations
<i>Export:</i>	
Phytosanitary certificates	MOAC/DOA/OAR/Export PQ Service, PQ Stations MOAC/DOA/PPRDO/PQRG
Treatment of commodities	MOAC/DOA/OAR/Export PQ Service, PQ Stations MOAC/DOA/PPRDO/PQRG

Infrastructure	Year: 2009	Year: 2010
Number of plant quarantine officers authorized to inspect/certify	88	84
Total qualified personnel for plant pest risk assessment	7	7
Number of quarantine offices		
entry points (sea/air/land/mail = total)	42	42
post-entry plant quarantine containment facilities	5	5
other offices	–	–
Number of quarantine service diagnosis laboratories	9	9
In-country recognized pest diagnostics capabilities (incl. universities, etc.)		
Number of laboratories for insect/mite (arthropod) samples	7	7
Number of laboratories for bacteria samples	6	6
Number of laboratories for virus samples	6	6
Number of laboratories for fungus samples	7	7
Number of laboratories for mycoplasma samples	3	3
Number of laboratories for nematode samples	6	6
Number of laboratories for plant/weed samples	7	7
Number of laboratories for other pests (snail, slug, rodents, etc.)	2	2

Pest-free areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)
Overall management	MOAC/DOA/PPRDO
– surveillance	MOAC/DOA/PPRDO
– management	MOAC/DOA/PPRDO
– certification	MOAC/DOA/PPRDO
List of target pest species and crops ISPM 10	Number of sites in 2009-2010
<i>Xanthomonas axonopodis</i> pv. <i>citri</i> , pummelo	1

**Key situation indicators**

International trade		Year: 2009	Year: 2010
Main import plant commodities	Main countries/areas of origin	Quantity (tons)	Quantity (tons)
Soybean	Brazil, USA, Belize, Argentina	1 189 972	5 861 880
Soybean meal	Brazil, Argentina, India		1 085 503
Wheat	USA, Australia, Canada	612 850	974 066
Sawn timber	Malaysia, Lao PDR, USA	373 348	
	USA, Australia, Canada		
Main export plant commodities	Main destination countries		Quantity (tons)
Rice	Nigeria, South Africa, Iraq	8 025 097	8 193 403
Cassava and its products	China, Indonesia, Rep of Korea	5 934 001	6 315 022
Para-rubber and its products	China, India, Rep of Korea	1 448 676	1 396 899

**Cooperation projects**

Title (Purpose/target)	Donor	Amount	Years (start-end)
Cooperation for the Improvement of Phytosanitary Capacity in Asian Countries through capacity building (GCP/RAS/226/JPN) “The FAO Regional Training Workshop on Pest Risk Analysis”	FAO		2008-2009
Plant Biosecurity: Technological research and training for improved pest diagnostics in Thailand and Australia	Australia		2008-2010
Title of government follow-up programmes		Amount	Years (start-end)
–			

**Key operation indicators**

Institutional functions	Year: 2009	Year: 2010
Number of import permits issued	1 637	2 940
Number of import inspections carried out	52 347	73 067
Number of emergency phytosanitary treatments taken on imports	22	15
Number notifications of non-compliance	87	46
Number of conventional phytosanitary certificates issued	280 886	299 320
Number of electronic phytosanitary certificates issued	–	–

Number of quarantine pests intercepted		Year: 2009	Year: 2010
Top three commodity	Top three pest/commodity	# of interceptions	# of interceptions
Soybean	Weed seed: <i>Ambrosia artemisiifolia</i>	7	1
Coriander seed	Weed seed: <i>Avena fatua</i>	1	–
Fresh citrus fruit	Insect: <i>Pantomorus cervinus</i>	16	12
Seed potato	Powdery scab: <i>Spongospora subterranean</i>	4	–



List of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of quarantine pests	2009	128	193	39
Number of regulated non-quarantine pests	–	–	–	–
Number of regulated import articles	2009			
Prohibited articles:				
1. Fresh fruits of plants in 23 species, 25 genus and 2 families				
2. Any part of plants in 8 species, 11 genus and 1 families				
3. Soil, organic fertilizer, agricultural micro-organisms, animal pests of plant, earthworms, insects, mites, nematodes, snails, slugs, weeds, parasites and predators.				
Restricted articles:				
1. Dry tea leave, fresh coffee beans, cotton lint, white rice, broken rice, parboil rice				
2. Any part of plants in 20 species, 18 genus and 1 family				
Web source for further information: <a href="http://www.doa.go.th">www.doa.go.th</a>				

Pest risk analysis (PRA)	Insects	Pathogens	Plants
No. of PRA completed and documented (according to ISPM)	1	1	10
PRA in process for tomato seed, onion, apple, shallot, corn seed, grape and garlic			
Web source for further information: <a href="http://www.doa.go.th">www.doa.go.th</a>			

### Progress and Constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
1. Taxonomic training specific pests: <i>Globodera roschiensis</i> (Potato cyst nematode) 3-27 February 2009.
2. Molecular diagnostic training – Virology 12 October – 4 December 2009.
3. Molecular diagnostic training – Bacteria and fruit fly 12 October – 4 December 2009.
4. Workshop on Fungi and Bacteria Associated with seed 21-27 October 2009.
5. IAEA/RCA Regional Training course 2009 on the use of irradiation as a phytosanitary application for economically important fruit 23-27 February 2009.
6. Regional workshop on phytosanitary inspection and phytosanitary certification 27-31 July 2009.
7. Workshop on inspection techniques of pest and diseases 26 February 2009.
8. Pest, Plant Inspection, Regulations and Import Requirements of the Importing Countries 19-20 March 2009.
9. Fumigation Technique for Perishable Commodities Theories and Practices 23-24 May 2009.
10. Phytophagous mites and their control 9-10 April 2009.
11. Importation of Prohibited Articles Imported for Commercial under Plan Quarantine Act B.E. 2507, amended by 2 <sup>nd</sup> revision B.E. 2542, amended by 3 <sup>rd</sup> revision B.E. 2551 20-22 April 2009.
12. Insect and zoological pest and their control 20-24 April 2009.
13. Technical operation under Plant Quarantine Act B.E. 2507, amended by 2 <sup>nd</sup> revision B.E. 2542, amended by 3 <sup>rd</sup> revision B.E. 2551 17-19 June 2009.
14. Workshop on pest risk management of imported and exported vegetables and fruits 24-26 June 2009.
15. Collecting and identification of some sucking insect pests on imported plants and plants intended for export 19-21 October 2009.
16. Workshop on fungi and bacteria associated with seed 21-27 October 2009.
17. Molecular diagnostic training – Virology 27 September – 20 November 2010.
18. Workshop on Remote Microscope as a tool for plant pest diagnosis 22-25 March 2010.
19. Workshop on Molecular Techniques as a tool for plant pest diagnosis 25-30 March 2010.
20. Taxonomic training specific pests: Bacteria 3-27 February 2010.
21. Thermal treatment for the disinfestations of fruit flies 11 May – 4 September 2010.

22. Workshop on phytosanitary risk management strategies and operational options for market access 28-30 November 2010.
23. APEC workshop on enhancing food security through a regional approach and wide stakeholder participation in plant biosecurity 1-3 December 2010.
24. Surveillance of important plant disease on exportation and importation commodities 22-25 June 2010.
25. Plant Inspection, Regulations and Import Requirements of the Importing Countries 17-18 March 2010.
26. Fumigation Technique for Perishable Commodities Theories and Practices 27-28 April 2010.
27. Surveillance of *Radopholus similes* in Aquatic Plant and Ornamental Plant 24 June 2010.

**Main constraints (personnel, infrastructure, administrative, operational, training, etc.)**

Skilled personnel, SPS capacity building, PQ treatment facilities, communication network (international and domestic), diagnosis facilities, and administrative.

Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
ISPM 01 Principles of plant quarantine as related to international trade			x			x		
ISPM 02 Guidelines for pest risk analysis			x				x	
ISPM 03 Code of conduct for the import and release of exotic biological control agents			x				x	
ISPM 04 Requirements for the establishment of pest free areas	x			x				
ISPM 05 Glossary of phytosanitary terms			x				x	
ISPM 06 Guidelines for surveillance			x		x			
ISPM 07 Export certification system			x				x	
ISPM 08 Determination of pest status in an area		x			x			
ISPM 09 Guidelines for pest eradication programmes	x			x				
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites		x			x			
ISPM 11 Pest risk analysis for quarantine pests			x				x	
ISPM 12 Guidelines for phytosanitary certificates			x				x	
ISPM 13 Guidelines for the notification of noncompliance and emergency action			x		x			
ISPM 14 The use of integrated measures in a systems approach for pest risk management	x			x				
ISPM 15 Guidelines for regulating wood packaging material in international trade			x		x			
ISPM 16 Regulated non-quarantine pests: concept and application	x			x				
ISPM 17 Pest reporting		x				x		
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure			x				x	
ISPM 19 Guidelines on lists of regulated pests		x				x		
ISPM 20 Guidelines for a phytosanitary import regulatory system			x			x		
ISPM 21 Pest risk analysis for regulated non-quarantine pests	x			x				
ISPM 22 Requirements for the establishment of areas of low pest prevalence	x			x				
ISPM 23 Guidelines for inspection			x				x	
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures	x			x				
ISPM 25 Consignments in transit		x		x				
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)	x			x				
ISPM 27 Diagnostic protocols for regulated pests		x			x			
ISPM 28 Phytosanitary treatments for regulated pests		x				x		
ISPM 29 Recognition of pest free areas and areas of low pest prevalence	x			x				
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (Tephritidae)		x			x			
ISPM 31 Methodologies for sampling of consignments	x			x				
ISPM 32 Categorization of commodities according to their pest risk	x			x				
ISPM 33 Pest free potato ( <i>Solanum</i> spp.) micropropagative material and minitubers for international trade	x			x				
ISPM 34 Design and operation of post-entry quarantine stations for plants		x			x			
Comments/constraint: Translation of ISPMs into Thai version								

**III. SURVEILLANCE, PEST OUTBREAKS AND INVASIVE SPECIES MANAGEMENT**

Last updated: December 2010

**List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions**

Plant Quarantine Act B.E. 2507 (1964) amended by Plant Quarantine Act (2<sup>nd</sup> edition) B.E. 2542 (1999) and Plant Quarantine Act (3<sup>rd</sup> edition) B.E. 2551 (2008)

**Web source for further information:** [www.doa.go.th](http://www.doa.go.th)

Policies regarding invasive/migratory species management	Yes	No	Don't know
National strategy to control serious field pest outbreaks?	x		
National strategy to control migratory or periodically occurring pests?	x		
National strategy to eradicate serious newly invaded exotic pests?	x		
Other policies: (e.g. subsidies, etc.) Alien invasive species, Ministry of Natural Resources and Environment			
Web source for further information: <a href="http://www.pcd.go.th">www.pcd.go.th</a>			

Organization of functions related to surveillance, pest outbreaks and invasive species management	Responsible organizational unit (ministry/department/unit)
<i>Field/storage pest outbreaks</i>	(e.g. BPH, coconut hispine beetle, etc.)
Response strategy/plans	MOAC/DOA/PPRDO, PHPPRD MOAC/DOAE/BAPQD
Surveillance	MOAC/DOA/PPRDO MOAC/DOAE/BAPQD
Control	MOAC/DOA/PPRDO, PHPPRD MOAC/DOAE/BAPQD
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plans	MOAC/DOA/PPRDO
Surveillance	MOAC/DOA/PPRDO MOAC/DOAE/BAPQD
Control	MOAC/DOA/PPRDO MOAC/DOAE/BAPQD
<i>New exotic pest eradication</i>	(e.g. black headed caterpillar, pink cassava mealybug, giantsalvinia)
Response strategy/plans	MOAC/DOA/PPRDO, OAR
Surveillance	MOAC/DOA/PPRDO MOAC/DOAE/BAPQD
Control/eradication	MOAC/DOA/PPRDO MOAC/DOAE/BAPQD
Reporting to bilateral or international organizations	MOAC/DOA MOAC/ACFS

Infrastructure	Year: 2010
Number of designated staff for <b>surveillance</b> of field pests of national importance	Staffs from DOA/PPRDO – Entomology and Zoology Group, – Weed Science Research Group, – Plant Pathology Group Total = 117 staffs  DOAE/BAPQD trained staff on plant pest surveillance and control over 76 provinces, 9 plant pest management center, 1 fruit fly control group including volunteer growers over 58 516 persons.
Number of designated staff for <b>surveillance</b> of migratory and periodically occurring pests	
Number of designated staff for <b>surveillance</b> of invasive species	
Number of designated staff for <b>control</b> of field pests of national importance	
Number of designated staff for <b>control</b> of migratory and periodically occurring pests	
Number of designated staff for <b>eradication</b> of invasive species	

### Key situation and operation indicators

(Outbreaks and invasions in the past 2 years)

New exotic species found established in the country	Insects	Pathogens	Weeds
Total number for 2010 [most recent]	2	–	1
Total number for 2009 [year before]	1	–	–
Total number on record	3	–	1

Eradication or internal quarantine actions taken against economically important species			
Name of species	<i>Opisina orenosella</i>	<i>Phenococcus manihoti</i>	<i>Salvinia molesta</i>
Year of first discovery	2010	2010	2010
Pathway	Unknown	Unknown	Ornamental plant
Location of first discovery	Southern Region	Central Region	Bangkok
Area affected [ha]	N/A	N/A	0.1
Area treated [ha]	N/A	N/A	0.1
Control method	biological/chemical	–	removal
Expenditures	–	–	–

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species	<i>Phenococcus manihoti</i>	<i>Opisina orenosella</i>	<i>Salvinia molesta</i>
Year of outbreak	2010	2010	2010
Area affected [ha]	414 440	3 520	Some area in Kanchanaburi Province
Estimated damage \$	26% reduction	4 million baht	–
Area treated by government [ha]	96 000	5 440	3
Expenditures by government [\$]	24.25 million baht	15.6 million baht	US\$ 3 000
Control method	Chemical and Biocontrol	Chemical and Biocontrol by Bt.	Manual control/ removal
More information	–	–	Educated people

## Progress and constraints

### Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)

1. *Phenococcus manihoti* (Pink cassava mealybug)
  - a. DOA has organized training on mass rearing and releasing the parasitoid for the extension officials and private sectors who suffer for the mealybug.
  - b. Established 30 parasitoid rearing units under DOA facilities in the infested areas around the country to produce and provide the parasitoids to the farmers.
2. *Opisina orenosella* (Black headed caterpillar)
  - Aerial spray using Bt. (*Bacillus thuringiensis*) in the coconut infested areas by DOA.
3. *Salvinia molesta* (Giant salvinia)
  - Detection and surveillance of *Salvinia molesta* in Thailand (2010)
4. Detection Survey for Mango Seed Weevil, *Sternochetus mangiferae* (Fabricius) (Insecta: *Coleoptera: Curculionidae*) in Thailand (2009)

### Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

Skilled personnel, experience, and identification

1. *Phenococcus manihoti* (Pink cassava mealybug)
  - a. Confirmed identification by taxonomist.
  - b. Introduction of effective natural enemy (parasitoid), *Anagyrus loperi*, from IITA-Benin international institute for Tropical Agriculture.
  - c. Host specificity test was conducted and concluded that it is safe to use the parasitoids for controlling the cassava mealybug.
  - d. Soaking planting materials with an effective systemic insecticide have been carried out to prevent control the infestation of the cassava mealybug.
2. *Salvinia molesta* (Giant salvinia)
  - Training on identification, detection and eradication of *Salvinia molesta* for DOA staff (2010)

#### IV. PEST MANAGEMENT

Last updated: December 2010

#### List of key legislation/regulations/rules for pest management

Pesticide Act:

#### Web source for further information: –

Policies regarding pest management	Yes	No	Don't know
Do you have policies encouraging organic or low-pesticide use production	x		
Is IPM specifically mentioned in laws or <i>policy documents</i> ?	x		
Do you have official Good Agricultural Practice (GAP) or any other relevant food safety (ecofood, etc.) standards for pest management?	x		
Is pest management extension separate from general extension?	x		
Other policies: (subsidies, production inputs, etc.) IPM, control of pesticide use, reduction of pesticide use.			
Web sources for further information: <a href="http://www.doa.go.th">www.doa.go.th</a> , <a href="http://www.doae.go.th">www.doae.go.th</a>			

Organization of pest management function	Responsible organizational unit (ministry/department/unit)
Policy development	MOAC/DOA, MOAC/DOAE/BAPQD MOAC/ACFS
Pest management research	MOAC/DOA/PPRDO
Control recommendations	MOAC/DOA/PPRDO
Pest management extension	MOAC/DOA MOAC/DOAE/BAPQD
IPM training	MOAC/DOA MOAC/DOAE/BAPQD
GAP training	MOAC/DOA MOAC/DOAE/BAPQD

Infrastructure	Year: 2010
Number of central, regional, provincial or state offices	DOAE = 10, 6, 76
Number of district and village level field offices	DOAE = 780 districts
Number of field/extension agents for pest management advice	DOAE = 7 111
Number of field/extension agents trained in IPM-FFS facilitation	DOAE = 7 111
Number of government biocontrol production/distribution facilities	DOAE = 9 plant pest management centres and 1 sterile fruit fly mass rearing facility
Number of government biopesticide production/distribution facilities	DOAE = 9 plant pest management centres
Number of general extension staff involved in pest management	DOAE = 7 111
Number of designated plant protection technical officers for extension	DOAE = 67

**Key situation and operation indicators**

Pest management	Yes	No	Don't know
Does the country have a National IPM Programme? <i>If yes, give Name and Address of IPM Programme:</i> IPM Programme 1: IPM development on economic crops Address: MOAC/DOA/PPRDO IPM Programme 2: Area-wide Integrated Control of fruit flies Address: MOAC/DOAE/BAPQD IPM Programme 3: Establishment of Community Plant Pest Management Centre Address: MOAC/DOAE/BAPQD	x		
Does the country have specific IPM extension programmes? <i>If yes, in which crops?:</i> baby corn, orchid, rice, sugarcane, mango, okra, mangosteen, asparagus, chilli and pomelo	x		
Does the country have specific IPM research programmes? <i>If yes, in which crops?:</i> pomelo, tangerine, longan, ginger.	x		
Does the country have specific GAP extension programmes? <i>If yes, in which crops?:</i> mango, longan, chilli, mangosteen, pomelo, rice, green leaf vegetable, asparagus, orchid, baby corn, pineapple, fruit crops and field crops.	x		
Does the country have specific GAP research programmes? <i>If yes, in which crops?:</i> (Durian, longan, orchid, fresh orchid cut flower, pineapple, pomelo, coffee, non-heading type chinese cabbage, tomato, asparagus, chinese kale, onion, cabbage, chilli, yard long bean, sugar pea, baby corn, chinese cabbage, shallot, cassava, rubber, mango, tangerine, curcuma)	x		

Market shares (estimated value, volume or area under control)	Year: 2010
Size of chemical pest control market	98% [2009]
Size of biopesticides market	1%
Size of biological control agents market	1%

Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop	Para rubber tree	Oil Palm tree	Rice
Name(s) of pest(s)	Annual weed	Annual weed	Annual weed
Estimated crop loss	Unestimatable	Unestimatable	Unestimatable
Affected area	Unestimatable	Unestimatable	Unestimatable
Number of pesticide applications or amount of pesticide used	2-3/yr	2-3/yr	1-2 time/crop
Government action taken	Appropriate application techniques		

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
Purpose/target of government follow-up programmes		Amount	Years (start-end)



<b>Pest management extension</b>	<b>Years: 2009-2010</b>
Number of farmers trained in IPM during the year	31 300
Number of IPM-FFS conducted during the year	1 116
Number of farmers trained in GAP standards during the year	336 230
Area under IPM/low pesticide management [ha]	N/A
Area under organic/pesticide-free management [ha]	22 400 (Over 12 provinces 440 farm owners)
Crops in which IPM or other ecology friendly programmes are successfully implemented: Asparagus, baby corn, orchid cut flowers, okra, coconut	
Crops grown organic/pesticide-free: Rice, banana	

### **Progress and constraints**

<b>Main progress in recent Years (legislation, policies, infrastructure, investments, training, etc.)</b>
<b>Main constraints (personnel, infrastructure, administrative, operational, training, etc.)</b>
<ol style="list-style-type: none"> <li>1. There are a large number of small farmers/growers in Thailand. Therefore, it is very difficult for implementation.</li> <li>2. Some pests are exotic pests. At the first year of outbreak, farmers waited for the appropriate technology. As a result, during the period the farmers mainly used chemical pesticides to control the pests.</li> </ol>

## V. PESTICIDE MANAGEMENT

Last updated: December 2010

### List of key legislation/regulations/rules

- 1. The Hazardous Substances Act B.E. 2535 (1992) amended by the Hazardous Substances Act (No. 3) B.E. 2551 (2008)**
- 2. Ministerial Regulation (B.E. 2537/1994) (3 regulations issued under the Hazardous Substances Act B.E. 2535 (1992))**
- 3. Notification of Ministry of Industry on**
  - 3.1. List of hazardous substances
  - 3.2. Hazardous Substances According to Section 3 “Civil Obligation and Responsibility” B.E. 2538/1995
- 4. Notification of Ministry of Agriculture and Cooperatives on**
  - 4.1. Registration of Hazardous Substances under Responsibility of Department of Agriculture B.E. 2551 (2008)
  - 4.2. Determination of Deviation from the Specified Quantity of Active Ingredient Hazardous Substance
  - 4.3. Label and Toxicity Level of Hazardous Substances
  - 4.4. Criteria and Procedure for Production, Import and Possession of Hazardous Substances under Responsibility of Department of Agriculture
  - 4.5. Appointment of Hazardous Substances Act B.E. 2535 (1992) Officials
  - 4.6. Exemption for Implementation of Hazardous Substances Act B.E. 2535 (1992)
  - 4.7. Managing of Type IV (Banned) Hazardous Substances
  - 4.8. Determination of Storage Site for Possession of Hazardous Substances
  - 4.9. Specification of Hazardous Substances (One Notification for one pesticide, already done on paraquat dichloride and sodium nitrate)
  - 4.10. Regulation of Ministry of Agriculture and Cooperatives on Maintenance of Trade Secret Information of Agricultural Chemical Product B.E. 2547 (2004).
- 5. Notifications of Department of Agriculture on**
  - 5.1. Determination on Details, Criteria and Procedure for Pesticide Registration
  - 5.2. Notification on Action Made concerning Type II Hazardous Substances
  - 5.3. Criteria, procedure and condition on determination of trade name of hazardous substances
  - 5.4. Determination of experimental design and report on efficacy test of hazardous substances
  - 5.5. Efficacy test areas
  - 5.6. Determination of Concentration for each Formulation Allowed for Registration
  - 5.7. Details of Criteria and Procedure for Registration, Issuance and Extension of Hazardous Substances Registration Certificate under the Responsibility of Department of Agriculture (No. 2) B.E. 2553 (2010)
- 6. Rules of Department of Agriculture**
  - 6.1. Application for Possession of Hazardous Substances in Provinces other than Bangkok B.E. 2539 (1996)
  - 6.2. Methods and conditions for notification registration of trade secret information of agricultural chemical product B.E. 2547 (2004).

**Web sources for further information:** [www.doa.go.th](http://www.doa.go.th), [www.diw.go.th](http://www.diw.go.th)

Policies regarding pesticide management	Yes	No
Do you have national pesticide reduction targets? <i>If yes, what is the target: _____ 25% in 2009</i>	x	
Have you ratified the Rotterdam (PIC) Convention?	x	
Have you ratified the Stockholm (POP) Convention?	x	
Have your ratified the Basel Convention? (hazardous wastes)	x	
Have your ratified the Montreal Protocol? (MeBr phasing-out)	x	
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?	x	
Have you adopted Good Laboratory Practices (GLP)?	x	
<i>Pesticide registration</i>		
Do you require pesticides to conform to relevant FAO or WHO specifications?	x	
Do you allow the “me-too” registration and sale of generic pesticides?	x	
Do you require data on product equivalence for generic registration?	x	
Do you conduct country-specific risk assessments for...		
occupational risks?	x	
consumer risks?	x	
environmental risks?	x	
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labelling?	x	
Do you accept evaluation results from other countries?	x	
Do you accept field studies conducted in other countries?	x	
Do you require environmental fate studies?	x	
<i>Incentives/disincentives</i>		
Do you have a special tax on pesticides to cover externality costs?		x
Do you subsidize or provide low-cost pesticides?		x
Do you subsidize or provide low-cost biopesticides?	x	
Other policies:		
Web source for further information: <a href="http://www.doa.go.th">www.doa.go.th</a> , <a href="http://www.diw.go.th">www.diw.go.th</a>		

Organization of pesticide management function	Responsible organizational unit (ministry/department/unit)
Legislation	MOAC/DOA/OAR MOI
Registration	MOAC/DOA/OAR
Licensing of shops	MOAC/DOA/OAR
Licensing of field applicators**	MOAC/DOA/OAR
Enforcement/inspections	MOAC/DOA/OAR
Testing of pesticide efficacy	MOAC/DOA/PPRDO, PHPPRD
Development of pesticide use recommendations	MOAC/DOA/PPRDO, PHPPRD
Safe use training/extension	MOAC/DOA MOAC/DOAE TABA TCPA
Food residue monitoring	MOAC/DOA MOPH/FDA
Environmental monitoring	MOAC/DOA MONRE/DOPC
Health monitoring	MOPH

<i>Other stakeholders:</i>	
Pesticide Industry Association	Thai Agri-Business Assoc (TABAA); Thai Crop Protection Assoc (TCPA)
Civil Society Organizations (NGO, etc.)	

Infrastructure	Year: 2010
Number of registration officers	10
Number of enforcement officers	234
Number of department quality control laboratories	9
Number of quality control laboratory personnel	10
Number of department residue analysis laboratories	13
Number of residue laboratory personnel	18

### Key situation indicators

Pesticide trade: 2010	Tons	US\$ '000 Value
Imports	69 849	596 733
Manufacture	N/A	N/A
Export	3 828	N/A
Domestic Use/Sales	N/A	N/A
Pesticide use profile: 2010	Tons (a.i./formulation to be specified)	US\$ Value
Agriculture		
Chem. Insecticides	23 417 (19.9%)	155.66 million (23.86%)
Chem. Fungicides	9 643 (8.19%)	128.4 million (13.23%)
Chem. Herbicides	80 267 (68.22%)	294.37 million (59.89%)
Chem. Others: e.g. molluscicide, acaricide	2 040 (1.73%)	18.18 million (1.92%)
Other: e.g. Avamectrin, Bt, Neem	–	–
Other purposes e.g. PGR	2 293 (1.95%)	6.4 million (1.10%)
<b>TOTAL</b>	<b>117 660</b>	<b>603.01 million</b>

### Post registration monitoring

Testing, quality control and effects in the field	Yes	No	Don't know
Do you have significant problems with low-quality pesticides in the market?	x		
Do you have significant problems with pesticide resistance?	x		
Do you have a list of pesticides under close observation for problems	x		
Source for more information: –			

Health and environmental information	Yes	No	Don't know
Do you maintain data on pesticide poisoning cases?	x		
Do you have a system to monitor pesticide residues in food?	x		
Do you have a system to monitor pesticide residues in the environment?	x		
Do you have significant problems of environmental contamination from pesticides?		x	
Do you have data on pesticides effects on wildlife and ecosystems?		x	
Web sources for more information: <a href="http://www.doa.go.th">www.doa.go.th</a> , <a href="http://www.pcd.go.th">www.pcd.go.th</a>			

Pesticide disposal	Yes	No	Don't know
Do you have system to collect and safely dispose of used containers and small quantities of left-over pesticides?	x		
Do you have an inventory of outdated and obsolete pesticides in the country? (e.g. banned and no longer traded, but still in storage)	x		
Do you have illegal trade in pesticides? if yes: what is the estimated amount: _____	x		
Source for more information: –			

### Key operation indicators

Registration/regulation/monitoring	Year: 2010	
	a.i.*	Trade name
Number of registered pesticide products	416	22 920
Number of registered biopesticides (Avamectrin, Bt, Neem, etc.)	14	N/A
Number of restricted-use pesticides/formulations	11	N/A
Number of banned pesticides	96	
Number of licensed outlets	11 009	
Number of licensed field applicators (professional and/or farmers)	1 290	
Number of licensing violations reported during year	165	
Number of quality control analyses conducted during year	3 677	
Number of food samples analyzed for pesticide residues during year	10 123	
Number of samples exceeding MRL	–	
Number of environmental samples analyzed for pesticide residues	21	

\* active ingredient

Pesticides restricted in recent years (2009-2010)	
Year	Name of active ingredient or hazardous formulation
2009-2010	Endosulfan CS formulation

Pesticides banned in recent years (2009-2010)	
Year	Name of active ingredient
2009	(See the list of banned/prohibited pesticides below.)

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
National Methyl Bromide Phase-out Plan	Multilateral Fund		
Purpose/target of government follow-up programmes		Amount	Years (start-end)

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
List of banned/prohibited pesticides (See the list of banned/prohibited pesticides below.)
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)

## VI. ADDITIONAL ISSUES OF INTEREST

Genetically Modified Crops	
Name of GMO Crop	Area under cultivation [ha]

**List of banned/prohibited pesticides**

- |  |  |
|--|--|
| 1. aldrin  | 41. EDB (1, 2-dibromoethane)                                 |
| 2. aminocarb   | 42. endrin   |
| 3. 4-aminodiphenyl   | 43. ethyl hexyleneglycol (ethylhexane diol)                  |
| 4. amitrole  | 44. ethylene dichloride                                      |
| 5. aramite   | 45. ethylene oxide (1, 2-epoxyethane)                        |
| 6. asbestos – amosite  | 46. fensulfothion  |
| 7. azinphos – ethyl  | 47. fentin   |
| 8. azinphos – methyl   | 48. fluoroacetamide  |
| 9. benzidine   | 49. fluoroacetate sodium                                     |
| 10. beta – HCH (1, 3, 5/2, 4, 6 – hexachloro-cyclohexane)    | 50. fonofos  |
| 11. BHC or HCH (1, 2, 3, 4, 5, 6 – hexachloro-cyclohexane)   | 51. heptachlor   |
| 12. binapacryl   | 52. hexachlorobenzene  |
| 13. bis (chloromethyl) ether                                 | 53. lead arsenate  |
| 14. bromophos  | 54. leptophos  |
| 15. bromophos-ethyl  | 55. lindane (>99% gamma-HCH or gamma-BHC)                    |
| 16. cadmium and cadmium compounds                            | 56. MCPB [4-(4-chhloro-o-tolyloxy) butyric acid]             |
| 17. calcium arsenate   | 57. mecoprop   |
| 18. captafol   | 58. mephosfolan  |
| 19. carbon tetrachloride                                     | 59. mercury compounds  |
| 20. chlordane  | 60. mevinphos  |
| 21. chlordecone  | 61. MGK repellent-11   |
| 22. chlordimeform  | 62. mirex  |
| 23. chlorobenzilate  | 63. monocrotophos  |
| 24. chlorophenols  | 64. naphthylamine  |
| 25. chlorthiophos  | 65. 4-nitrodiphenyl  |
| 26. copper arsenate hydroxide                                | 66. nitrofen   |
| 27. cycloheximide  | 67. parathion  |
| 28. cyhexatin  | 68. Paris green  |
| 29. daminozide   | 69. pentachlorophenate sodium or pentachlorophenoxide sodium |
| 30. DBCP (1, 2-dibromo-3-chloropropane)                      | 70. pentachlorophenol  |
| 31. DDT (1, 1, 1-trichloro-2, 2-bis (4-chlorophenyl ethane)) | 71. phenothiol   |
| 32. demephion  | 72. phorate  |
| 33. demeton  | 73. phosphamidon   |
| 34. o-dichlorobenzene  | 74. phosphorus   |
| 35. dieldrin   | 75. polybrominated biphenyls, PBBs                           |
| 36. dimefox  | 76. polychlorinated triphenyls, PCTs                         |
| 37. dinoseb  | 77. prothoate  |
| 38. dinoterb   | 78. pyrinuron (piriminil)                                    |
| 39. disulfoton   | 79. safrole  |
| 40. DNOC (4, 6-dinitro-o-cresol)                             |  |

- 
- |     |  |     |  |
|-----|--|-----|--|
| 80. | schradan   | 89. | 2, 4, 5-TP ((+)-2-[2, 4, 5-trichlorophenoxy] propionic acid) |
| 81. | sodium arsenite  | 90. | thallium sulfate   |
| 82. | sodium chlorate  | 91. | toxaphene orcamphechlor)                                     |
| 83. | Strobane (polychloroterpenes)                                | 92. | tri (2, 3-dibromopropyl) phosphate)                          |
| 84. | sulfotep   | 93. | vinyl chloridemonomer (monochloroethene)                     |
| 85. | 2, 4, 5-T ([2, 4, 5-trichlorophenoxy] acetic acid)           | 94. | methamidophos  |
| 86. | 2, 4, 5-TCP (2, 4, 5-trichlorophenol)                        | 95. | parathion methyl   |
| 87. | TDE or DDD [1, 1-dichloro-2, 2-bis (4-chlorophenyl) ethanel) | 96. | endosulfan (except CS formulation)                           |
| 88. | TEPP (tetraethyl pyrophosphate)                              |     |  |

## 2.20 VIET NAM

### I. GENERAL INFORMATION

Last updated: May 2011

#### Overall executive summary

##### Outstanding issues

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.

Great efforts have been made in controlling pest outbreaks on rice, particularly the Southern Black Streaked Dwarf Virus Disease (SBSDVD) in the North 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 tons respectively, and the national food security was maintained.

For capacity building purpose, a lot of programmes 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 programmes 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 neighbouring 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 Programme 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 programme 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 programmes, some others were also implemented, including SRI, 3 Reductions – 3 Gains, 1 Must-5 Reductions, 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 labour 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 programmes helped farmers reduce seed, fertilizers and pesticides and, therefore, increase the profit.

## Plant quarantine

### *Pest record/identification*

During 2009-2010, 248 cases of quarantine pest interception were reported, including:

- In 2009: 59 cases, particularly:
  - Bacterial wilt of maize (*Pantoea stewartii* (Smith) Mergaert et al.) intercepted on maize imported into Viet Nam from Thailand.
  - Potato tuber moth (*Phthorimaea operculella* (Zeller 1873) intercepted on potato imported from China.
  - Khapra beetle (*Trogoderma granarium* Everts) intercepted on coconut oil-cake of Indonesia, wheat bran of Srilanca.
- In 2010: 189 cases. Especially, since August 2010 *Khapra beetle* (*Trogoderma granarium*) intercepted on corn, soya bean means, bailey and millet imported from India into Viet Nam.
- In 2011: until February 2011, *Khapra beetle* (*Trogoderma granarium*) intercepted on 104 consignments imported from India into Viet Nam.

### *New regulations/decisions*

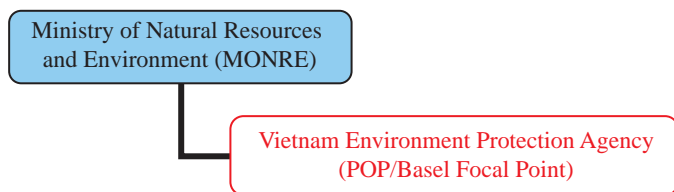
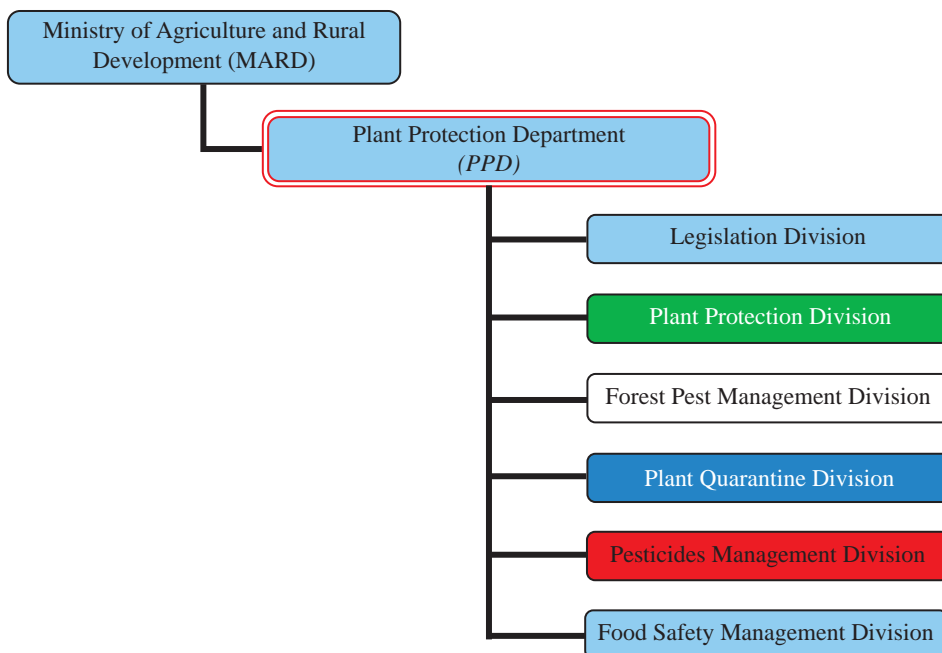
- Decree No. 02/2007/ND-CP of the government on plant quarantine dated 5<sup>th</sup> January 2007.
- Decision No. 34/2007/QD-BNN of 23<sup>rd</sup> April 2007 publishing the list of regulated articles subject to pest risk analysis before importing into Viet Nam.
- Decision No. 48/2007/QD-BNN of 29<sup>th</sup> May 2007, Regulation Procedure for issuance of the phytosanitary import permit for articles subject to pest risk analysis before importing into Viet Nam.

