

## 2.10 LAO PEOPLE'S DEMOCRATIC REPUBLIC

### I. GENERAL INFORMATION

Last updated: December 2008

#### Overall Executive Summary

Lao PDR is a landlocked country. It occupies an area of 236 800 km<sup>2</sup>, out of which approximately 75 percent is mountainous and lies entirely within the tropics and is located between latitudes 16° 30' N and longitudes 100°20' to 107°50' E. The population in early 2008 was about 5.8 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 nationwide 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 neighbouring countries create a growing demand for food and agricultural products. These can be supplied from Lao PDR, whose natural resources favour 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.

Exports of agricultural products from Lao PDR have not yet faced a major ban or suspension for SPS noncompliance, but there are specific concerns for the future. At present most agricultural exports are destined to market segments in neighbouring 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 neighbouring countries are also increasing.

The role and responsibilities of the NPPO has been made more explicit under the WTO SPS regime and stipulated in the New Revised Text of the IPPC (1997). Lao PDR has not yet fully implemented all 27 ISPMs adopted by CPM. The status of pest surveillance is essentially an *ad hoc* event with no long term planning 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

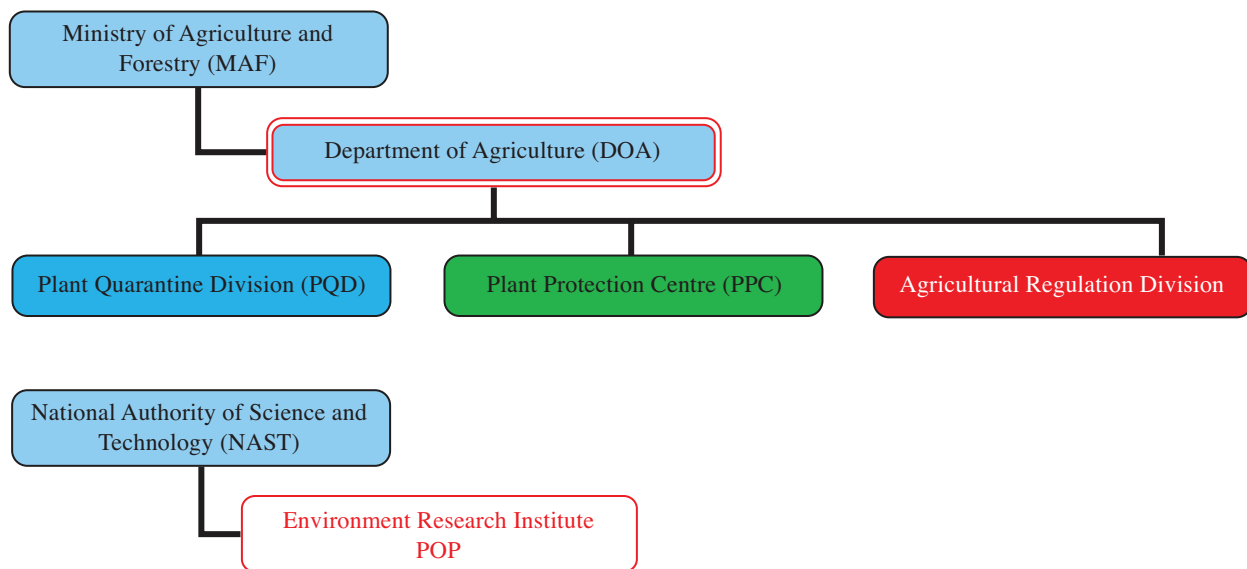
Protecting the Lao People's Democratic Republic's Plant Health Status and Facilitating Safe Trade in Plants and Plant Products, the NPPO of Lao PDR is dealing its mandates with the Prime Minister Decree on Plant Quarantine promulgated in 1993 and so far to be in compliance with the WTO SPS Agreement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

As the role and responsibilities of the NPPO have 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 neighbouring 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.

**Plant Protection Organization Chart**



Color Code:

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

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### Important Contact Addresses

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**Rotterdam Convention (PIC) DNA Pesticides**

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**Basel Convention Competent Authority (CA)****Montreal Protocol Focal Point****Selected Country Statistics**

|   |                   |                         |                       |
|---|-------------------|-------------------------|-----------------------|
| 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 2008

### Executive Summary

#### 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 treaty International Plant Protection Convention (IPPC) which provides standards for phytosanitary measures on how to prevent the spreads and introduction of pest of plants and plant products. Since the country has limited resource 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 pest of plants and plant products, and to promote appropriate measure 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 2 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” was approved by the National Assembly on 9 December 2008**

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 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 is implementing “Sanitary and Phytosanitary Capacity Building Programme” to enhance SPS capacity in Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Thailand and Viet Nam as a part of “Asia Regional Development Cooperation Programme”. The project is seeking to extend its activities.
- JICA is supporting an in-country and third-country training programme on Phytosanitary aiming to train plant quarantine staff 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. This project has not yet been implemented.

**National goal and objectives**

1. Conduct physical and instrumental awareness on newly approved Plant Protection and Quarantine Law.
2. Continue using and improving 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 regulations 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 furnished 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 also has 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

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 ISPM.

