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**Country Report of Significant Changes and  
Developments of Plant Protection**

**Lao People's Democratic Republic**

**Updated 2015**

## Executive summary

Rice is a major crop grown in Lao PDR accounting about 68 % of total cultivated area of 1.8 million hectares. Rice is typical glutinous or sticky variety as the preference consumption of majority of Lao people. Sticky rice occupies almost 90%, the remaining is mandarin variety or non-sticky rice. Total paddy rice production is reached 3.1 million tons in 2009. Beside paddy rice other important crops are maize, waxy corn, job's tear, coffee, tea, cardamom, soybean, mungbean, other beans, sugar cane, peanut, sesame, cassava, cotton, tobacco, other root crops, various vegetables, fruit trees, etc...

In the wet season most production areas are planted to rice and, hence, fewer vegetable crops are cultivated. Various kinds of fruit trees are grown scattered throughout the country, largely produced and marketed for domestic consumption. Most commercial production of vegetables is surrounded in sub-urban areas of large cities. It also takes place at higher elevation areas and on the plateau. The remaining vegetable production areas are located along the Mekong riverbank and its tributaries from the north to the south. In general, pest and diseases of commercially produced vegetables are managed with undesirable dosage application of chemical pesticide. Weed management of commercial production of exporting crops mainly used herbicides including Paraquat, Glyphosate and Atrazine. Major export crops are milled rice, coffee, maize, banana, water melon, job's tear, sliced dry cassava, herbal plants, spicy fresh leafy vegetables for Asian culinary and non-timber forest products as crop-based.

In general, the tropical monsoon climate is conducive of pests and diseases to the country. Its incidence and severity become economically high risk with the development of new export crops, off-season production and introduction of new high yielding crop varieties. Climate change and increased trade of agriculture products in the region bring the risk of introduction of new pests and diseases to Lao PDR. The coffee berry borer, coconut hispine

beetle, cassava pink mealybug, locust, sugar cane phytoplasma, citrus canker, other diseases damaged planted tree such as eucalyptus and agar wood are recent examples of such invasive plant pests. List of plant pests and diseases encountered in Lao PDR is regularly updated by the Plant Protection Center under the Department of Agriculture.

## **I. General Information**

Lao PDR has a tropical monsoon climate with a wet season between May to November and a dry season between December to April. Rice is major crop grown on about 787,500 ha under rainy wet season and 101,500 ha under irrigation during dry season (statistical record by the Department of Agriculture, 2015). Lao PDR is classified by the United Nations as a Least Developed Country (LDC). Poverty alleviation is one of Lao Government's main policies, which should be solved by year 2020. The main challenges for the Government will be to increase rural labor productivity. The major constraints to the development of agricultural sector are the lack of skills and training of the rural population, poor infrastructure (including access roads, electricity and communication facility supply to remote areas) and the lack of financing.

The Ministry of Agriculture and Forestry of Lao PDR and its Department of Agriculture has proclaimed policies aimed at reduction of agro-chemicals in agricultural production. In recent years, the Government has contributed an important role to IPM in its clean agricultural production program. Province Agriculture and Forestry Service Office (PAFSO) make extensive use of IPM trainers who were intensively trained by FAO IPM Program. Safe vegetable production known as GAP farmer groups are organized in sub urban production areas in the large cities. A number of national and international organizations and development projects are promoting organic agriculture production. They mostly work with IPM-FFS farmer graduates who are interested and motivated in moving towards the organic agriculture production. The

Government encourages this development and regards the organic production as a way to find a niche-market for export of healthy safe produces.