- Decision No. 89/QD-BNN of 29 October of Minister of Agriculture and Rural Development promulgating regulations on state management on fumigation practice for regulated articles.
- New Law on Plant Protection is being drafted and will be submitted to the National Assembly in 2013.

*Projects/programme cooperation*

- Improvement of Plant Quarantine treatment against Fruit Fly on fresh fruits (JICA), finished in 2008
- Dragon fruit has been approved and entered into US market since October 2008
- Two irradiation treatment facilities established in ABC Company and Son Son Company
- One vapor heat treatment facility established by Yashaka Company
- Viet Nam Methyl bromide phase out plan: ongoing with WB funding
- NZAID phytosanitary capacity building in the Mekong region: going to terminate (NPD development is ongoing).

**Plant protection organization chart**



---

**Important contact addresses****Responsible Ministry**

Ministry of Agriculture and Rural Development

*Mr Luong The Phiet, Director General*

International Cooperation Department

2 Ngoc Ha Street, Ba Dinh

Hanoi, Viet Nam

Tel: (+84) 4 38437 520

Fax: (+84) 4 37330 752

Emails: [icd.mard@fpt.vn](mailto:icd.mard@fpt.vn)[phietlt.htqt@mard.gov.vn](mailto:phietlt.htqt@mard.gov.vn)Website: <http://icd.mard.gov.vn/>**National Plant Protection Organization (NPPO)**

Plant Protection Department, Ministry of Agriculture and Rural Development

*Mr Nguyen Xuan Hong, Director General*

149 Ho Duc Di Street, Dong Da

Hanoi, Viet Nam

Tel: (+84) 4 35335054

Fax: (+84) 4 35330043

Email: [nxhong4456@yahoo.com](mailto:nxhong4456@yahoo.com)Website: [www.ppd@gov.vn](http://www.ppd@gov.vn)**Address for nominations**

Plant Protection Department

*Mr Ngo Tien Dung, Deputy Director General*

149 Ho Duc Di Street, Dong Da

Hanoi, Viet Nam

Tel: (+84) 4 35335018

Fax: (+84) 4 35330043

Email: [ipmppd@fpt.vn](mailto:ipmppd@fpt.vn)Website: [www.ppd@gov.vn](http://www.ppd@gov.vn)**Operational offices:****Plant protection**

Plant Protection Department (PPD)

*Mr Ho Dang Cu, Head of Plant Protection Division*

149 Ho Duc Di Street, Dong Da

Hanoi, Viet Nam

Tel: (+84) 4 38513913

Fax: (+84) 4 35330043

Email: [bvtv@fpt.vn](mailto:bvtv@fpt.vn)Website: [www.ppd@gov.vn](http://www.ppd@gov.vn)

**Plant quarantine**

Plant Protection Department (PPD)

*Mr Hoang Trung, Deputy Director General*

149 Ho Dac Di Street, Dong Da

Hanoi, Viet Nam

Tel: (+84) 4 35334813

Fax: (+84) 4 35330043

Emails: pqd@fpt.vn

hoangtrungppd@fpt.vn

Website: www.ppd@gov.vn

**Surveillance, pest outbreaks and invasive species management**

Plant Protection Department

*Mr Ngo Tien Dung, Deputy Director General*

149 Ho Dac Di Street, Dong Da

Hanoi, Viet Nam

Tel: (+84) 4 35335018

Fax: (+84) 4 35330043

Email: ipmppd@fpt.vn

Website: www.ppd@gov.vn

**Pesticide registration**

Plant Protection Department (PPD)

*Mr Vuong Truong Giang, Head of Pesticide Management Division*

149 Ho Dac Di Street, Dong Da

Hanoi, Viet Nam

Tel: (+84) 4 38518194

Fax: (+84) 4 35330043

Emails: p.qlt@fpt.vn

giangppd@ymail.com

Website: www.ppd@gov.vn

**Official international contact points****NPPO Contact Point (for IPPC/APPPC)**

Plant Protection Department

*Mr Ngo Tien Dung, Deputy Director General*

149 Ho Dac Di Street, Dong Da

Hanoi, Viet Nam

Tel: (+84) 4 35335018

Fax: (+84) 4 35330043

Email: ipmppd@fpt.vn

Website: www.ppd@gov.vn

**WTO SPS Contact point**

International Cooperation Department

*Ms Hoang Thi Dung, Deputy Director General*

Ministry of Agriculture and Rural Development

2 Ngoc Ha Street, Ba Dinh

Hanoi, Viet Nam

Tel: (+84) 4 38437 450 / 38226318

Fax: (+84) 4 37330 752

Email: [icd.mard@fpt.vn](mailto:icd.mard@fpt.vn)

Website: <http://icd.mard.gov.vn>

**Rotterdam Convention (PIC) DNA Pesticides (P)**

Plant Protection Department, Ministry of Agriculture and Rural Development

*Mr Nguyen Xuan Hong, Director General*

149 Ho Duc Di Street, Dong Da

Hanoi, Viet Nam

Tel: (+84) 4 35335054

Fax: (+84) 4 35330043

Email: [nxhong4456@yahoo.com](mailto:nxhong4456@yahoo.com)

Website: [www.ppd@gov.vn](http://www.ppd@gov.vn)

**Stockholm Convention (POP) National Focal Point (P)**

Viet Nam Environment Protection Agency

Mr Bui Cach Tuyen, Deputy Minister

Ministry of Natural Resources and Environment (MONRE)

Cum. Director General, Viet Nam Environmental Protection Agency (VEPA)

67 Nguyen Du Street, Hai Ba Trung

Hanoi, Viet Nam

Tel: (+84) 4 39424557

Fax: (+84) 4 38223189

Email: [natuan.vepa@gmail.com](mailto:natuan.vepa@gmail.com) (Mr Nguyen Anh Tuan)

Website: [www.vea.gov.vn](http://www.vea.gov.vn)

**Basel Convention Competent Authority (CA) and Focal Point**

Viet Nam Environment Protection Agency

*Mr Bui Cach Tuyen, Deputy Minister*

Ministry of Natural Resources and Environment (MONRE)

Cum. Director General, Viet Nam Environmental Protection Agency (VEPA)

67 Nguyen Du Street, Hai Ba Trung

Hanoi, Viet Nam

Tel: (+84) 4 39424557

Fax: (+84) 4 38223189

Email: [ngthanhyen@gmail.com](mailto:ngthanhyen@gmail.com) (Mr Nguyen Thanh Yen)

Website: <http://www.vea.gov.vn>

**Montreal Protocol Focal Point**

Viet Nam National Ozone Unit

*Mr Luong Duc Khoa, Project Coordinator*

Tel: (+84) 4 39448310 / (84) 0904882528

Email: ozoneoffice@fpt.vn

Website: www.noccop.org.vn

**Selected Country Statistics**

Agricultural Population (2009): 24 788 500		Agricultural Land (2008): 24 997 200 ha	
GDP (2009): US\$ 92.6 billion	Agric. GDP: 20.7% of GDP	GNI per capita (2009): US\$ 81 591 million	Undernourishment (2004-2006): 13%
Main crops grown: Rice, maize, coffee			

GDP = Gross Domestic Product; GNI = Gross National Income; Undernourishment = Population below minimum energy requirement

## II. PLANT QUARANTINE

Last updated: May 2011

### List of key legislation/regulations /rules for plant quarantine

- 2001 Ordinance on the Plant Protection and Quarantine, Order No. 11/2001/L of 8<sup>th</sup> August 2001
- 2002 Regulation on Plant Protection, the Regulation on Plant Quarantine and the Regulation on Management of Plant Protection Drugs, Decree No. 58/2008/ND-CP of 3<sup>rd</sup> June 2002
- 2004 Decision 16/2004/BNN-BVTV of 20<sup>th</sup> July 2004 of the Minister of Agriculture and Rural Development providing Procedures for Plant Quarantine Inspection and Recording of Regulated Articles
- 2005 List of Regulated Articles of the S.R.Viet Nam, Decision No. 73/2005/QD-BNN of 14<sup>th</sup> November 2005 (MARD)
- 2005 List of Plant Quarantine Pests of the S.R.Viet Nam, Decision No. 73/2005/QD-BNN of 14<sup>th</sup> November 2005 (MARD)

**Web sources for further information:** [www.ppd.gov.vn](http://www.ppd.gov.vn); [www.ippc.int](http://www.ippc.int)

Policies (regarding plant quarantine)	Yes	No
Does phytosanitary legislation cover domestic quarantine	x	
Does phytosanitary legislation cover import quarantine	x	
Does phytosanitary legislation export quarantine	x	
Does phytosanitary legislation cover living modified organisms?		x
Is plant quarantine a separate organization from animal quarantine?	x	
Other policy initiatives (under review/progress)		
Web source for further information: <a href="http://www.ppd.gov.vn">www.ppd.gov.vn</a>		

Organization of plant quarantine functions	Responsible organizational unit (ministry/department/unit)
Pest risk analysis	MARD/PPD
National standards development	MARD/PPD
International notifications	MARD
<i>Import:</i>	
Import permits	MARD/PPD
Import inspections	MARD/PPD
Emergency action	MARD/PPD
<i>Export:</i>	
Phytosanitary certificates	MARD/PPD
Treatment of commodities	Fumigation companies under PPD's authorization

Infrastructure	Year: 2010
Number of plant quarantine officers authorized to inspect/certify	500
Total qualified personnel for plant pest risk analysis	25
Quarantine officers	
Entry points (sea/air/land/mail = total)	77
Post-entry plant quarantine containment facilities	2
Other offices	12
Quarantine service diagnosis laboratories	12



In-country recognized pest diagnostics capabilities (incl. universities, etc.)	
Number of laboratories for insect/mite (arthropod) samples	15
Number of laboratories for bacteria samples	10
Number of laboratories for virus samples	2
Number of laboratories for fungus samples	15
Number of laboratories for mycoplasma samples	12
Number of laboratories for nematode samples	15
Number of laboratories for plant/weed samples	13
Number of laboratories for other pests (snail, slug, rodents...)	5

Pest Free Areas according to ISPM 10	Responsible organizational unit (ministry/department/unit)
Overall management	MARD/PPD
– surveillance	MARD/PPD
– management	MARD/PPD
– certification	MARD/PPD
List of target pest species and crops ISPM 4	Number of sites in 2010
List of target pest species and crops ISPM 10	Number of sites in 2010
Web source for further information:	

### Key Situation Indicators

International trade		Year: 2008
Main import plant commodities	Main countries of origin	Quantity (tons)
Malt	French, Australia, Denmark, Belgium, England, Germany, Czech, Indonesia, Newzeland, China, US, Australia, Canada, Netherlands, UAE...	415 405
Wheat	USA, Austria, China, Russia, India, Argentina, Pakistan, Canada, Taiwan, Turkey, UAE, Ukraine, France, Indonesia, Japan, Malaysia...	1 942 408
Maize	USA, China, Japan, India, Argentina, Thailand, Myanmar, Germany, Malaysia...	373 985
Main export plant commodities	Main destination countries	
Coffee	Argentina, China, Brazil, Canada, Russia, USA...	4 596 335
Rice	Africa, Belgium, Brazil, China, Indonesia, USA...	34 883 784
Pepper	Austria, Bulgaria, China, France, India, USA...	1 508 397

Cooperation projects			
Title (purpose/target)	Donor	Amount	Years (start-end)
Phytosanitary Capacity Building Project for the Mekong Region	NZAID		2002-2005
Phytosanitary Capacity Building Project for the Mekong Region – phase 2	NZAID	344 200 (\$AU)	2006-3/2011
Improvement of Plant Quarantine treatment against Fruit Fly on fresh fruits	JICA		2005-2007
Integrating effective phosphine fumigation practices into grain storage system in China, Viet Nam and Australia	ACIAR		2001-2004
Viet Nam Methyl bromide phase out plan	WB	1 098 284 USD	2008-2014
Title of government follow-up programmes	Amount		Years (start-end)
National stored pests survey programme for harvesting of plant products in Viet Nam	State budget (billion VND): 2006: 165 2007: 250 2008: 900 2009: 1 250 2010: 1 424.6		2006-2010

### Key operation indicators

Institutional functions	Year: 2009	Year: 2010
Number of import permits issued	750	1 400
Number of import inspections carried out	114 882	116 432
Number of emergency phytosanitary treatments taken on imports	0	25
Number of non-compliance notifications	0	12
Number of conventional phytosanitary certificates issued <i>Do you have an electronic certification system?:</i> <i>Yes_YES__No__</i>	N/A	
Number of electronic phytosanitary certificates issued	124 554	140 791

Number of quarantine pests intercepted		Years: 2009-2010
Top three commodities	Top three pest/commodity	# of interceptions
Soybean	<i>Trogoderma granarium</i>	6
Corn	<i>Sitophilus granaries</i>	1
	<i>Trogoderma granarium</i>	12
Bailey	<i>Sitophilus granaries</i>	1
	<i>Trogoderma granarium</i>	3

Lists of regulated pests	Year of last update	Insects	Pathogens	Plants
Number of quarantine pests	2005	25	21	11
Number of regulated non-quarantine pests				
Number of regulated import articles				
Web source for further information: –				

Pest risk analysis (PRA)	Insects	Pathogens	Plants	Fresh Fruits
Number of PRA completed and documented (according to ISPM) 2009-2010	06	03	27	6
Web source for further information: –				

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
<ul style="list-style-type: none"> <li>● Law on Plant Protection and Quarantine was under development.</li> <li>● Cooperation with other countries and international organizations were maintained in managing pests, training, exchanging information, trade market access.</li> </ul>
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
<ul style="list-style-type: none"> <li>● Trade market access still has a lot of difficulties.</li> <li>● Human resources are still inadequate (leading and experienced experts in applying international phytosanitary standards, carrying out PRA, qualified staff for inspecting, testing and verifying the equivalence of phytosanitary measures).</li> <li>● Database to serve phytosanitary operations is not adequate.</li> <li>● Legal document system is inadequate and inconsistent.</li> <li>● Infrastructure and equipment remain poor.</li> </ul>

Implementation of ISPMs	Relevance			Implementation				Planned/actual year of full implementation
	low	medium	high	none	partial	most	full	
<b>International measures</b>								
ISPM 01 Principles of plant quarantine as related to international trade		x				x		2001
ISPM 02 Guidelines for pest risk analysis			x		x			2001
ISPM 03 Code of conduct for the import and release of exotic biological control agents			x	x				
ISPM 04 Requirements for the establishment of pest free areas		x			x			2005
ISPM 05 Glossary of phytosanitary terms			x		x			2007
ISPM 06 Guidelines for surveillance			x				x	2007
ISPM 07 Export certification system			x		x			
ISPM 08 Determination of pest status in an area			x				x	2005
ISPM 09 Guidelines for pest eradication programmes			x	x				
ISPM 10 Requirements for the establishment of pest free places of production and pest free production sites			x		x			2007
ISPM 11 Pest risk analysis for quarantine pests			x		x			2007
ISPM 12 Guidelines for phytosanitary certificates		x			x			2006
ISPM 13 Guidelines for the notification of noncompliance and emergency action		x		x				
ISPM 14 The use of integrated measures in a systems approach for pest risk management		x		x				
ISPM 15 Guidelines for regulating wood packaging material in international trade		x			x			2009
ISPM 16 Regulated non-quarantine pests: concept and application		x		x				
ISPM 17 Pest reporting		x		x				
ISPM 18 Guidelines for the use of irradiation as a phytosanitary measure		x		x				2011-2012
ISPM 19 Guidelines on lists of regulated pests			x	x				2010
ISPM 20 Guidelines for a phytosanitary import regulatory system			x	x				2007
ISPM 21 Pest risk analysis for regulated non-quarantine pests			x	x				
ISPM 22 Requirements for the establishment of areas of low pest prevalence		x		x				
ISPM 23 Guidelines for inspection		x		x				2007
ISPM 24 Guidelines for the determination and recognition of equivalence of phytosanitary measures		x			x			2006
ISPM 25 Consignments in transit		x		x				
ISPM 26 Establishment of pest free areas for fruit flies (Tephritidae)		x		x				
ISPM 27 Diagnostic protocols for regulated pests			x	x				
ISPM 28 Phytosanitary treatments for regulated pests		x		x				
ISPM 29 Recognition of pest free areas and areas of low pest prevalence		x		x				
ISPM 30 Establishment of areas of low pest prevalence for fruit flies (Tephritidae)		x		x				
ISPM 31 Methodologies for sampling of consignments			x	x				2010
ISPM 32 Categorization of commodities according to their pest risk			x	x				
ISPM 33 Pest free potato ( <i>Solanum</i> spp.) micropropagative material and minitubers for international trade		x		x				
ISPM 34 Design and operation of post-entry quarantine stations for plants		x		x				
Comments/constraints:								

### III. SURVEILLANCE, PEST OUTBREAKS AND INVASIVE SPECIES

Last updated: May 2011

#### List of key legislation/regulations/rules for surveillance, pest reporting and emergency actions

- 2001 Ordinance on the Plant Protection and Quarantine, Order No. 11/2001/L of 8<sup>th</sup> August 2001  
 2002 Regulation on Plant Protection under Decree No. 58/2008/ND-CP of 3<sup>rd</sup> June 2002  
 2005 Decision No. 82/2005/QD-BNN of 10<sup>th</sup> November 2005 (MARD) on Pest Surveying Procedure for Crops

**Web sources for further information:** [www.ppd.gov.vn](http://www.ppd.gov.vn); [www.ippc.int](http://www.ippc.int)

#### Key situation and operation indicators

Policies (Regarding invasive/migratory species management)	Yes	No
National strategy to control serious field pest outbreak	x	
National strategy to control migratory or periodically occurring pests?	x	
National strategy to eradicate serious newly invaded exotic pests?	x	
Other policies: (e.g. subsidies, etc.)		
Web source for further information: <a href="http://www.ppd.gov.vn">www.ppd.gov.vn</a>		

Organization of outbreak management functions	Responsible organization unit (ministry/department/unit)
<i>Field/storage pest outbreaks</i>	(e.g. BPH, bollworm, etc.)
Response strategy/plant	MARD/PPD
Surveillance	MARD/PPD
Control	MARD/PPD
<i>Migratory pest outbreaks</i>	(e.g. locusts, birds, armyworm)
Response strategy/plant	MARD/PPD
Surveillance	MARD/PPD
Control	MARD/PPD
<i>New exotic pest eradication</i>	(e.g. coconut beetle)
Response strategy/plans	MARD/PPD
Surveillance	MARD/PPD/Plant Protection Sub-Department
Control/eradication	MARD/PPD/Plant Protection Sub-Department
Reporting to bilateral or international organization	MARD/PPD

Infrastructure	Year: 2009	Year: 2010
Number of designated staff for surveillance of field pests of national importance	1 400	1 400
Number of designated staff for surveillance of migratory and periodically occurring pests	900	900
Number of designated staff for surveillance of invasive species	200	200
Number of designated staff for control of field pests of national importance	2 200	2 200
Number of designated staff for control of migratory and periodically occurring pests	2 700	2 700
Number of designated staff for eradication of invasive species	200	200

**Key situation and Operation indicators**

(Outbreak and invasive in the past two years)

New exotic species found established in country	Insects	Pathogens	Weeds
Total number for year: (most recent)	Brontispa logisime		
Total number for year:			
Total number on record			

Eradication or internal quarantine action taken against economically important species			
Name of species	Mexican Bean Weevil <i>Zabrotes subfaciatus</i>		
Year of first discovery	2005		
Pathway	Commercial bean		
Location of first discovery	Markets		
Area affected (ha)	Small		
Area treated	Small		
Control method	Fumigation		
Expenditures			

Pest outbreak actions	Outbreak 1	Outbreak 2	Outbreak 3
Name of species			
Year of outbreak			
Area affected (ha)			
Estimated damage \$			
Area treated by government (ha)			
Expenditures by government			
Control method			
More information			

**Progress and constraints**

<b>Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)</b>
<ul style="list-style-type: none"> <li>● Applying Geographical Information System (GIS) for Pest surveillance and warning</li> <li>● There are several farmers and officers trained by IPM Programme</li> </ul>
<b>Main constraints (personnel, infrastructure, administrative, operational, training, etc.)</b>
<ul style="list-style-type: none"> <li>● Fund for surveillance is limited.</li> <li>● Knowledge of farmers needs to be improved.</li> <li>● Lack of technical equipment.</li> </ul>

#### IV. PEST MANAGEMENT

Last updated: May 2011

##### List of key legislation/regulations/rules for pest management

- 2001 Ordinance on the Plant Protection and Quarantine, Order No. 11/2001/L of 8<sup>th</sup> August 2001
- 2002 Regulation on Plant Protection, the Regulation on Plant Quarantine and the Regulation on Management of Plant Protection Drugs, Decree No. 58/2008/ND-CP of 3<sup>rd</sup> June 2002
- 2008 MARD's Decision No. 379/QD-BNN-KHCN dated 28 January 2008 on Good Practices for the Production of Fresh Fruit and Vegetables (VietGAP for fruit and vegetables)
- 2008 MARD's Decision No. 1121/QD-BNN-KHCN dated 14 April 2008 on Good Practices for the Production of Tea (VietGAP for tea)

**Web sources for further information:** [www.ppd/gov.vn](http://www.ppd/gov.vn); [www.ippc.int](http://www.ippc.int)

Policies (regarding pest management)	Yes	No
Do you have policies encouraging organic or low-pesticide use production	x	
Is ISPM specifically mentioned in law or policy documents?	x	
Do you have official Good Agricultural Practice(GAP) or any other relevant food safety (ecofood, etc.) standard for pest management?	x	
Is pest management extension separate from general extension?	x	
Other policies: (subsidies, production input, etc.)		
Web source for further information: <a href="http://www.ppd/gov.vn">http://www.ppd/gov.vn</a>		

Organization of pest management functions	Responsible organizational unit (ministry/department/unit)
Policy development	MARD/PPD
Pest management research	MARD/PPD + National Inst. Of Plant protection (NIPP) Vietnam Academy of Agricultural Science (VAAS) Southern Fruit Research Institute (SOFRI)
Control recommendations	MARD/PPD + Institute, Academy
Pest management extension	MARD/PPD
IPM training	MARD/PPD
GAP training	MARD/PPD

Infrastructure	Year: 2009	Year: 2010
Number of technical officers for pest management		
Number of central, regional, provincial or state offices	4 regions + 63 provinces	4 regions + 63 provinces
Number of district and village level field offices	1 000	1 000
Number of field/extension agents for pest management advice	63	63
Number of field/extension agents trained in IPM-FFS facilitation	150	150
Number of government biocontrol production/distribution facilities	2	2
Number of government biopesticide production/distribution facilities	2	2
Number of general extension staff involved in pest management	200	200
Number of designated plant protection technical officers for extension	200	200

**Key situation and operation indicators**

Pest management	Yes	No
Does the country have a National IPM Programmes? National IPM Coordinator, PPD, Tel: 844 35335018. Email: ipmppd@fpt.vn	x	
Does the country have specific IPM extension programmes? <i>Rice, cotton, vegetable, green tea, citrus, maize, sweet potato</i>	x	
Does the country have specific IPM research programmes? <i>Rice, cotton, vegetable</i>	x	
Does the country have specific GAP extension programmes? <i>Dragon fruit, vegetable, rice</i>	x	
Does the country have specific GAP research programmes? <i>Fruit, vegetable</i>	x	

Market shares (estimated value, volume or area under control)	Year: 2011
Size of chemical pest control market	
Size of biopesticides market	
Size of biological control agents market	

Major crops requiring most pesticide applications	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Affected crop	Rice	Rice	Rice
Name(s) of pest(s)	Brown Plant Hopper <i>Nilaparvata lugens</i>	Small Leaf Folder	SBSDVD
Estimated crop loss	507 ha totally lost; 141 221 ha with heavy damage	545 831 ha with heavy damage	4 913 ha with heavy damage
Affected area	1 082 309 ha	1 189 434 ha	52 819 ha
Number of pesticide applications or amount of pesticide used	2-4 apps	3-5 apps	3 apps for WBPH
Government action taken	yes	yes	yes

Cooperation projects			
Purpose/target	Donor	Amount	Years (start-end)
IPM on vegetable (Capacity building and policy reform for pesticide risk reduction in Viet Nam under One UN-2 initiative)	FAO	1.8 million USD	2009-2011
Biodiversity Use and Conservation in Asia Programme (BUCAP)	SEARICE	1 million USD	2000-2010
Oxfam America (VIE 034/07) SRI	Oxfam US		2007-2012
Purpose/target of government follow-up programmes		Amount	Years (start-end)



<b>Pest management extension</b>	<b>Year: 2009</b>	<b>Year: 2010</b>
Number of farmers trained in IPM during the year	25 500	38 488
Number of IPM-FFS conducted during the year	1 399	934
Number of farmers trained in GAP standards during the year	3 000	600
Area under IPM/low pesticide management (ha)	1 172 582	1 132 654
Area under organic/pesticide-free management (ha)		
Crops in which IPM or other ecology friendly programmes are successfully implemented: Rice, citrus, vegetables		
Crops grown organic/pesticide-free: –		

### Progress and constraints

<b>Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)</b>
<ul style="list-style-type: none"> <li>● IPM Training: 3 192 main trainers; 5 855 farmer trainers (training of farmer trainers); 38 095 FFSs; 1 172 582 trained farmers. <ul style="list-style-type: none"> <li>– Farmer analysis skills and critical thinking improved.</li> <li>– Farmers have become more independent in decision making.</li> <li>– Positive impact on human health and environment. Farmer trainers play important role in developing district and commune agricultural development plans.</li> <li>– IPM field studies have had significant impact on provincial decision makers in determining policy regarding recommendations on pesticide management, seed rates and fertilizer application.</li> </ul> </li> <li>● Impact of the IPM on rice: farmers reduced pesticides by 38% (insecticide sprayings by 60%), nitrogenous fertilizer by 15%, seed by 16%, while increased yields by 8% and income by 16%.</li> </ul>
<b>Main constraints (personnel, infrastructure, administrative, operational, training, etc.)</b>
<ul style="list-style-type: none"> <li>● It is difficult to control pests in the field while a lot of new kinds of pests appear. For example, new virus diseases on rice, associated with the plant hopper.</li> <li>● There is a larger number of pesticides and the overuse of pesticides remains (misunderstanding of virus transmittance results in pesticide overuse and, thereafter, outbreak of pests; lack of rural labour due to migration to cities leads to reliance on chemical pesticides).</li> <li>● There were not enough staff to provide timely technical guidance to farmers.</li> <li>● Some IPM trainers retired or changed their positions.</li> </ul>

## V. PESTICIDE MANAGEMENT

Last updated: May 2011

### List of key legislation/regulations/rules for pesticide management

- 2002 Regulation on Management of Pesticide, issued together with the Government's Decree No. 58/2002/ND-CP of 3<sup>rd</sup> June 2002.
- 2008 Regulation on the Issue Professional Certificate for Production, Formulation, Re-Packaging and Business of Pesticide, issued in conjunction with Decision No. 98/2008/QD-BNN on 6<sup>th</sup> October 2008 by the Ministry of Agriculture and Rural Development.
- 2009 Regulation on the issue Control of Pesticide Quality Import on 10<sup>th</sup> December 2009 together with Circulars No. 77/2009/TT-BNNPTNT by the Ministry of Agriculture and Rural Development.
- 2010 Regulation on Procedures for Registration, Production, Formulating, Re-Packaging, Export, Import, Trading, Storage, Transport, Usage, Disposal, Labeling, seminars and Advertisement of Pesticide, Control of Pesticide Quality and Residue and Field Trial of Pesticides for Registration in Viet Nam, issued 28<sup>th</sup> June 2010 together with Circulars No. 38/2010/TT-BNNPTNT by the Ministry of Agriculture and Rural Development.

### Web source for further information: –

Policies regarding pesticide management	Yes	No
Do you have national pesticide reduction targets? If yes, what is the target: _____		x
Have you ratified the Rotterdam (PIC) Convention?	x	
Have you ratified the Stockholm (POP) Convention?	x	
Have you ratified the Basel Convention? (hazardous wastes)	x	
Have you ratified the Montreal Protocol? (MeBr phasing-out)	x	
Have you reported the observance of the Code of Conduct to FAO according to Art. 12 of the Code?		x
Have you adopted Good Laboratory Practices (GLP)?	x	
<i>Pesticide registration</i>		
Do you require pesticides to conform to relevant FAO or WHO specifications?	x	
Do you allow the "me-too" registration and sale of generic pesticides?	x	
Do you require data on product equivalence for generic registration?	x	
Do you conduct country-specific risk assessments for...		
occupational risks?		x
consumer risks?		x
environmental risks?		x
Have you adopted the Global Harmonized System (GHS) for pesticides hazards evaluation and labelling?	x	
Do you accept evaluation results from other countries		x
Do you accept field studies conducted in other countries		x
Do you require environmental fate studies?	x	
<i>Incentives/disincentives</i>		
Do you have a special tax on pesticides to cover externality costs?		x
Do you subsidize or provide low-cost pesticides?		x
Do you subsidize or provide low-cost biopesticides?	x	
Other policies: –		
Web source for further information: –		

Organization of pesticide management functions	Responsible organizational unit (ministry/department/unit)
Legislation	MARD/PPD
Registration	MARD/PPD
Licensing of shops	MARD/State PPD
Licensing of field applicators	MARD/PPD
Enforcement/inspections	MARD/PPD/Inspection Division
Testing of pesticide efficacy	MARD/PPD/Pesticides Division/Pesticides Control Center
Development of pesticide use recommendations	MARD/PPD
Safe use training/extension	MARD/PPD
Food residue monitoring	MARD/PPD
Environmental monitoring	Ministry of Natural Resources and Environment
Health monitoring	Ministry of Health
<i>Other stakeholders:</i>	
Pesticide Industry Association	
Civil Society Organizations (NGO, etc.)	Viet Nam Plant Protection Assoc. (VPPA)

Infrastructure	Year: 2010
Number of registration officers	7
Number of enforcement officers	558
Number of department quality control laboratories	5
Number of quality control laboratory personnel	35
Number of department residue analysis laboratories	5
Number of residue laboratory personnel	35

### Key Situation Indicators

Pesticide trade:	Tons	\$ '000 Value
Imports	72 560	500 000
Manufacture		
Export		
Domestic Use/Sales		
Pesticide use profile: 2010	Tons (a.i./formulation to be specified)	\$ '000 Value
Agriculture	72 560	
Chem. Insecticides	18 648 (25.7%)	
Chem. Fungicides	19 954 (27.5%)	
Chem. Herbicides	28 153 (38.8%)	
Chem. Others: e.g. molluscide, acaricide	5 805 (8.0%)	
Others: e.g. Avamectin, Bt, Neem		
Others purposes		
TOTAL	72 560	500 000

**Post registration monitoring**

Testing, quality control and effects in the field	Yes	No
Do you have significant problems with low-quality pesticides in the market?	x	
Do you have significant problems with pesticides resistance?	x	
Do you have a list of pesticides under close observation for problems		x
Source for more information: –		

Health and environmental information	Yes	No
Do you maintain data on pesticide poisoning cases?		x
Do you have a system to monitor pesticide residues in food?	x	
Do you have a system to monitor pesticide residues in the environment?	x	
Do you have significant problems of environmental contamination from pesticides?	x	
Do you have data on pesticides effects on wildlife and ecosystems?		x
Source for more information: –		

Pesticide disposal	Yes	No
Do you have system to collect and safely dispose of used containers and small quantities of left-over pesticides?	x	
Do you have an inventory of outdated and obsolete pesticides in the country? (e.g. Banned and no longer traded, but still in storage)	x	
Do you have illegal trade in pesticides? if yes: what is the estimated amount: _____		x
Source for more information: –		

**Key operation indicators**

Registration/regulation/monitoring	Year: 2010	
	a.i.*	Trade name
Number of registered pesticide products	1 012	2 762
Number of registered biopesticides (Avamectin, Bt, Neem, etc.)	181	582
Number of restricted-use pesticides/formulations	15	28
Number of banned pesticides	29	
Number of licensed outlets		
Number of licensed field applicators (professional and/or farmers)		
Number of licensing violations reported during year		
Number of quality control analyses conducted during year	4 453	
Number of food samples analyzed for pesticide residues during year	1 240	
Number of samples exceeding MRL		
Number of environmental samples analyzed for pesticide residues		

\* active ingredient

Pesticides restricted in recent years (2009-2010)	
Year	Name of active ingredient or hazardous formulation

Pesticides banned in recent years (2009-2010)	
Year	Name of active ingredient or hazardous formulation

Cooperation projects			
Purpose/Target	Donor	Amount	Years (start-end)
Purpose/Target of government follow-up programmes		Amount	Years (start-end)

### Progress and constraints

Main progress in recent years (legislation, policies, infrastructure, investments, training, etc.)
<ul style="list-style-type: none"> <li>• Legal document of pesticide management is more and more comprehensive.</li> <li>• Number of biopesticides increased.</li> <li>• New equipment.</li> </ul>
Main constraints (personnel, infrastructure, administrative, operational, training, etc.)
<ul style="list-style-type: none"> <li>• Request for technical assistance in capacity building in the fields of risk assessment/evaluation of chemicals, technical expertise and training in the use of the principle of equivalence in future pesticides evaluation.</li> <li>• Lack of equipment and human resource for pesticide residue and quality analysis.</li> <li>• Pesticide resistance.</li> </ul>

## VI. ADDITIONAL ISSUES OF INTEREST

Last updated: May 2011

Genetically Modified Crops	
Name of GMO Crop	Area under Cultivation [ha]

**Appendix I****Analysis of the 26<sup>th</sup> session country reports and updated plant protection profiles**

The 26<sup>th</sup> session of the Asia and Pacific Plant Protection Commission was held in New Delhi, India, from 31 August to 4 September 2009. It was attended by delegates from 17 countries, as well as Japan as an observer. Each delegation presented a country report for which the following general outline was given:

1. Introduction
2. Outbreaks of major pests
3. Integrated pest management
4. Plant quarantine
5. Pesticides
6. Development of international cooperation projects
7. Name of national plant protection organization

The organization and content of the country reports, however, varied greatly. This made it difficult to compile the information to assess the status of plant protection in the Asia-Pacific region. The table “2009 APPPC country report topics” (see next page) shows the selection of topics addressed in each country report. It reveals that the topic of plant quarantine was generally more comprehensively covered than other areas. This uneven reporting partly reflects the choices made by the meeting delegates, but it is also the result of the increasing fragmentation of plant protection functions over several government departments which makes it difficult for one person or institution to report about all aspects of plant protection.

Because of these limitations of the APPPC country reports, the Plant Protection Profiles were introduced in 2006 as a standardized source of information about the status of plant protection in the member countries. In preparation for the 2009 APPPC meeting, six new country profiles were submitted and 14 others updated, bringing the total number of plant protection profiles to 20. These covered most of the APPPC countries except for French Polynesia, Papua New Guinea, Solomon Islands and Tonga.

To review the plant protection information exchange in the Asia-Pacific region, it seemed necessary to include the plant protection profiles together with the country reports. Each of these two sources of information assumes a mutually complementary role. While the profiles compile relevant information in a standardized format, the country reports should summarize and highlight recent developments. Thus, the country reports may be seen as the executive summary of the profiles and both documents are closely interrelated.

Two of the 2009 meeting delegations already presented the executive summary of the profiles as their country report. While this was an exception in 2009, this practice should become the rule for future meetings. This approach would encourage updating the profiles on a regular basis, and at the same time, it would facilitate the preparation of the APPPC country reports.