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

Web source for further information: –

| (regarding plant quarantine)  | Yes | No |
|---|-----|----|
| 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<br>(Ministry/Department/Unit) |
|--|---|
| Pest Risk Analysis                         | MAF/DOA/PQD/PPC/NUOL  |
| National standards development             | MAF/DOA   |
| International notifications                | MAF/DOA/PQD   |
|  |   |
| Import permits                             | MAF/DOA/PQD   |
| Import inspections                         | MAF/DOA/PQD/PAFO  |
| Emergency action                           | MAF/DOA/PQD/PAFO  |
|  |   |
| Phytosanitary certificates                 | MAF/DOA/PQD/PAFO  |
| Treatment of commodities                   |   |

| Infrastructure   | Years: 2007-2008 |
|--|------------------|
| 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<br>(Ministry/Department/Unit) |
|---|---|
| Overall management                            |   |
| – surveillance                                |   |
| – management                                  |   |
| – certification                               |   |
| List of target pest species and crops ISPM 4  | Number of sites in [year]                                     |
|   |   |
| List of target pest species and crops ISPM 10 | Number of sites in [year]                                     |
|   |   |
|   |   |

**Key Situation Indicators**

| International Trade                                     |   | Years: 2007-2008 |
|---|---|------------------|
| Main Import Plant Commodities                           | Main countries/areas of origin                  | Quantity (tons)  |
| Seed and planting material                              | Viet Nam, China, Thailand, India, UK, Australia |                  |
|   |   |                  |
|   |   |                  |
| Main Export Plant 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                       |        | 17 600 USD | 2006-2007         |
| Improving PQ entry/exit points                       |        | 35 200 USD | 2007-2008         |

**Key Operation Indicators**

| Institutional Functions                                       | Years: 2007-2008 |
|---|------------------|
| 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:              |
|--|--------------------------|--------------------|
| 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: –     |                     |         |           |        |

| Pest Risk Analysis                                      | Insects | Pathogens | Plants |
|---|---------|-----------|--------|
| No. of PRA completed and documented (according to ISPM) |         |           |        |
| Web source for further information: –                   |         |           |        |

### Progress and Constraints

|   |
|---|
| <b>Main Progress in Recent Years</b> (legislation, policies, infrastructure, investments, training, etc.) |
| Two in-country training courses on plant quarantine inspection (32 staffs have been trained basic level)  |
| <b>Main Constraints</b> (personnel, infrastructure, administrative, operational, training, etc.)          |
| Lack of personnel, no adequate infrastructure, no operational budget, not enough training                 |

| Implementation of ISPM  | 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              |         |      |      |  |
| Comments/Constraints  |           |        |      |                |         |      |      |  |
| See as determined in the management responsibilities requirements above.                                    |           |        |      |                |         |      |      |  |

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

Last updated: December 2008

#### Executive Summary

Lao PDR has not established a national programme 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 crops such as coffee

The Department of Agriculture (DOA) has recently established networks of plant protection with their role to monitor and develop database on pest status of economic crop which is further reported to NPPO to indentify 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.

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 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

Web source for further information: –

| (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.)                                  |     |    |
| Web source for further information: –                                   |     |    |

| Organization of Outbreak Management Functions | Responsible Organizational Unit<br>(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                       |   |
|   |   |
|   |   |

|   |                       |
|---|-----------------------|
| <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   | Years: 2007-2008 |
|--|------------------|
| 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 country | Insects | Pathogens | Weeds |
|---|---------|-----------|-------|
| Total number for year 2007:                     |         |           |       |
| Total number for year 2008:                     |         |           |       |
| Total number on record                          |         |           |       |

| Eradication or internal quarantine actions taken against economically important species |                      |  |  |
|---|----------------------|--|--|
| Name of species   | Brontispa longissima |  |  |
| Year of first discovery   | 2002                 |  |  |
| 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 |            |            |
| Year of outbreak                |                    |            |            |
| Area affected [ha]              | 25 000             |            |            |
| 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.)

- Knowledge and skill of key technical staff on diagnostic and pest surveillance have been improved through NZAID training programme.
- Surveillance programme of important crop (corn, mango, cabbage) was initiated to establish a pest list and collection of specimen has been fully established in Plant Protection Center.
- Plant protection network in each province of Lao PDR and its role have been defined by DOA.

**Main Constraints** (personnel, infrastructure, administrative, operational, training, etc.)

Lack of personnel, no adequate infrastructure, no operational budget, not enough training.

#### IV. PEST MANAGEMENT

Last updated: December 2008

##### Executive Summary

Pest management is nationwide recognized in Lao PDR through integrated pest management project (IPM) which has been implemented since 1995 under the technical cooperation programme between FAO and Lao PDR.

National IPM project office which is based in 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.

Strategy for pest management has focused on vegetables since 2005. The IPM activities in Lao PDR have focused on increasing the capacity of 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 IPM. As well, 7 officers and local trainers of 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 the 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 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 PPC.