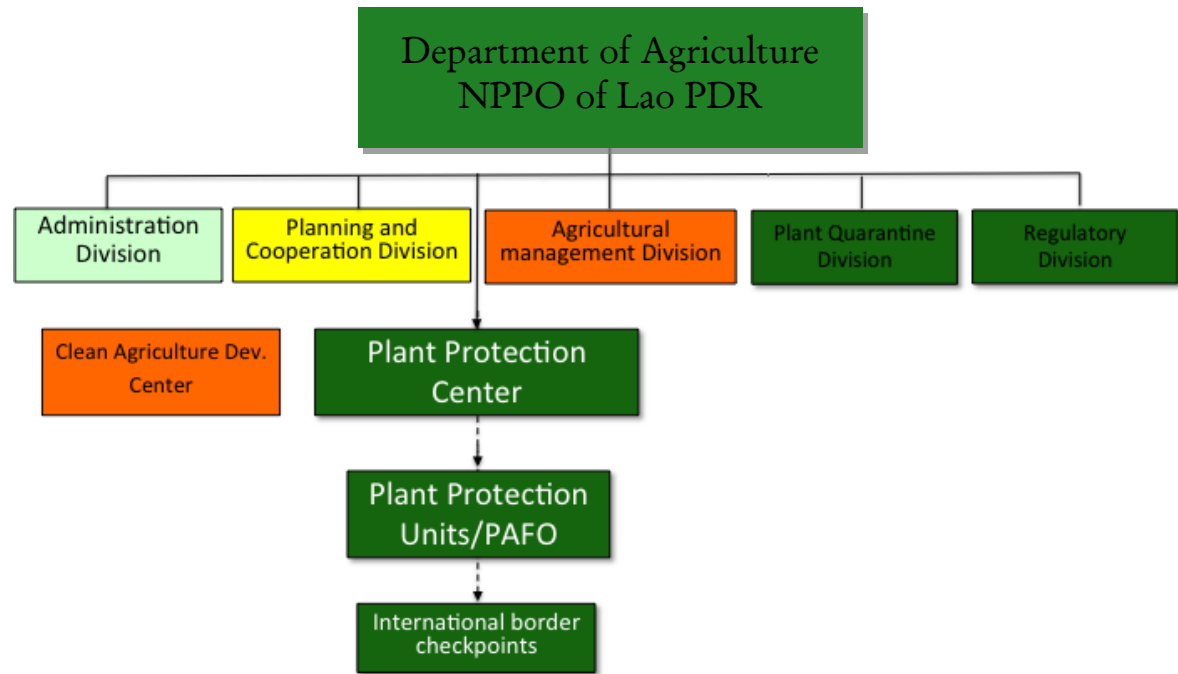


Fig 1. Plant protection structure

### Function of Plant Protection

1. Plant protection is comprised of the following activities:

- Pest inventory, surveillance, diagnosis;
- Pest damage evaluation;
- Pest identification and collection of samples;
- PRA, including pest outbreak impact study;
- Implementation of pests control programs within the country under the guidance of the Department of Agriculture;
- Scientific and technical adaptive experiment on plant protection management techniques and plant health management;
- Reporting the pest and disease status record, pest prevalence within the country
- Submission of proposals for the declaration of pest free areas

- Dealing technical recommendation on technical and legal control of pests.
- Provide technical and specific training related to plant quarantine inspection activities

## **2. Agricultural input and crop product testing consists of:**

- Laboratory analysis of non-organic fertilizer and organic fertilizers to verify compliance with declared quality standards;
- Testing of efficacy and toxicity of chemical pesticides;
- Testing of seed quality (e.g. germination and impurity);
- Testing of maximum residue limit in crop products;
- Reporting of testing results to higher authority for certification purposes.

## **3. Plant quarantine encompasses:**

- Inspections of agricultural commodities for import and export;
- Reporting inspection result to the Department of Agriculture for further issuance of phytosanitary certification in the compliance with international standards;
- Conducting training on plant quarantine inspection techniques for plant quarantine inspectors based in the provinces and land/river border post within the country;
- Coordinating inspection activities within the country; and
- Supervising of the treatment done by fumigation enterprises (State and private stakeholders).

## **4. Administration and staff management includes:**

- Regular fiscal planning and budgeting for plant protection activities, agricultural input and crop product testing, and plant quarantine activities;
- Staff management and training.