## 2009 APPPC country report topics

	Australia	Bangladesh	Cambodia	China	India	Indonesia	Japan	Lao PDR	Malaysia	Myanmar	Nepal	New Zealand	Pakistan	Philippines	Rep of Korea	Sri Lanka	Thailand	Viet Nam	TOTAL	
<b>1. Introduction</b>																				
1.1 Changes	x		x	x		x		x	x			x	x	x	x	x	x			12
<b>2. Outbreaks</b>																				
2.1 Infested crops		x	x	x												x	x	x		6
2.2 Causal organisms		x	x	x												x	x	x		6
2.3 Invasive species																	x	x		2
<b>3. IPM</b>																				
3.1 IPM policy		x	x		x	x		x		x	x						x			8
3.2 IPM programmes		x	x			x					x						x	x		6
3.3 IPM research				x					x											2
3.4 Cooperation			x					x			x							x		4
3.5 Pest control		x	x	x	x				x				x		x	x	x			9
3.6 Extension		x	x	x	x					x	x					x	x	x		9
<b>4. Plant Quarantine</b>																				
4.1 NPPO structure	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17
PQ network	x	x		x	x	x	x			x	x	x		x		x		x		12
Legislation		x	x		x			x	x		x	x				x	x			9
Updates		x		x					x		x			x	x	x	x			8
4.2 ISPM			x			x				x									x	4
4.3 PRA	x		x	x	x	x						x		x	x	x	x	x	x	11
4.4 Regulated pests				x					x		x				x					4
4.5 Pest free places	x		x	x	x											x	x	x		7
4.6 IPP																				0
4.7 PCE														x			x			2
4.8 Proposals																				0
<b>5. Pesticides</b>																				
5.1 Regulations			x		x			x	x		x					x		x		7
5.2 Rotterdam			x					x	x											3
5.3 Code of Conduct			x		x															2
5.4 Residues			x		x				x									x		4
5.5 Biopesticides															x					1
5.6 Banned		x	x			x												x		4
5.7 Address/Name	x	x	x			x				x	x		x			x				8
<b>6. Cooperation</b>																				
	x		x	x		x	x	x		x	x			x	x				x	11
<b>7. NPPO Address</b>																				
Name			x	x	x		x		x	x	x	x		x		x				10
Total	7	11	21	14	12	10	4	8	11	8	13	6	4	8	8	14	15	14		

x = the topics addressed in the 2009 country reports

A review of the 2009 country reports and plant protection profiles arrived at the following conclusions:

- The plant protection profiles have become the most comprehensive source of information about the status of the various plant protection function in the APPPC region; they are now available for most of the APPPC member countries;
- The format and content of past APPPC country reports greatly limited their usefulness as a stand-alone source of information; in future, the country reports should summarize and highlight the information given in the profiles;

- A few sections of the profiles are inconsistent and exist in different versions; these sections should be harmonized in order to facilitate comparisons and compilation of information;
- Some sections of the profiles seemed difficult to fill out or led to misunderstandings; they would need to be identified and revised;
- Updated country statistics of key development indicators may be copied from FAO statistical yearbooks and added by the secretariat if necessary;
- The profiles need to be updated regularly to reflect the current status of plant protection; older profiles should be kept on file to show trends and progress over time;
- Additional issues of interest may be added according to need or interest.

The following tables provide an overview of which information in the plant protection profiles was new or was updated for the 2009 APPPC meeting. In addition, the responses to selected topics have been compiled to assess their overall status in the region.

## I. General information

### Observations

- Almost all profiles contained updated lists of contact addresses and changes in the organizational set-up of plant protection functions;
- New legislation and regulations have recently come into effect in 7 countries;
- There were institutional changes in 8 countries, and infrastructure improvements were reported from 4 countries.

I. General information	Australia	Bangladesh	Cambodia	China	DPR Korea	Fiji	India	Indonesia	Japan*	Lao PDR	Malaysia	Myanmar	Nepal	New Zealand	Pakistan	Philippines	Rep of Korea	Sri Lanka	Thailand	Viet Nam	TOTAL	
<b>Updates</b>		new				new			new				new	new			new					
Executive Summary	x	x	x	x	x	x	x	-	x	x	x	x	x	x	x	x	x	x	x	x	x	19
same as country report				x			x															
Recent highlights	x	x	x	x	x	x	x			x	x	x		x	x	x		x	x	x	x	16
Organization Chart	x	x	...	x	x	x	...	...	x	x	x	...	x	#	x	...	x	...	x	...	...	12
Addresses	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	...	19
country statistics	...	x	...	...	x	x	...	...	x	...	-	x	x	-	...	x	x	x	x	x	...	10
Total changes	4	5	3	4	5	5	3	1	4	4	4	4	4	3	4	4	4	4	4	5	2	

\* Japan is not yet a member of APPPC

Updates as compared to the 2006 PPPProfiles:

x = content new/updated; ... = content same as 2006 PPPProfiles; - = no response; # = different format



## II. Plant quarantine

### Observations

- This section had new or updated information from 18 countries;
- All plant quarantine legislations covered domestic and import/export quarantine; animal and plant quarantine services were combined in 3 countries;
- Legislation covered living modified organisms in 8 countries, and wild flora in two;
- The set-up of pest-free areas according to ISPM No. 4 was reported from 10 countries; these areas were free from fruit flies (6 countries), mango weevils (4 countries), or brown rot in potato (2 countries);
- Two countries (New Zealand and Thailand) had established pest-free production areas according to ISPM No. 10;
- Fifteen countries had conducted PRA; however, the numbers vary greatly, possibly indicating different quality standards;
- Many countries experience a lack of skilled staff and insufficient laboratory capacities.

II. Plant quarantine	Australia	Bangladesh	Cambodia	China	DPR Korea	Fiji	India	Indonesia	Japan*	Lao PDR	Malaysia	Myanmar	Nepal	New Zealand	Pakistan	Philippines	Rep of Korea	Sri Lanka	Thailand	Viet Nam	TOTAL	
<b>Updates</b>		new				new			new				new	new			new					
Exec. Summary	-	x		x	x					x		x					x	x	x			8
list regulation/legislation	x	x	...	...	x	x	...	x	x	...	...	x	x	x	...	x	x	...	x	...		12
web link	...		...	x	-	x	...	x	x	-	x	-	-	x	-	-	-	...	x	...		7
policies	x	x	...	x	x	x	x	x	x	x	x	...	x	x	...	x	x	...	...	...		14
domestic+import	yes	-	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	19
plant separate animal	no	yes	yes	yes	yes	no	yes	no	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	yes	16
incl. wild flora	yes	-	-	-		-					yes											2
living GMO	no	-	no	no	yes	part	no	yes	no	yes	no	yes	yes	yes	no	yes	no	no	yes	no		8
organization	...	x	...	...	x	x	x	x	x	x	x	...	x	x	x	x	x	...	x	...		14
infrastructure	...	x	...	...	x	x	x	...	x	x	x	...	x	x	x	x	x	x	x	x	...	15
laboratories	-		...	-	-	x	x	...	x	x	x	...	x	x	...	...	x	...	x	...		15
pest free areas	...	x	...	x	x	x	x	...	x	-	x	...	x	x	x	...	x	...	...	...		11
ISPM 4 – target species	2	3	-	2	-	2	3	-	4	-	2	-	-	1	...	1	-	7	0	...		10
fruit flies	x	x		x		x	x							x								6
Mango weevils		x					x				x					x						4
brown rot/potato		x					x															2
codling moth/apple				x																		1
other						x	x		x		x											1
ISPM 10 target species	0	0	-	0	-	0	0	-	0	-	0	-	-	2	-	0	-	0	1	...		2
key trade indicators	-	x	...	...	x	x	...	...	x	...	x	x	x	x	x	x	x	x	x	x	...	13
cooperation projects	...	-	...	-	-	x	...	...	x	x	-	x	x	x	-	x	x	...	x	...		9
institutional functions	...	x	...	...	-	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	...	15
key interceptions	-	-	-	x	x	-	x	x	x	-	-	...	-	-	-	-	x	-	-	-		6
regulated pests	x	-	...	x	x	-	x	x	x	-	x	-	x	-	...	x	x	...	x	...		11
number	IPP	-	170	435	175	-	184	712	169	-	260	-	135	web	127	8	1933	132	360	56		16
pest risk analysis		-	...	...	x	-	x	x	x	-	x	-	x	-	x	x	x	...	x	...		10
number	15	-	0	yes	14	-	2 368	57	352	-	5	-	7	web	132	3	1993	12	2	5		15
progress and constraints	-	x	...	...	x	x	x	x	-	x	x	...	x	-	x	x	x	...	x	...		12
Total changes	4	10	0	7	12	12	10	10	14	9	13	6	13	11	8	11	15	5	13	0		

\* Japan is not yet a member of APPPC

Updates as compared to the 2006 PPPfiles: x = content new/updated; ... = content same as 2006 PPPfiles; - = no response

## Implementation of ISPMs

### Observations

- Highest implementation rate in Australia, China, Japan, New Zealand and Rep. of Korea;
- Large degree of implementation in 9 countries;
- Partial implementation in Myanmar, Nepal and Sri Lanka;
- Low implementation rate in Cambodia, Lao PDR and Viet Nam.

Implementation of ISPMs	Australia	Bangladesh	Cambodia	China	DPR Korea	Fiji	India	Indonesia	Japan*	Lao PDR	Malaysia	Myanmar	Nepal	New Zealand	Pakistan	Philippines	Rep of Korea	Sri Lanka	Thailand	Viet Nam	TOTAL
<b>Status of ISPM</b>		new				new			new				new	new			new				
Update	x	x	...	x	x	x	...	x	x	x	x	x	x	x	x	x	x	x	x	...	18
Importance																					
high importance	30	25	0	27	24	23	25	23	25	7	24	3	29	29	9	29	29	11	15	13	
medium importance	0	2	2	4	3	3	2	6	6	3	7	28	2	0	16	0	2	6	7	14	
low importance	1	0	0	0	0	1	0	2	0	21	0	0	0	1	2	2	0	0	10	0	
Implementation																					
full	27	11	0	21	8	10	9	8	21	1	6	0	2	25	3	17	27	5	12	2	
most	0	4	2	4	8	7	14	7	9	1	13	8	6	0	12	0	3	7	3	1	
partial	0	12	10	5	6	8	4	5	0	3	8	21	8	2	12	8	0	5	5	9	
none	1	0	13	0	5	2	0	9	0	26	4	2	12	2	0	4	1	0	12	15	
Full implementation																					
ISPM 01 – Principles	x	x		x			x							x		x	x	x			8
ISPM 02 – PRA	x	x		x			x	x	x					x		x	x				9
ISPM 03 – biocontrol	x							x						x		x	x		x		6
ISPM 04 – pest-free areas	x								x					x		x	x				5
ISPM 05 – glossery	x	x		x	x	x	x		x		x		x	x		x	x	x	x		14
ISPM 06 – surveillance	x			x		x			x					x		x	x			x	8
ISPM 07 – export certif	x	x		x	x	x	x	x	x					x	x	x	x	x	x	x	14
ISPM 08 – pest status	x			x	x	x		x	x					x			x			x	9
ISPM 09 – pest eradicatio	x			x					x					x			x				5
ISPM 10 – pest free sites	x			x	x				x		x			x			x		x		8
ISPM 11 – quaran pests	x	x		x			x	x						x		x	x		x		9
ISPM 12 – phytosan certif	x	x		x	x	x	x	x	x		x			x		x	x	x	x	x	14
ISPM 13 – notif non-com	x	x		x	x		x		x					x		x	x		x		10
ISPM 14 – IPM	x			x		x			x					x		x	x				7
ISPM 15 – wood pack	x	x		x			x	x	x	x	x			x		x	x		x		12
ISPM 16 – regul non-quar	x													x			x				3
ISPM 17 – pest reporting	x	x		x										x		x			x		6
ISPM 18 – irradiation	x																		x		2
ISPM 19 – list of reg pest	x			x				x					x	x			x		x		7
ISPM 20 – import reg sys	x	x		x	x	x					x			x	x		x	x			10
ISPM 21 – regul non-quar	x													x			x				3
ISPM 22 – low pest	x				x				x								x				4
ISPM 23 – inspection	x	x		x		x	x		x		x			x	x	x	x		x		12
ISPM 24 – equivalence	x			x		x			x					x			x				6
ISPM 25 – consignments	x			x		x								x		x	x				6
ISPM 26 – fruit flies	x								x					x			x				4
ISPM 27 – protocols	x								x					x			x				4
ISPM 28 – treatment				x					x							x	x				4
ISPM 29 – low/pest-free									x							x					2
ISPM 30 – low fruit fly									x												1
ISPM 31 – sampling				x					x								x				3
Total	27	11	0	21	8	10	9	8	21	1	6	0	2	25	3	17	27	5	12	2	

\* Japan is not yet a member of APPPC

Updates as compared to the 2006 PPPProfiles: x = content new/updated; ... = content same as 2006 PPPProfiles; - = no response

### III. Surveillance, pest outbreaks and invasive species management

#### Observations

- This section had new or updated information from 17 countries;
- Government control measures against serious field pest outbreaks were implemented in 10 countries;
- Programmes to control newly invaded pests existed in 13 countries; eradication programmes were implemented in 7 countries;
- BPH outbreaks in rice were reported from 3 countries;
- New exotic species were discovered in 7 countries; most new pests were detected in New Zealand (75 in 2007/08).

III. Surveillance, pest outbreaks and invasive species	Australia	Bangladesh	Cambodia	China	DPR Korea	Fiji	India	Indonesia	Japan*	Lao PDR	Malaysia	Myanmar	Nepal	New Zealand	Pakistan	Philippines	Rep of Korea	Sri Lanka	Thailand	Viet Nam	TOTAL	
<b>Updates</b>		new				new			new				new	new			new					
exec. summary				x	x					x		x					x	x	x			7
list legislation/regulation	-	x	...	-	...	-	...	...	x	-	...	-	x	x	...	...	-	-	x	...		5
web link	-	x	...	-	...	x	...	...	x	-	-	-	-	x	...	...	-	-	...	-		4
policies	...	-	...	x	...	x	...	...	x	...	...	...	x	x	x	...	x	...	...	...		7
control field pest	yes	-	no	yes	yes	yes	yes	yes	yes	no	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	yes	16
migratory	no	-	no	yes	yes	no	yes	yes	yes	no	yes	yes	yes	no	yes	yes	yes	no	yes	yes	yes	13
newly invaded	yes	-	no	yes	yes	yes	yes	yes	yes	no	yes	no	no	yes	no	-	yes	yes	yes	yes	yes	13
organization	...	x	...	...	x	x	...	...	x	...	x	...	x	x	...	...	x	...	x	...		9
infrastructure	-	-	...	x	x	x	x	...	x	x	x	x	-	x	-	...	-	-	x	...		10
new exotic species	x	-	...	x	x	x	x	-	-	-	-	x	x	x	-	...	x	-	-	...		9
recent 2 years	9	-	0	3	23	0	3	-	-	-	-	-	2	75	-	2	0	-	0	-		
eradication/quarantine	x	-	...	x	...	x	-	x	x	...	-	-	-	x	-	...	-	-	-	...		6
number	1	-	1	1	-	-	-	1	1	-	-	-	-	18	-	2	-	-	-	-		
outbreak actions	...	-	...	x	...	-	x	-	-	...	x	x	-	-	-	...	x	x	-	...		6
number	1	-	2	3	-	-	3	-	-	1	2	1	-	-	-	2	3	1	-	-		
progress and constraints	-	-	...	-	x	-	-	-	-	x	x	x	-	x	x	-	-	...	x	...		7
Total changes	2	3	0	6	5	6	3	1	6	2	4	5	4	8	2	0	5	2	5	0		
<b>Outbreaks Pests</b>																						
BPH/rice				x			x				x											3
Locusts	x																					1
Rodents												x										1
Coffee berry borer									bio													1
Leaf folder/rice				x																		1
Papaya mealybug																		x				1
Other				x			xx				x						xxx					7

\* Japan is not yet a member of APPPC

Updates as compared to the 2006 PPPfiles: x = content new/updated; ... = content same as 2006 PPPfiles; - = no response

## IV. Pest management

### Observations

- This section had new or updated information from 17 countries;
- Almost all countries had policies encouraging low-pesticide, “clean” or organic production
- IPM was mentioned in laws and policy statements in 17 countries;
- National IPM Programmes existed in 15 countries, and IPM extension activities in 17 countries;
- GAP standards existed in 12 countries; GAP extension programs were implemented in 10 countries;
- FFS were conducted in 10 countries; 8 countries had sizable IPM extension efforts reaching more than 10 000 farmers/year;
- Lack of price incentive was found as a disincentive for GAP;
- Many countries reported a lack of training and trained personnel.

IV. Pest management	Australia	Bangladesh	Cambodia	China	DPR Korea	Fiji	India	Indonesia	Japan*	Lao PDR	Malaysia	Myanmar	Nepal	New Zealand	Pakistan	Philippines	Rep of Korea	Sri Lanka	Thailand	Viet Nam	TOTAL	
<b>Updates</b>		new				new			new				new	new			new					
exec. summary		x	-	x	x					x		x					x	x	x			8
list legislation/regulation	-	x	-	-	...	x	...	...	x	...	-	-	x	x	...	...	-	...	...	...	...	5
web link	-	x	-	-	...	-	-	-	x	-	-	-	-	x	...	...	-	...	-	...	...	3
policies	x	x	...	...	x	x	x	x	x	...	x	...	x	-	...	...	x	...	x	...	...	11
organic/low pesticide	-	yes	yes	yes	yes	yes	yes	-	yes	yes	yes	yes	yes	-	yes	yes	yes	yes	yes	yes	yes	17
IPM	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	no	yes	-	yes	yes	yes	yes	yes	yes	yes	17
GAP	-	-	no	yes	yes	no	yes	yes	no	yes	yes	yes	no	-	-	yes	yes	yes	yes	yes	yes	12
sep pest mgmt extension	-	-	-	no	yes	no	no	yes	-	yes	no	yes	no	-	yes	yes	no	no	yes	yes		8
organization	...	-	...	...	x	x	...	x	x	x	x	...	x	-	x	...	x	...	x	...	...	10
infrastructure	-	-	...	...	x	-	x	-	x	x	x	...	x	-	...	...	x	x	x		...	9
pest mgmt indicators	-	-	...	...	x	x	x	...	x	x	x	x	x	x	...	...	x	...	x	...	...	11
Nat. IPM	-	-	yes	yes	-	yes	yes	yes	yes	yes	yes	no	yes	no	yes	yes	yes	yes	yes	yes	yes	15
IPM extension/r	-	-	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	17
GAP extension/r	-	-	no	yes	yes	no	yes	-	no	yes	yes	yes		yes	-	-	yes		yes	yes		10
market shares	-	-	-	x	-	-	x	-	-	-	-	x	x	-	...	-	x	-	x	-		6
major crops	-	-	-	x	x	-	x	...	x	-	x	...	x	-	...	-	x	x	x	...	...	9
cooperation projects	-	-	...	x	x	-	-	-	-	x	-	...	x	-	...	-	x	x	-	...	...	6
IPM extension	-	x	-	x	x	-	x	...	-	x	x	x	x	-	...	-	x	...	x	...	...	10
'000 farmers	-	222		56.8	-		24.3	1 048	-	.2	.3	.9	69	-	1.2	-	15.8	4.5	13.6	94	13	
FFS	-	6 240		189	-		812		-	38		29	2 623	-		-	464	250	x	216	10	
progress and constraints	-	-	-	-	x	-	-	-	x	x	x	x	-	-	...	-	-	x	x	...	...	7
Total changes	1	3	0	5	9	4	6	2	8	7	7	5	9	3	1	0	9	5	9	0		

\* Japan is not yet a member of APPPC

Updates as compared to the 2006 PPProfiles: x = content new/updated; ... = content same as 2006 PPProfiles; - = no response

## V. Pesticide management

### Observations

- This section had new or updated information from only 15 countries;
- Seven countries reported to have targets for reducing the use pesticide; however, only Thailand had formulated a specific target of reducing pesticide consumption by 25% in 2009;
- Four countries reported to have a special tax on pesticides to cover externality costs;
- Three countries reported to subsidize low-cost pesticides, while two countries subsidized low-cost biopesticides;
- The number of banned pesticides ranged from 11 to 96 per country; the number of pesticides with restricted use ranged from 0 to 53.

V. Pesticide management	Australia	Bangladesh	Cambodia	China	DPR Korea	Fiji	India	Indonesia	Japan*	Lao PDR	Malaysia	Myanmar	Nepal	New Zealand	Pakistan	Philippines	Rep of Korea	Sri Lanka	Thailand	Viet Nam	TOTAL	
<b>Updates</b>		new				new			new				new	new			new					
exec. summary	-	x	-	x	x					x		x					x	x	x			8
list legislation/regulation	...	x	...	x	..	-	...	...	x	...	...	..	x	x	...	...	x	...	x	...	...	7
web link	...	x	-	...	-	-	-	-	x	-	...	-	-	x	...	-	-	-	...	-	-	3
policies	...	x	...	...	x	-	x	...	x	x	x	x	x	x	x	-	x	x	x	...	...	13
pest. reduction target	no	yes	no	yes	yes	-	-	yes	no	no	no	no	no	no	yes	-	yes	no	yes	no	no	7
special externality tax	no	yes	no	no	no	-	no	-	no	no	no	no	yes	no	yes	-	yes	no	no	no	no	4
subsidize low-cost pest	no	no	no	no	yes	-	no	-	no	no	yes	no	no	no	no	-	yes	no	no	no	no	3
subsidize biopesticides	no	no	no	no	no	-	no	-	no	no	no	no	no	no	no	-	yes	no	no	yes	no	2
organization	...	x	...	...	x	-	...	...	x	x	x	...	x	x	x	...	x	...	x	...	...	10
infrastructure	...	x	...	...	x	-	...	...	x	x	x	x	x	x	...	-	x	...	x	...	...	10
pesticide trade	...	x	...	x	-	-	x	...	x	...	x	x	x	x	x	...	x	x	x	...	...	12
pesticide use profile	...	x	...	...	-	-	x	-	x	...	x	x	x	x	x	...	x	x	x	...	...	11
testing, quality control	...	x	...	...	...	-	...	...	x	x	...	...	x	x	...	...	x	...	x	...	...	7
health, environment	x	x	...	...	x	-	...	...	x	...	...	...	x	x	...	...	x	x	x	...	...	9
disposal	...	x	...	...	...	-	...	...	x	x	x	...	x	x	...	...	x	...	x	...	...	8
key operation indicators	...	x	-	...	-	-	x	...	x	x	x	x	x	x	x	...	x	x	x	...	...	12
pesticides restricted	-	-	-	...	-	-	-	-	-	-	-	-	-	-	-	x	-	-	-	x	-	2
number	-	-	-	21	-	-	13	4	2	-	3	7	5	-	0	-	6	53	11	17		
pesticides banned	-	-	-	...	-	-	-	-	-	-	x	-	-	x	...	-	-	-	x	-	-	3
number	-	-	-	18	-	-	27	36	21	26	25	19	14	11	25	28	-	43	96	29		
cooperation projects	-	x	-	...	-	-	-	-	-	x	-	...	-	x	...	-	-	-	x	-	-	4
progress and constraints	-	x	...	-	x	-	x	-	-	x	x	x	x	x	...	-	-	x	...	...	...	9
Total changes	1	14	0	3	6	0	5	0	11	9	9	7	11	14	6	0	11	7	14	0		

\* Japan is not yet a member of APPPC

Updates as compared to the 2006 PPPProfiles: x = content new/updated; ... = content same as 2006 PPPProfiles; - = no response

## VI. Additional issues of interest

### Observations

- The cultivation of GMO crops was reported from 3 countries: GMO cotton was grown in China and Indonesia, GMO maize in the Philippines.

VI. Additional issues of interest	Australia	Bangladesh	Cambodia	China	DPR Korea	Fiji	India	Indonesia	Japan*	Lao PDR	Malaysia	Myanmar	Nepal	New Zealand	Pakistan	Philippines	Rep of Korea	Sri Lanka	Thailand	Viet Nam	TOTAL
<b>Updates</b>		new				new			new				new	new			new				
GMO crops	-	-	-	...	-	-	-	..	-	-	-	-	-	x	x	x	x	-	-	-	4
allow cultivation				yes				yes						no	no	yes	no				
cotton				x				x													
maize																x					

\* Japan is not yet a member of APPPC

Updates as compared to the 2006 PPPProfiles: x = content new/updated; ... = content same as 2006 PPPProfiles; - = no response

## Relevance and implementation of 16 selected ISPMs

### Results of a questionnaire survey in 2011

#### Background

- Sixteen ISPMs were selected for this questionnaire survey;
- Twelve countries sent in responses; only two countries gave information about the years of full implementation;
- The information given in this questionnaire complements the information in the plant protection profiles with regard to relevance and degree of implementation.

#### Conclusions

- All responding countries found the ISPMs very relevant and useful;
- Highly relevant ISPM were generally more fully implemented;
- High relevance but a lower implementation rate with ISPM No. 2 (pest risk analysis) may indicate particular difficulties with its implementation in some countries;
- Full implementation was mainly limited by insufficient qualified staff and financial resources.

## Relevance and implementation of selected ISPMs

#### Observations

- All ISPMs were generally rated as highly relevant; only 8 were of low relevance to some countries;
- The overall level of fully implemented ISPMs per country was 46%; it ranged from over 80% (Australia, Japan, Rep of Korea) to 0% (Lao PDR and Myanmar);
- Seven countries increased their level of implementation between 2006 and 2009; most progress was reported with ISPM No. 29, followed by ISPM No. 11, 2 and 7.

#### Summary response from 12 countries for the period 2009-2010

ISPM	Relevance				Implementation				
	low	medium	high	NA	none	partial	most	full	NA
ISPM No. 02 Framework for pest risk analysis	0	1	11	0	1	3	3	5	0
ISPM No. 04 Requirements for the establishment of pest free areas	2	3	7	0	4	3	0	5	0
ISPM No. 06 Guidelines for surveillance	0	1	11	0	0	4	3	5	0
ISPM No. 07 Export certification system	0	0	12	0	0	1	2	9	0
ISPM No. 09 Guidelines for pest eradication programmes	1	2	9	0	2	5	1	4	0
ISPM No. 10 Requirements for the establishment of pest free places of production and pest free production sites	1	2	9	0	2	4	0	6	0
ISPM No. 11 PRA for quarantine pests including analysis of environmental risks and living modified organisms	0	3	9	0	1	3	5	3	0
ISPM No. 12 Guidelines for phytosanitary certificates	0	1	11	0	0	1	2	9	0
ISPM No. 14 The use of integrated measures in a systems approach for pest risk management	2	2	8	0	4	2	2	4	0
ISPM No. 15 Regulation of wood packaging material in international trade	0	2	10	0	0	2	3	7	0
ISPM No. 17 Pest reporting	1	2	9	0	1	4	5	2	0
ISPM No. 19 Guidelines on lists of regulated pests	1	1	10	0	2	3	3	4	0
ISPM No. 20 Guidelines for a phytosanitary import regulatory system	0	1	11	0	1	1	4	6	0
ISPM No. 23 Guidelines for inspection	0	2	10	0	1	0	3	8	0
ISPM No. 26 Establishment of pest free areas for fruit flies (Tephritidae)	2	3	7	0	4	3	1	4	0
ISPM No. 29 Recognition of pest free areas and areas of low pest prevalence	2	2	5	2	3	3	3	2	1
Total responses	12	28	149	2	26	42	40	83	1

NA = no answer

## Key factors contributing to a high degree of implementation

### Observations

- The high relevance of an ISPM was identified as the most important factor contributing to a high degree of implementation;
- ISPM No. 7 (export certification) had the most factors that contributed to a high degree of implementation;
- Sufficient facilities and financial resources, as well as the availability of supporting policies and operational manuals were factors present with those ISPMs that were fully implemented.

### Summary response from 12 countries (ranked in order of importance of contributing factor)

Factor	ISPM														TOTAL		
	No. 02 – PRA	No. 04 – pest free areas	No. 06 – surveillance	No. 07 – export certification	No. 09 – pest eradication	No. 10 – pest free sites	No. 11 – quarantine pests	No. 12 – phytosanitary certification	No. 14 – Integrated measures	No. 15 – wood pack	No. 17 – pest reporting	No. 19 – list of regulated pests	No. 20 – import regulatory sys.	No. 23 – inspection		No. 26 – fruit flies	No. 29 – pest free area recognition
This ISPM is highly or moderately relevant.	8	5	8	11	8	8	8	10	8	11	8	7	10	11	6	7	134
Most areas of this standard are easy to understand.	5	5	6	7	6	6	4	6	4	6	6	4	5	7	3	2	82
Good communication and coordination among stakeholders.	4	5	6	8	6	4	4	6	5	8	5	4	4	5	3	5	82
Effective work prioritization (and/or clear focus).	4	5	6	8	4	4	4	7	4	6	3	5	6	6	1	3	76
Availability of long-term supporting policies and operational plans.	6	4	6	5	4	5	4	5	5	6	3	5	6	7	3	2	76
Sufficient infrastructure supporting the implementation of this ISPM.	3	3	3	6	4	4	4	4	3	5	5	5	5	4	2	3	63
Sufficient facilities supporting the implementation of this ISPM.	3	1	3	7	5	5	4	5	3	4	5	5	6	2	1	3	62
Sufficient supporting financial resources (such as budget and funding).	4	3	1	7	4	4	3	5	4	4	4	4	5	4	2	3	61
Availability of an operational manual for implementing this ISPM.	5	1	5	4	5	4	3	5	3	4	3	2	4	6	3	2	59
Sufficient qualified personnel supporting the implementation (& staff low turnover rate).	2	2	2	7	3	2	3	7	3	4	5	3	4	5	2	4	58
Effective and efficient capacity building (training activities).	3	4	2	5	3	4	2	5	3	5	4	3	4	5	3	2	57
This standard is easy to implement.	2	1	4	5	3	2	2	5	2	6	3	4	4	7	2	0	52
Others.	1	0	2	1	0	0	1	1	0	1	0	1	1	1	0	0	10
TOTAL	50	39	54	81	55	52	46	71	47	70	54	52	64	70	31	36	

### Country comments:

#### ISPM No. 02: Framework for pest risk analysis

- Australia: Technical officers have a sound knowledge of this ISPM and its key steps for undertaken pest risk assessment. For example, the methodology section of policy documents released for comment or as a final document clearly explains the steps outlined in the ISPM.



Additionally, Plant Biosecurity runs internal pest risk assessment training which gives officers a good grounding in this ISPM. ISPM 2 provides both clear and fundamental guidance to the principles behind pest risk analysis. As such, it provides the necessary guidance and does so in an easy to understand manner and is a useful tool for staff. For example – section 1.2 provides good guidance on possible relevant factors to consider when determining the potential pestiferous nature of an organism being assessed.

- DPRK: With a correct understanding of importance of PRA in plant protection, the NPPO of the DPRK assesses the risk of pests corresponding with its specific conditions. The Central Plant Protection Station (CPPS) under the Ministry of Agriculture (MOA) is a key organization that is responsible for the PRA. However, there are other entities involved in the nationwide PRA efforts. The Korea Export & Import Commodity Inspection & Quarantine Committee (KIQC) of the State Administration for Quality Management (SAQM) are in charge of PRA on imported plants and/or plant materials. Upon detection of pests, these bodies are authorized to take measures deemed appropriate. For example, when fruit fly was detected in imported orange in 2010, the KIQC analyzed pest risk and concluded that it could not survive in the climatic conditions of the DPRK; measures were taken to disinfect orange for consumption.”
- Malaysia: PRA is highly relevant to Malaysia since there are many major crops (oil palm, rubber, rice, cocoa, etc.) contributing to the economy. Sound PRA procedures are necessary to prohibit entry of exotic pests related to those crops.
- Rep of Korea: In the headquarters of National Plant Quarantine Service/MIFAFF, there is a PRA division which mainly conducts PRA. The division consists of 13 staff, many of them are experts in plant pathology and entomology.
- Samoa: Operational plans are in place and this plays a huge role in IRA process. Additionally, there is good communication with stakeholders as information pertaining to potential imports are often provided by clients. This assists with the information required for the IRA process.

#### ISPM No. 04: Requirements for the establishment of pest free areas

- Australia: ISPM 4 is considered fundamental in its guidance on relevant information and measures to support pest free area status. While quite broad in its scope, it is a valuable check list and is effective in assisting the development of submissions to have pest free areas recognized. Pest free area status within Australia is effectively managed within Australia, according to the principles listed in ISPM 4 and as supported by operations guidelines and infrastructure. In IRAs and policy reviews principles of this ISPM are used as examples of information that would need to be received by Plant Biosecurity in order to assess a claim for a pest free area as a risk management measure for imported plant produce. In the assessment of bulk grain imports for metropolitan processing the use of this system was supported by sufficient financial resources to visit the exporting countries and confirm that production areas were pest free and that supply chains would maintain that pest free status.
- Rep of Korea exports fresh fruits based on pest freedom area. Key factors are survey, official control, reporting and documentation etc. Rep of Korea imports fresh fruits with recognition of pest freedom area such as oranges from fruit fly freedom area from Australia, kiwi and grape from fruit fly freedom area from Chili, orange from fruit fly freedom area from USA etc. Key factors are survey, official control, reporting and documentation etc. To recognize the pest freedom area, the communication with exporting countries, recognition by other

countries, sound survey system, emergency action and reporting, on-site verification etc. are important.

#### ISPM No. 06: Guidelines for surveillance

- Australia: Lack of adequate resources and a biosecurity framework that clearly identifies the role of surveillance in a biosecurity system hampers deploying and sustaining a comprehensive baseline level of surveillance for verifying pest status and providing early warning of new pest introduction.
- DPRK: The NPPO of the DPRK has a well-organized pest survey system on crops and other plants; its mandate is to survey and record domestic outbreak of pests. The forecasting section of the CPPS collects information on pest outbreak on crops; it has forecasting officers in plant protection offices at county and provincial levels in addition to independent forecasting stations under its administration. These independent forecasting stations, distributed on the basis of the principles of agricultural meteorology, collect and keep information on possible outbreak of pests in the area under surveillance on an annual basis. In farming season, a surveillance officer collects relevant information on pests and reports back to the CPPS once every 5 days. In case a new type of pest is detected, the CPPS is called in to identify the pest and apply remedy. The Ministry of Land and Environmental protection has a similar system to survey pests on forests. The MOA calls PRA meetings on biannual basis with a view to summing up the work done and sharing experience and methodology. The above meetings are financed and supervised by the government. New types of pests were detected in 2009 and 2010, resulting in crop damages. Field crops like maize were seriously affected by large colonies of soil-born pests such as cut worm and white grubs. The central part of the DPRK was one of the worst affected areas. Another type of previously undetected pest – *Trionymus agrestis* – caused damages in some areas of Kangwon Province while new types of previously undetected pests like *Cephalosporium* sp. and *Autographa* sp., were found in southern part of the country. Forecasting stations reported local outbreak of new pests in addition to those mentioned. Upon report of the outbreak, emergency quarantine measures are taken immediately to minimize damages under the supervision and financing of the government.
- Rep. of Korea: In the headquarters of NPQS/MIFAFF there are groups who are working for survey and epidemiology of newly introduced pest. However, early detection of plant pest is not easy and cooperation between relevant organizations should be improved for efficient surveillance.

#### ISPM No. 07: Export certification system

- Bangladesh: NPPO of Bangladesh has the legal authority, management responsibility and resources for implementation of this standard.
- DPRK: The DPRK has a well-established system of issuing established well-ordered system to issue certificates for import and export items. The KIQC issues export and import certificates for plants and plant materials while the Central Plant Quarantine Station (CPQS) of the MOA issues export and import certificates for planting materials such as seeds and seedlings. All technical issues are being dealt with by the CPQS in cooperation with the MOA. In 2010, the State Administration for Quality Management concluded the agreement on phytosanitary cooperation with its Chinese counterpart; these two entities step up the efforts to exchange views and share technology.
- Lao PDR: This measure is considered to be mandatory and very important for Lao PDR; it is applied in many countries. Stakeholders understand well on the concept and be able

to access information of contracting party. System, regulation and long term policy are developed to facilitate the trade

- Rep. of Korea: Qualified inspectors and facilities and communication system is necessary.

#### ISPM No. 09 Guidelines for pest eradication programmes

- Australia: ISPM 9 is supported within Australia by specific operational guidelines for eradicating incursions/spread of a number of specific pests (notably fruit flies). ISPM 9 is therefore of value in setting the guidelines which operational protocols then implement, as appropriate, in response to specific outbreaks.
- DPRK: Pursuant to pest eradication manuals provided by the IPPC and the domestic plan, the government of the DPRK works out a detailed plan to eradicate pests once an outbreak is reported. It is the responsibility of the MOA to take nationwide measures to carry out the plan and minimize damages. The KIQC plays a key role in detecting and quarantine pests in imported plant products; the KIQC, at its discretion, can decide either to disinfect or burn/bury the products with default, subject to the result of risk analysis. Likewise, the Central Plant Quarantine Station (CPQS) does a similar job as regards the pests on planting materials like seeds and seedlings. Once the outbreak is confirmed, the area under surveillance is thoroughly disinfected to prevent further spread. Although the CPQS is the key player, the MOA and the Cabinet supervise the work being done. Upon detection of a new type of pest, the government takes powerful measures to eradicate the pest. The first step is the creation of an expert group whose responsibility is to assess the extent of outbreak, analyze the risk and decide on detailed steps of eradication plan. The second step is the creation of an ad-hoc emergency disease control committee under the administration of the MOA. The MOA, in turn, collects information on affected areas and take measures to quarantine and eradicate pests. The CPPS of the MOA is a key player in this regard. For example, the government responded immediately and provided financial and administrative assistance for the pest eradication campaign when maize powdery scale affected the eastern part of the country in 2010.
- Malaysia: The eradication programme of Papaya Die-back disease in Malaysia in 2010-2011 is implemented based on this ISPM.
- Rep of Korea: Effective survey for early detection and assessment for eradication programme is essential. For eradication, qualified experts and communication with other relevant organizations are important.