Based on IPM project's activities with its achievement, the Ministry of Agriculture and Forestry as well as the Department of Agriculture have been promoting 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: –

| (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? | x   |    |
| Is pest management extension separate from general extension?  | x   |    |
| Other policies: (subsidies, production inputs, etc.)   |     |    |
| Web source for further information: –  |     |    |

| Organization of Plant Protection Functions | Responsible Organizational Unit<br>(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   | Years: 2007-2008 |
|--|------------------|
| 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<br>(TOT from 3 provinces has been implemented during IPM Programme) | 50               |

**Key Situation and Operation Indicators**

| Pest Management   | Yes | No |
|---|-----|----|
| Does the country have a National IPM Programme?<br><i>If yes, give Name and Address of IPM Programme:</i> | x   |    |
| Does the country have specific IPM extension programmes?<br><i>If yes, in which crops?:</i> Vegetables    | x   |    |
| Does the country have specific IPM research programmes?<br><i>If yes, in which crops?:</i>                | x   |    |
| Does the country have specific GAP extension programmes?<br><i>If yes, in which crops?:</i>               | x   |    |
| Does the country have specific GAP research programmes?<br><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 pest control requiring crops<br>(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   | Years: 2007-2008 |
|---|------------------|
| 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:<br>Head Cabbage, rice |                  |
| Crops grown organic/pesticide-free:   |                  |

## Progress and Constraints

| Main Progress in Recent Years (legislation, policies, infrastructure, investments, training, etc.)   |
|--|
| <ul style="list-style-type: none"> <li>• Knowledge on using of biological control agent was introduced into FFS of IPM Programme.</li> <li>• Clean agriculture development center was established and a number of work on organic farm and good agricultural practice (GAP) was initiated.</li> </ul> <p>Frame work on pest management was newly defined in the function and role of provincial agricultural office (PAO).</p> |
| 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: December 2008

### Executive Summary

Pesticide management has been nationally recognized since the declaration of Pesticide Regulation No. 0886/MAF, dated on 10 March 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.

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.

To comply with the WTO SPS Agreement, a 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 in 2008. Lao PDR has not yet signed the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and their Disposal.

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.

### List of Key Legislation/Regulations/Rules

2000 Regulation on Management and Usage of Pesticides for Agricultural Production issued by the Ministry of Agriculture and Forestry, No. 0886, dated 10 March 2000.

Web source for further information: –

| (regarding pesticide management)   | Yes | No |
|--|-----|----|
| Do you have national pesticide reduction targets?<br><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?     |     |    |
| 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 |   |
| 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 |

| Organization of Plant Protection Functions   | Responsible Organizational Unit<br>(Ministry/Department/Unit) |
|--|---|
| 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                      |   |
| Environmental monitoring                     | MAF/DOA/NAFRI   |
| Health monitoring                            | MOH/FDD   |
| <i>Other Stakeholders:</i>                   |   |
| Pesticide Industry Association               |   |
| Civil Society Organizations                  |   |

| Infrastructure                                     | Years: 2007-2008 |
|--|------------------|
| Number of registration officers                    | 2                |
| 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             |                  |

### Key Situation Indicators

| Pesticide Trade:  | Tons                                       | US\$ '000 Value |
|---|--|-----------------|
| Imports   | <10  |                 |
| Manufacture   | 0  |                 |
| Export  | 0  |                 |
| Domestic Use/Sales  |  |                 |
| Pesticide Use Profile:  | Tons<br>(a.i./formulation to be specified) | US\$ '000 Value |
| Agriculture   | <10  |                 |
| Chem. Insecticides  |  |                 |
| Chem. Fungicides  |  |                 |
| Chem. Herbicides  |  |                 |
| Chem. Others: e.g. molluscicide, acaricide<br>e.g. Avamectrin, Bt, Neem |  |                 |
| Other purposes  |  |                 |
|   |  |                 |

**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 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?               |     |    |
| 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?<br>if yes: what is the estimated amount: _____   |     | x  |
| Source for more information: DOA  |     |    |

**Key Operation Indicators**

| Registration/Regulation/Monitoring                                 | Years: 2007-2008 |            |
|--|------------------|------------|
|  | a.i.*            | Trade Name |
| Number of registered pesticide products                            | 46               | 112        |
| Number of registered biopesticides (Avamectrin, Bt, Neem, etc.)    |                  |            |
| Number of restricted-use pesticides/formulations                   |                  |            |
| 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 |  |
|---------------------------------------|--|
| 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) |
| Regional Programme for Pesticide Risk Reduction in South East Asia | GCP/RAS/224/SWE | Unknown | 2007-2009         |
|  |                 |         |                   |
| 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.)   |
|--|
| One awareness workshop on IPM and Near-Market Pesticide Use with respect to food safety and quality (16-17 November 2006)<br>Prime Minister's Decree on Management and Use of Pesticide (still in the process of editing in the Ministry of Justice) |
| Main Constraints (personnel, infrastructure, administrative, operational, training, etc.)  |
| Lack of personnel, no adequate infrastructure, no operational budget, and not enough training  |

## VI. ADDITIONAL ISSUES OF INTEREST

Last updated: December 2008

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