## The Role of the national plant protection organization for the implementation of WTO-SPS Agreement and in the implementation of international pesticide conventions:

- Conduct of surveillance of growing plants including cultivated and non-cultivated, plants and plant products in storage and transportation, with the object of reporting the occurrence, outbreak and spread of pests, and the control of those pests;
- Conduct of pest risk analysis;
- Protection of endangered areas;
- Disinfestations/disinfection of consignments (of plants and plant products) moving in internationally to meet phytosanitary measures;
- Issuance of certificates relating to the phytosanitary regulations of the importing country;
- Inspection of consignments.
- **Pesticide quality control:** pesticide import registration, identify list of ban pesticide, set up inspection team,
- **Pesticide residue management:** set up laboratory in PPC; annual survey plan on residue in fruits and vegetables at border checkpoints and organic and GAP farms, awareness on use of pesticide,

## II. Phytosanitary Matters (Plant Quarantine)

- 22 International Check Points (3 International Airports) including 50 quarantine inspectors in the country
- Plant quarantine functions:
  - Regularly develop capacity building by providing the technical training for quarantine inspectors around the country and supported/provided inspection tools for checkpoints,
  - Assisted the Provincial Agriculture and Forestry Office in improving quarantine system at the check points,

- Under developed PRA guideline on fruits and vegetables
- 5 local treatment provider registered in the country
- Currently, the NPPO of Lao PDR is proceeding a proposal on establishing the Pest Free Area in Done Khong Island, Champasak province.
- Cooperation projects:
  - SPS-GMS/ADB provides technical support on capacity building, for market access, technical information sharing among neighboring countries,..
  - QIA of the Republic of Korea supported technical assistant, especially pest identification, diagnostic and tools for field survey and references/handbooks
  - Australia-Enabling Plant Bio-security Practice (Cambodia, Laos and Thailand) Project
  - Pest Diagnostic - The Southeast Asian network on taxonomy
  - CIAT: Cassava Pink Mealybug
  - FAO-ROK : Regional Plant Pest Diagnostic
- Interception of quarantine pests  
The is no record of interception on import, contrary pests contaminated with crop product consignment are intercepted by importing countries
- Progress in preparation/update of lists of regulated pests in accordance with ISPM19  
Due to lack of good trained technical staffs the lists of regulated pest in accordance with ISPM No19 is not complete yet.
- Progress of implementation of ISPMs/RSPMs  
ISPMs implementation:

No.	Title	Remark
ISPM 1	Phytosanitary principles for the protection of plants and the application of phytosanitary measures in international trade	✓
ISPM 2	Framework for Pest Risk Analysis	✓
ISPM 3	Code of conduct for the import and release of exotic biological control agents	✓
ISPM 4	Requirements for the establishment of pest-free areas	✓
ISPM 5	Glossary of phytosanitary terms (2009 version)	✓
ISPM 6	Guidelines for surveillance	✓
ISPM 7	Export certification system	✓
ISPM 8	Determination of pest status in an area	
ISPM 9	Guidelines for pest eradication programmes	
ISPM 10	Requirements for the establishment of pest free places of production and pest free production sites	✓
ISPM 11	Pest risk analysis for quarantine pests including analysis for environmental risks and living modified organisms (2004)	✓
ISPM 12	Guidelines for phytosanitary certificates	✓
ISPM 13	Guidelines for the notification of non-compliance and emergency action	
ISPM 14	The use of integrated measures in a systems approach for pest risk management	✓
ISPM 15	Guidelines for regulating wood packaging in international trade (2009)	✓
ISPM 16	Regulated non-quarantine pests: concept and application	
ISPM 17	Pest reporting	✓
ISPM 18	Guidelines for the use of irradiation as a phytosanitary measures	
ISPM 19	Guidelines on lists of regulated pests	✓
ISPM 20	Guidelines for a phytosanitary import regulatory system	✓
ISPM 21	Pest Risk Analysis for regulated non-quarantine pests	
ISPM 22	Requirements for the establishment of areas of low pest prevalence	
ISPM 23	Guidelines for inspection	✓
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 ( <i>Tephritidae</i> )	
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	✓
ISPM 35	Systems approach for pest list management of fruit flies (TEPHRITIDAE)	
ISPM 36	Integrated measures for plant for planting	✓