#### ISPM No. 10: Requirements for the establishment of pest free places of production

- Australia: ISPM 10 supplements ISPM 4, particularly for establishing particular sites or production faculties being free from specific pest – particularly where high health plant material is concerned. Of particular note in ISPM 10 is the definition provided between area freedom and pest free places/production sites (refer section 1.2). The additional measures that may be required to achieve and maintain pest freedom and the different levels of monitoring to certify that status are well described and a valuable guide in developing and assessing submissions. In IRAs and policy reviews principles of this ISPM are used as examples of information that would need to be received by Plant Biosecurity in order to assess a claim for a pest free place of production or a pest free production site as a risk management measure for imported plant produce.
- DPRK: Government agencies involved in the plant protection efforts attach great importance to the work aimed at ensuring the complete suppression of non-indigenous pests by manufacturers.

- Malaysia: Implementation of this ISPM is mainly on commodities for export. Malaysia has a scheme supporting this ISPM i.e. Malaysian Phytosanitary Certification Assurance Scheme (MPCA).
- Thailand: The Department of Agriculture (DOA) has started establishing pest free production sites.

#### ISPM No. 11: PRA for quarantine pests including analysis of environmental risks and living modified organisms

- Australia: ISPM 11, coupled with the specific country methodology, is the primary reference during the development of pest risk analyses – from hazard identification through to justification in measures. While broad in its focus, this ISPM provides substantial guidance on those factors agreed as relevant to determining quarantine risks and provides valuable prompts to risk assessment staff. Full implementation and best use of this ISPM requires substantial resources, both in terms of data management and the ability to source and obtain relevant literature. Where these are available, training then provides the necessary knowledge on translating the guidelines into the country specific risk assessment methodology. This standard forms the basis for all pest risk assessments used in policy reviews and its principles and guidelines are incorporated into the standard methodology section used in import risk assessments, policy reviews and policy extensions. Aspects of the ISPM are even referred to in the methodology sections of assessments of biological control agents. Internal training is offered to all new staff members focusing on this standard and how it applies to our assessment of phytosanitary risks.
- DPRK: Analysis of environmental risks and living modified organisms is being done pursuant to the relevant manual. – just as in the case of PRA (ISPM No. 2). National Academy of Science is responsible for the analysis of living modified organisms.
- Malaysia: PRA is highly relevant to Malaysia since there are many major crops (oil palm, rubber, rice, cocoa, etc.) contributing to the economy. Sound PRA procedures are necessary to prohibit entry of exotic pests related to those crops. NPPO of Malaysia carries out PRA for LMO but the decision to approve import is under the purview of the National Biosafety Board (NBB) under the Ministry of National Resource and Environment (NRE).
- Rep. of Korea: Experts with experience and information collecting are the key factors.

#### ISPM No. 12: Guidelines for phytosanitary certificates

- Bangladesh: Phytosanitary certificates are issued only when the Quarantine Officials are satisfied with the products that the product meets the import requirements of the importing country.
- Malaysian plans to implement E-cert (electronic certification of PC) by 2012.
- Thailand: The guidelines for phytosanitary certificates have been tightly adhered to.

#### ISPM No. 14: The use of integrated measures in a systems approach for pest risk management

- Australia: Consideration of, and guidance from, this ISPM was important in the development of the policy review for *Phalaenopsis* orchids from Taiwan. This review evaluated the efficacy of a systems approach for the production of *Phalaenopsis* as an alternative to the previously accepted risk management measures. The ISPM is quite clear on the different stages of the systems approach and the evaluation of those measures. The implementation, in this situation, was supported by sufficient financial resources which allowed technical visits of the production system/facilities. Information from this ISPM is also important in the development of systems approaches domestically, for accessing a variety of markets. With pressures on currently available pesticides, alternatives to methyl

bromide and other “mainstays” of quarantine are actively being sought. ISPM 14 provides useful guidance on how to assess combinations of measures and develop submissions demonstrating why a “systems approach” may be valid. This ISPM is usefully supported by a large quantity of literature from quarantine researchers.

- DPRK: The DPRK developed well-ordered system for pest risk management and eradication of pests. The CPPS of the MOA is responsible for pest risk management. To this end, the CPPS runs plant protection stations at county and provincial levels. The work of the CPPS is under the supervision of the MOA. The MOA organizes an ad hoc pest risk management office in farming season which is prone to the outbreaks of pests so as to coordinate risk management and eradication efforts. The national plant protection organizations hold national seminars on biannual basis to share relevant information technology. These seminars proved successful in minimizing the damages by pests. 2009 and 2010 saw an increase in the outbreak of soil-born pests such as grubs and cut worms; migrant pests such as armyworm and plant hoppers added to the damage. Some areas were affected by new types of pests such as *Trionymus agrestis*, *Cephalosporium* sp. and *Autogrpha* sp. The MOA successfully led the campaign to eradicate these pests. In 2009 and 2010, more than 20 facilities were built to grow *Trichogramma* as a part of the Integrated Pest Management efforts; the Swiss Agency for Development and Cooperation (SDC) and European Union Program Support Units (EUPS units) sponsored the campaign, making a substantial contribution. In addition, the introduction of advanced techniques such as crop rotation contributed to sustainable agricultural production.

#### ISPM No. 15: Regulation of wood packaging material in international trade

- Bangladesh: Heat treatment for wood packaging materials is a must.
- DPRK: All import and export items in wood packing are thoroughly fumigated at border quarantine checkpoints.
- Malaysia: Implementation of ISPM No. 15 for export was enforced since 2006 to fulfill importing countries requirement. Meanwhile, enforcement for import was fully implemented since July 2010.
- Thailand: In establishing requirements for exports, Thailand applies the standards in line with the regulation of wood packaging material in international trade.

#### ISPM No. 17: Pest reporting

- Australia: ISPM 17 highlights both basic procedures and expectations for reporting new/changed pests status within a country. Full implementation of the ISPM is promoted by its emphasis on cooperative action to prevent the spread of pests and pathogens (IPPC) and the confidence brought about by members proactively reporting matters of actual or potential phytosanitary importance.
- DPRK: The government of the DPRK responds promptly to reports of pest outbreaks coming in from different levels. The MOA collects information from plant protection stations and agricultural administrations at county and provincial levels to have a correct picture of the extent of the outbreak. The KIQC also informs the MOA of detected pests from imported items on a regular basis; the SAQM and plant quarantine stations are in charge of technical training.

---



---

 ISPM No. 19: Guidelines on lists of regulated pests

- Australia: Guidelines from this ISPM are incorporated into the pest categorization stage of import risk analyses and policy reviews. In particular the guidance provided by Section 4.1 (required information on listed pests) is commonly addressed. This ISPM is practically implemented by the development of pest risk analyses for imported commodities, which include the lists of regulated pests and the measures recommended for those pests. This is supported by a specific pest risk analysis process that is clearly documents and IT infrastructure to record and retain those records for future reference.
- DPRK: The NPPO will try to establish lists of regulated pests in future and make such lists available to the Secretary, to regional plant protection organization and to other parties concerned.
- Japan: To indicate the lists of regulated pests, our country is going to review our system of import plant quarantine through appropriate PRA according to ISPM and risk-communication with stakeholders and so on.

## ISPM No. 20: Guidelines for a phytosanitary import regulatory system

- Australia: Full implementation of ISPM 20 is encouraged by the interest in protecting an endangered area from a quarantine pest. The ISPM then provides valuable information on what specific actions may be justified and under what situations those actions may be considered reasonable. Of particular interest is Section 5.1.6.2 for managing emergency situations due to outbreaks or new pest reports, and when unanticipated circumstances arise. It is important that these implemented principles are, however, supported by long term plans and operational systems with suitable levels of support (including financial). This is particularly important for the surveillance, compliance checking, audit and PRA functions highlighted in this ISPM.
- Bangladesh: As we are importing country so to prevent the introduction of quarantine pest we try to follow the guidelines for a phytosanitary import regulation.
- DPRK: NPPO, DPRK had phytosanitary regulatory system to prevent the introduction of quarantine pests or limit the public crop pests with imported commodities and other regulated articles.
- Lao PDR: This standard is the most relevant to many countries and it has been widely promulgated in the region. Enforcement experience can be taken from neighbouring countries and well applied into domestic regulation. Many stakeholders mostly understand on how to implement this measure.

## ISPM No. 23: Guidelines for inspection

- Australia: Guidelines from this standard are utilized in setting inspection and sampling rates in our policy reviews. The Grains and Forestry branch is also taking part in a cross cutting project which aims to feed data collected from pest inspection and identification work back into the policy formulation process.
- Bangladesh: Inspection is a must at the point of entry to verify the compliance/non-compliance with the phytosanitary import regulations.
- DPRK: Well-ordered inspection system of the DPRK to inspect pests in the consignments of plants and plant products at border quarantine checkpoints help detect incoming pests to a certain degree. The KIQC informs the CPPS of its detection results. The Central Plant Quarantine Station inspects planting materials such as seeds and seedlings. In 2009 and 2010 CPQS organized two workshops for inspection officers of all quarantine checkpoints and trained them on inspection methods and notified them of issues raised by the IPPC.

The inspection officers are required to call in a specialized agency depending on the result of their primary inspection.

- Lao PDR: It is well known by stakeholders and many countries applied it, domestic regulation clearly indicates this activity. The operational manual can be shared among neighbouring countries. Series of capacity building have been developed and organized throughout the country.
- Thailand: The guidelines for inspection have been used for training the officers concerned.

ISPM No. 26: Establishment of pest free areas for fruit flies (Tephritidae)

- Australia: Recognising fruit flies as one of the most important quarantine pests for importing countries, ISPM 26 provides valuable guidance that is supplementary to ISPM 4 and has specificity to these fruit fly pests. Full implementation is encouraged by recognizing the importance of being able to demonstrate area freedom that is consistent with ISPM 26's principles, providing a starting point for discussions with importing NPPOs. Of particular note is the emphasis on targeting high risk areas – a relevant consideration for fruit flies that have specific host requirements and often high degrees of host specificity. Significant investment in operational systems is required, particularly for movement control where a pest free area is located within an otherwise infested area. The availability of these systems and the funding to maintain them is a key factor in their implementation.

ISPM No. 29: Recognition of pest free areas and areas of low pest prevalence

- Australia: This ISPM has been used for the acceptance of soybean imports from areas of low pest prevalence in Argentina for metropolitan processing. The approach is accepted due to good communication with the Argentinean quarantine authorities and their prompt responses to requests for information on the level of pest prevalence. Imports of soybean have also been supported by being able to conduct technical visits of their export facilities through use of sufficient available financial resources.
- Malaysia: Implementation of areas of low pest prevalence for mango orchard for export to Japan in 2010.

## Key factors contributing to a low degree of implementation

### Observations

- The most important factor that contributed to a low degree of implementation were insufficient capacity building, followed by insufficient qualified staff and insufficient financial resources;
- ISPM No. 4 (pest-free areas), 9 (pest eradication) and No. 11 (quarantine pests) listed the most factors limiting their implementation;
- ISPM No. 7 (export certification) and No. 12 (phytosanitary certification) had the fewest factors contributing to a low implementation; both were fully implemented by most reporting countries;
- Low relevance and difficulties in understanding did not appear to contribute significantly to a low degree of implementation.

### Summary response from 12 countries (ranked in order of importance of contributing factor)

Factor \ ISPM	No. 02 – PRA	No. 04 – pest free areas	No. 06 – surveillance	No. 07 – export certification	No. 09 – pest eradication	No. 10 – pest free sites	No. 11 – quarantine pests	No. 12 – phytosanitary certification	No. 14 – Integrated measures	No. 15 – wood pack	No. 17 – pest reporting	No. 19 – lists of regulated pests	No. 20 – import regulatory sys.	No. 23 – inspection	No. 26 – fruit flies	No. 29 – pest free area recognition	TOTAL
Insufficient capacity building (training activities).	6	6	8	2	7	5	8	2	6	3	6	6	5	3	5	5	83
Insufficient qualified personnel supporting the implementation (and staff high turnover rate).	8	4	6	1	7	5	8	1	5	3	5	6	4	3	5	4	75
Insufficient supporting financial resources (such as budget and funding)	5	7	9	1	5	4	6	2	5	2	6	5	3	1	6	5	72
Insufficient facilities supporting the implementation of this ISPM.	4	4	6	0	4	3	5	1	4	3	5	3	3	3	5	2	55
Inadequate (or lack of) work prioritization (and/or lack of focus)	6	3	2	1	4	4	6	1	2	3	4	4	3	2	4	4	53
Most or some parts of this standard are difficult to implement.	5	4	3	2	5	4	6	1	5	1	3	3	2	0	3	5	52
Non-availability of long-term supporting policies and operational plans.	2	4	1	2	3	4	5	2	3	3	4	4	3	2	2	4	48
Insufficient infrastructure supporting the implementation of this ISPM.	3	3	6	1	4	2	3	2	3	2	2	3	3	3	3	2	45
Non-availability of an operational manual for implementing this ISPM.	2	3	1	2	3	2	3	2	3	3	5	5	3	0	3	3	43
Insufficient communication and coordination among stakeholders.	4	3	2	0	3	2	4	0	3	1	3	2	2	1	1	2	33
Most or some areas of this standard are difficult to understand.	3	1	1	1	1	1	3	0	3	1	1	3	2	0	2	3	26
This ISPM is slightly or marginally relevant.	0	2	0	1	1	1	0	1	1	1	0	0	1	1	3	2	15
Others	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	5
<b>TOTAL</b>	<b>49</b>	<b>44</b>	<b>45</b>	<b>14</b>	<b>47</b>	<b>38</b>	<b>58</b>	<b>15</b>	<b>43</b>	<b>26</b>	<b>44</b>	<b>44</b>	<b>34</b>	<b>19</b>	<b>43</b>	<b>42</b>	



## Country comments:

## ISPM No. 02: Framework for pest risk analysis

- Bangladesh: With the existing human resources, technical capacity, technical information and budgetary allocation it is hard to implement the standard the full. New text of “Bangladesh Quarantine Act 2009” has been placed in the parliament for approval. It is expected that the Act will be passed soon. Under the new Act 2009 legal framework will be established and other necessary steps will be taken for full implementation of the standard.
- DPRK: PRA is a complicated process for which a country needs to rely on a vast array of information including domestically acquired data as well as detailed pest-related information from foreign countries; further, the information collected needs to be analyzed in a comprehensive manner. To this end, a team of experts was sent to attend workshops organized by APPPC in 2006. However, these experts couldn’t get enough information from the IPPC; as a result, the efficiency of PRA couldn’t be ensured. Moreover, some staff members of CPPS have only minimum understanding of the PRA standards set by the IPPC. As a result, the efficiency of the PRA doesn’t live up to the standards, covering only a limited number of areas. PRA requires coordinated efforts of experts and scientists from different disciplines; it is, by no means, a one-man job. However, only a few experts in our country have experience in PRA. Further, dissemination of related technology is also insufficient. Although the standards of PRA had already been set by the IPPC, lack of training in actual assessment methodology and lack of understanding stand in the way of implementation. On several occasions, we have requested cooperation from the IPPC for the training in PRA, without any result. If possible, PRA experts from our relevant organizations can be trained by allowing them to work together with their counterparts in other countries. If not, the APPPC may send an experienced expert to our country to train our experts. It would be desirable if the APPPC could make an arrangement for the CPPS of the MOA to receive, on a regular basis, CD-ROMs on which comprehensive databases concerning the outbreak of pests are recorded because the CPPS is to play a pivotal role in PRA. For example, the Crop Protection Compendium is of great help; however, the CPPS has been unable to get this Compendium on CD-ROM. To make matters worse, the CD-ROM version of the Compendium the CPPS acquired from other source turned out to be an outdated one, making our PRA efforts difficult and inefficient. It points to a need to set up a channel through which the CPPS can get necessary information (preferably CD-ROMs) on the outbreaks and specifics of pests on an international scale.
- Lao PDR: The number of technical staff who has knowledge on PRA is very limited and it is not distributed to academic or research institution. The training courses on PRA were given for short time and focus only technical staff. Many stake holders such as policy maker and trader do not understand the concept of PRA which is the difficulty for Lao PDR to adopt and implement PRA. Moreover, learning and sharing information among countries in the region on implementation and enforcement of PRA is very limited and only some of them are just starting. the contracting party have not yet apply this measure to Lao PDR. Resource person do not have experience to apply and enforce this measures in to real situation. The exist knowledge is only the principle of PRA but it is not an operational manual for implementing this ISPM.
- Malaysia: Malaysia is in the process of strengthening its PRA unit by increasing the number of personnel and other resources. However, there is a lack of trained personnel to conduct PRA consisting of experts in pathology, entomology, weed science, nematology, etc.

- Philippines: Fast turnover of manpower; new manpower would require capability building on Pest Risk Analysis; for the existing manpower, PRA is an additional function
- Viet Nam: Particularly for Living Modified Organisms (LMO): LMOs are organisms that possess a novel combination of genetic material, obtained through the use of modern biotechnology and are designed to express one or more new or altered traits; special field of LMOs, Viet Nam is still limited knowledge and capacity assessment. So the risk analysis for these species is difficult to make specific management measures; also, Viet Nam should be funded to improve the capacity of the species of LMOs.

#### ISPM No. 04: Requirements for the establishment of pest free areas

- Australia: At times the adoption of pest free areas can be limited by miscommunication as to what information is required to adequately assess a claim of a pest free area. In this regard the ISPM is particularly important as a guideline for what is required.
- Bangladesh: Citrus, vegetables and fruits are exported regularly, but recently citrus exportation to EU are hampering due to the presence of citrus canker and other diseases. For pest free production of citrus, momordica, brinjal etc. we have taken a project which will be started functioning from March 2011.
- Lao PDR: The concept of this measure is not yet well known by relevant staff as well as stake holders, experience from countries in the region on enforcement of this measure is not shared or distributed. It is not yet applied or required by trade contracting party.
- Malaysia: Establishment of PFA requires significant amount of resources to implement and maintain. Malaysia has low priority on establishing PFA but focus more towards the establishment of Pest Free Production Sites.
- Thailand: Thailand has no expert who can establish the specific survey for the preparation of pest lists.
- Viet Nam: The requirements of PFAs of this standard is difficult to implement such as an entire country. A pest free area (PFA) would be established within an area whose infestation status has been based on specific surveys and general surveys. Viet Nam had just established a PFA for some crops and in some areas, such as dragon fruit, mango, litchi, longan, rambutan, breast milk, etc. Therefore requires investment funds to establish PFA for potential exporting crops. Must support in personnel and funding for as follows: – Determination of a PFA (surveys (delimiting, detection, monitoring); regulatory controls; audit (review and evaluation),..); – Establishment and Maintenance of a PFA; – Systems to establish freedom; – Phytosanitary measures to maintain freedom; – Checks to verify freedom has been maintained; Training for farmers in the growing area to understand technical details of surveillance, or survey and monitoring systems used and determination of pest status, also regulatory controls.

#### ISPM No. 06: Guidelines for surveillance

- Bangladesh: Lack of human resources, technical capacity, technical information and budgetary allocation are not sufficient enough for full implementation of this ISPM.
- DPRK: The government of the DPRK pays deep attention to plant protection efforts; the infrastructure is in place; it has enough human resources as well. However, lack of necessary equipment is a problem. In particular, basic equipment such as microscope is in short supply, as a result of which personnel manning local stations are not able to make a direct on-site evaluation; instead they are compelled to call in CPPS or other research institutes for assessment. It reduces efficiency of the efforts to combat pests. Migrant pests from other countries are detected in our country on an increasing scale. In particular, plant hopper

and armyworm that struck the DPRK in 2010 caused widespread damages across the country. The DPRK wanted to share information with other countries like China as regards the migrant pests. The failure to do so results in serious damages caused by migrant pests. Although the CPPS does what it can to protect plants from migrant pests, the absence of working relations with foreign counterparts results in continued damages.

- Lao PDR: Systematic surveillance programme in Lao PDR have been just started. Although there is guideline, there is not operation manual and it is considered as new measure for Lao PDR that difficult to have experience staff that can applied in real situation. There is difficulty on identification of the pest collected from survey and the academic and research in situation have not involved in programme which make publication the pest status is limited.
- Malaysia fully implemented this ISPM on selected prioritized major crops for export. Prioritization is necessary due to insufficient funding. Lack of expertise in identifying pest and disease is overcome by utilizing regional networking on diagnostics.
- Thailand has no expert who can establish the specific survey for the preparation of pest lists.
- Viet Nam: In recent years, Viet Nam has done a good survey including general surveillance and specific surveys. However, insufficient qualified personnel and financial resources such as: – capacities for identification of the target pest in specific surveys (facilities and equipment); – financial for surveillance on all crops, Viet Nam are not enough funds for investment; – facilities for record keeping; – facilities for processing and storing of voucher specimens; – data verification procedures.

#### ISPM No. 07: Export certification system

- Viet Nam: Completing the construction of the law on Plant Protection and Quarantine (in 2013-2014). Insufficient qualified personnel and financial resources are available to undertake management responsibility as follows: – identification of organisms found during inspection of consignments; – training for production of operational instructions to ensure that importing country phytosanitary requirements are satisfied; – development of bilateral cooperation. Staff: personnel with a low/medium level of expertise. Having access to personnel with training and experience (detection and identification of pests, survey, monitoring and control activities); technical information (concerning quarantine pests, and non-quarantine pests); equipment and facilities (to carry out inspection, testing with virus, phytoplasma, other microorganisms).

#### ISPM No. 09: Guidelines for pest eradication programmes

- Bangladesh: No exotic pest outbreak in Bangladesh. NPPO has the available resources to eradicate the general pests.
- Lao PDR: Pest eradication programme is new measure for Lao PDR, it was partly adopted into domestic regulation anyhow there is not qualified personnel supporting implementation of this measure and stakeholder do not understand on the concept, the experience shared by neighbouring country and number of capacity building provided are very limited.
- Thailand has neither budget nor plan to eradicate plant pests in a continuous manner.
- Viet Nam: Decision to Undertake an Eradication Programme: – This approach may be limited in practice by the availability of data and resources; – Initiation: Key factors contributing the same ISPM 6; insufficient qualified personnel and financial resources to identify (Identification methods, morphological characteristics to more sophisticated bioassay, chemical, particularly genetic analyses and conserving specimens for possible future analysis); insufficient facilities, capacity and financial resources to conduct the

eradication programme (surveillance, the status of the pest in the area is then 'absent: pest eradicated', containment, treatment or control measures, completion of a successful eradication programme).

#### ISPM No. 10: Requirements for the establishment of pest free places of production

- Australia: At times the adoption of pest free places of production and pest free production sites can be limited by miscommunication as to what information is required to adequately assess a claim. In this regard the ISPM is particularly important as a guideline for what is required.
- Bangladesh: A small quantity of citrus and vegetables are exported to EU. But citrus canker is a concern to EU. So, for exportation of citrus and vegetables we are going to establish pest free citrus and some vegetables production sites.
- Lao PDR: The concept of this measure is not yet well known by relevant staff as well as stake holders, experience from countries in the region on enforcement of this measure is not shared or distributed.
- Viet Nam: Insufficient qualified personnel and financial resources to study on: – the natural spread of the pest (or its vectors, if appropriate) is slow and over short distances; – the possibilities for artificial spread of the pest are limited; – the pest has a relatively low probability of survival from previous seasons; – the pest has a moderate or low rate of reproduction; – sensitive methods for detection of the pest are available, either by tests applied in the field or in the laboratory, at the appropriate season; – factors in the biology of the pest (e.g. latency) and in the management of the place of production do not interfere with detection; – effective and practical measures for control and management; – insufficient capacity building to verify that pest freedom has been attained or maintained and official surveys before consignments are certified for export; – insufficient facilities and financial resources to implement preventive measures (pest free propagating material, elimination of other hosts), exclusion measures (physical barriers, screens, controls on equipment, machinery, plants, soil and growing media); pest control measures (cultural methods, treatments, and resistant cultivars).

#### ISPM No. 11: PRA for quarantine pests including analysis of environmental risks and living modified organisms

- Bangladesh is an importing country. Rice, wheat, lentil, spices fruits and most of agricultural seeds are imported to our country. But with our existing human resources, technical competence, budgetary allocation, etc., we cannot meet the adequate requirements of this standard.
- Lao PDR: The number of technical staff who has knowledge on PRA is very limited and it is not distributed to academic or research institution. The training courses on PRA were given for short time and focus only technical staff. Many stake holders such as policy maker and trader do not understand the concept of PRA which is the difficulty for Lao PDR to adopt and implement PRA. Moreover, learning and sharing information among countries in the region on implementation and enforcement of PRA is very limited and only some of them are just starting. The contracting party have not yet apply this measure to Lao PDR.
- Malaysia is in the process of strengthening its PRA unit by increasing the number of personnel and other resources. However, there is a lack of trained personnel to conduct PRA consisting of experts in pathology, entomology, weed science, nematology, etc.
- Viet Nam: Particularly for Living Modified Organisms (LMO): Insufficient qualified personnel, financial resources, infrastructure, facilities and capacity building determine if

the genetic modification (i.e. gene, new gene sequence that regulates other genes, or gene product) results in a new trait or characteristic that may present a plant pest risk. Insufficient qualified personnel, financial resources to conduct plant pest risk from LMOs may be presented by: – the organism(s) with the inserted gene(s) (i.e. the LMO); – the combination of genetic material (gene from plant pests such as viruses, microorganisms) or; – the consequences of the genetic material moving to another organism. Stage 1: Initiation: Insufficient capacity building training activities to determine the potential for a living modified organism to be a pest. Stage 2: Pest Risk Assessment: There are difficult to implement for LMOs to determine potential for establishment and spread in PRA area, potential for economic consequences in PRA area. Stage 3: Pest Risk Management: This is difficult to implement for LMOs to obtain concerning the risk management measures applied to the LMOs. The potential for risk from LMO pests depends in part on the intended use. As for other organisms, certain intended uses (such as high security contained use) may significantly manage risk. Insufficient capacity building regarding environmental risk (such as training). This is a new issue for capacity building and financial resource to determine: – directly affect uncultivated/unmanaged plants; – indirectly affect plants: invasive plants, exotic, etc.; – environmental risk management measures.

#### ISPM No. 12: Guidelines for phytosanitary certificates

- Viet Nam: Completing the construction of the law on Plant Protection and Quarantine (in 2013-2014). Type and form of phytosanitary certificates: – electronic certification and security is acceptable by the importing countries; – Insufficient financial resources to design model issue and software to manage phytosanitary certificates; – training for staff using the software to certificate a electronic phytosanitary certification for export or phytosanitary certification for re-export.

#### ISPM No. 14: The use of integrated measures in a systems approach for pest risk management

- Australia: Issues that hamper the implementation of this standard are insufficient facilities or infrastructure in exporting countries to maintain systems approaches at a level which will meet Australia's quarantine requirement or insufficient communication of data demonstrating efficacy of the systems approach. This applies equally for Australia's export systems approaches.
- Bangladesh: Budgetary allocation, season long training and integrated approaches are required for full implementation of the standard.
- Lao PDR: trade contracting party does not require or apply for this measure.
- Malaysia has only started to implement this ISPM recently. Stakeholders acceptance over this approach for market access is still low. The lack of trained personnel and active involvement of stakeholders in the implementation of this ISPM are the biggest hindrance to its success.
- Viet Nam: Systems approaches should be composed of the combination of phytosanitary measures that are possible to implement within the exporting country. There are many options to improve qualified personnel and capacity building as follows: – Pre-planting; – Pre-harvest; – Harvest; – Post-harvest treatment and handling; – Transportation and distribution. Insufficient financial resources to support: – Pre-planting (study on resistant or less susceptible cultivars); – Pre-harvest [field management methods (pre-harvest treatments, pesticides, biocontrol, etc.)] : protected conditions (glasshouse, fruit bagging, etc.); – Post-harvest treatment and handling [treatment to kill, sterilize or remove pests (fumigation, irradiation, cold storage, heat, VHT, etc.)]; packing facilities, screening of

storage areas); – Transportation (processing during transport; method of packing). Parts of this standard are difficult to implement that is Evaluating Systems Approaches (audit: planned evaluation and verification of the systems approach); risk management measures proposed for a systems approach.

#### ISPM No. 15: Regulation of wood packaging material in international trade

- Viet Nam: – Insufficient qualified personnel to approve phytosanitary measures (achieves a minimum temperature of 56°C for a minimum duration of 30 continuous minutes throughout the entire profile of the wood or fumigated with methyl bromide); approve of new or revised treatments; – Training for staff are qualified to inspect the heat treatment facilities and qualified supervision fumigated by methyl bromide for wood packaging material.

#### ISPM No. 17: Pest reporting

- Bangladesh: Generally we collect information from field level, the occurrence, outbreak and spread of pests. We don't have any outbreak of exotic pest yet. The information collected are the general pests of Bangladesh.
- Lao PDR: Frame work and information required for pest reporting is just established and number of staff supporting the implementation is very limited and they are not familiar with this standard. The number of domestic publication on pest status is very limited and Insufficient communication and coordination among stakeholders.
- Thailand has no clear policy on pest reporting.
- Viet Nam: – Insufficient qualified personnel to approve phytosanitary measures (achieves a minimum temperature of 56°C for a minimum duration of 30 continuous minutes throughout the entire profile of the wood or fumigated with methyl bromide); approve of new or revised treatments; – Training for staff are qualified to inspect the heat treatment facilities and qualified supervision fumigated by methyl bromide for wood packaging material.

#### ISPM No. 19: Guidelines on lists of regulated pests

- Bangladesh: Lack of budgetary allocation and proper training, etc. are the main causes for not fulfillment of this standard.
- DPRK: The NPPO failed to make a list of regulated pests because it had insufficient understanding of the criteria by which regulated pests and/or quarantine pests are classified; lack of skilled experts was another factor.
- Viet Nam: Enhancement capacity building to determine lists of regulated pests, including: – quarantine pests, or; – regulated non-quarantine pests. Supporting personnel and financial resources for: – survey; – pest risk assessment of pests to build catalogue of regulated non-quarantine pests; – updating of lists of regulated pests when pests are added or deleted, or the category of listed pests changes, or when information is added or changed for listed pests.

#### ISPM No. 20: Guidelines for a phytosanitary import regulatory system

- Viet Nam: Completing the construction of the law on Plant Protection and Quarantine (in 2013-2014): – Enhancement capacity building for import regulatory system such as measures required in the exporting country, during shipment, at the point of entry, after entry and other measures to build imported conditions for each consignment. Staff, including training: – authorize personnel who have appropriate qualifications and skills; – ensure that adequate and sustained training is provided to all personnel to ensure

competency in the areas for which they have responsibility. Supporting equipment and facilities are available for: – inspection, sampling, testing, surveillance and consignment verification procedures; – communication and access to information (by electronic means as far as possible).

#### ISPM No. 23: Guidelines for inspection

- DPRK: The quarantine checkpoints mainly identify insect pests and fungus pests in plant products and planting materials but face a difficulty in detecting viruses and bacteria due to lack of advanced identification equipment and capacity. Technical assistance in this regard will help us eradicate pests on import and/or export items more thoroughly.
- Viet Nam: Enhancement capacity of inspector/personnel resources: – authority to discharge their duties and accountability for their actions; – technical qualifications and competencies, especially in pest detection; – knowledge of access to capability in identification of pests, plants and plant products and other regulated articles; – access to appropriate inspection facilities, tools and equipment; – written guidelines (such as regulations, manuals, pest data sheets); – knowledge of the operation of other regulatory agencies where appropriate; – objectivity and impartiality; – Pest risk analysis (PRA) provides the basis for technical justification for phytosanitary import requirements; – Understanding three distinct procedures: + examination of documents associated with a consignment; + verification of consignment identity and integrity; + visual examination for pests and other phytosanitary requirements (such as freedom from soil). Training inspection method for staff, It is important that: – examination of the sample be undertaken as soon as reasonably possible after the sample has been drawn and that the sample is as representative of the consignment/lot as possible; – techniques are reviewed to take account of experience gained with the technique and of new technical developments; – procedures are put in place to ensure the independence, integrity, traceability and security of samples for each consignment/lot; – results of the inspection are documented.

#### ISPM No. 26: Establishment of pest free areas for fruit flies (Tephritidae)

- Bangladesh: We export a small amount of citrus and vegetables so, we are going to establish some pest free production sites under the project ‘Exportable citrus and Vegetables Production’.
- Malaysia: This ISPM is not feasible to be implemented in Malaysia.
- Viet Nam: Supporting financial resources to determine characteristics of the fruit flies pest free area (FF-PFA): – the target fruit fly species and its distribution within or adjacent to the area; – commercial and non-commercial host species; – delimitation of the area (detailed maps or GPS coordinates showing the boundaries, natural barriers, entry points and host area locations, and, where necessary, buffer zones); – climate, for example rainfall, relative humidity, temperature, prevailing wind speed and direction. Supporting personnel and financial resources to develop and implement: – buffer zone; – surveillance activities for establishment of the FF-PFA; – delimitation of the FF-PFA; – phytosanitary measures related to movement of host material or regulated articles; – pest suppression and eradication techniques as appropriate; – Maintenance of the FF-PFA. Supporting facilities for trapping procedures (trap type and lures). Training activities for: – trapping method; – fruit sampling.

#### ISPM No. 29: Recognition of pest free areas and areas of low pest prevalence

- Australia: Wider adoption of this ISPM has been hampered by its limitations in lowering the risk to below Australia’s ALOP. Generally speaking the acceptance of areas of low pest prevalence is not seen as an appropriate risk management measure unless accompanied

by other supporting measures which act in combination to reduce the risk to an acceptable level.

- Bangladesh: Some places of Mango production area in Bangladesh are reported as pest prevalence area but these area are not officially recognized as pest free areas and areas of low pest prevalence.
- Lao PDR: Relevant framework is not yet established and insufficient experience to implement this standard.
- Viet Nam: Training to improve skill and understanding about procedure for the Recognition of Pest Free Areas and Areas of Low Pest Prevalence (for importing country in order to recognize PFAs and ALPPs of exporting country): – Request for recognition by the NPPO of the exporting contracting party; – Acknowledgement by the importing contracting party of receipt of the information package and indication of its completeness for assessment purposes; – Description of assessment process to be used by the importing contracting party; – Assessment of the technical information; – Notification of results of assessment; – Official recognition; – Duration of recognition.



## Questionnaire:

**Country:**

### **Questionnaire on relevance and implementation of selected International Standards for Phytosanitary Measures (ISPMs)**

**The purpose of this questionnaire** is to identify key factors that contribute to a high degree of the implementation of 16 selected ISPMs as well as those factors that hinder their implementation. It is also important for all concerned to find out how these challenges and obstacles have been or can be overcome. As well, it is a means to find out specific areas on which some APPPC member countries may require assistance in implementing ISPMs.

The valuable inputs to be provided by you and your fellow colleagues will be very useful at both national and regional levels. The key factors identified will significantly contribute to the database that will help all parties concerned, particularly policy makers and implementing staff, in enhancing the effectiveness of ISPM implementation.

The questionnaire is in the form of an Excel workbook consisting of 16 selected worksheets covering each of the ISPMs (see the various tabs from ISPM 02 to ISPM 29 at the bottom of this Worksheet). **Please provide your responses in the five tables (Nos. 1, 2, 3, 4.1 and 4.2)** in each worksheet as requested. Please also feel free to give any additional inputs you and your fellow colleagues consider relevant to the questions asked. For this purpose, spaces are provided in Cells 1-5 at the bottom of Table 4 of each worksheet for filling out additional information.

**Warnings:** *While typing the additional information in the available spaces of Cells 1-5, if you want to begin a new paragraph within the cell(s), please press the ALT+ENTER key combination on your key board. To edit the text in any cell, please press F2.*

If you have more information to give than the available spaces of the cells, you may want to send us a separate file which can be in the form of Word, Excel Workbook, PowerPoint or PDF files, referring to respective ISPM Number concerned.

For your convenience, we have also filled up part (Table No. 1 and Table No. 2) of the questionnaire in connection with the relevance and implementation of the ISPMs, based on the available country information in the 2<sup>nd</sup> edition of Plant protection profiles from Asia-Pacific countries (2007-2008). While most of the information may remain the same for the period 2009-2010, it is essential for you and your fellow colleagues **to verify whether there is any change and to make necessary amendments accordingly.**

There is **no need** to fill out the tables in the last worksheet entitled 'Summary' as the information provided by you in the previous worksheets will be automatically reflected in this worksheet.

To avoid any misunderstanding, please be informed that **this questionnaire is not intended to identify the non-compliance of the selected ISPMs.**

For your information, the APPPC Secretariat is also establishing a programme entitled "**Introduction to the APPPC Programme on the implementation of ISPMs**". The main objective of the programme is to assist the member countries in implementing ISPMs. Although most member countries would like to see such a programme set up for several standards, it is recommended that emphasis be placed on only one or few ISPMs first as a beginning for the programme. This will make it easier to deal with any problem that may arise and serve as a model for dealing with challenges encountered in implementing other ISPMs.

The inputs by you and your fellow colleagues as well as your counterparts in other member countries to this questionnaire will help decide which few ISPMs will be selected first for the programme. Based on the collected information and analysis, the APPPC Secretariat will make recommendations to IPPC Implementation Review and Support System (IRSS) for actions to be undertaken.

Your contributions and time well spent in collecting and sharing relevant information for this questionnaire are greatly appreciated.

## 16 Selected International Standards for Phytosanitary Measures

Source: <https://www.ippc.int/index.php?id=13399&L=0>

Weblink

No.	ISPM # & adoption year	Particulars	Related Weblinks
1	02 (2007)	Framework for pest risk analysis	<a href="#">Link</a>
2	04 (1995)	Requirements for the establishment of pest free areas	<a href="#">Link</a>
3	06 (1997)	Guidelines for surveillance	<a href="#">Link</a>
4	07 (1997)	Export certification system	<a href="#">Link</a>
	09 (1998)	Guidelines for pest eradication programmes	<a href="#">Link</a>
5	10 (1999)	Requirements for the establishment of pest free places of production and pest free production sites	<a href="#">Link</a>
6	11 (2004)	Pest risk analysis for quarantine pests including analysis of environmental risks and living modified organisms	<a href="#">Link</a>
7	12 (2001)	Guidelines for phytosanitary certificates	<a href="#">Link</a>
	14 (2002)	The use of integrated measures in a systems approach for pest risk management	<a href="#">Link</a>
8	15 (2009)	Regulation of wood packaging material in international trade	<a href="#">Link</a>
	17 (2002)	Pest reporting	<a href="#">Link</a>
9	19 (2003)	Guidelines on lists of regulated pests	<a href="#">Link</a>
10	20 (2004)	Guidelines for a phytosanitary import regulatory system	<a href="#">Link</a>
11	23 (2005)	Guidelines for inspection	<a href="#">Link</a>
12	26 (2006)	Establishment of pest free areas for fruit flies (Tephritidae)	<a href="#">Link</a>
13	29 (2007)	Recognition of pest free areas and areas of low pest prevalence	<a href="#">Link</a>

### Country:

### Compliance and implementation of:

ISPM #	
Framework for pest risk analysis	<a href="#">Weblink</a>

Table 1: Survey period (2007-2008) (Please type x in the appropriate 'cell' below.)						
Relevance			Implementation			
medium	high	medium	none	partial	most	full

Table 2: Survey period (2009-2010) (Please type x in the appropriate 'cell' below.)						
Relevance			Implementation			
low	medium	high	none	partial	most	full

**Table 3: Planned and actual year of full implementation  
(provided that this information is available)**

<i>Planned year of full implementation:</i>	Year	
<i>Actual year of full implementation:</i>	Year	

**Table 4: Supporting and hindering key factors affecting the implementation of this ISPM  
(2009-2010)**

<b>Table 4.1: Key factors contributing to a high degree of implementation:</b>		<b>Table 4.2: Key factors contributing to a low degree of implementation:</b>	
<b>Please tick appropriate box(es).</b>		<b>Please tick appropriate box(es).</b>	
<input type="checkbox"/> This ISPM is highly or moderately relevant.		<input type="checkbox"/> This ISPM is slightly or marginally relevant.	
<input type="checkbox"/> This standard is easy to implement.		<input type="checkbox"/> Most or some parts of this standard are difficult to implement.	
<input type="checkbox"/> Availability of an operational manual for implementing this ISPM.		<input type="checkbox"/> Non-availability of an operational manual for implementing this ISPM.	
<input type="checkbox"/> Most areas of this standard are easy to understand.		<input type="checkbox"/> Most or some areas of this standard are difficult to understand.	
<input type="checkbox"/> Sufficient qualified personnel supporting the implementation (& staff low turnover rate).		<input type="checkbox"/> Insufficient qualified personnel supporting the implementation (& staff high turnover rate).	
<input type="checkbox"/> Sufficient supporting financial resources (such as budget and funding)		<input type="checkbox"/> Insufficient supporting financial resources (such as budget and funding)	
<input type="checkbox"/> Sufficient infrastructure supporting the implementation of this ISPM.		<input type="checkbox"/> Insufficient infrastructure supporting the implementation of this ISPM.	
<input type="checkbox"/> Sufficient facilities supporting the implementation of this ISPM.		<input type="checkbox"/> Insufficient facilities supporting the implementation of this ISPM.	
<input type="checkbox"/> Good communication and coordination among stakeholders.		<input type="checkbox"/> Insufficient communication and coordination among stakeholders.	
<input type="checkbox"/> Effective and efficient capacity building (training activities).		<input type="checkbox"/> Insufficient capacity building (training activities).	
<input type="checkbox"/> Effective work prioritization (and/or clear focus).		<input type="checkbox"/> Inadequate (or lack of) work prioritization (and/or lack of focus)	
<input type="checkbox"/> Availability of long-term supporting policies and operational plans.		<input type="checkbox"/> Non-availability of long-term supporting policies and operational plans.	
<input type="checkbox"/> Others (Please specify below.)		<input type="checkbox"/> Others (Please specify below.)	
<b>(a)</b>		<b>(a)</b>	
<b>(b)</b>		<b>(b)</b>	
<b>(c)</b>		<b>(c)</b>	
<b>(d)</b>		<b>(d)</b>	
<b>(e)</b>		<b>(e)</b>	

<p>Please describe briefly below the above-mentioned key factor(s) contributing to a <b>high degree of implementation</b> of this ISPM in your country by typing in the available space of the cell(s) below. It will be preferable if one or more examples can also be given.</p>	<p>Please describe briefly below the above-mentioned key factor(s) contributing to a <b>low degree of implementation</b> of this ISPM in your country by typing in the available space of the cell(s) below. It will be preferable if one or more examples can also be given.</p>
<p><b>***** WARNINGS *****</b></p> <p><i>While typing your description in the available spaces of Cells 1-5 below, if you want to begin a new paragraph within the cell(s), please press the ALT+ENTER key combination on your key board. To edit the text in any cell, please press F2.</i></p> <p><i>If the available spaces of the cells are not adequate, please send us your description or additional information in a separate file (Word, Excel, PowerPoint, or PDF), referring to the ISPM Number concerned.</i></p>	
Cell 1:	Cell 1:
Cell 2:	Cell 2:
Cell 3:	Cell 3:
Cell 4:	Cell 4:
Cell 5:	Cell 5:

**Progress and constraints related to the implementation, monitoring and observance of the *International Code of Conduct on the Distribution and Use of Pesticides***

**Results of a questionnaire survey in 2011**

Background

- The “International Code of Conduct on the Distribution and Use of Pesticides” was adopted in 1985 by all FAO member countries; it was also adopted by some non-governmental organizations and pesticide industry associations;
- The Code was revised in 2002; the new document included a call upon governments and industry to collect information on monitoring and observance of the Code and to report regularly to FAO;
- In 2006, an “Asia Regional Workshop on the Implementation, Monitoring and Observance of the Code of Conduct” was organized by FAO in Bangkok; in preparation for this workshop, a short questionnaire survey was conducted and responses were collected from 17 countries;
- The Plant Protection Profiles from Asia-Pacific countries were designed to facilitate the monitoring and observance of the Code of Conduct; some information relevant in the Code were included in sections “IV. Pest management” and “V. Pesticide management”;
- The 2011 survey included all questions of the 2006 questionnaire; this allowed to determine possible changes in the last 5 years;
- Furthermore, this survey included additional and more detailed questions based on the “Guidelines on Monitoring and Observance of the Code of Conduct (2006)”;
- The reporting of the results followed the order in the Guidelines, i.e.
  - A. Pest management,
  - B. Testing, Quality control and effects in the field
  - C. Health and environmental information
  - D. Trends in manufacture, use and trade
  - E. Selected standards of conduct
  - F. General input on observance of code of conduct
- This survey was answered by 10 countries, including three new countries which were not part of the 2006 survey (Australia, Japan and Samoa);
- The number of respondents in this survey does not allow for a comprehensive analysis of the monitoring and observance of the Code in the Asia-Pacific region. However, certain trends and observations found may also be indicative of the situation in other countries.

Conclusions

- The Code of Conduct was found highly useful and was appreciated;
- The most challenging provisions of the Code of Conduct were the guidelines for environmental risk, and for the disposal of waste pesticides and empty containers;
- Legislation and registration of pesticides appeared well established in most countries; however, many countries lack information about the volume and pattern of pesticide use;
- Despite IPM Programmes and new methods of pest management, the use of pesticides seems to be increasing in many countries;

- Continued efforts are needed to monitor and reduce pesticide poisoning cases and environmental contamination;
- In some countries, low ethics among advertisers and farmers hinders the observance of the Code;
- In many countries, the implementation of the Code is held back by limited qualified staff;
- FAO could play an important role in strengthening the implementation of the Code by providing specialized training on methods of risk assessment, post-registration monitoring, quality control, and enforcement and the introduction of GHS for labels.

## Institutional profiles

### Observations

- Since 2006, the institutional profiles changed slightly in 6 of the 7 countries which responded to both surveys; however, it could not be determined whether these changes always reflected a new distribution of responsibilities, or whether they were based on different interpretations by the reporting officers;
- In all countries, the Ministry of Agriculture was the lead agency for the implementation of the Code of Conduct;
- Furthermore, the Ministry of Health was involved in 7 countries, the Ministry of Environment in 5 countries;
- Most inter-ministerial collaboration was reported from Japan, Malaysia and Samoa;
- Industry associations existed in Australia, Malaysia, Rep of Korea and Thailand;
- Consumer associations were involved in Malaysia, Rep of Korea and Samoa;
- Shared/overlapping responsibilities were reported from 5 countries; shared responsibilities were equally divided between the Ministries of Health and Environment.

### Conclusions

- In most countries, the different functions of pesticide management seem well institutionalized
- Since 2006, three countries reported an increased involvement of the Ministries of Environment and Health for the monitoring of pesticide effects;
- Some countries have not yet identified institutions responsible for the monitoring of health effects (3 countries) or environmental effects (2 countries).

### Summary responses from 10 countries (update to the 2006 survey)

Ministry	Responsibilities						Monitoring	
	Legislation	Registration	Licensing	Enforcement	Testing	Training	Health	Environment
– The Ministry of Agriculture (MOA)	10	10	8	9	9	9	2	6
– The Ministry of Health (MOH)	3	2	0	4	2	3	7	2
– The Ministry of Environment (MOE)	2	0	1	3	3	4	1	5
Shared responsibilities MOA-MOH	3	2		4	2	3	2	2
Shared responsibilities MOA-MOE	2		1	3	3	4	1	3

The intensity of shading increases with the number of responding countries

## A. Pest management

### Observations

- There were few changes in the answers since 2006;
- All responding countries had IPM mentioned in crop protection/agricultural policy statements;
- Six countries had a specific IPM policy declared;
- Three responding countries reported to have a national IPM Programme;
- Most responding countries implemented IPM extension programmes and conducted IPM research;
- Pest resistance to pesticides was reported from more than half the responding countries.

### Conclusions

- It could not be determined to what extent IPM was institutionalized, i.e. whether there were dedicated IPM departments or sections in the countries;
- The number of countries that reported pest resistance problems had slightly increased since 2006.

### Responses from 10 countries (update to the 2006 survey)

Country	Australia	Bangladesh	DPK of Korea	Japan	Lao PDR	Malaysia	Myanmar	Rep of Korea	Samoa	Thailand	Total "yes"
<b>A. Pest and pesticide management</b>	new			new					new		
<b>1. IPM policy declared?</b>		Y	Y	Y	Y	Y			Y		6
<b>2. IPM mentioned in</b>											
2.1 Crop protection policy		Y	Y	?	Y	Y	Y		Y	Y	7
2.2 Agricultural sector policy	Y	Y	Y	?	Y	Y			Y	Y	7
2.3 Other laws/documents			Y	?	?	Y			N/A	Y	3
<b>3. National IPM Programme?</b>			Y		Y	Y					3
3.1 Department:	Y	Y	?	Y	Y	Y			Y	Y	7
3.2 IPM extension projects?	Y	Y	Y	Y	N	Y	Y		Y	Y	8
3.3 IPM research projects?	Y	N	Y	Y	N	Y	Y		Y	Y	7
<b>4. Pest resistance problems?</b>	Y	Y	Y	Y	Y	?	?		Y		6

Note: Y = Yes, N = No, ? = Don't know, N/A = Not applicable or available



## B. Testing, quality control and effects in the field

### Observations

- There were few changes in the responses since 2006;
- All countries except Japan reported to have laws for pesticide specifications; laws in Democratic People's Republic of Korea (DPRK) and Lao PDR did not require pesticides to conform to relevant FAO or WHO specifications;
- All countries except Lao PDR had laboratories to test the quality of products; however, the capacities to conduct analyses were limited in DPRK and Samoa;
- Most responding countries except for Japan and Rep of Korea reported to have low quality products in the market;
- Exporting countries were reported to offer little assistance in support to testing and analysis.

### Conclusions

- Since 2006, slightly more countries reported low quality products in the market; however, only DPRK regarded this as a serious problem;
- Collaboration between pesticide industry and governments in post-registration surveillance and monitoring to determine fate and effects of pesticides under field conditions needs more efforts;
- Since recent numbers of analyses were not available, progress in the capacities of the laboratories to conduct these tests could not be determined.

### Responses from 10 countries (update to the 2006 survey)

Country	Australia	Bangladesh	DPR of Korea	Japan	Lao PDR	Malaysia	Myanmar	Rep of Korea	Samoa	Thailand	Total "yes"
<b>B. Testing, quality control and effects</b>											
<b>1. Laws for pesticide specifications?</b>	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	9
<b>2. Low quality products in market?</b>	Y	Y	Y	N	Y	Y	Y	N	N/A	Y	7
<b>3. Quality control laboratory?</b>	N	Y	Y	Y	N	Y	Y	Y	N		6
3.1 Own analyses	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	9
3.2 Outside analyses	Y	N	N	Y	Y	Y			Y	N	5

Note: Y = Yes, N = No, ? = Don't know, N/A = Not applicable or available

### Additional summary responses from 10 countries (new survey questions)

Question	Number of responses							
	Yes	No	No response	Not at all	Small degree	Large degree	Fully/completely	No response
<b>1.1 Facilities for quality control over pesticides (Article 4.2 of the Code)</b>								
(a) Do you have significant problems or concerns about the quality of pesticides offered for sale or export in your country?	1	9	0					
(b) To what extent does your country possess or have access to facilities to verify and exercise control over the quality of pesticides offered for sale or export?				1	2	5	2	0
(c) Do you have significant problems or concerns about your ability to establish the quantity of active ingredients and the suitability of their formulation, according to FAO or WHO specifications when available?	2	6	2					
(d) To what extent do you possess or have access to facilities to establish the quantity of the active ingredient or ingredients and the suitability of their formulation, according to FAO or WHO specifications, when available.				2	2	4	1	1
(e) Does your national law or regulatory framework require pesticides to conform to relevant FAO or WHO specifications when available?	9	1	0					
(f) Additional responses: Australia: Only when FAO standards are consistent with Australian standards DPRK: Quality control over the pesticides produced, imported, distributed and used within the country is insufficient owing to the limited number of pesticide quality test units and their inadequate capacity. Samoa: WHO & FAO Specification are used in all pesticides applications for applications for assessing of Material Safety data and lethal dose classifications.								
<b>1.2 Assistance by exporting governments in relation to testing and analysis (Article 4.4 of the Code)</b>								
(a) Has your country received assistance during the last three years in training personnel on trial design and conduct, the interpretation and evaluation of test data, and risk/benefit analysis? For exporting governments, to what extent do you assist developing importing countries in training personnel on trial design and conduct, the interpretation and evaluation of test data, and risk/benefit analysis.				4	2	1	0	3
(b) For those that provide such assistance, please respond to the following questions. Does your government have ongoing programmes or initiatives to assist developing importing countries in personnel on trial design and conduct, the interpretation and evaluation of test data, and risk/benefit analysis?	1	4	5					
(c) Has your government provided funding to developing importing countries for training in the mentioned areas?	1	4	5					
(d) Has your government made available experts to participate in training in the mentioned areas?	1	4	5					
(e) Please also describe to what extent you have taken actions to promote maximum availability to, and use by importing developing countries of, appropriate international assessments and evaluations of pesticide hazards and risks.				3	1	0	0	6
(f) Additional responses: Samoa: It is one of the priority requirements for capacity building of staffs to specialise in pesticides handling etc. The Government at times provide assistance but to a limited extend. Samoa is not a manufacture of these pesticides but rather uses of it and supplying countries should assist with this aspect on training what they manufactured and traded for world environment protection. Thailand: CropLife Asia provided assistance in training our personnel on trial design and conduct, the interpretation and evaluation of test data, and risk/benefit analysis.								

Question		Number of responses							
		Yes	No	No response	Not at all	Small degree	Large degree	Fully/completely	No response
<b>1.3</b>	<b>Collaboration between pesticide industry and governments in post-registration surveillance and monitoring to determine fate and effects of pesticides under field conditions (Article 4.5 of the Code):</b>								
(a)	To what extent has your government taken actions to collaborate with pesticide industry and with other governments in post-registration surveillance or in conducting monitoring studies to determine the fate of pesticides and their health and environmental effects under field conditions.				2	3	3	0	2
(b)	<p>Additional responses</p> <p>DPRK: Local pesticide manufacturers cooperate with government agencies on a regular basis in assessing the quality of newly developed and registered products at different stages of production and their field efficiency; on the basis of the assessment results, local pesticide manufacturers improve the quality of their products.</p> <p>Malaysia: Establish committee</p> <p>Samoa: For pesticides introductions, field tests mainly can be subject to decision from the Pesticide Technical committee before registration. For post registration surveillance and monitoring to determine the fate and effects under field controls only occurs when signs of pesticide resistance is experience thus alternatives are to source for integrating with the practice undertaken.</p> <p>Thailand: In relation to the post-registration surveillance and monitoring, we request the Pesticide Industry to give report presentations every three years. The presentations cover those pesticides which need to be closely monitored. Other areas of collaboration include: monitoring health hazards of farmers and consumers, monitoring fake and substandard pesticides, and monitoring residues on crops.</p>								

## C. Health and environmental information

### Observations

- Six of the responding countries had data on poisoning cases, but they were not always broken down into different exposure categories;
- Not all countries had *Poison Information and Control Centers* or facilities to treat pesticide poisoning cases;
- All countries except Bangladesh monitored pesticide residues in food; however, only Malaysia and Rep of Korea reported sizable numbers of samples (which had increased significantly since 2006) that indicated systematic monitoring programmes;
- Only 3 countries reported to have data on effects on wildlife and ecosystems; two of the countries concluded that there was significant environmental contamination.

### Conclusions

- Only about half the countries had established MRLs for residues in food/feed;
- There were no indications that pesticide poisoning cases were generally decreasing;
- Only Thailand had data that allowed a comparison to the 2006 survey: while occupational exposure cases almost doubled, suicide cases were greatly reduced;
- More efforts are needed to monitor pesticide effects on the environment; most countries that claimed not to have a significant environmental contamination had no supporting data on effects on wildlife and ecosystems.

### Responses from 10 countries (update to the 2006 survey)

Country	Australia	Bangladesh	DPR of Korea	Japan	Lao PDR	Malaysia	Myanmar	Rep of Korea	Samoa	Thailand
<b>1. Data on pesticide poisoning cases?</b>	Y		?	Y	N	Y		?	Y	Y
Total cases	~170 (5 yrs)					231 (2009)				
1.1 Occupational exposure cases:				7 (2008)					33 (2008)	2 012
1.2 Accidental exposure cases:		11		12 (2008)		1				
1.3 Intentional/suicide cases:		18							17 (2008)	160 (2007)
<b>2. Pesticide poison facilities?</b>	Y	Y	Y	Y	N	Y		?	Y	Y
2.1 Number of facilities:	all hospitals	700				1				6
<b>3. Poison information and control centers?</b>	Y	Y	N	Y	N	Y	N	?	Y	Y
3.1 Number of centers:		68				1			~ 3	6
<b>4. Significant environmental contamination?</b>	Y	N	N	N	N	N	N	N	Y	
<b>5. Data on effects on wildlife &amp; ecosystems?</b>	Y	N	?	Y	N	N	N	?	Y	?
<b>6. Pesticide residue monitoring system?</b>	Y	N	Y	Y	Y	Y	Y	Y	Y	Y
6.1 Number of analyses:		2	426		36	2 550	50	6 500	1	N/A

Note: Y = Yes, N = No, ? = Don't know, N/A = Not applicable or available

## Additional summary responses from 10 countries (new survey questions)

Question		Number of responses							
		Yes	No	No response	Not at all	Small degree	Large degree	Fully/completely	No response
<b>1.4</b>	<b>Monitoring pesticide residues in food (Articles 5.1.10 of the Code):</b>								
(a)	Has your Government established national MRLs for food and feed items?	4	4	1					
(b)	Does your Government have implemented a national system to monitor pesticide residues?								
	In food/feed	6	3	1					
	In the environment	4	5	1					
(c)	If no, has your government recently carried out any studies on residues in food or in the environment?	2	4	4					
(d)	<p>Additional responses</p> <p>Australia: National Residue Survey data reported annually; Food Standards Australia New Zealand – Australian Total Diet Survey 2008; State based monitoring programmes published</p> <p>DPRK: There are systems to monitor pesticide residue in food and environment; however, insufficient ability to detect pesticide residue hampers full and efficient operation of the above systems.</p> <p>Malaysia: Monitoring of pesticides residues in food is carried out by the Ministry of Health under the Food Act 1983.</p> <p>Thailand: While the Department of Agriculture (DOA) is responsible for monitoring residues in food exports, the Food and Drug Administration (FDA) is responsible for monitoring the imported fruits and vegetables at points of entry and in the market.</p>								

## D. Pesticide manufacture, use and trade

### Observations

- Most countries did not provide a complete set of data which would have allowed an assessment of the overall volume and value of pesticide manufacture, use and trade in the APPPC region;
- Only one country gave manufacture information (Rep of Korea);
- Four of the responding countries provided a breakdown of the types of pesticides used in agriculture; herbicides were the predominant type of pesticide in 3 countries; insecticide was predominant in only one country;
- Most countries reported having a system to detect illegal trade with pesticides; three countries considered illegal imports a significant problem, but only one country had an estimated figure
- One country included fertilizer in the statistics;
- Only one country reported to have provided FAO regularly with information on the consumption of pesticides.

### Conclusion

- Even though pesticides are highly regulated, the authorities in many countries do not have sufficient information about the volume and pattern of pesticide consumption;
- In those countries with sufficient data, the agricultural pesticide market value increased 2-3 fold since 2006, while the volume increased by 30-60%;
- It could not be determined whether the illegal trade is predominantly with adulterated and low-quality pesticides, or with cheaper products smuggled from neighbouring countries.

### Summary responses from 10 countries

Type of Information	Tons	US\$ value
<b>Pesticide volume</b>		
Imports	7	5
Manufacture	1	1
Exports	4	2
Sales	1	2
<b>Pesticide use profile</b>		
Agriculture (total)	2	4
Insecticides	4	4
Fungicides	3	3
Herbicides	4	4
Others	3	4
Veterinary		1
Public health	1	1
Household	1	3
Others		
Total		2

The intensity of shading increases with the number of responding countries

**Additional summary responses from 10 countries (new survey questions)**

	Question	Number of responses		
		Yes	No response	No
<b>2.1</b>	<b>Data on manufacture, use and trade (Article 6.1.8 of the Code)</b>			
(a)	Have you established and applied methods to collect and record data on the import, export, manufacture, formulation, quality, and use of pesticides?			
	– Import	9	1	0
	– Export	5	4	1
	– Manufacture	5	4	1
	– Formulation	6	3	1
	– Quality of pesticides	8	2	0
	– Use	6	3	1
(b)	Does your Government send any data to FAO regularly on pesticide consumption?	4	3	3
(c)	Additional response: DPRK: The data on the production, import, export, processing, quality and use of pesticide products are being collected sporadically on an individual industry basis. The entity for integrated management of the data is not available.			
<b>2.2</b>	<b>Methods to detect and control illegal trade in pesticides (Article 6.1.10 of the Code):</b>			
(a)	Have you established methods to detect illegal trade in pesticides?	8	2	0
(b)	Have you established methods to control illegal trade in pesticides?	8	2	0
(c)	Do you consider that there are or might be significant problems of illegal import of pesticides in your country?	4	6	0
(d)	Additional response: Malaysia: Illegal trade in pesticides is monitored by the Industry Association. Control of illegal trade is carried out through the Committee to combat of illegal pesticides Samoa: This is a very important aspect to be established at border operations, we rely on manifest whereby if pesticides are hide in smaller amounts these can get through border inspections as facilities to x-ray containers is absence, therefore it is very important for a well established system at border outlets to detect and control the incoming of pesticide trade.			

## E. Selected standards of the Code of Conduct

### Observations

- Many countries had established a scheme to collect old containers and unused pesticides, however, only one country provided a figure of the amount collected;
- About half the countries reported to have an inventory of outdated/obsolete products;
- All countries have established an operational pesticide registration system;
- Most responding countries reported to license pesticide facilities,
- All countries except Myanmar restricted the use of highly toxic products; the highest reported number of registered but restricted products was 12.

### Conclusion

- The level of enforcement of registration could not be determined since only one country had statistics on the number of registration violations;
- While most countries license facility that contain pesticides, only one country reported a large number of inspections indicating a systematic enforcement effort.

### Summary responses from 10 countries (update to the 2006 survey)

Country	Australia	Bangladesh	DPR of Korea	Japan	Lao PDR	Malaysia	Myanmar	Rep of Korea	Samoa	Thailand	Total "yes"
<b>1. Illegal trade estimates?</b>			Y	N	N	Y		?	?		2
1.1 Estimated amount:						10%					
<b>2. Collection of old containers and pesticides?</b>	Y	Y	Y	Y	N	Y	N	Y	N	?	6
annual amount collected						50 t					
<b>3. Inventory of outdated/obsolete products?</b>	Y	Y	N	N	N	NA	Y	Y	Y	Y	5
<b>4. Operational pesticide registration system?</b>	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10
4.1 Violations in 2009 or 2010	133						?				
<b>5. Existing facility licensing system?</b>	N	Y	Y	Y	Y	Y		?	Y	Y	7
5.1 Inspections in 2009 or 2010						8 000				~ 80	
<b>6. Highly toxic products restricted</b>	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	9
number of products			4					12		1	

Note: Y = Yes, N = No, ? = Don't know, N/A = Not applicable or available



### Selected standards of the Code of Conduct: Risk reduction efforts

#### Observations:

- The predominant measures to reduce pesticide risks were the marketing of less toxic formulations, and clear and concise labeling;
- Most countries promoted the use of personal protective equipment;
- Most countries made efforts to minimize environmental risks;
- Services to collect and safely dispose of used containers and small quantities of left-over pesticides have not yet been fully established in many countries;
- More efforts are needed to improve application methods and equipment that minimize exposure to pesticides.

#### Summary responses from 10 countries on risk reduction efforts (new survey questions)

Question	Number of responses			
	Not at all	To a small degree	To a large degree	Fully/ completely
<b>3.1 Risk reduction efforts by pesticide industry (Article 5.2.3 of the Code):</b>				
(a) Making less toxic formulations available	2	0	5	3
(b) Introducing products in ready-to-use packages	1	4	4	1
(c) Developing application methods and equipment that minimize exposure to pesticides	2	4	3	1
(d) Using returnable and refillable containers where effective container collection systems are in place	5	2	3	0
(e) Using containers that are not attractive to or easily opened by children, particularly for domestic use products	3	3	3	1
(f) Using clear and concise labelling	1	1	6	2
(g) Additional response:	<p>Australia: ChemClear and DrumMuster are industry supported programs for chemical container collection. Pesticide registrants have for several years been developing and registering formulations that continue to reduce risks to users, consumers and the environment. Industry stewardship programs have reduced the amount of container waste disposed to landfill through adoption of returnable and recyclable containers.</p> <p>DPRK: The study and practice to decrease potential risk of pesticides are not sufficient, pointing to the need for further technical assistance in this area.</p> <p>Malaysia: (a) Registration of less toxic formulation is encouraged through the amendment of the registration fee where the fee is dependent on the toxicity of the formulations. Lower fees charges for less toxic pesticides.(e) &amp; (f) Controlled under the labelling regulation.</p> <p>Samoa: The registration system use in Samoa relies heavily on low toxic pesticides that intended to applied for registration in Samoa and likewise consider the labelling it clear and to the Samoan language translation. This will assist with the analysis to be put forward to the Pesticide Technical Committee for its decision.</p>			

Question		Response	
		Yes	No
<b>3.2</b>	<b>Cooperative actions for risk reduction (Article 5.3 of the Code):</b>		
(a)	Promoting the use of proper and affordable personal protective equipment	9	1
(b)	Making provisions for safe storage of pesticides at both warehouse and farm level	8	2
(c)	Establishing services to collect and safely dispose of used containers and small quantities of left-over pesticides	6	4
(d)	Protecting biodiversity and minimizing adverse effects of pesticides on the environment (water, soil and air) and on non-target organisms	9	1
(e)	<p>Additional response:</p> <p>Australia: Through industry awareness and user awareness and training and accreditation programs, the importance of personal protective equipment, safe storage and handling of products and collection of reusable drums and containers is promoted. ChemCert is one such organisation in Australia <a href="http://www.chemcert.org.au">www.chemcert.org.au</a>. Industry has voluntarily developed procedures for the collection and safe disposal of empty pesticide containers and unwanted and unused chemicals (<a href="http://www.agsafe.com.au/agsafe/">http://www.agsafe.com.au/agsafe/</a>).</p> <p>Japan: Those services are provided in many regions, but not all parts of the country.</p> <p>Malaysia: Provisions for all of the above is stipulated under the Good Agricultural Practice Scheme (SALM) and Malaysian Organic Scheme (SOM).</p> <p>Samoa: Collection of empty containers for recycling purpose is not yet established at the national level however part of the trainings on safety use and storage of pesticides also recommends the safe keeping of empty containers for later disposals.</p> <p>Thailand: Thai Crop Protection Association (TCPA) cooperates with DOA in the following activities:</p> <ol style="list-style-type: none"> <li>1. Promoting PPE and providing some PPE to farmers for safe use of pesticides.</li> <li>2. Promoting and teaching farmers to keep pesticides in safe storage.</li> <li>3. Promoting and teaching farmers on proper disposal of empty pesticide containers.</li> </ol>		

## Selected standards of the Code of Conduct: Legislation, registration

### Observations:

- All countries reported having national legislation for the regulation of pesticides; however, pesticide registration systems had not yet been fully established in DPRK and Lao PDR;
- In most countries, the industry ensured that pesticides conformed to FAO/WHO standards;
- In almost all countries, pesticide industry has taken voluntarily corrective action when difficulties occurred.

### Summary responses from 10 countries (new survey questions)

Question		Response	
		Yes	No
<b>3.3</b>	<b>National legislation and enforcement (Article 6.1.1 of the Code):</b>		
(a)	Has your government introduced the necessary legislation for the regulation of pesticides covering their entire life-cycle and made provisions for its effective enforcement.	10	0
(b)	Additional response: DPRK: Recognizing the importance of pesticides in agricultural production, public health and environment protection, the government of the DPRK has laid legal foundation for the regulation of pesticides by enacting "Law on Pesticide" (Aug., 2006), "Detailed Regulation for Enforcement of the Law on pesticides"(Dec., 2007) and "The Regulation for Treatment of Toxic materials" (Jan., 2006). Japan: Manufacture, import, sales, and use of pesticides are regulated by Agricultural Chemicals Regulation Law. Disposal of pesticides is regulated by Wastes Disposal and Public Cleansing Act. Samoa has the Pesticide Regulation 1990 and is currently under review. However there are also other legislations which associated with pesticides toxicant, these include : Waste Management Act, Ozone Protection Regulation, Occupation Safety and Health Act as well as the Poison Act.		
<b>3.4</b>	<b>Pesticide registration system (Article 6.1.2 of the Code):</b>		
(a)	Does your government ensure that each pesticide product is registered before it can be made available for use?	8	2
(b)	Additional response: Australia: Please see the APVMA website at <a href="http://www.apvma.gov.au">www.apvma.gov.au</a> DPRK: The pesticide registration system is not complete; domestically produced pesticides are thoroughly registered while the system of registration for imported pesticides needs further refinement. Malaysia: The Pesticides Act 1974 ensures that all pesticides must first be registered in the country before it can be imported, manufactured or sold in the country. Samoa: All intended pesticides to enter Samoa must apply first and analyse by the Registrar for the Pesticide Technical Committee for a decision to accept and reject based on the analysis conducted.		
<b>3.5</b>	<b>Conformity with relevant FAO and WHO specifications (Article 6.2.4 of the Code):</b>		
(a)	Does the pesticide industry ensure that active ingredients and formulated products conform with relevant FAO and WHO specifications.	7	2
(b)	Additional response: Australia: Please see the APVMA website for standards and specifications for active constituents ( <a href="http://www.apvma.gov.au/products/constituents/index.php">www.apvma.gov.au/products/constituents/index.php</a> ). Existing Quality Assurance schemes administered by the APVMA ensure that appropriate quality standards are met for products used in Australia. DPRK: Efforts are being made to ensure that active ingredients and formulated products conform with relevant specifications; however, full conformity cannot be ensured because of some technical problems. Malaysia: All pesticides registered in the country must undergo a technical evaluation process which includes compliance to WHO and FAO specifications, where available Samoa: Both (FAO & WHO) International Codes of Practice are used in the analysis of all pesticides that are applied to be registered in Samoa.		
<b>3.6</b>	<b>Voluntary responsive action (Article 6.2.6 of the Code):</b>		
(a)	Has the pesticide industry, when problems occur in your country, voluntarily taken corrective action and, when requested by governments, helped to find solutions to difficulties?	7	3
(b)	Additional response: Australia: Industry remains engaged with federal, state and territory governments on a wide range of pesticide regulatory issues. Voluntary actions can be taken (such as through industry stewardship or other training and accreditation schemes) where necessary. Legislative requirements under s.160 and 161 of the Agvet Code provide additional information that may impact a registration decision. An example would be voluntary withdrawal of products from the marketplace due to problems being identified. Malaysia: The Pesticides Industry Association is a member of the Consultative Body comprising of government agencies, NGOs and this Body serves as a platform for consultation of various issues between the various stakeholders. Samoa: National Emergency response plan are in place for any huge spills on pesticides as well as trainings are conducted regularly on safe use and storage of pesticides as recommended by manufacturer. Thailand: 1. Many companies voluntarily withdraw highly hazardous pesticide products, such as decreasing concentration of active ingredients. In some cases, they withdraw whole products from the market. 2. Some companies implement product stewardship programmes. 3. Thai Crop Protection Association (TCPA) cooperates with DOA in implementing pesticide safe use programmes, tackling problems of illegal and substandard products and misuse of pesticides.		

## Selected standards of the Code of Conduct: Trade, manufacture and sale

### Observations:

- Most countries reported that the industry had provided data on trade, manufacture and sale of pesticides; however, the data were not always reported in the plant protection profiles;
- All reporting countries have established prohibitions against the importation, sale and purchase of highly toxic and hazardous pesticides.

### Summary responses from 10 countries (new survey questions)

Question		Response	
		Yes	No
<b>3.7</b>	<b>Provision of data on trade, manufacture and sale by pesticide industry (Article 6.2.7 of the Code):</b>		
(a)	Has the pesticide industry has provided the national government with clear and concise data on the following:	Yes	No
	– Import	7	3
	– Export	6	3
	– Manufacture	8	2
	– Formulation	8	2
	– Quality of pesticides	6	3
	– Sales	7	3
(b)	Additional response:		
	Australia: Information on imports and exports is mainly provided to the Australian Customs and Border Protection Service. Information on sites of manufacture, formulation and quality is provided to the APVMA at the time of registration. Information on sales is provided annually to the APVMA.		
	DPRK: The data on pesticides are reported to the relevant ministries, but the system to integrate and manage all data in a comprehensive manner has not been established yet.		
	Malaysia: The Pesticides Association only provides data on sales in the country according to use category		
	Samoa: Information on trade has been surrendered to the National Pesticide Profile compilation and it is available from the Ministry of Natural Resource and Environment.		
<b>3.8</b>	<b>Prohibitions on highly toxic and hazardous products (Article 7.5 of the Code):</b>		
(a)	Has your government prohibited the importation, sale and purchase of highly toxic and hazardous products, such as those included in WHO classes Ia and Ib, in light of Article 7.5 which indicates that such prohibitions may be desirable if other control measures or good marketing practices are insufficient to ensure that the product can be handled with acceptable risk to the user.	10	0
(b)	Additional response:		
	Australia: In legislation, chemicals that are restricted are included in the Agvet Chemicals Admin. Act Regulations. Australia also has a Restricted Chemical Product scheme which sets out controls associated with registration and use of specific chemical products ( <a href="http://www.apvma.gov.au/products/restricted.php">www.apvma.gov.au/products/restricted.php</a> )		
	Malaysia: Many of the pesticides in the WHO list have been banned or never registered. However, these are some still registered:- Class Ia – brodifacoum, bromodiolone, floccoumafen. Class Ib – carbofuran, coumatetraly, cyfluthrin, dichlofos, fenamiphos, methidathion, triazophos, warfarin and zinc phosphate. While methamidophos and monocrotophos are also still used but are controlled under the Highly Toxic Pesticides Regulation.		
	Samoa: Analysis of all importing pesticides has to go through a Pesticide Technical Committee for approval. The committee analyses applications using international codes on pesticide products and make recommendations for decision.		