## RSPMs implementation:



Title	Title	Remark
APPPC RSPM No. 10	Approval of Fumigation Facilities	✓
APPPC RSPM No. 9	Approval of Irradiation Facilities	✓
APPPC RSPM No.8	Guidance on the Operation of Land Border Entry Points for Local Trade	✓
APPPC RSPM No.7	Guidelines for Protection against South American Leaf Blight of Rubber	✓
APPPC RSPM No.6	Guideline for PRA on Scale insects associated with commodities for human consumption	
APPPC RSPM No.5	Guideline for the application of emergency actions and the establishment emergency measures	✓
APPPC RSPM No.4	Guideline for the confirmation of non-host status of fruit and vegetable to Tephritid fruit flies	
APPPC RSPM No.3	Requirements for the establishment and maintenance of pest free areas for Tephritid fruit flies	
APPPC RSPM No.2	Training requirements for plant quarantine inspectors	✓
APPPC RSPM No.1	Guidelines for the development of the heat disinfestation treatments of fruit fly host commodities	

- Use of International Phytosanitary Portal (IPP) and/or APPPC website for information exchange:  
Currently, National Phytosanitary Information is available in the Trade Portal website under Ministry of Industry and Commerce, i.e. related laws, decrees, regulations, no specific technical topics is uploaded. National Plant Protection website is under development by the PPC.
- Phytosanitary capacity development; training on phytosanitary capacity development (i.e. capacity in surveillance and diagnostics, system approaches, PRA, etc.)
  - ADB: technical support on capacity building, for market access, technical information sharing among neighboring countries,
  - QIA: supported technical assistant: pest identification, diagnostic and tools for field survey and references/handbooks
  - Australia-Enabling Plant Bio-security Practice (Cambodia, Laos and Thailand) Project

- Pest Diagnostic - The Southeast Asian network on taxonomy
- CIAT: Cassava Pink Mealybug
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### **3. Surveillance, Outbreaks and Invasive Species Management**

PPC is developing the Plant Protection Strategic Plan for 2015-2025 with the long-term vision to 2030

#### **Pest surveillance activities: Set up program for:**

- 1) Passive surveillance on rubber, rice, maize, water melon, cassava, banana, tobacco,
- 2) Active surveillance for Locusts,

#### **Outbreaks and control of specific pest including invasive species and migratory pest**

- Since April 2015, the outbreak of Yellow Spined Bamboo locust (*Ceracris kiangsu*) in Northern provinces of Lao PDR, 4,095 ha of rice, maize, food and feed crops were seriously damaged, 3,654 households (20,000 peoples) were affected.

#### **Control measures:**

- The Government of the PR of China supported technical assistance by providing pesticides, sprayers and technical staffs conducted training for the villagers, local staffs in practical spraying and maintaining its sprayers.
- FAO-Lao PDR supported technical advice in development Locust Management Plan and provided Locust experts to conduct survey and surveillance for locust emergency control action.
- **Lessons and experiences as well as in difficulties in controlling pest outbreaks and the newly invaded species**
  - Inadequate information on Yellow Spined Bamboo Locust outbreak
  - No previous surveillance on Locusts
  - No expertise and experience on locust outbreak management (first outbreak in Lao PDR)

- The outbreak location in mountainous areas (in bamboo forest), difficult and no access road into the outbreak villages
- Limited facilities for Locust outbreak emergency action

#### 4. Pest Management

In general, the tropical monsoon climate of Lao PDR is conducive to a variety of pests and diseases. Pest and disease incidence and severity may become more acute with the development of new export crops, off-season production, and the introduction of new high yielding crop varieties. At the same time climate change and increased trade of agricultural materials along the major GMS economic corridors bring the risk of introduction of new pest and diseases. The coconut hispine beetle, cassava pink mealybug and locust are recent examples of such invasive pests. List of pests and diseases encountered in Lao crop production is regularly updated by PPC.

Regarding the promotion of sustainable and environmentally friendly pest management in support of sustainable crop production intensification relating to food safety and food security the Ministry of Agriculture and Forestry approved the **2015-2025 National Strategic Plan on Agricultural with the Vision through Year 2030**, which fully supports the Clean Agricultural Production including two modules as GAP and Organic. To support this plan, the IPM Program in PPC bring more positive impacts resulted in many completed activities such as ❶ Capacity building in IPM includes several specific topics namely BCA production/trial and its application in rice, fruits and vegetable production, ❷ Risk reduction of pesticides in raising awareness on pesticide use, training of trainers, training PAFO- and DAFO staffs on monitoring the banned pesticide through practical application in farmer fields and ❸ Support and promote the Safe and Grow in training of trainers, conducting farmer field school in the five provinces of Lao PDR: Champasak, Savannakhet, Xayabouly,

Xiengkhouang, Vientiane capital. Moreover, Rice IPM project supported by EU Aid is still develop BCA (Tychrograma) for controlling rice stem borer in Northern part of Lao PDR

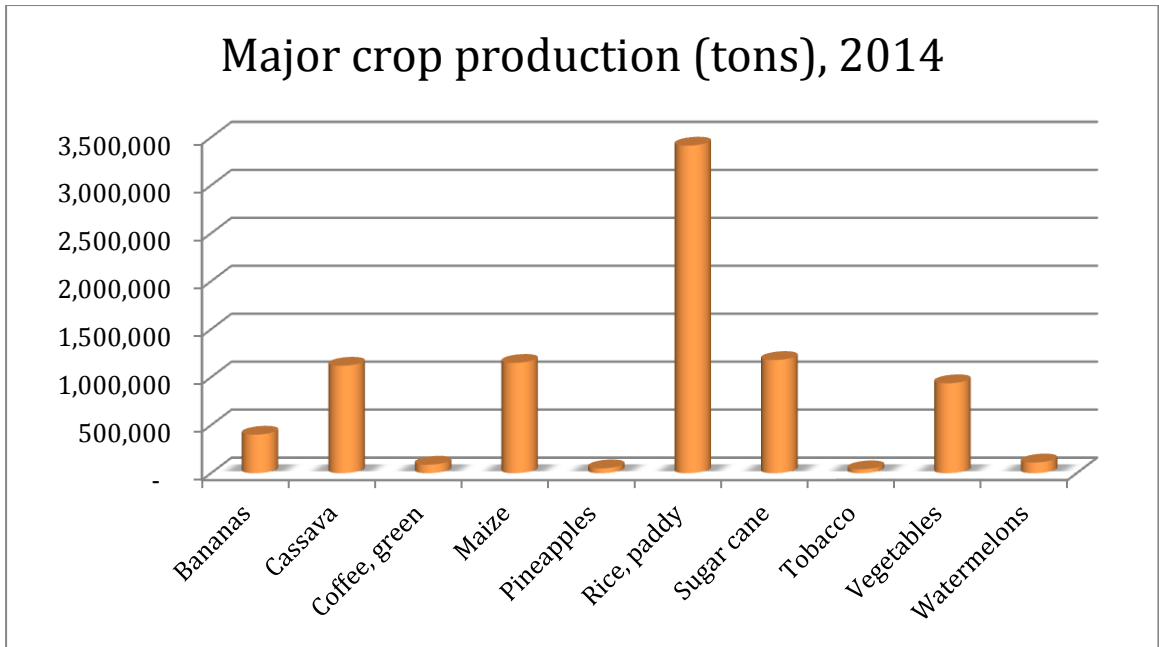
## **5. Pesticide Management**

Regulation on the Control of Pesticides no.2860/MAF, dated 11 June 2010 is as a support tool for conducting the pesticide quality control from import through its commercial and application in the country. Since 2013, there are 100 registered items of pesticides and updated list of banned pesticides included of 29 insecticides and acaricides, 7 fungicides, 2 rodenticides, 5 herbicides, 3 fumigants and other 7 items. Now, the Government of Laos set up the national target and efforts with the regard to pesticide risk reduction in fully support and promote Glean Agricultural Policy as National Strategic Plan on Crop Production with free pesticides. To monitor pesticide free production in the country and from import, the sharing information on banned pesticides with neighboring countries are needed. While the PPC conducts annual plan for pesticide quality control and residue management at international border checkpoint through GAP and Organic farms. However, most of bio-pesticide is not produced in the country. So far, the development/trials and application of BCA is encouraged by Government and some donors support.

- **Status of management of obsolete pesticides**

Issue on obsolete pesticides in Lao PDR is actually under consideration. The Ministry of Natural Resource and Environment (MONRE) is in charge of responsibility of all chemical products. Legal instrument related to management of all chemical products is under development by MONRE. Ministry of Industry and Commerce is insisting to be in charge of registration of all chemical products. Obsolete pesticide still remaining in some district is accounting very small quantity. There is no formal record.

## **6. Appendix**



**Fig. 2** Major crop production in 2014