## **F. General inputs on observance of the Code of Conduct**

### **1. Which provisions of the Code of Conduct are especially important at the national level, and why?**

- Bangladesh: Article 3,4,5,6 and 10 are the important texts of the Code of Conduct on the distribution and use of pesticides. We have already incorporated all the contents of the above articles of the Code of Conduct in our revised Pesticide Act & Rules for their Importance.
- Lao PDR: Pesticide management, labeling, packaging, advertising, storage and disposal
- Malaysia: All benefits the country
- Myanmar: Pesticide repacking and marking
- Rep of Korea: Article 5 is very important to Korea because the protection of health of human and animal, and environment is the most important.
- Samoa: Samoa uses WHO Hazard Class codes of conduct on its pesticide application form IA , IB, II , III and Not Classified.
- Thailand: The provisions related to the advertising (Article 11) and labeling (Article 10) are especially important. It is essential that the business sector fully complies with all the requirements. Full compliance will result in appropriate and safe use of the pesticides. The Code recommends that the government shall control, by means of legislation, the advertising of pesticides in all media.

### **2. In which areas covered by the Code of Conduct are there the most significant problems in full observance?**

- Bangladesh: Article 5 for environmental risk and article 10 for disposing of the POP, expired and obsolete pesticides are the most significant problems.
- DPRK: There are problems in the articles that cover the responsibility of an exporting country. So far, there has been no cooperation with an exporting country or company in terms of pesticide management - not least the quality test. It is probably because of lack of communication and contact between organizations/entities of an exporting country and their counterparts of an importing country that are responsible for pesticide quality inspection. The Secretariat of FAO needs to take measures for cooperation in this area.
- Malaysia: Kindly refer attachment 1(b).
- Myanmar: Pesticide application
- Rep of Korea: FAO concentrates its own interest in the Illegal trade of highly toxic pesticides among nations
- Thailand: Advertising and labeling.

#### **2(a) What are the strengths of the present pesticide management system?**

- Bangladesh: Strict Rules & Regulations
- DPRK: All relevant agencies that are involved in pesticide management have clear-cut legal and administrative responsibilities and exercise effective control over the matter.

---

Lao PDR:	Pesticide registration
Malaysia:	A structured and systematic approach in the registration and post registration regulation.
Myanmar:	Registration and training of certified pesticide applicator
Rep of Korea:	Korean Government evaluates to reduce the risks from the pesticides. Accordingly the Government reevaluates the pesticide toxicity after the registration.
Samoa:	Able to prevent the importation of Pesticides into the Country per year.
Thailand:	Strict pesticide registration systems are the country's strength. Pesticides are subject to toxicology test and have to be certified by GLP laboratories. As well, the pesticides have to be registered and licensed by the producing countries.

## **2(b) What are the weaknesses of the present pesticide management system?**

Bangladesh:	Lack of competent human resources, ignorance etc.
DPRK:	The responsibilities of relevant agencies in the integrated management of pesticide data are not clearly defined. All competent authorities and relevant entities should strengthen working relations and contact.
Lao PDR:	Monitoring
Malaysia:	Need for capacity building in particularly in specialized fields of analysis, risk assessment and enforcement.
Myanmar:	No access to the inventory of uses and stock
Rep of Korea:	The number of experts on risk evaluation is not enough at global standard.
Samoa:	Needed to streamline it's activities and it's database
Thailand:	The weakness of present pesticide management system is the law enforcement. As well, there are no legal penalties imposed on farmers in relation to misuse or inappropriate use of pesticides.

## **2(c) What are the major bottlenecks to ensure sound pesticide management?**

Bangladesh:	Training, monitoring and evaluation
DPRK:	Insufficient testing capacity. No information service center for integrated data management and improvement of social awareness.
Lao PDR:	Enforcement legislation
Malaysia:	Lack of human resources, expertise, financial resources & facilities
Myanmar:	Inconclusive data of stock and importation
Rep of Korea:	As Korean consumers require the high levels of regulation on the pesticide safety, there is the wide gap between consumers and law.
Samoa:	Strengthening of safe use, storage and monitoring needed to be adopted by the public.
Thailand:	Farmers (users) have low ethical responsibility towards the misuse or inappropriate use of pesticides. Other major bottlenecks include the disposal of waste pesticides and empty containers.

**2(d) What are priority areas for strengthening of pesticide management?**

Bangladesh:	Training of officials
DPRK:	Capacity building for assessment of pesticide products and residues. Improvement of social awareness on risks of pesticides. Further refinement of the pesticide registration system.
Lao PDR:	Training on pesticide inspectors and shopkeepers
Malaysia:	All as 2 (b) 2 (c)
Myanmar:	Control of illegal importation
Rep of Korea:	The sound risk communication between the consumers, industry, and government is required.
Samoa:	Staff Capacities required to be specialized and assisted with resources on pesticide monitoring.
Thailand:	Training farmers in the safe use of pesticides. The training should cover pesticide hazards and the responsibility towards consumers and public health. Other priority area is law enforcement.

**2(e) In what areas could FAO possibly provide assistance for strengthening of pesticide management?**

Bangladesh:	Establishment of incinerator, well equipped pesticide laboratory and capacity building of the officials.
DPRK:	Strengthening the capacity for the assessment of pesticide products and residues (provision of necessary equipment, training incl.)
Lao PDR:	Inventory of pesticides; funding support for participation to regional and international harmonization
Malaysia:	Capacity building in risk assessment, analysis, post registration analysis, product evaluation and enforcement
Myanmar:	Formulation Technology and analysis incineration facility
Rep of Korea:	We hope the FAO can supply the information on each nation's pesticide usage over the world.
Samoa:	Providing specialized training for pesticides staff, provide appropriate and friendly software for pesticide monitoring systems and database and could assist with material resources in implementation of activities for disposal pesticides containers etc.
Thailand:	Training for DOA officials in classification and labeling pesticides as to comply with the globally harmonized System (GHS) and risk assessment.

**Questionnaire:**

**Implementation, monitoring and observance of  
the International Code of Conduct on the Distribution and Use of Pesticides  
in Asia-pacific Countries in 2010**

(\*\*covering agricultural, veterinary, public health and household pesticides\*\*)

**\*\*\* QUESTIONNAIRE \*\*\***

Background information

A. Your contact details					
<b>Name:</b>	<table border="1" style="width: 100%;"> <tr> <th style="width: 50%;">First name</th> <th style="width: 50%;">Family name</th> </tr> <tr> <td style="height: 20px;"></td> <td style="height: 20px;"></td> </tr> </table>	First name	Family name		
First name	Family name				
<b>Position:</b>					
<b>Name of agency/entity:</b>					
<b>Mailing address:</b> (Line 1)					
(Line 2)					
(Line 3)					
(Line 4)					
<b>Tel:</b>					
<b>Email:</b>					
<b>Website:</b>					

Responsibility of the agency/entity <i>(Please check one or more boxes below.)</i>			
<b>Areas of responsibility/activities relating to pesticides:</b>			
<input type="checkbox"/>	Legislation/regulation (development)	<input type="checkbox"/>	Pesticide registration/authorization
<input type="checkbox"/>	Facility licensing	<input type="checkbox"/>	Enforcement/inspection
<input type="checkbox"/>	Research /testing	<input type="checkbox"/>	Training/extension
<input type="checkbox"/>	Other (please describe below):		
<b>Types of pesticides that are regulated by this Agency (for regulatory Agency)</b>			
<input type="checkbox"/>	Agricultural pesticides	<input type="checkbox"/>	Veterinary pesticides
<input type="checkbox"/>	Public health pesticides	<input type="checkbox"/>	Household pesticides

B. Description of the agency/entity			
<i>If possible and the information is available, please attach a recent report or document (preferably including an organization chart) describing the structure and activities of this agency/entity (e.g. a recent annual report or a presentation made for a conference, in a form of word file, pdf file, etc.)</i>			
<b>Information provided?</b>	<input type="checkbox"/>	<b>Yes</b>	<input type="checkbox"/>
			<b>No</b>



## Part I: Overview

## Institutional profile

(Please check one or more boxes in the table below.)

Responsibilities: the Ministry of		Agriculture	Environment	Health
– Legislation (development)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– Registration		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– Licensing		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– Enforcement		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– Testing		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– Training		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
– Monitoring	Environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Notes:

Government agencies:	
Industry associations:	
Non-governmental associations:	

A. Pest and pesticide management		Response
1.	IPM policy declared?	
2.	IPM mentioned in .....	
2.1	Crop protection policy	
2.2	Agric. sector policy	
2.3	Other laws/documents	
3.	National IPM program?	
3.1	Department:	
3.2	IPM extension projects?	
3.3	IPM research projects?	
4.	Pest resistance problems?	

B. Testing, quality control and effects		Response
1.	Laws for pesticide specifications?	
2.	Low quality products in market?	
3.	Quality control laboratory?	
3.1	Own analyses	
3.2	Outside analyses	

C. Health and environmental information		Response	If yes, please specify amount
1.	Data on pesticide poisoning cases?		
1.1	Occupational exposure cases:		
1.2	Accidental exposure cases:		
1.3	Intentional/suicide cases:		
2.	Pesticide poison facilities?		
2.1	Number of facilities:		

<b>3.</b>	<b>Poison information and control centers?</b>		
3.1	Number of centers:		
<b>4.</b>	<b>Significant environmental contamination?</b>		
<b>5.</b>	<b>Data on effects on wildlife &amp; ecosystems?</b>		
<b>6.</b>	<b>Pesticide residue monitoring system?</b>		
6.1	Number of analyses:		

<b>D. Pesticide manufacture, use and trade</b>				
<b>Pesticide volume</b>	<b>For the year 2007-2008</b>		<b>For the year 2010</b>	
	<b>Tons</b>	<b>US\$ '000 value</b>	<b>Tons</b>	<b>US\$ '000 value</b>
Imports				
Manufacture				
Exports				
Sales				
<b>Pesticide use profile</b>	<b>For the year 2007-2008</b>		<b>For the year 2010</b>	
	<b>Tons</b>	<b>US\$ '000 value</b>	<b>Tons</b>	<b>US\$ '000 value</b>
Agriculture (total)				
Insecticides				
Fungicides				
Herbicides				
Others				
Veterinary				
Public health				
Household				
Others				
<b>Total</b>				

<b>E. Selected standards of the Code of Conduct</b>		<b>Response</b>	<b>If yes, please specify amount</b>
<b>1.</b>	<b>Illegal trade estimates?</b>		
1.1	Estimated amount:		
<b>2.</b>	<b>Collection of old containers and pesticides?</b>		
<b>3.</b>	<b>Inventory of outdated/obsolete products?</b>		
<b>4.</b>	<b>Operational pesticide registration system?</b>		
4.1	Violations in <b>2010</b>		
<b>5.</b>	<b>Existing facility licensing system?</b>		
5.1	Inspections in <b>2010</b>		
<b>6.</b>	<b>Highly toxic products restricted</b>		

## Part II: Regular Monitoring Report

### 1. Testing, quality control and effects in the field

<b>1.1 Facilities for quality control over pesticides (Article 4.2 of the Code)</b>			
(a) Do you have significant problems or concerns about the quality of pesticides offered for sale or export in your country?			
<input type="checkbox"/>	Yes;	<input type="checkbox"/>	No
(b) To what extent does your country possess or have access to facilities to verify and exercise control over the quality of pesticides offered for sale or export?			
<input type="checkbox"/>	Not at all;	<input type="checkbox"/>	To a small degree;
<input type="checkbox"/>		<input type="checkbox"/>	To a large degree;
<input type="checkbox"/>		<input type="checkbox"/>	Fully/completely
(c) Do you have significant problems or concerns about your ability to establish the quantity of active ingredients and the suitability of their formulation, according to FAO or WHO specifications when available?			
<input type="checkbox"/>	Yes;	<input type="checkbox"/>	No
(d) To what extent do you possess or have access to facilities to establish the quantity of the active ingredient or ingredients and the suitability of their formulation, according to FAO or WHO specifications, when available			
<input type="checkbox"/>	Not at all;	<input type="checkbox"/>	To a small degree;
<input type="checkbox"/>		<input type="checkbox"/>	To a large degree;
<input type="checkbox"/>		<input type="checkbox"/>	Fully/completely
(e) Does your national law or regulatory framework require pesticides to conform to relevant FAO or WHO specifications when available?			
<input type="checkbox"/>	Yes;	<input type="checkbox"/>	No
(f) <b>If possible and the information is available</b> , please provide additional responses to the above questions by typing in the expandable shaded area within the box below. (Please use a separate sheet of paper if space is not adequate.)			
<b>1.1</b>			

<b>1.2 Assistance by exporting governments in relation to testing an analysis (Article 4.4 of the Code)</b>			
(a) Has your country received assistance during the last three years in training personnel on trial design and conduct, the interpretation and evaluation of test data, and risk/benefit analysis? For exporting governments, to what extent do you assist developing importing countries in training personnel on trial design and conduct, the interpretation and evaluation of test data, and risk/benefit analysis.			
<input type="checkbox"/>	Not at all;	<input type="checkbox"/>	To a small degree;
<input type="checkbox"/>		<input type="checkbox"/>	To a large degree;
<input type="checkbox"/>		<input type="checkbox"/>	Fully/completely
(b) For those that provide such assistance, please respond to the following questions. Does your government have ongoing programs or initiatives to assist developing importing countries in personnel on trial design and conduct, the interpretation and evaluation of test data, and risk/benefit analysis?			
<input type="checkbox"/>	Yes;	<input type="checkbox"/>	No
(c) Has yd areas?			
<input type="checkbox"/>	Yes;	<input type="checkbox"/>	No
(d) Has your government made available experts to participate in training in the mentioned areas?			
<input type="checkbox"/>	Yes;	<input type="checkbox"/>	No
(e) If the answer to any of the above is yes, please describe briefly on a separate sheet of paper. Please also describe to what extent you have taken actions to promote maximum availability to, and use by importing developing countries of, appropriate international assessments and evaluations of pesticide hazards and risks.			
<input type="checkbox"/>	Not at all;	<input type="checkbox"/>	To a small degree;
<input type="checkbox"/>		<input type="checkbox"/>	To a large degree;
<input type="checkbox"/>		<input type="checkbox"/>	Fully/completely
(f) In case such actions have been undertaken, <b>if possible and the information is available</b> , please provide additional responses to the above questions by typing in the expandable shaded area within the box below. (Please use a separate sheet of paper if space is not adequate.)			
<b>1.2</b>			

### 1.3 Collaboration between pesticide industry and governments in post-registration surveillance and monitoring to determine fate and effects of pesticides under field conditions (Article 4.5 of the Code):

(a) To what extent has your government taken actions to collaborate with pesticide industry and with other governments in post-registration surveillance or in conducting monitoring studies to determine the fate of pesticides and their health and environmental effects under field conditions.

Not at all;       To a small degree;       To a large degree;       Fully/completely

(b) In case such actions have been undertaken, **if possible and the information is available**, please provide additional responses to the above question by typing in the expandable shaded area within the box below. (Please use a separate sheet of paper if space is not adequate.)

1.3

### 1.4 Monitoring pesticide residues in food (Articles 5.1.10 of the Code):

(a) Has your Government established national MRLs for food and feed items?

Yes;       No

(b) Does your Government have implemented a national system to monitor pesticide residues?

In good/feed:  Yes;       No

In the environment:  Yes;       No

(c) If no, has your government recently carried out any studies on residues in food or in the environment?

Yes;       No

(d) In case the answer is yes, **if possible and the information is available**, please provide additional responses to the above questions by typing in the expandable shaded area within the box below. (Please use a separate sheet of paper if space is not adequate.)

1.4

## 2. Trends in manufacture, use and trade

### 2.1 Data on manufacture, use and trade (Article 6.1.8 of the Code)

(a) Have you established and applied methods to collect and record data on the import, export, manufacture, formulation, quality, and use of pesticides? Have you collected data regularly in the following areas:

Import:  Yes;       No

Export:  Yes;       No

Manufacture:  Yes;       No

Formulation:  Yes;       No

Quality of pesticides:  Yes;       No

Use:  Yes;       No

(b) Does your Government send any data to FAO regularly on pesticide consumption?

Yes;       No

(c) In case the answer is yes, **if possible and the information is available**, please provide additional responses to the above questions by typing in the expandable shaded area within the box below. (Please use a separate sheet of paper if space is not adequate.)

2.1

### 2.2 Methods to detect and control illegal trade in pesticides (Article 6.1.10 of the Code):

(a) Have you established methods to **detect** illegal trade in pesticides?

Yes;       No

(b) Have you established methods to **control** illegal trade in pesticides?

Yes;       No

(c) Do you consider that there are or might be significant problems of illegal import of pesticides in your country?			
<input type="checkbox"/>	Yes;	<input type="checkbox"/>	No
(d) In case the answer to any of the above questions is yes, <b>if possible and the information is available</b> , please provide additional responses by typing in the expandable shaded area within the box below. (Please use a separate sheet of paper if space is not adequate.)			
2.2			

### 3. Selected standards of conduct

<b>3.1 Risk reduction efforts by pesticide industry (Article 5.2.3 of the Code):</b>							
<i>Please describe the extent to which the pesticide industry has made efforts to reduce risks from pesticides in relation to the following:</i>							
(a) <i>Making less toxic formulations available:</i>							
<input type="checkbox"/>	Not at all;	<input type="checkbox"/>	To a small degree;	<input type="checkbox"/>	To a large degree;	<input type="checkbox"/>	Fully/completely
(b) <i>Introducing products in ready-to-use packages:</i>							
<input type="checkbox"/>	Not at all;	<input type="checkbox"/>	To a small degree;	<input type="checkbox"/>	To a large degree;	<input type="checkbox"/>	Fully/completely
(c) <i>Developing application methods and equipment that minimize exposure to pesticides:</i>							
<input type="checkbox"/>	Not at all;	<input type="checkbox"/>	To a small degree;	<input type="checkbox"/>	To a large degree;	<input type="checkbox"/>	Fully/completely
(d) <i>Using returnable and refillable containers where effective container collection systems are in place:</i>							
<input type="checkbox"/>	Not at all;	<input type="checkbox"/>	To a small degree;	<input type="checkbox"/>	To a large degree;	<input type="checkbox"/>	Fully/completely
(e) <i>Using containers that are not attractive to or easily opened by children, particularly for domestic use products</i>							
<input type="checkbox"/>	Not at all;	<input type="checkbox"/>	To a small degree;	<input type="checkbox"/>	To a large degree;	<input type="checkbox"/>	Fully/completely
(f) <i>Using clear and concise labeling</i>							
<input type="checkbox"/>	Not at all;	<input type="checkbox"/>	To a small degree;	<input type="checkbox"/>	To a large degree;	<input type="checkbox"/>	Fully/completely
(g) <b>If possible and the information is available</b> , please provide additional responses to the above questions by typing in the expandable shaded area within the box below. (Please use a separate sheet of paper if space is not adequate.)							
3.1							

<b>3.2 Cooperative actions for risk reduction (Article 5.3 of the Code):</b>			
<i>Has your government alone and/or in cooperation with industry undertaken cooperative actions to further reduce risks in the following areas:</i>			
(a) <i>Promoting the use of proper and affordable personal protective equipment:</i>			
<input type="checkbox"/>	Yes;	<input type="checkbox"/>	No
(b) <i>Making provisions for safe storage of pesticides at both warehouse and farm level</i>			
<input type="checkbox"/>	Yes;	<input type="checkbox"/>	No
(c) <i>Establishing services to collect and safely dispose of used containers and small quantities of left-over pesticides</i>			
<input type="checkbox"/>	Yes;	<input type="checkbox"/>	No
(d) <i>Protecting biodiversity and minimizing adverse effects of pesticides on the environment (water, soil and air) and on non-target organisms</i>			
<input type="checkbox"/>	Yes;	<input type="checkbox"/>	No
(e) <b>If possible and the information is available</b> , please provide additional responses (such as positive cooperative initiatives, particular issues or concerns) to the above questions by typing in the expandable shaded area within the box below. (Please use a separate sheet of paper if space is not adequate.)			
3.2			

**3.3 National legislation and enforcement (Article 6.1.1 of the Code):**

*Has your government introduced the necessary legislation for the regulation of pesticides covering their entire life-cycle and made provisions for its effective enforcement.*

Yes;  No

*If possible and the information is available, please provide additional responses to the above question by typing in the expandable shaded area within the box below. (Please use a separate sheet of paper if space is not adequate.)*

3.3

**3.4 Pesticide registration system (Article 6.1.2 of the Code):**

*Does your government ensure that each pesticide product is registered before it can be made available for use?*

Yes;  No

*If possible and the information is available, please provide additional responses to the above question by typing in the expandable shaded area within the box below. (Please use a separate sheet of paper if space is not adequate.)*

3.4

**3.5 Conformity with relevant FAO and WHO specifications (Article 6.2.4 of the Code):**

*Does the pesticide industry ensure that active ingredients and formulated products conform with relevant FAO and WHO specifications.*

Yes;  No

*If possible and the information is available, please provide additional responses to the above question by typing in the expandable shaded area within the box below. (Please use a separate sheet of paper if space is not adequate.)*

3.5

**3.6 Voluntary responsive action (Article 6.2.6 of the Code):**

*Has the pesticide industry, when problems occur in your country, voluntarily taken corrective action and, when requested by governments, helped to find solutions to difficulties?*

Yes;  No

*If possible and the information is available, please provide additional responses to the above question by typing in the expandable shaded area within the box below. (Please use a separate sheet of paper if space is not adequate.)*

3.6

**3.7 Provision of data on trade, manufacture and sale by pesticide industry (Article 6.2.7 of the Code):**

(a) *Has the pesticide industry has provided the national government with clear and concise data on the following:*

Import:	<input type="checkbox"/>	Yes;	<input type="checkbox"/>	No
Export:	<input type="checkbox"/>	Yes;	<input type="checkbox"/>	No
Manufacture:	<input type="checkbox"/>	Yes;	<input type="checkbox"/>	No
Formulation:	<input type="checkbox"/>	Yes;	<input type="checkbox"/>	No
Quality of pesticides:	<input type="checkbox"/>	Yes;	<input type="checkbox"/>	No
Sales:	<input type="checkbox"/>	Yes;	<input type="checkbox"/>	No

(b) *If possible and the information is available, please provide additional responses to the above question by typing in the expandable shaded area within the box below. (Please use a separate sheet of paper if space is not adequate.)*

3.7

**3.8 Prohibitions on highly toxic and hazardous products (Article 7.5 of the Code):**

*Has your government prohibited the importation, sale and purchase of highly toxic and hazardous products, such as those included in WHO classes Ia and Ib, in light of Article 7.5 which indicates that such prohibitions may be desirable if other control measures or good marketing practices are insufficient to ensure that the product can be handled with acceptable risk to the user.*

Yes;  No

*If possible and the information is available, please provide additional responses to the above question by typing in the expandable shaded area within the box below. (Please use a separate sheet of paper if space is not adequate.)*

3.8

### Part III: General input on implementing, monitoring and observing of the Code of Conduct

The purpose of this section is to allow you to identify areas of the Code of Conduct of particular important in your country, and to highlight any problems relating to pesticides that you consider merit attention.

**Question 1:**

*Which provisions of the Code of Conduct are especially important at the national level, and why? If possible, please explain your answer briefly by typing in the expandable shaded area within the box below with examples. (Please use a separate sheet of paper if space is not adequate.)*

A-1

**Question 2:**

*In which areas covered by the Code of Conduct are there the most significant problems in full observance? If possible, please explain briefly by typing in the expandable shaded area within the box below **what these problems are and why you believe that they exist.** (Please use a separate sheet of paper if space is not adequate.)*

A-2

*Apart from answering these two questions, **if possible**, please provide your professional opinions by typing in the expandable shaded area within the boxes below on the following: (If the space available is not adequate, please give your opinions on a separate sheet of paper.)*

(a) What are the strengths of the present pesticide management system?

A-2(a)

(b) What are the weaknesses of the present pesticide management system?

A-2(b)

(c) What are the major bottlenecks to ensure sound pesticide management?

A-2(c)

(d) What are priority areas for strengthening of pesticide management?

A-2(d)

(e) In what areas could FAO possibly provide assistance for strengthening of pesticide management?

A-2(e)

**Appendix IV****Usefulness and readability of FAO guidelines on pesticide management in support of the implementation of the *International Code of Conduct on the Distribution and Use of Pesticides*****Results of a questionnaire survey in 2011**

## Observations

- Ten countries responded to the questionnaire; this number was too low to give a conclusive picture, but it was useful for identifying certain trends;
- Not all the guidelines were known to all countries;
- Two documents were found to be incomplete: “Manual on the submission and evaluation of pesticide residues data for the estimation of maximum residue limits in food and feed [2002]” (c.4) and “The Implementation of the Globally Harmonized System of Classification and Labeling of Chemicals – FAO’s past and present activities [2007]” (c.6).

## Usefulness

- Half the countries were strongly positive about the usefulness; 24 guidelines were assessed as mostly “very useful” and “absolutely essential”;
- The most useful guidelines were the guidelines for legislation on the control of pesticides (a.1), guidance on pest and pesticide management policy development (b.1) and guidelines for good labeling practice for pesticides (c.5);
- 13 guidelines received lower assessments of mostly “marginally” or “moderately useful”;
- Not so strongly useful were mostly guidelines on registration of application equipment (d.2+3+5+6) and some guidelines concerning obsolete pesticides: assessing soil contamination (i.5), baseline study (i.6) and the environmental management toolkit (i.9+10);
- The guidelines on registration of biopesticides were not included in questionnaire, but were found very useful by Thailand

## Readability

- Not all countries evaluated the readability of the guidelines, but those who responded found them mostly “fairly easy” to understand or they had no difficulties;
- “The Implementation of the Globally Harmonized System of Classification and Labelling of Chemicals – FAO’s past and present activities [2007]” (c.6) was the only guideline that was rated as “fairly difficult”.

## Conclusions

- Periodic notifications on available guidelines may increase awareness and their use;
- All guidelines seemed to have been well written, and there were no major difficulties with understanding them.



## Summary of country responses

Country	Guideline usefulness				Readability of Guidelines					Remarks (such as areas for improvement)
	Not or marginally useful	Moderately useful	Very useful	Absolutely essential	Very easy	Fairly easy	Neither easy nor difficult	Fairly difficult	Very difficult	
Bangladesh	3	15								
Cambodia		2	23	16	1	17	18	5		
Japan			32	4			36			
Lao PDR		1	12	4						21 not known
Malaysia	3	4	17	2		22	1			
Nepal		39				39				
Republic of Korea		18	21	4			39			
Samoa	5	11	15	8		39				
Thailand			7		1	5		1		10 not used 18 not known
Viet Nam		18	20			4	32			
Total	8	94	107	18	1	109	72	1		

## Usefulness of Guidelines

No.	FAO guidelines on pesticide management in support of the implementation of the International Code of Conduct on the distribution and use of pesticides	Guideline usefulness			
		Not or marginally useful	Moderately useful	Very useful	Absolutely essential
<b>A.</b>	<b>Pesticide legislation guidelines</b>				
a.1	Guidelines for legislation on the control of pesticides (1989)		2	5	3
<b>B.</b>	<b>Pest and Pesticide Management Policy Guidelines</b>				
b.1	Guidance on Pest and Pesticide Management Policy Development [2010]		3	3	3
<b>C.</b>	<b>Implementation guidelines: Registration – Pesticides</b>				
c.1	Guidelines for the Registration of Pesticides [2010]		3	2	4
c.2	Revised guidelines on environmental criteria for the registration of pesticides [1989]		3	5	1
c.3	Guidelines on efficacy evaluation of plant protection products [2006]		4	6	
c.4	Manual on the submission and evaluation of pesticide residues data for the estimation of maximum residue limits in food and feed [2002]		3	3	2
c.5	Guidelines on good labelling practice for pesticides [1995]		3	5	2
c.6	The Implementation of the Globally Harmonized System of Classification and Labelling of Chemicals – FAO's past and present activities [2007]		5	4	
<b>D.</b>	<b>Implementation guidelines: Registration – Application Equipment</b>				
d.1	Guidelines on procedures for the registration, certification and testing of new pesticide application equipment [2001]		2	2	2
d.2	Guidelines on minimum requirements for agricultural pesticide application equipment – Volume 1: (operator-carried) sprayers [2001]		3	4	
d.3	Guidelines on minimum requirements for agricultural pesticide application equipment – Volume 2: Vehicle-mounted and trailed sprayers [2001]	1	2	3	
d.4	Guidelines on minimum requirements for agricultural pesticide application equipment – Volume 3: Portable (operator-carried) foggers		2	4	
d.5	Guidelines on standards for agricultural pesticide application equipment and related test procedures – Volume 1: Portable (operator-carried) sprayers [2001]	1	2	3	1
d.6	Guidelines on standards for agricultural pesticide application equipment and related test procedures – Volume 2: Vehicle-mounted and trailed sprayers [2001]		3	3	
<b>E.</b>	<b>Implementation guidelines: Compliance and Enforcement</b>				
e.1	Guidelines on compliance and enforcement of a pesticide regulatory programme [2006]		1	5	2

No.	FAO guidelines on pesticide management in support of the implementation of the International Code of Conduct on the distribution and use of pesticides	Guideline usefulness			
		Not or marginally useful	Moderately useful	Very useful	Absolutely essential
e.1	Guidelines on the organization of schemes for testing and certification of agricultural pesticide sprayers in use [2001]		1	6	1
e.3	Manual on the development and use of FAO and WHO specifications for pesticides [2002]		4	3	3
e.4	FAO/WHO pesticide specifications [ongoing]		3	5	1
<b>F.</b>	<b>Implementation guidelines: Distribution and sales</b>				
f.1	Guidelines for retail distribution of pesticides with particular reference to storage and handling at the point of supply to users in developing countries [1988]		1	4	2
f.2	Pesticide storage and stock control manual [1996]		1	6	2
f.3	Provisional guidelines on tender procedures for the procurement of pesticides [1994]	1	2	4	
f.4	Guidelines on pesticide advertising [2010]		2	4	1
<b>G.</b>	<b>Implementation guidelines: Use</b>				
g.1	Guidelines for personal protection when working with pesticides in tropical climates [1990]		2	6	1
g.2	Guidelines on good practice for ground application of pesticides [2001]		1	5	2
g.3	Guidelines on good practice for aerial application of pesticides [2001]		3	5	1
<b>H.</b>	<b>Implementation guidelines: Training &amp; awareness</b>				
h.1	Guidelines on organization and operation of training schemes and certification procedures for operators of pesticide application equipment [2001]		5	2	
<b>I.</b>	<b>Implementation guidelines: Prevention &amp; disposal of obsolete stocks</b>				
i.1	Prevention of accumulation of obsolete stocks [1995]		1	4	2
i.2	Pesticide storage and stock control manual [1995]		1	6	
i.3	Disposal of bulk quantities of obsolete pesticides in developing countries [1996]		2	4	1
i.4	Guidelines for the management of small quantities of unwanted and obsolete pesticides [1999]		1	5	1
i.5	Assessing soil contamination: a reference manual [2000]		5	3	
i.6	Baseline study on the problem of obsolete pesticide stocks [2001]	1	4	3	
i.7	FAO Training Manual for inventory taking obsolete pesticides [2001]	1	2	4	1
i.8	Guidelines on management options for empty pesticide containers [2008]		2	4	2
i.9	Environmental Management Tool Kit for Obsolete Pesticides (EMTK) - Volume 1 [2009]	2	4	1	1
i.10	Environmental Management Tool Kit for Obsolete Pesticides (EMTK) - Volume 2 [2009]	1	4	2	
<b>J.</b>	<b>Implementation Guidelines - Post surveillance registration</b>				
j.1	Guidelines on post-registration surveillance and other activities in the field of pesticides [1988]		2	6	
j.2	Guidelines on developing a reporting system for health and environmental incidents resulting from exposure to pesticides [2009]		2	6	
<b>K.</b>	<b>Monitoring and observance of the Code of Conduct</b>				
k.1	Guidelines on monitoring and observance of the revised version of the Code [2006]		3	4	1
<b>L.</b>	<b>NEW GUIDELINES BEING DEVELOPED</b>				
<b>l.1</b>	<b>Guidelines on resistance management for pesticides</b>			2	
<b>l.2</b>	<b>Guidelines on evaluation of microbial pest control agents</b>			2	
<b>l.3</b>	<b>Guidelines on retail establishments for pesticides</b>		2		
<b>l.4</b>	<b>Guidelines on the development of a reporting system for health and environmental incidents resulting from exposure to pesticides</b>		1		
	<b>Total</b>	8	102	163	43

## Readability of Guidelines

No.	FAO guidelines on pesticide management in support of the implementation of the International Code of Conduct on the distribution and use of pesticides	Ease of Understanding				
		Very easy	Fairly easy	Neither easy nor difficult	Fairly difficult	Very difficult
<b>A.</b>	<b>Pesticide legislation guidelines</b>					
a.1	Guidelines for legislation on the control of pesticides (1989)		4	5		
<b>B.</b>	<b>Pest and Pesticide Management Policy Guidelines</b>					
b.1	Guidance on Pest and Pesticide Management Policy Development [2010]		4	4		
<b>C.</b>	<b>Implementation guidelines: Registration - Pesticides</b>					
c.1	Guidelines for the Registration of Pesticides [2010]		3	5		
c.2	Revised guidelines on environmental criteria for the registration of pesticides [1989]		3	5		
c.3	Guidelines on efficacy evaluation of plant protection products [2006]	1	4	4		
c.4	Manual on the submission and evaluation of pesticide residues data for the estimation of maximum residue limits in food and feed [2002]		3	4		
c.5	Guidelines on good labelling practice for pesticides [1995]		6	3		
c.6	The Implementation of the Globally Harmonized System of Classification and Labelling of Chemicals – FAO's past and present activities [2007]		3	4	2	
<b>D.</b>	<b>Implementation guidelines: Registration – Application Equipment</b>					
d.1	Guidelines on procedures for the registration, certification and testing of new pesticide application equipment [2001]		3	3		
d.2	Guidelines on minimum requirements for agricultural pesticide application equipment – Volume 1: (operator-carried) sprayers [2001]		3	3		
d.3	Guidelines on minimum requirements for agricultural pesticide application equipment – Volume 2: Vehicle-mounted and trailed sprayers [2001]	1	2	3		
d.4	Guidelines on minimum requirements for agricultural pesticide application equipment – Volume 3: Portable (operator-carried) foggers		3	3		
d.5	Guidelines on standards for agricultural pesticide application equipment and related test procedures – Volume 1: Portable (operator-carried) sprayers [2001]		2	4		
d.6	Guidelines on standards for agricultural pesticide application equipment and related test procedures – Volume 2: Vehicle-mounted and trailed sprayers [2001]		3	3		
<b>E.</b>	<b>Implementation guidelines: Compliance and Enforcement</b>					
e.1	Guidelines on compliance and enforcement of a pesticide regulatory programme [2006]		3	5		
e.1	Guidelines on the organization of schemes for testing and certification of agricultural pesticide sprayers in use [2001]		3	4	1	
e.3	Manual on the development and use of FAO and WHO specifications for pesticides [2002]		5	3	1	
e.4	FAO/WHO pesticide specifications [ongoing]		6	2		
<b>F.</b>	<b>Implementation guidelines: Distribution and sales</b>					
f.1	Guidelines for retail distribution of pesticides with particular reference to storage and handling at the point of supply to users in developing countries [1988]		3	2	1	
f.2	Pesticide storage and stock control manual [1996]		3	4		
f.3	Provisional guidelines on tender procedures for the procurement of pesticides [1994]		2	3		
f.4	Guidelines on pesticide advertising [2010]		4	4		
<b>G.</b>	<b>Implementation guidelines: Use</b>					
g.1	Guidelines for personal protection when working with pesticides in tropical climates [1990]		4	4		
g.2	Guidelines on good practice for ground application of pesticides [2001]		3	5		
g.3	Guidelines on good practice for aerial application of pesticides [2001]		4	4		

No.	FAO guidelines on pesticide management in support of the implementation of the International Code of Conduct on the distribution and use of pesticides	Ease of Understanding				
		Very easy	Fairly easy	Neither easy nor difficult	Fairly difficult	Very difficult
<b>H.</b>	<b>Implementation guidelines: Training &amp; awareness</b>					
h.1	Guidelines on organization and operation of training schemes and certification procedures for operators of pesticide application equipment [2001]		3	4		
<b>I.</b>	<b>Implementation guidelines: Prevention &amp; disposal of obsolete stocks</b>					
i.1	Prevention of accumulation of obsolete stocks [1995]		3	4		
i.2	Pesticide storage and stock control manual [1995]		2	5		
i.3	Disposal of bulk quantities of obsolete pesticides in developing countries [1996]		2	5		
i.4	Guidelines for the management of small quantities of unwanted and obsolete pesticides [1999]		3	4		
i.5	Assessing soil contamination: a reference manual [2000]		3	5		
i.6	Baseline study on the problem of obsolete pesticide stocks [2001]		3	4		
i.7	FAO Training Manual for inventory taking obsolete pesticides [2001]		2	5		
i.8	Guidelines on management options for empty pesticide containers [2008]		4	4		
i.9	Environmental Management Tool Kit for Obsolete Pesticides (EMTK) - Volume 1 [2009]		2	4	1	
i.10	Environmental Management Tool Kit for Obsolete Pesticides (EMTK) - Volume 2 [2009]		3	3	1	
<b>J.</b>	<b>Implementation Guidelines - Post surveillance registration</b>					
j.1	Guidelines on post-registration surveillance and other activities in the field of pesticides [1988]		4	4		
j.2	Guidelines on developing a reporting system for health and environmental incidents resulting from exposure to pesticides [2009]		3	5		
<b>K.</b>	<b>Monitoring and observance of the Code of Conduct</b>					
k.1	Guidelines on monitoring and observance of the revised version of the Code [2006]		4	4		
<b>L.</b>	<b>NEW GUIDELINES BEING DEVELOPED</b>					
<b>l.1</b>	<b>Guidelines on resistance management for pesticides</b>					
<b>l.2</b>	<b>Guidelines on evaluation of microbial pest control agents</b>					
<b>l.3</b>	<b>Guidelines on retail establishments for pesticides</b>					
<b>l.4</b>	<b>Guidelines on the development of a reporting system for health and environmental incidents resulting from exposure to pesticides</b>					
	<b>Total</b>	2	127	153	7	

**Questionnaire:**

**Questionnaire on the usefulness and readability of FAO guidelines on pesticide management in support of the implementation of the International Code of Conduct on the distribution and use of pesticides**

**Source:** <http://www.fao.org/agriculture/crops/core-themes/theme/pests/pm/code/guidelines/en/>  
<http://www.fao.org/agriculture/crops/core-themes/theme/pests/pm/code/list-guide/en/>

*Please type 'X' in the appropriate boxes below in terms of guidelines' usefulness and readability.*

No.	FAO guidelines on pesticide management in support of the implementation of the International Code of Conduct on the distribution and use of pesticides	Web links	Guideline usefulness				How easy the guideline is to understand				Remarks (such as areas for improvement)
			Not /marginally useful	Moderately useful	Very useful	Absolutely essential	Very easy	Fairly easy	Neither easy or difficult	Fairly difficult	
<b>A.</b>	<b>Pesticide legislation guidelines</b>										
a.1	Guidelines for legislation on the control of pesticides (1989)	<a href="#">Link</a>									
<b>B.</b>	<b>Pest and Pesticide Management Policy Guidelines</b>										
b.1	Guidance on Pest and Pesticide Management Policy Development [2010]	<a href="#">Link</a>									
<b>C.</b>	<b>Implementation guidelines: Registration - Pesticides</b>										
c.1	Guidelines for the Registration of Pesticides [2010]	<a href="#">Link</a>									
c.2	Revised guidelines on environmental criteria for the registration of pesticides [1989]	<a href="#">Link</a>									
c.3	Guidelines on efficacy evaluation of plant protection products [2006]	<a href="#">Link</a>									
c.4	Manual on the submission and evaluation of pesticide residues data for the estimation of maximum residue limits in food and feed [2002]	<a href="#">Link</a>									
c.5	Guidelines on good labelling practice for pesticides [1995]	<a href="#">Link</a>									
c.6	The Implementation of the Globally Harmonized System of Classification and Labelling of Chemicals – FAO's past and present activities [2007]	<a href="#">Link</a>									
<b>D.</b>	<b>Implementation guidelines: Registration – Application Equipment</b>										
d.1	Guidelines on procedures for the registration, certification and testing of new pesticide application equipment [2001]	<a href="#">Link</a>									
d.2	Guidelines on minimum requirements for agricultural pesticide application equipment – Volume 1: (operator-carried) sprayers [2001]	<a href="#">Link</a>									
d.3	Guidelines on minimum requirements for agricultural pesticide application equipment – Volume 2: Vehicle-mounted and trailed sprayers [2001]	<a href="#">Link</a>									
d.4	Guidelines on minimum requirements for agricultural pesticide application equipment – Volume 3: Portable (operator-carried) foggers	<a href="#">Link</a>									
d.5	Guidelines on standards for agricultural pesticide application equipment and related test procedures – Volume 1: Portable (operator-carried) sprayers [2001]e	<a href="#">Link</a>									
d.5	Guidelines on standards for agricultural pesticide application equipment and related test procedures – Volume 2: Vehicle-mounted and trailed sprayers [2001]	<a href="#">Link</a>									

<b>E.</b>	<b>Implementation guidelines: Compliance and Enforcement</b>																			
e.1	Guidelines on compliance and enforcement of a pesticide regulatory programme [2006]	<a href="#">Link</a>																		
e.1	Guidelines on the organization of schemes for testing and certification of agricultural pesticide sprayers in use [2001]	<a href="#">Link</a>																		
e.3	Manual on the development and use of FAO and WHO specifications for pesticides [2002]	<a href="#">Link</a>																		
e.4	FAO/WHO pesticide specifications [ongoing]	<a href="#">Link</a>																		
<b>F.</b>	<b>Implementation guidelines: Distribution and sales</b>																			
f.1	Guidelines for retail distribution of pesticides with particular reference to storage and handling at the point of supply to users in developing countries [1988]	<a href="#">Link</a>																		
f.2	Pesticide storage and stock control manual [1996]	<a href="#">Link</a>																		
f.3	Provisional guidelines on tender procedures for the procurement of pesticides [1994]	<a href="#">Link</a>																		
f.4	Guidelines on pesticide advertising [2010]	<a href="#">Link</a>																		
<b>G.</b>	<b>Implementation guidelines: Use</b>																			
g.1	Guidelines for personal protection when working with pesticides in tropical climates [1990]	<a href="#">Link</a>																		
g.2	Guidelines on good practice for ground application of pesticides [2001]	<a href="#">Link</a>																		
g.3	Guidelines on good practice for aerial application of pesticides [2001]	<a href="#">Link</a>																		
<b>H.</b>	<b>Implementation guidelines: Training &amp; awareness</b>																			
h.1	Guidelines on organization and operation of training schemes and certification procedures for operators of pesticide application equipment [2001]	<a href="#">Link</a>																		
<b>I.</b>	<b>Implementation guidelines: Prevention &amp; disposal of obsolete stocks</b>																			
i.1	Prevention of accumulation of obsolete stocks [1995]	<a href="#">Link</a>																		
i.2	Pesticide storage and stock control manual [1995]	<a href="#">Link</a>																		
i.3	Disposal of bulk quantities of obsolete pesticides in developing countries [1996]	<a href="#">Link</a>																		
i.4	Guidelines for the management of small quantities of unwanted and obsolete pesticides [1999]	<a href="#">Link</a>																		
i.5	Assessing soil contamination: a reference manual [2000]	<a href="#">Link</a>																		
i.6	Baseline study on the problem of obsolete pesticide stocks [2001]	<a href="#">Link</a>																		
i.7	FAO Training Manual for inventory taking obsolete pesticides [2001]	<a href="#">Link</a>																		
i.8	Guidelines on management options for empty pesticide containers [2008]	<a href="#">Link</a>																		
i.9	Environmental Management Tool Kit for Obsolete Pesticides(EMTK) - Volume 1 [2009]	<a href="#">Link</a>																		
i.10	Environmental Management Tool Kit for Obsolete Pesticides(EMTK) - Volume 2 [2009]	<a href="#">Link</a>																		
<b>J.</b>	<b>Implementation Guidelines - Post surveillance registration</b>																			
j.1	Guidelines on post-registration surveillance and other activities in the field of pesticides [1988]	<a href="#">Link</a>																		
j.2	Guidelines on developing a reporting system for health and environmental incidents resulting from exposure to pesticides[2009]	<a href="#">Link</a>																		
<b>K.</b>	<b>Monitoring and observance of the Code of Conduct</b>																			
k.1	Guidelines on monitoring and observance of the revised version of the Code [2006]	<a href="#">Link</a>																		
<b>L.</b>	<b>NEW GUIDELINES BEING DEVELOPED</b>																			
<b>l.1</b>	<b>Guidelines on resistance management for pesticides</b>																			
<b>l.2</b>	<b>Guidelines on evaluation of microbial pest control agents</b>																			
<b>l.3</b>	<b>Guidelines on retail establishments for pesticides</b>																			
<b>l.4</b>	<b>Guidelines on the development of a reporting system for health and environmental incidents resulting from exposure to pesticides</b>																			

## Management of Highly Hazardous Pesticides (HHP) in Asia and the Pacific

### Results of a questionnaire survey in 2011

#### General observations

- The management of highly hazardous pesticides is important for pesticide registration and protecting pesticide applicators;
- The number of responding countries (10) was too low to give a conclusive assessment for the APPPC region, but it was sufficient for identifying opportunities and constraints.

#### Overall conclusions

- A periodic review or re-registration of old pesticide chemicals is useful for managing highly hazardous pesticides
- The classification and registration of highly hazardous plant products seems to be unresolved and may need guidelines
- The *Global Harmonized System on Classification and Labeling of Chemicals* (GHS) may require special promotion and training

#### Difficulties in classification as Highly Hazardous Pesticide

- Most countries found it easy to classify highly hazardous pesticides
- Access to up-to-date information and adequate registration staff capacity are necessary prerequisites for HHP management

#### Details of questionnaire responses:

Country	Very easy	Fairly easy	Neither easy or difficult	Fairly difficult	Very difficult	Difficulties in classification as Highly Hazardous Pesticide
Australia		x				
Bangladesh	x					
DPR of Korea				x		Lack of access to up-to-date information Lack of capacity to assess pesticide hazard
Japan			x			
Lao PDR		x				
Malaysia	x					
Myanmar		x				Lack of awareness and knowledge of pesticide toxicology
Republic of Korea					x	Special quarantine and forest pest control considerations
Samoa		x				Label information not clear and simple for classification of hazard.
Thailand	x					Need to search for chronic and sub-chronic information for pesticides registered more than 10 years ago
Total	3	4	1	1	1	

## Criteria used for classification

### Observations

- Most countries used standard classifications and international conventions for their classification of pesticides;
- All responding countries found it easy to use standard WHO/GHS classifications or the pesticides lists provided by various conventions/protocols;
- Australia relied on its own assessment of human health, environmental hazard and risk assessment for the classification of pesticides as poisons with the appropriate warnings of “CAUTION”, “POISON” or “DANGEROUS POISON”;
- The WHO classifications Ia and Ib was the most frequently used classification of pesticides as highly hazardous;
- Reported incidences of severe and adverse effects on human health and the environment were important criteria considered by most countries;
- The GHS was only used by Thailand; the Republic of Korea is planning to use it in the future.

### Conclusions

- International classification systems, conventions and protocols provide important assistance to many countries for their management of highly hazardous pesticides;
- The Global Harmonized System on Classification and Labeling of Chemicals (GHS) is not yet widely used and may require special promotion and training.

### Details of questionnaire responses:

Country	WHO	GHS	Stockholm Convention	Rotterdam Convention	Montreal Protocol	High incidence of effects adverse	Other criteria	Description of other criteria used
Australia						x	x	Full human health, environmental hazard and risk assessments
Bangladesh	x							
DPR of Korea	x		x	x	x	x	x	Information provided by hygienic research and environmental protection institutes
Japan			x			x		
Lao PDR	x		x	x				
Malaysia	x		x	x	x	x		
Myanmar	x							
Republic of Korea	x							
Samoa	x		x	x	x	x		FAO low toxicity level chemicals
Thailand	x	x		x	x	x		
Total	8	1	5	5	4	6	2	



## Considerations prior to registration of Highly Hazardous Pesticides (HHPs)

### Observations

- Responses to the consideration of other factors prior to the registration of highly hazardous pesticides varied greatly from “Never/Rarely” to “Always”;
- Most countries allowed the use of highly hazardous pesticides if there was a clear need in the country and viable alternatives were not available;
- Only Australia and the Republic of Korea primarily assessed the hazards and risks of a pesticide and rarely considered the need for the product or availability of alternatives;
- All countries considered adequate control measures and/or good marketing practices prior to the registration of each highly hazardous pesticide, ensuring that they could be handled with acceptable risk to human health and environment.

### Conclusion

- There appeared to be two different approaches on this issue: more industrialized countries seemed to focus exclusively on the assessment of the hazard and risk of the chemical compound, while the majority of other countries also considered the needs in the country (and possibly economic factors as well).

### Details of questionnaire responses:

Country	Establishment of a clear need for the use of HHPs	Risk-benefit analysis of on available other viable alternatives	Consideration of control measures and/or marketing practices for handling of HHP
Australia	Rarely	Rarely	Always
Bangladesh	Always	Always	Most of the time
DPR of Korea	Sometimes	Most of the time	Sometimes
Japan	NA	NA	NA
Lao PDR	Always	Always	Always
Malaysia	Always	Sometimes	Most of the time
Myanmar	Rarely	Sometimes	Rarely
Republic of Korea	Rarely	Never	Always
Samoa	Always	Always	Always
Thailand	Always	Always	Always
Summary of responses			
Never		1	
Rarely	3	1	1
Sometimes	1	2	1
Most of the time		1	2
Always	5	4	5

Note: The available choices are never, rarely, sometimes, most of the time or always

## Risk reduction measures

### Observations

- All responding countries had instituted some kind of risk reduction measures for managing highly hazardous pesticides;
- The most frequent measures were legal restrictions such as banning or phasing out highly hazardous pesticides, and precautionary warnings on the label to encourage the use of personal protective equipment;
- Frequently, highly hazardous pesticides were only available in certain concentrations or formulations, or they were restricted to certain applications and application methods (e.g. quarantine fumigation);
- In some cases, highly hazardous pesticides were not available to the general public and could only be used by especially trained applicators.

### Conclusions

- Pesticide risk reduction relied on regulatory measures as well as on individual, voluntary protection;
- A regular chemical review of old pesticides can lead to better risk reduction measures such as restrictions on uses, amended label instructions (e.g. first aid instruction and safety directions, stronger warning statements), or, in some cases, cancellation of product registrations and active constituent approval.

### Details of questionnaire responses:

Country	Chemical review of hazardous pesticides	Restricted registration, phase-out, banning	Restricted formulations	Restricted availability	Restricted usage and application method	Precaution warnings
Australia	x	x		x		x
Bangladesh		x				
DPR of Korea		x			x	x
Japan				x		
Lao PDR		x				
Malaysia	x	x	x		x	x
Myanmar		x			x	
Republic of Korea						x
Samoa		x	x	x		x
Thailand	x					
Total	3	5	2	2	2	5

## Overall cooperation among relevant stakeholders

### Observations

- Cooperation among relevant stakeholders was found to be “satisfactory” or “fairly satisfactory” in the responding countries;
- The management of HHP relied on the cooperation from various departments for the enforcement of various regulations;
- Labour laws and occupational health standards may contribute to better HHP management;
- An example for the need for increased stakeholder consultation was the attempt in Thailand to classify 13 plants as Type 1 Hazardous Substance. There are different interests and views about registering these products which still need to be resolved.

### Conclusions

- Guidelines for the classification and registration of hazardous plant substances may be helpful for stakeholder consultations;
- Education and social awareness may facilitate increased cooperation.

### Details of questionnaire responses:

Country	Not satisfactory	Fairly satisfactory	Satisfactory	Very satisfactory	Areas that need improvement
Australia			x		
Bangladesh			x		Laboratory facilities, obsolete pesticide management, training on safe use of pesticide, etc
DPR of Korea		x			Pesticide registration system, testing, inspection, enforcement, social awareness and education, safety standards and labour protection
Japan			x		
Lao PDR			x		
Malaysia			x		
Myanmar		x			Exchange of information and know-how
Republic of Korea			x		
Samoa	x				Public awareness and training for proper use and equipment of hazardous pesticides
Thailand		x			More stakeholder consultations to agree on the classification of plant hazardous substances
Total	1	3	6	0	

**Questionnaire:**

**Implementation and observance of the International Code of Conduct  
on the Distribution and Use of Pesticides**

**Questionnaire**

**on**

**Management of highly hazardous pesticides (HHPs)**

*(\*\*covering agricultural, veterinary, public health and household pesticides\*\*)*

**1. Classification as highly hazardous pesticide**

Is it easy for pesticide registrars in your country to decide whether a pesticide is highly hazardous?

*Please check one of the boxes in the following table:*

<input type="checkbox"/>	Very easy
<input type="checkbox"/>	Fairly easy
<input type="checkbox"/>	Neither easy or difficulty
<input type="checkbox"/>	Fairly difficult
<input type="checkbox"/>	Very difficult

*If the pesticide classification by the registrars is fairly or very difficult, please describe briefly by typing in the expandable shaded area within the box below **why it is difficult to decide whether a pesticide is highly hazardous.***

*Difficulties in deciding whether a pesticide is highly hazardous:*

**2. Criteria used by pesticide registrars for classifying pesticides**

What criteria are currently used by pesticide registrars in your country for deciding whether a pesticide is highly hazardous?

*Please check one or more boxes in the following table:*

<input type="checkbox"/>	Classes Ia or Ib of the <b>WHO</b> Recommended Classification of Pesticides by Hazard
<input type="checkbox"/>	Categories 1A and 1B (in terms of carcinogenicity, mutagenicity and/or reproductive toxicity) of the <b>Globally Harmonized System</b> on Classification and Labeling of Chemicals ( <b>GHS</b> )
<input type="checkbox"/>	Pesticide active ingredients listed in <b>Stockholm Convention's</b> Annexes A and B and all criteria in Paragraph 1 of Annex D
<input type="checkbox"/>	Pesticide active ingredients/formulations listed in <b>Rotterdam Convention's</b> Annex III
<input type="checkbox"/>	Pesticide listed under the <b>Montreal Protocol</b>
<input type="checkbox"/>	Pesticide active ingredients/formulations that have shown a <b>high incidence of severe or irreversible adverse effects on human health/environment</b>
<input type="checkbox"/>	Other criteria ( <i>Please describe briefly <b>other criteria</b> by typing in the expandable shaded area within the box below.</i> )
	<i>Brief description of other criteria being used:</i>

### 3. Consideration prior to registration of highly hazardous pesticides (HHPs) (including agricultural, public health, veterinary and household pesticides)

#### 3.1 Need for the use of HHPs

Does the government or the agency concerned establish a clear need **prior to the registration** of each HPP?

*Please check one of the boxes in the following table:*

<input type="checkbox"/>	Never
<input type="checkbox"/>	Rarely
<input type="checkbox"/>	Sometimes
<input type="checkbox"/>	Most of the time
<input type="checkbox"/>	Always

#### 3.2 Availability of other viable alternatives

Apart from the HHPs, does the government or the agency concerned consider **the availability of other viable alternatives**, based on a risk benefit analysis, prior to the registration of each HHP?

*Please check one of the boxes in the following table:*

<input type="checkbox"/>	Never
<input type="checkbox"/>	Rarely
<input type="checkbox"/>	Sometimes
<input type="checkbox"/>	Most of the time
<input type="checkbox"/>	Always

#### 3.3 Control measures and/or marketing practices

Does the government or the agency concerned consider the **adequacy** of control measures and/or good marketing practices **prior to the registration** of each HHP, ensuring that the highly hazardous pesticide to be registered can be handled with acceptable risk to human health and environment?

*Please check one of the boxes in the following table:*

<input type="checkbox"/>	Never
<input type="checkbox"/>	Rarely
<input type="checkbox"/>	Sometimes
<input type="checkbox"/>	Most of the time
<input type="checkbox"/>	Always

#### 4. Risk reduction measures

For the highly hazardous pesticides which have already been registered, has the government or the agency concerned put in place **risk reduction measures** such as necessary precautions, progressive ban or phase-out, appropriate labels giving advice/information for judicious use, application of restrictions including the use only under certain conditions or by specifically certified users.

Please check one of the boxes in the following table:

<input type="checkbox"/>	No risk reduction measures have been put in place.
<input type="checkbox"/>	Yes, there are risk reduction measures in place. <i>(If possible and the information is available, please describe briefly <b>such measure(s)</b> by typing in the expandable shaded areas within in the boxes below. (Please use a separate sheet of paper if space is not adequate.)</i>
(a)	
(b)	
(c)	
(d)	
(e)	
(f)	

#### 5. Overall cooperation

The extent or degree of overall cooperation among relevant stakeholders (government agencies concerned, the pesticide industry including manufacturers and distributors, users of pesticides including farmers, households, sprayers, consumers, the food sector and NGOs) in reducing risk arising from the use and distribution of highly hazardous pesticides (HHPs):

Please check one of the boxes in the following table:

<input type="checkbox"/>	Weak or no overall cooperation
<input type="checkbox"/>	Fairly satisfactory overall cooperation
<input type="checkbox"/>	Satisfactory overall cooperation
<input type="checkbox"/>	Strong/very satisfactory overall cooperation

*In case of weak or fairly satisfactory overall cooperation, please describe briefly in the expandable box below **those areas that need improvement and/or how to improve the cooperation.** (Please use a separate sheet of paper if space is not adequate.)*

*Areas that need improvement and/or how to improve the cooperation:*

--

## **Rotterdam Convention**

### **Compilation of data on the implementation of the Convention in Asia and the Pacific region**

#### Background

- The Rotterdam Convention is a multilateral treaty to promote shared responsibilities in relation to importation of hazardous chemicals; its full name is “Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade”.
- The treaty was signed in 1998 and became effective in 2004 after the ratification by the 50th signatory state. There are presently 73 signatories and 128 parties to the treaty.
- The convention promotes calls on exporters of hazardous chemicals to use proper labeling and safe handling procedures, and to inform purchasers of any known restrictions or bans.
- Parties can decide whether to allow or ban the importation of chemicals listed in the treaty, and exporting countries are obliged make sure that producers within their jurisdiction comply.

#### Observations

- Among APPPC members, 14 countries are party to the Rotterdam Convention; the latest countries that joined in 2010 were Lao PDR and Tonga;
- Since 1993 there were 760 import responses in the Asia and Pacific region of which 75 % were denied; only 4 % received a general import permit, and 22 % of the imports were allowed under certain conditions;
- The highest number of import permits in the region since 1993 were granted for tetraethyl lead and tetramethyl lead (17 cases combined), followed by monocrotophos (7 cases) and methamidophos (6 cases);
- In the past 5 years, there were 28 import permissions granted (of which only 3 were unconditional) for 15 chemicals; the highest numbers were for tetraethyl lead and tetramethyl lead (9 cases combined), followed by tributyltin compounds (3 cases);
- Highly hazardous pesticides imported in the region in the past 5 years were: parathion by Australia and China (2006), and monocrotophos and methamidophos by the Republic of Korea (2010).

#### Conclusions

- The trade with highly hazardous chemicals appears to be declining in the APPPC region: the number of permitted importations fell from 109 cases between 2001 and 2005 to only 28 cases between 2006 and 2010.
- The trade with highly hazardous pesticides declined significantly from 48 cases between 2001 and 2005 to only 4 cases in the past 5 years; there were no imports of highly hazardous pesticides to countries with inadequate safety infrastructure.

## Notifications and import responses

**Table 1: Parties to the Rotterdam Convention in Asia and the Southwest Pacific (as well as numbers of their official contact points and designated national authorities)**

**Sources:** (1) <http://www.pic.int/home.php?type=t&id=63&sid=17>  
 (2) <http://www.pic.int/reports/countryprofiles.asp>

**Updated:** April 2011

No.	Parties to Rotterdam Convention in Asia and the Southwest Pacific	PIC Region	Signature	Ratification, Acceptance (A), Approval (AA), Accession (a)	Number of Official Contact Points	Number of Designated National Authorities (DNAs)
1	Australia	Southwest Pacific	6-Jul-99	20-May-04	1	2
2	China <sup>1</sup>	Asia	24-Aug-99	22-Mar-05	3	2
3	Cook Islands	Southwest Pacific		29-Jun-04 a	2	2
4	Democratic People's Republic of Korea	Asia		6-Feb-04 a	3	2
5	India	Asia		24-May-05 a	2	2
6	Iran (Islamic Republic of)	Asia	17-Feb-99	26-Aug-04	5	3
7	Japan	Asia	31-Aug-99	15-Jun-04 A	1	1
8	Kazakhstan	Asia		1-Nov-07 a	3	1
9	Lao People's Democratic Republic	Asia		21-Sep-10 a	1	2
10	Malaysia	Asia		4-Sep-02 a	2	2
11	Maldives	Asia		17-Oct-06 a	2	1
12	Marshall Islands	Southwest Pacific		27-Jan-03 a	2	1
13	Mongolia	Asia	11-Sep-98	8-Mar-01	5	4
14	Nepal	Asia		9-Feb-07 a	2	2
15	New Zealand <sup>2</sup>	Southwest Pacific	11-Sep-98	23-Sep-03	4	2
16	Pakistan	Asia	9-Sep-99	14-Jul-05	5	2
17	Philippines	Asia	11-Sep-98	31-Jul-06	5	2
18	Republic of Korea	Asia	7-Sep-99	11-Aug-03	3	2
19	Samoa	Southwest Pacific		30-May-02 a	1	2
20	Singapore	Asia		24-May-05 a	2	1
21	Sri Lanka	Asia		19-Jan-06 a	4	3
22	Thailand	Asia		19-Feb-02 a	1	3
23	Tonga	Southwest Pacific		31-Mar-10 a	1	1
24	Viet Nam	Asia		7-May-07 a	1	3

Note:

For more details and updates of all Parties to the Rotterdam Convention, please visit the following website ([www.pic.int/Countries/Parties/tabid/1072/language/en-US/Default.aspx](http://www.pic.int/Countries/Parties/tabid/1072/language/en-US/Default.aspx))

<sup>1</sup> The convention shall apply to the Macau Hong Kong Special Administrative Region and the Hong Kong Special Administrative Region.

<sup>2</sup> The ratification shall not extend to Tokelau.



**Table 2: Rotterdam Convention (RC) Implementation in Asia and the Pacific**

**Sources:** (1) <http://www.pic.int/home.php?type=t&id=7&sid=16> (Countries in PIC regions -Asia and Southwest Pacific)  
(2) <http://www.pic.int/home.php?type=t&id=63&sid=17> (Parties to the Rotterdam Convention)  
(3) <http://www.pic.int/Reports/FRA-Parties-List-AnnexIII.asp> (Notifications of Final Regulatory Actions for Annex III chemicals)  
(4) <http://www.pic.int/Reports/FRA-Parties-List.asp> (Notifications of Final Regulatory Actions for Non Annex III chemicals)  
(5) <http://www.pic.int/Reports/06-ICRs-Country-Parties.asp> (Import Response by Parties)  
(6) <http://www.pic.int/Reports/06-ICRs-Country-NON-Parties.asp> (Import Response by Non Parties)

**Updated:** April 2011

No.		PIC Region (Asia, Europe, Near East, North America or Southwest Pacific)	24 RC Parties in Asia & the Southwest Pacific	Notifications of Final Regulatory Action for Annex III chemicals by 24+1 RC Parties	Notifications of Final Regulatory Action for Non Annex III chemicals by 24+1 RC Parties	Import Responses by 24+1 RC Parties	Import Responses by RC Non-Parties (20 countries)
<b>I. 24 member nations of APPPC and FAO in Asia and the Pacific</b>							
1.	Australia	Southwest Pacific	✓	5 chemicals	4 chemicals	40 chemicals	
2.	Bangladesh	Asia	Not RC Party				11 chemicals
3.	Cambodia	Asia	Not RC Party				No response
4.	China	Asia	✓	No notification	No notification	39 chemicals	
5.	DPR of Korea	Asia	✓	No notification	No notification	25 chemicals	
6.	Fiji	Southwest Pacific	Not RC Party				11 chemicals
7.	France	Europe	*	No notification	No notification	40 chemicals	
8.	India	Asia	✓	No notification	1 chemical	40 chemicals	
9.	Indonesia	Asia	Not RC Party				17 chemicals
10.	Lao PDR	Asia	✓	No notification	No notification	27 chemicals	
11.	Malaysia	Asia	✓	1 chemical	2 chemical	40 chemicals	
12.	Myanmar	Asia	Not RC Party				3 chemicals
13.	Nepal, Federal Democratic Republic of	Asia	✓	No notification	No notification	11 chemicals	
14.	New Zealand	Southwest Pacific	✓	No notification	1 chemical	39 chemicals	
15.	Pakistan	Asia	✓	No notification	No notification	29 chemicals	
16.	Papua New Guinea	Southwest Pacific	Not RC Party				5 chemicals
17.	Philippines	Asia	✓	No notification	No notification	25 chemicals	
18.	Republic of Korea	Asia	✓	8 chemicals	13 chemicals	33 chemicals	
19.	Samoa	Southwest Pacific	✓	No notification	No notification	29 chemicals	
20.	Solomon Islands	Southwest Pacific	Not RC Party				2 chemicals
21.	Sri Lanka	Asia	✓	No notification	1 chemical	24 chemicals	
22.	Thailand	Asia	✓	11 chemicals	45 chemicals	39 chemicals	
23.	Tonga	Southwest Pacific	✓	No notification	No notification	No response	
24.	Viet Nam	Asia	✓	No notification	No notification	26 chemicals	
<b>II. FAO's other 19 member nations in Asia and the Pacific</b>							
1.	Afghanistan	Near East	Not RC Party				No response
2.	Bhutan	Asia	Not RC Party				6 chemicals
3.	Cook Islands	Southwest Pacific	✓	No notification	No notification	25 chemicals	
4.	Iran, Islamic Republic of	Asia	✓	7 chemicals	3 chemicals	40 chemicals	
5.	Japan	Asia	✓	24 chemicals	44 chemicals	40 chemicals	
6.	Kazakhstan	Asia	✓	No notification	No notification	16 chemicals	
7.	Kiribati	Southwest Pacific	Not RC Party				No response
8.	Maldives	Asia	✓	No notification	No notification	No response	
9.	Marshall Islands	Southwest Pacific	✓	No notification	No notification	No response	
10.	Micronesia, Federated States of	Southwest Pacific	Not RC Party	No response			
11.	Mongolia	Asia	✓	No notification	No notification	30 chemicals	
12.	Nauru	Southwest Pacific	Not RC Party	No response			
13.	Niue	Southwest Pacific	Not RC Party				No response
14.	Palau	Southwest Pacific	Not RC Party				No response
15.	Timor-Leste	Asia	Not RC Party				No response
16.	Tuvalu	Southwest Pacific	Not RC Party				No response
17.	United States of America	North America	Not RC Party				No response
18.	Uzbekistan	Near East	Not RC Party				No response
19.	Vanuatu	Southwest Pacific	Not RC Party				20 chemicals
<b>III. Other countries (not FAO members) in Asia and the Pacific</b>							
1.	Brunei Darussalam	Asia	Not RC Party				No response
2.	Singapore	Asia	✓	No notification	No notification	40 chemicals	

\* **Notes**

France is Party to the Rotterdam Convention in Europe (based on the PIC Regions).













**Table 4. Chemicals covered by import responses by Parties and Non Parties to the Rotterdam Convention in Asia and Pacific**

(24 Parties in Asia and the Southwest Pacific and 1 Party [France] in Europe as well as 20 Non Parties)

Sources: (1) <http://www.pic.int/Reports/06-ICRs-Country-Parties.asp> (Import Response by Parties)(2) <http://www.pic.int/Reports/06-ICRs-Country-NON-Parties.asp> (Import Response by Non Parties)

Updated: April 2011

The following show information about the import response decisions (consent, no consent, consent under conditions, or 'response did not address importation') on various chemicals by the parties and non parties to the Rotterdam Convention.

No.	Chemical	First Date of Response	Latest Date of Response	# of Parties (A)	# of Non Parties (B)	Total (A + B = C)	Parties/Total or A/C (in %)	Non Parties/Total or B/C (in %)	(A) compared to 24 Parties in Asia and Southwest Pacific (in %)
1	2, 4, 5-T & its salts and esters	12/01/98	12/06/10	19	2	21	90%	10%	79%
2	Actinolite asbestos	12/12/04	12/12/09	11	0	11	100%	0%	46%
3	Aldrin	12/07/93	12/06/10	22	5	27	81%	19%	92%
4	Amosite, asbestos	12/12/04	12/12/08	11	0	11	100%	0%	46%
5	Anthophyllite	12/12/04	12/12/09	11	0	11	100%	0%	46%
6	Binapacryl	12/12/99	12/06/10	19	0	19	100%	0%	79%
7	Captafol	12/01/98	12/06/10	20	2	22	91%	9%	83%
8	Chlordane	12/07/93	12/06/10	22	4	26	85%	15%	92%
9	Chlordimeform	12/07/93	12/06/10	21	4	25	84%	16%	88%
10	Chlorobenzilate	12/01/98	12/06/10	20	2	22	91%	9%	83%
11	Crocidolite	12/01/95	12/06/06	16	1	17	94%	6%	67%
12	DDT	12/07/93	12/06/10	21	5	26	81%	19%	88%
13	Dieldrin	12/07/93	12/06/10	22	5	27	81%	19%	92%
14	Dinitro-ortho-cresol (DNOC) and its salts	12/12/04	12/06/10	14	0	14	100%	0%	58%
15	Dinoseb & Dinoseb Salts	12/07/93	12/06/10	22	5	27	81%	19%	92%
16	Dustable powder formulations *****	12/12/04	12/06/10	14	0	14	100%	0%	58%
17	EDB (1, 2-dibromoethane)	12/07/93	12/06/10	22	4	26	85%	15%	92%
18	Ethylene dichloride	12/06/01	12/06/06	16	1	17	94%	6%	67%
19	Ethylene oxide	12/06/01	12/06/10	15	1	16	94%	6%	63%
20	Fluoroacetamide	12/07/93	12/06/10	21	5	26	81%	19%	88%
21	HCH (mixed isomers)	12/07/93	12/06/10	21	5	26	81%	19%	88%
22	Heptachlor	12/07/93	12/06/10	22	4	26	85%	15%	92%
23	Hexachlorobenzene	12/01/98	12/06/10	19	2	21	90%	10%	79%
24	Lindane (gamma-HCH)	12/01/98	12/06/10	20	2	22	91%	9%	83%
25	Mercury compounds	12/07/93	12/06/10	22	4	26	85%	15%	92%
26	Methamidophos	12/01/98	12/06/10	19	2	21	90%	10%	79%
27	Methyl-parathion	12/01/98	12/06/10	19	2	21	90%	10%	79%
28	Monocrotophos	12/06/03	12/06/10	16	0	16	100%	0%	67%
29	Parathion	12/01/98	12/06/10	15	0	15	100%	0%	63%
30	Pentachlorophenol & its salts and esters	12/01/98	12/06/10	20	2	22	91%	9%	83%
31	Phosphamidon	12/01/98	12/06/10	19	2	21	90%	10%	79%
32	Polybrominated Biphenyls (PBBs)	12/01/95	12/06/10	15	1	16	94%	6%	63%
33	Polychlorinated Biphenyls (PCBs)	12/01/95	12/12/08	16	1	17	94%	6%	67%
34	Polychlorinated Terphenyls (PCTs)	12/01/95	12/06/10	16	1	17	94%	6%	67%
35	Tetraethyl lead	12/12/05	12/06/10	12	0	12	100%	0%	50%
36	Tetramethyl lead	12/12/05	12/06/10	12	0	12	100%	0%	50%
37	Toxaphene (Camphechlor)	12/12/99	12/06/10	19	0	19	100%	0%	79%
38	Tremolite	12/12/04	12/06/10	11	0	11	100%	0%	46%
39	Tributyltin compounds	12/12/09	12/06/11	8	0	8	100%	0%	33%
40	Tris (2, 3 dibromopropyl) phosphate	12/01/95	12/06/10	16	1	17	94%	6%	67%
<b>Total Import Responses</b>				<b>696</b>	<b>75</b>	<b>771</b>			

\*\*\*\*\*Notes:

Dustable powder formulations containing combination of benomyl at or above 7%, carbonfuran at or above 10% and thiram at or above 15%



**Table 5.1 Dates of import responses – Parties to the Rotterdam Convention in Asia and the Pacific (24 Parties in Asia and the Southwest Pacific and 1 Party [France] in Europe)**

Source: <http://www.pic.int/Reports/06-ICRs-Country-Parties.asp>

Updated: April 2011

The date shown in the cell is the date the import response decision (consent, no consent, consent under conditions, or 'response did not address importation') on the chemical was published.

No.	Chemical	# of Countries addressing the chemical																									
			Australia	China	DPR Korea	France	India	Labo PDR	Malaysia	Nepal	New Zealand	Pakistan	Philippines	Republic of Korea	Samoa	Sri Lanka	Thailand	Tonga	Viet Nam	Cook Islands	Iran Islamic Republic of	Japan	Kazakhstan	Maldives	Marshall Islands	Mongolia	Singapore
1	2, 4, 5-T & its salts and esters	19	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04
2	Actinolite asbestos	11	12/12/04	12/12/04	12/06/08	12/06/08	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04
3	Aldrin	21	12/12/04	12/12/04	12/07/93	12/07/93	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04
4	Amosite, asbestos	11	12/12/04	12/12/04	12/06/08	12/06/08	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04
5	Anthophyllite	11	12/12/04	12/12/04	12/06/08	12/06/08	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04
6	Binapacryl	19	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04
7	Captafol	20	12/12/04	12/12/04	12/01/98	12/01/98	12/12/00	12/12/00	12/12/00	12/12/00	12/12/00	12/12/00	12/12/00	12/12/00	12/12/00	12/12/00	12/12/00	12/12/00	12/12/00	12/12/00	12/12/00	12/12/00	12/12/00	12/12/00	12/12/00	12/12/00	12/12/00
8	Chlordane	22	12/12/04	12/12/04	12/07/93	12/07/93	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04
9	Chlordimeform	21	12/12/04	12/12/04	12/07/94	12/07/94	12/06/05	12/06/05	12/07/98	12/07/98	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99
10	Chlorobenzilate	20	12/12/04	12/12/04	12/01/98	12/01/98	12/12/03	12/12/03	12/01/98	12/01/98	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99
11	Crocidolite	16	12/06/02	12/12/04	12/01/95	12/01/95	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04
12	DDT	21	12/12/04	12/12/04	12/07/93	12/07/93	12/06/05	12/06/05	12/07/93	12/07/93	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99
13	Dieldrin	22	12/12/04	12/12/04	12/07/93	12/07/93	12/06/05	12/06/05	12/07/93	12/07/93	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01
14	Dinitro-ortho-cresol (DNOC) and its salts	14	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04	12/12/04
15	Dinoseb & Dinoseb Salts	22	12/12/04	12/12/04	12/07/93	12/07/93	12/06/05	12/06/05	12/07/93	12/07/93	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99
16	Dustable powder formulations <sup>1</sup>	14	12/12/04	12/12/04	12/12/04	12/12/04	12/06/10	12/06/10	12/12/04	12/12/04	12/12/08	12/12/08	12/12/08	12/12/08	12/12/08	12/12/08	12/12/08	12/12/08	12/12/08	12/12/08	12/12/08	12/12/08	12/12/08	12/12/08	12/12/08	12/12/08	12/12/08
17	EDB (1, 2-dibromoethane)	22	12/12/04	12/12/04	12/07/93	12/07/93	12/06/05	12/06/05	12/07/93	12/07/93	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99
18	Ethylene dichloride	16	12/06/02	12/12/04	12/12/04	12/12/04	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01
19	Ethylene oxide	15	12/12/04	12/12/04	12/06/10	12/06/10	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01	12/12/01
20	Fluoroacetamide	21	12/12/04	12/12/04	12/07/93	12/07/93	12/06/10	12/06/10	12/07/93	12/07/93	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99	12/12/99

Table 5.1 (continued)

No.	Chemical	# of Countries addressing the chemical	# of Countries addressing the chemical																															
			Australia	China	DPR Korea	France	India	Lao PDR	Malaysia	Nepal	New Zealand	Pakistan	Philippines	Republic of Korea	Samoa	Sri Lanka	Thailand	Tonga	Viet Nam	Cook Nam	Fran Islands	Japan	Kazakhstan	Maldives	Marshall Islands	Mongolia	Singapore							
21	HCH (mixed isomers)	21	12/12/04	12/07/93		12/06/10	12/07/93	12/12/99	12/01/94	12/07/93	12/01/95	12/07/93	12/07/93	12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
22	Heptachlor	22	12/12/04	12/07/93	12/12/04	12/06/05	12/07/95	12/12/99	12/01/94	12/07/93	12/01/95	12/07/93	12/07/93	12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
23	Hexachlorobenzene	19	12/12/04	12/01/98	12/12/04	12/06/05	12/07/95	12/12/99	12/01/94	12/07/93	12/01/95	12/07/93	12/07/93	12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
24	Lindane (gamma-HCH)	20	12/06/02	12/01/98	12/12/04	12/06/10	12/07/98	12/12/99	12/01/94	12/07/93	12/01/95	12/07/93	12/07/93	12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
25	Mercury compounds	22	12/12/04	12/07/93	12/12/04	12/06/10	12/07/98	12/12/99	12/01/94	12/07/93	12/01/95	12/07/93	12/07/93	12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
26	Methamidophos	19	12/12/04	12/01/98	12/12/04	12/06/10	12/07/98	12/12/99	12/01/94	12/07/93	12/01/95	12/07/93	12/07/93	12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
27	Methyl-parathion	19	12/12/04	12/01/98	12/12/04	12/12/03	12/12/03	12/06/06	12/07/98	12/12/03	12/06/06	12/07/98	12/07/98	12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
28	Monocrotophos	16	12/12/03	12/12/04	12/12/04	12/12/03	12/06/06		12/07/98	12/12/03				12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
29	Parathion	15	12/12/06	12/06/06	12/12/04	12/12/05	12/06/06		12/07/98	12/12/06				12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
30	Pentachlorophenol & its salts and esters	20	12/12/04	12/01/98	12/12/04	12/06/10	12/01/98	12/12/99	12/01/98	12/12/08	12/06/06	12/12/04	12/07/98	12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
31	Phosphamidon	19	12/12/04	12/01/98	12/12/04	12/12/03	12/06/06	12/12/99	12/01/98	12/07/98	12/12/04	12/07/98	12/07/98	12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
32	Polybrominated Biphenyls (PBBs)	15	12/12/06	12/01/95	12/12/04	12/06/10	12/01/95	12/12/99	12/01/98	12/12/08	12/12/04	12/12/04	12/07/98	12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
33	Polychlorinated Biphenyls (PCBs)	16	12/06/02	12/01/95	12/12/04	12/06/05	12/01/95	12/12/99	12/01/98	12/12/08	12/12/04	12/12/04	12/07/98	12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
34	Polychlorinated Terphenyls (PCTs)	16	12/06/02	12/01/95	12/12/04	12/06/10	12/01/95	12/12/99	12/01/98	12/12/08	12/12/04	12/12/04	12/07/98	12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
35	Tetraethyl lead	12	12/12/06	12/06/08	12/12/04	12/12/05	12/12/05		12/06/06	12/06/06	12/06/06	12/12/04	12/07/96	12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
36	Tetramethyl lead	12	12/12/06	12/06/08	12/12/04	12/12/05	12/12/05		12/06/06	12/06/06	12/06/06	12/12/04	12/07/96	12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
37	Toxaphene (Camphechlor)	19	12/12/01	12/12/04	12/12/04	12/06/05	12/06/06	12/12/99	12/12/00	12/06/06	12/06/06	12/06/06	12/06/06	12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
38	Tremolite	11	12/12/04	12/06/08	12/12/04	12/12/04	12/12/05		12/12/06	12/12/06	12/06/05	12/06/05	12/06/05	12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
39	Tributyltin compounds	8	12/06/11		12/12/09	12/06/10		12/06/10	12/06/10				12/06/10	12/06/10	12/06/10	12/06/10	12/06/10	12/06/10	12/06/10	12/06/10	12/06/10		12/06/10	12/06/10	12/06/10	12/06/10	12/06/10	12/06/10				12/06/10	12/12/03	
40	Tris (2, 3 dibromopropyl) phosphate	16	12/06/10	12/01/95	12/12/04	12/01/95	12/01/95	12/12/99	12/01/98	12/12/04	12/12/04	12/07/96	12/06/10	12/06/10	12/01/98	12/06/10	12/07/98	12/01/94	12/01/97	12/07/93	12/07/93	12/07/93		12/06/10	12/01/95	12/01/95	12/12/00	12/12/04	12/07/96				12/06/10	12/12/03
	<b>Total</b>	<b>696</b>	40	39	25	40	39	27	40	11	39	29	25	33	29	24	39	0	26	25	40	40	16	0	0	30	40							

## Notes:

<sup>1</sup> Dustable powder formulations containing combination of benomyl at or above 7%, carbonfuran at or above 10% and thiram at or above 15%.

**Table 5.2 Import responses by Parties to the Rotterdam Convention in Asia and the Pacific (24 Parties in Asia and the Southwest Pacific and 1 Party [France] in Europe)**

Source: <http://www.pic.int/Reports/06-ICRs-Country-Parties.asp>

Updated: April 2011

The information in the cell shows the import response decision: consent (c), no consent (nc), consent under conditions (cuc) or 'response did not address importation (r-im)' on the chemical.

No.	Chemical	# of Countries addressing the chemical	# of Countries addressing the chemical																								
			Australia	China	DPR Korea	France	India	Lao PDR	Malaysia	Nepal	New Zealand	Pakistan	Philippines	Republic of Korea	Samoa	Sri Lanka	Thailand	Tonga	Viet Nam	Cook Islands	Tam.	Islamic Republic of Iran	Kazakhstan	Madagascar	Marshall Islands	Mongolia	Singapore
1	2, 4, 5-T & its salts and esters	19	cuc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
2	Actinolite asbestos	11	cuc	nc	nc	nc	nc	nc	nc	c	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
3	Aldrin	22	nc	nc	cuc	nc	nc	nc	nc	c	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
4	Amosite, asbestos	11	cuc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
5	Anthophyllite	11	cuc	nc	nc	nc	nc	nc	nc	c	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
6	Binapacryl	19	cuc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
7	Captafol	20	cuc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
8	Chlordane	22	nc	nc	cuc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
9	Chlordimeform	21	cuc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
10	Chlorobenzilate	20	cuc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
11	Crocidolite	16	cuc	nc	c	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
12	DDT	21	nc	nc	nc	nc	c	nc	nc	c	nc	nc	nc	cuc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
13	Dieldrin	22	nc	nc	cuc	nc	c	nc	nc	c	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
14	Dinitro-ortho-cresol (DNOC) and its salts	14	cuc	nc	nc	nc	nc	nc	nc	nc	cuc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
15	Dinoseb & Dinoseb Salts	22	cuc	nc	cuc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
16	Dustable powder formulations <sup>1</sup>	14	cuc	nc	nc	nc	nc	nc	nc	nc	cuc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
17	EDB (1, 2-dibromoethane)	22	cuc	nc	cuc	nc	c	nc	nc	nc	cuc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
18	Ethylene dichloride	16	cuc	nc	cuc	nc	cuc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
19	Ethylene oxide	15	cuc	nc	nc	cuc	nc	nc	nc	nc	cuc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
20	Fluoroacetamide	21	cuc	nc	cuc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
21	HCH (mixed isomers)	21	cuc	nc	nc	nc	c	nc	nc	c	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc



**Table 6.1 Dates of import responses – Non Parties (20 countries) to the Rotterdam Convention in Asia and the Pacific**

Source: <http://www.pic.int/Reports/06-ICRs-Country-NON-Parties.asp>

Updated: April 2011

The date shown in the cell is the date the import response decision (consent, no consent, consent under conditions, or 'response did not address importation') on the chemical was published.

No.	Chemical	# of Countries addressing the chemical	# of Countries addressing the chemical																					
			Bangladesh	Cambodia	Fiji	Indonesia	Myanmar	Papua New Guinea	Solomon Islands	Afghanistan	Bhutan	Kiribati	Micronesia	Nauru	Niue	Palau	Timor-Leste	Tuvalu	United States of America	Uzbekistan	Vanuatu	Brunei Darussalam		
1	2, 4, 5-T & its salts and esters	2				12/07/98																12/01/98		
2	Aldrin	5	12/01/95		12/01/94	12/07/95																12/07/93		12/01/98
3	Captafol	2				12/07/98																	12/01/98	
4	Chlordane	4	12/01/98		12/01/94	12/01/96																	12/01/98	
5	Chlordimeform	4	12/01/98		12/01/94	12/07/95																	12/01/98	
6	Chlorobenzilate	2				12/07/98																	12/01/98	
7	Crocidolite	1						12/07/96																
8	DDT	5	12/01/98		12/01/94	12/07/95																	12/01/98	
9	Dieldrin	5	12/01/98		12/01/94	12/01/96																	12/01/98	
10	Dinoseb & Dinoseb Salts	5	12/01/98		12/01/94	12/07/95																	12/01/98	
11	EDB (1, 2-dibromoethane)	4	12/01/98		12/01/94	12/07/95																	12/01/98	
12	Ethylene dichloride	1																					12/06/01	
13	Ethylene oxide	1																					12/06/01	
14	Fluoroacetamide	5	12/01/98		12/01/94	12/07/95																	12/01/98	
15	HCH (mixed isomers)	5	12/01/98		12/01/94	12/01/96																	12/01/98	
16	Heptachlor	4	12/01/98		12/01/94	12/07/95																	12/01/98	
17	Hexachlorobenzene	2				12/07/98																	12/01/98	
18	Lindane (gamma-HCH)	2				12/07/98																	12/01/98	

Table 6.1: (continued)

No.	Chemical	# of Countries addressing the chemical	# of Countries addressing the chemical																				
			Bangladesh	Cambodia	Fiji	Indonesia	Myanmar	Papua New Guinea	Solomon Islands	Afghanistan	Bhutan	Kiribati	Micronesia	Nauru	Niue	Palau	Timor-Leste	Tuvalu	United States of America	Uzbekistan	Vanuatu	Brunei Darussalam	
19	Mercury compounds	4	12/01/98		12/01/98	12/07/95																12/01/98	
20	Methamidophos	2					12/07/98															12/01/98	
21	Methyl-parathion	2					12/07/98															12/01/98	
22	Pentachlorophenol & its salts and esters	2				12/07/98																12/01/98	
23	Phosphamidon	2					12/07/98															12/01/98	
24	Polybrominated Biphenyls (PBBs)	1						12/07/96															
25	Polychlorinated Biphenyls (PCBs)	1						12/07/96															
26	Polychlorinated Terphenyls (PCTs)	1						12/07/96															
27	Tris (2,3 dibromopropyl) phosphate	1						12/07/96															
	<b>Total</b>	<b>75</b>	<b>11</b>	<b>0</b>	<b>11</b>	<b>17</b>	<b>3</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>0</b>

**Table 6.2 Import Responses – Non Parties (20 countries) to the Rotterdam Convention in Asia and the Pacific**Source: <http://www.pic.int/Reports/06-ICRs-Country-NON-Parties.asp>

Updated: April 2011

The information in the cell shows the import response decision: consent (c), no consent (nc), consent under conditions (cuc) or 'response did not address importation (r-im)' on the chemical.

No.	Chemical	# of Countries addressing the chemical	# of Countries addressing the chemical																			
			Bangladesh	Cambodia	Fiji	Indonesia	Myanmar	Papua New Guinea	Solomon Islands	Afghanistan	Bhutan	Kiribati	Micronesia	Nauru	Niue	Palau	Timor-Leste	Tuvalu	United States of America	Uzbekistan	Vietnam	Brunei Darussalam
1	2, 4, 5-T & its salts and esters	2				nc																nc
2	Aldrin	5	nc		nc	nc							nc									nc
3	Captafol	2				nc																nc
4	Chlordane	4	cuc		nc	nc																nc
5	Chlordimeform	4	c		nc	nc																nc
6	Chlorobenzilate	2				nc																nc
7	Crocidolite	1							r-im													
8	DDT	5	nc		nc	nc							c									nc
9	Dieldrin	5	c		nc	nc							nc									nc
10	Dinoseb & Dinoseb Salts	5	r-im		nc	nc							nc									nc
11	EDB (1,2-dibromoethane)	4	r-im		cuc	nc																nc
12	Ethylene dichloride	1								nc												
13	Ethylene oxide	1								nc												
14	Fluoroacetamide	5	r-im		nc	nc							nc									nc
15	HCH (mixed isomers)	5	r-im		nc	nc							c									nc
16	Heptachlor	4	nc		nc	nc																nc
17	Hexachlorobenzene	2				nc																nc
18	Lindane (gamma-HCH)	2				nc																nc
19	Mercury compounds	4	r-im		nc	nc																nc
20	Methamidophos	2							nc													nc
21	Methyl-parathion	2							nc													nc
22	Pentachlorophenol & its salts and esters	2				nc																nc
23	Phosphamidon	2							nc													nc
24	Polybrominated Biphenyls (PBBs)	1										r-im										
25	Polychlorinated Biphenyls (PCBs)	1										r-im										
26	Polychlorinated Terphenyls (PCTs)	1										r-im										
27	Tris (2, 3 dibromopropyl) phosphate	1										r-im										
	<b>Total</b>	<b>75</b>	<b>11</b>	<b>0</b>	<b>11</b>	<b>17</b>	<b>3</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>0</b>

## Appendix VII

**Membership and partnership status of APPPC and FAO member countries in Asia and the Pacific  
in International Conventions and Agreements**

UPDATED: June 2011

No.	Country	Rotterdam Convention (PIC) <sup>(a)</sup>		Stockholm Convention <sup>(b)</sup>		Basel Convention <sup>(c)</sup>	
		Signature	Ratification, Acceptance (A), Approval (AA), Accession (a)	Signature	Ratification, Acceptance (A), Approval (AA), Accession (a)	Signature	Ratification, Acceptance (A), Approval (AA), Accession (a)
1.	Australia	6 Jul 99	20 May 04	23 May 01	20 May 04		5 Feb 92
2.	Bangladesh			23 May 01	12 Mar 07		1 Apr 93
3.	Cambodia			23 May 01	25 Aug 06		2 Mar 01
4.	China	24 Aug 99	22 Mar 05	23 May 01	13 Aug 04	22 Mar 90	17 Dec 91
5.	DPR Korea		6 Feb 04		26 Aug 02		10 Jul 08
6.	Fiji			14 Jun 01	20 Jun 01		
7.	France	11 Sep 98	17 Feb 04	23 May 01	17 Feb 04	22 Mar 89	7 Jan 91
8.	India		24 May 05	14 May 02	13 Jan 06	15 Mar 90	24 Jun 92
9.	Indonesia	11 Sep 98		23 May 01	28 Sep 09		20 Sep 93
10.	Lao PDR		21 Sep 10	5 Mar 02	28 Jun 06		21 Sep 10
11.	Malaysia		4 Sep 02	16 May 02			8 Oct 93
12.	Myanmar				19 Apr 04		
13.	Nepal		9 Feb 07	5 Apr 02	6 Mar 07		15 Oct 96
14.	New Zealand	11 Sep 98	23 Sep 03	23 May 01	24 Sep 04	18 Mar 89	20 Dec 94
15.	Pakistan	9 Sep 99	14 Jul 05	6 Dec 01	17 Apr 08		26 Jul 94
16.	Papua New Guinea			23 May 01	7 Oct 03		1 Sep 95
17.	Philippines	11 Sep 98	31-Jul-06	23 May 01	27 Feb 04	22 Mar 89	21 Oct 93
18.	Republic of Korea	7 Sep 99	11 Aug 03	4 Oct 01	25 Jan 07		28 Feb 94
19.	Samoa		30 May 02	23 May 01	4 Feb 02		22 Mar 02
20.	Solomon Islands				28 Jul 04		
21.	Sri Lanka		19 Jan 06	5 Sep 01	22 Dec 05		28 Aug 92
22.	Thailand		19 Feb 02	22 May 02	31 Jan 05	22 Mar 90	24 Nov 97
23.	Tonga		31 Mar 10	21 May 02	23 Oct 09		26 Mar 10
24.	Viet Nam		07-May-07	23 May 01	22 Jul 02		13 Mar 95



No.	Country	Rotterdam Convention (PIC) <sup>(a)</sup>		Stockholm Convention <sup>(b)</sup>		Basel Convention <sup>(c)</sup>	
		Signature	Ratification, Acceptance (A), Approval (AA), Accession (a)	Signature	Ratification, Acceptance (A), Approval (AA), Accession (a)	Signature	Ratification, Acceptance (A), Approval (AA), Accession (a)
1.	Afghanistan		***			22 Mar 89	
2.	Bhutan		*				26 Aug 02
3.	Cook Islands		**	29 Jun 04			29 Jun 04
4.	Iran	17 Feb 99	a	26 Aug 04	29 Jun 04		5 Jan 93
5.	Japan	31 Aug 99	A	15 Jun 04	6 Feb 06		17 Sep 93
6.	Kazakhstan		*	1 Nov 07	30 Aug 02		3 Jun 03
7.	Kiribati		**		9 Nov 07		7 Sep 00
8.	Maldives		*	17 Oct 06	7 Sep 04		28 Apr 92
9.	Marshall Islands		**	27 Jan 03	17 Oct 06		27 Jan 03
10.	Micronesia		**		27 Jan 03		6 Sep 95
11.	Mongolia	11 Sep 98	*	8 Mar 01	15 Jul 05		15 Apr 97
12.	Nauru		**		30 Apr 04		12 Nov 01
13.	Niue		**		9 May 02		
14.	Palau		**		12 Mar 02		
15.	Russian Federation		*	28 Apr 2011	28 Mar 02	22 Mar 90	31 Jan 95
16.	Timor-Leste		*				
17.	Tuvalu		**				
18.	United States of America	11 Sep 98	?		19 Jan 04		
19.	Uzbekistan		***			22 Mar 90	
20.	Vanuatu		**		16 Sep 05		7 Feb 96

**Remarks:**

(a) The Rotterdam Convention PIC Regions as adopted by the first meeting of the Conference of the Parties

\* ==> Asia region

\*\* ==> Southwest Pacific region

\*\*\* ==> Near East region

(b) The Stockholm Convention

(c) The Basel Convention

The above membership status is based on information collected on 6 June 2011. For more updated information, please visit the following websites:

(1) [www.fao.org/world/regional/rap/member-countries/en](http://www.fao.org/world/regional/rap/member-countries/en) for FAO

(2) [www.pic.int](http://www.pic.int) for the Rotterdam Convention or PIC

(3) <http://chm-pops.int/> for the Stockholm Convention or POPs

(4) [www.basel.int](http://www.basel.int) for the Basel Convention

## Appendix VIII

### Websites or weblinks for information about plant protection of APPPC member countries and other countries in Asia and Pacific

(Updated: June 2010)

Country	No.	Description	Websites/Weblinks	Remarks
Australia		Official website of the Asia and Pacific Plant Protection Commission (APPC)	<a href="http://www.apppc.org">www.apppc.org</a>	
	1.	Australian Government Department of Agriculture, Fisheries and Forestry	<a href="http://www.daff.gov.au">www.daff.gov.au</a>	
	2.	Australian Government Department of Agriculture, Fisheries and Forestry's Annual Report	<a href="http://www.daff.gov.au/about/annualreport/annual-report-2009-10">www.daff.gov.au/about/annualreport/annual-report-2009-10</a>	
	3.	Australian Government: Animal and Plant Health	<a href="http://www.daff.gov.au/animal-plant-health">www.daff.gov.au/animal-plant-health</a>	
	4.	International standards setting	<a href="http://www.daff.gov.au/animal-plant-health/plant/international-standards-setting">www.daff.gov.au/animal-plant-health/plant/international-standards-setting</a>	
	5.	Sanitary and phytosanitary measures	<a href="http://www.daff.gov.au/market-access-trade/sps">www.daff.gov.au/market-access-trade/sps</a>	
	6.	Exporting goods from Australia	<a href="http://www.daff.gov.au/aqis/export">www.daff.gov.au/aqis/export</a>	
	7.	Importing goods to Australia	<a href="http://www.daff.gov.au/aqis/import">www.daff.gov.au/aqis/import</a>	
	8.	Australian Plague Locust Commission (APLC)	<a href="http://www.daff.gov.au/animal-plant-health/locusts">www.daff.gov.au/animal-plant-health/locusts</a>	
	9.	Australian Quarantine and Inspection Service (AQIS)	<a href="http://www.daff.gov.au/aqis">www.daff.gov.au/aqis</a>	
	10.	Alerts: Hot topics or major changes to AQIS import requirements	<a href="http://www.aqis.gov.au/icon32/asp/ex_alertscontent.asp">www.aqis.gov.au/icon32/asp/ex_alertscontent.asp</a>	
	11.	Biosecurity Australia	<a href="http://www.daff.gov.au/ba">www.daff.gov.au/ba</a>	
	12.	Import risk analyses IRAs	<a href="http://www.daff.gov.au/ba/ira">www.daff.gov.au/ba/ira</a>	
	13.	Australian Pesticides and Veterinary Medicines Authority (APVMA)	<a href="http://www.apvma.gov.au">www.apvma.gov.au</a>	
	14.	Atlas of Living Australia	<a href="http://www.ala.org.au/">www.ala.org.au/</a>	
	15.	Australasian Plant Disease Notes	<a href="http://www.publish.csiro.au/nid/208.htm">www.publish.csiro.au/nid/208.htm</a>	
	16.	Australian Centre for International Agricultural Research (ACIAR)	<a href="http://www.aciar.gov.au/home">www.aciar.gov.au/home</a>	
	17.	Australian national pests and disease outbreaks	<a href="http://www.outbreak.gov.au">www.outbreak.gov.au</a>	
	18.	Quarantine Act	<a href="http://www.comlaw.gov.au">www.comlaw.gov.au</a>	
	19.	Pest and Diseases Image Library (PaDIL)	<a href="http://www.padil.gov.au">www.padil.gov.au</a>	
	20.	Commonwealth Scientific and Industrial Research Organisation (CSIRO)	<a href="http://www.csiro.au">www.csiro.au</a>	
	21.	Plant Health Australia	<a href="http://www.planthealthaustralia.com.au/site/index.asp">www.planthealthaustralia.com.au/site/index.asp</a>	
	22.	Quarantine information translated into Languages other than English (Multilinguals)	<a href="http://www.daffia.gov.au/languages">www.daffia.gov.au/languages</a>	
23.	Concise overview of Australia's plant biosecurity system (The National Plant Health Status Report 07/08)	<a href="http://www.ippc.int/file_uploaded/1242619163193_PHA_Status_Report_WEB_07_08.pdf">www.ippc.int/file_uploaded/1242619163193_PHA_Status_Report_WEB_07_08.pdf</a>		

Country	No.	Description	Websites/Weblinks	Remarks
<b>Bangladesh</b>	1.	Department of Agricultural Extension	<a href="http://www.dae.gov.bd">www.dae.gov.bd</a>	
	2.	Ministry of Agriculture	<a href="http://www.moa.gov.bd">www.moa.gov.bd</a>	
	3.	Department of Environment	<a href="http://www.doe-bd.org">www.doe-bd.org</a>	
<b>Cambodia</b>		Ministry of Agriculture, Forestry and Fisheries	<a href="http://www.maff.gov.kh/eng">www.maff.gov.kh/eng</a>	
		Ministry of Agriculture	<a href="http://english.agri.gov.cn">http://english.agri.gov.cn</a>	
<b>China</b>	1.	The Plant Protection & Quarantine of China	<a href="http://www.ppa.gov.cn/">www.ppa.gov.cn/</a>	In Chinese
	2.	General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ)	<a href="http://english.aqsq.gov.cn">http://english.aqsq.gov.cn</a>	
	3.	China Pesticide Information Network	<a href="http://www.chinapesticide.gov.cn/en">www.chinapesticide.gov.cn/en</a>	
	4.	National Agro-Tech Extension and Service Center (NATESC)	<a href="http://www.natesc.gov.cn">www.natesc.gov.cn</a>	
	5.	Ministry of Environmental Protection	<a href="http://english.mep.gov.cn">http://english.mep.gov.cn</a>	
	6.	State Forestry Administration	<a href="http://www.forestry.gov.cn">www.forestry.gov.cn</a>	In Chinese
	7.	Fiji Quarantine & Inspection Division, Ministry of Agriculture and Primary Industries (MAPI)	<a href="http://www.quarantine.gov.fj">www.quarantine.gov.fj</a>	
<b>Fiji</b>	1.	Ministry of Primary Industries (MPI)	<a href="http://www.agriculture.org.fj">www.agriculture.org.fj</a>	
	2.	Ministry of Primary Industries (MPI)	<a href="http://www.plantquarantineindia.org/">http://www.plantquarantineindia.org/</a>	Indian website for Plant Quarantine
<b>India</b>	1.	Department of Agriculture and Cooperation	<a href="http://agricoop.nic.in">http://agricoop.nic.in</a>	
	2.	Central Insecticides Board and Registration Committee	<a href="http://www.cibrc.nic.in">www.cibrc.nic.in</a>	
	3.	Plant Protection Information Network	<a href="http://daenet.nic.in/ppin">http://daenet.nic.in/ppin</a>	
	4.	Plant quarantine legislation	<a href="http://www.plantquarantineindia.org/law.htm">www.plantquarantineindia.org/law.htm</a>	
	5.	Center for Plant Quarantine (Agency of Agriculture Quarantine)	<a href="http://karantina.deptan.go.id/eng/index.php">http://karantina.deptan.go.id/eng/index.php</a>	Mostly in Indonesian
<b>Indonesia</b>	1.	Ministry of Agriculture Republic of Indonesia	<a href="http://www.deptan.go.id/index1.php">www.deptan.go.id/index1.php</a>	In Indonesian
	2.	Plant Protection Station	<a href="http://www.pps.go.jp/english/index.html">www.pps.go.jp/english/index.html</a>	
<b>Japan</b>	1.	Food and Agricultural Materials Inspection Center (FAMIC)	<a href="http://www.acis.famic.go.jp/eng/hourei/index.htm">www.acis.famic.go.jp/eng/hourei/index.htm</a>	
	2.	Ministry of Agriculture and Agro-Based Industry	<a href="http://www.moa.gov.my">www.moa.gov.my</a>	In Malay
<b>Malaysia</b>	1.	Crop Protection & Plant Quarantine Division (PQNet)	<a href="http://www.doa.gov.my/web/guest/pqnet">www.doa.gov.my/web/guest/pqnet</a>	In Malay
	2.	Malaysian Import Condition	<a href="http://www.doa.gov.my/pqnet/eng/import_export/import_conditions.pdf">http://www.doa.gov.my/pqnet/eng/import_export/import_conditions.pdf</a>	In Malay
	3.	Department of Agriculture, Ministry of Agriculture and Cooperatives (MOAC)	<a href="http://www.doanepal.gov.np">www.doanepal.gov.np</a>	
<b>Nepal</b>	1.	Plant Protection Directorate, Department of Agriculture	<a href="http://www.ppdnepal.gov.np">www.ppdnepal.gov.np</a>	
	2.	Department of Food Technology and Quality Control (SPS Enquiry Point)	<a href="http://www.spsenquiry.gov.np">www.spsenquiry.gov.np</a>	
	3.			

Country	No.	Description	Websites/Weblinks	Remarks
New Zealand	1.	Ministry of Agriculture and Forestry	<a href="http://www.maf.govt.nz">www.maf.govt.nz</a>	
	2.	Landcare Research New Zealand Limited	<a href="http://www.landcareresearch.co.nz/databases/index.asp">www.landcareresearch.co.nz/databases/index.asp</a>	
	3.	Museum of New Zealand Te Papa Tongarewa	<a href="http://www.tepapa.govt.nz/pages/default.aspx">www.tepapa.govt.nz/pages/default.aspx</a>	
	4.	New Zealand Biodiversity	<a href="http://www.biodiversity.govt.nz">www.biodiversity.govt.nz</a>	
	5.	New Zealand Department of Conservation	<a href="http://www.doc.govt.nz">www.doc.govt.nz</a>	
	6.	New Zealand Food Safety Authority	<a href="http://www.nzfsa.govt.nz/plant/index.htm">www.nzfsa.govt.nz/plant/index.htm</a>	
	7.	New Zealand Ministry of Fisheries	<a href="http://www.fish.govt.nz/en-nz/default.htm">www.fish.govt.nz/en-nz/default.htm</a>	
	8.	New Zealand museums with natural history collections	<a href="http://www.nz museums.co.nz">www.nz museums.co.nz</a>	
	9.	National Forestry Herbarium	<a href="http://www.scionresearch.com/general/facilities-and-collections/national-forestry-herbarium">www.scionresearch.com/general/facilities-and-collections/national-forestry-herbarium</a>	
Pakistan		Department of Plant Protection, Ministry of Food, Agriculture and Livestock	<a href="http://www.plantprotection.gov.pk">www.plantprotection.gov.pk</a>	
Philippines		Department of Agriculture	<a href="http://www.da.gov.ph">www.da.gov.ph</a>	
	1.	Bureau of Plant Industry (BPI), Department of Agriculture	<a href="http://www.bpi.da.gov.ph">www.bpi.da.gov.ph</a>	
	2.	Plant Quarantine Service Philippines	<a href="http://www.pqs.da.gov.ph">www.pqs.da.gov.ph</a>	
	3.	Fertilizer and Pesticide Authority	<a href="http://fpa.da.gov.ph">http://fpa.da.gov.ph</a>	
Republic of Korea	1.	National Plant Quarantine Service (NPQS)	<a href="http://www.npqqs.go.kr/homepage2010/english/default.asp">www.npqqs.go.kr/homepage2010/english/default.asp</a>	
	2.	Ministry for Food, Agriculture, Forestry and Fisheries	<a href="http://english.mifaff.go.kr/main.jsp">http://english.mifaff.go.kr/main.jsp</a>	
	3.	Pesticide Registration, Rural Development Administration	<a href="http://www.rda.go.kr">www.rda.go.kr</a>	In Korean
Sri Lanka		Department of Agriculture	<a href="http://www.agridept.gov.lk">www.agridept.gov.lk</a>	
Thailand	1.	National Bureau of Agricultural Commodity and Food Standards	<a href="http://www.acfs.go.th/eng/index.php">www.acfs.go.th/eng/index.php</a>	
	2.	Safety of Chemical Substances and Products	<a href="http://www.chemtrack.org">www.chemtrack.org</a>	In Thai
	3.	Ministry of Agriculture and Cooperatives	<a href="http://eng.moac.go.th/main.php?filename=index">http://eng.moac.go.th/main.php?filename=index</a>	
	4.	Department of Agricultural Extension	<a href="http://www.doae.go.th/page/homepage">www.doae.go.th/page/homepage</a>	In Thai
	5.	Pollution Control Department (PCD)	<a href="http://www.pcd.go.th/indexEng.cfm">www.pcd.go.th/indexEng.cfm</a>	
	6.	Department of Industrial Works	<a href="http://oaepp.diw.go.th/diw">http://oaepp.diw.go.th/diw</a>	
Viet Nam	1.	Ministry of Agriculture & Rural Development (MARD)	<a href="http://www.agroviet.gov.vn/en/Pages/default.aspx">www.agroviet.gov.vn/en/Pages/default.aspx</a>	
	2.	Plant Protection Department (PPD)	<a href="http://www.ppd.gov.vn/?lang=english">www.ppd.gov.vn/?lang=english</a>	In Vietnamese
	3.	Vietnam Environment Administration, Ministry of Natural Resources and Environment	<a href="http://www.vea.gov.vn/EN/Pages/homepage.aspx">www.vea.gov.vn/EN/Pages/homepage.aspx</a>	

Country	No.	Description	Websites/Weblinks	Remarks
Others	1.	Food and Agriculture Organization of the U.N.	<a href="http://www.fao.org">www.fao.org</a>	
	2.	FAO Regional Vegetable IPM Programme in Asia	<a href="http://www.vegetableipmasia.org">www.vegetableipmasia.org</a>	
	3.	International Plant Protection Convention	<a href="http://www.ippc.int">www.ippc.int</a>	International Phytosanitary Portal
	4.	Rotterdam Convention (PIC)	<a href="http://www.pic.int">www.pic.int</a>	
	5.	Stockholm Convention (POPS)	<a href="http://chm.pops.int/">http://chm.pops.int/</a>	
	6.	Basel Convention	<a href="http://www.basel.int">www.basel.int</a>	
	7.	Codex Alimentarius	<a href="http://www.codexalimentarius.ent">www.codexalimentarius.ent</a>	
	8.	World Trade Organization	<a href="http://www.wto.org">www.wto.org</a>	
	9.	Convention on Biological Diversity	<a href="http://www.cbd.int">www.cbd.int</a>	
	10.	Pesticide Action Network (PAN)	<a href="http://www.pesticideinfo.org/Search_Countries.jsp#Asia%20and%20the%20Pacific">http://www.pesticideinfo.org/Search_Countries.jsp#Asia%20and%20the%20Pacific</a>	PAN Pesticides Database – Pesticide Registration Status

ISBN 978-92-5-106920-2



9 789251 069202

I2326E/1/07.11