

Country Paper: Lao PDR¹
The National IPM Program in the Lao PDR: a Review of IPM activities for period 1999-2001 and future plans and priorities.

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1 Organisation and Funding Arrangements

The National IPM Program, implemented by the Lao Government under supervision of the newly (August 2001) established National Agriculture and Forestry Extension Service of the Ministry of Agriculture and Forestry, is a national program for the development of Integrated Pest Management in Rice and Vegetable production in the Lao PDR. The Program came into its existence when the Lao PDR joined the FAO Regional Programmes for the Development of Integrated Pest Management in Rice (1994) and Vegetable (1996) Production. Only with the start of the FAO Vegetable IPM Program in April 1996, major IPM farmer training activities in rice and vegetables commenced. The National IPM Program in Laos receives major funding for Vegetable IPM training activities through the FAO Asian Vegetable IPM Programme (GCP/RAS/160/NET) from the Government of the Netherlands (1996-2001). Funding for Rice IPM training activities is obtained through the FAO Community IPM Programme (GCP/RAS/172/NOR) from the Government of Norway for the period 1999-2002.

Various international NGOs and donors in the Lao PDR are at present supporting and enriching the work of the National IPM Program. *OXFAM-Belgium* is supporting the integration of IPM training activities into several Rural Development project implemented by the local provincial and district governments. The *South East Asia Regional Institute for Community Education (SEARICE)*, in cooperation with local NGO partners (*OXFAM*, *CIDSE*) and with funding support from the Norway Government, is financially and technically supporting the implementing by the Lao Government of a Plant Genetic Resources Management project, with IPM farmer FFS Alumni groups in several provinces of the Lao PDR. The NGO *Village Focus*, operating under a Canada-based NGO *Global Association for People and Environment (GAPE)* and with funding support from *DANIDA*, is implementing a Vegetable IPM training project in close

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collaboration with the Provincial Government in Salavane Province. *UNICEF* is providing additional financial resources to the NGO GAPE for the preparation and translation of IPM training materials, prepared by the National IPM Program/FAO, into Lao language. The *International Labour Organization (ILO)* under the “Mekong Project to Combat Trafficking in Children and Women” is supporting the implementation of IPM-FFS, facilitated by local Provincial/District Government trainers in several provinces of the Lao PDR. With financial support from *CIDSE*, IPM training activities were piloted in the two Agricultural Colleges in Luang Phabang and Pakse.

2 Training Achievements

The National IPM Program aims to empower farmers in rice and vegetables production by training them to become experts in the production and marketing of their own produce.

IPM Farmer Training is based on the following principles:

- Farmers learn how to grow healthy crops;
- Farmers learn how to regularly monitor their crops for informed decision making;
- Farmers learn how to conserve, augment and introduce natural enemies;
- Farmers become experts in the production and marketing of their own produce.

These principles are implemented by season-long and field-based activities that facilitate farmers to learn from experience and from their own discoveries. As a result, farmers develop their ability to make critical and informed decisions related to crop production, crop protection and marketing.

Rice IPM training

As of mid-1999, two season-long Rice IPM Training of Trainers Courses had been implemented, allowing 61 Provincial and District Government extension workers to become rice IPM Expert. These trainers subsequently facilitated 95 Farmer Field Schools in the major irrigated lowland rice production areas in the country (Vientiane Municipality & Province, Bolikhamsay, Khammouane, Savannakhet, Saravane and Champassack). By mid-1999, 2,850 rice farmers had participated in these season-long Farmers Field Schools and had subsequently become IPM expert. For the period mid-1999-2001, no additional season-long TOTs were implemented. Regular Refresher training, organised twice a year, allowed trainers to review their training work, facilitated planning for upcoming training seasons and allowed for refresher training on a range of technical and nonformal education-related topics. By November 2001, an additional 9,120 farmers had completed seasonlong rice IPM training. As a result, a total of 11, 970 rice farmers had become rice IPM experts in the Lao PDR as of November 2001.

Impact of IPM training, in comparison to local practices, has typically resulted in higher (25%) yields and higher profits (37%) in the study fields of the FFSs over the 1997-2001 period. Higher yields of improved varieties (mainly TDK-1) in the IPM plots were mainly due to better management, in particular due to differences in fertilizer management. Not just higher inputs of fertilizer (though in many cases indeed higher compared to local practices) but rather more

balanced and more timely applications. The latter is confirmed by field studies conducted by the Lao-IRRI Project, which have shown that rice yields in Laos are often severely constrained by poor understanding of plant nutrition and that simple changes in farmers practice, such as splitting fertilizer dose and application of balanced NPK compounds, can produce large benefits.

As Follow Up training activities after an initial rice Field School, farmers in many locations continue to meet and study together. Season-long and multiple-year study activities on plant genetic resource management continue to engage IPM farmer alumni groups in collaborative efforts to study and breed locally better adapted varieties with optimal use of local plant genetic resources. Farmer groups in several locations have initiated studies on soil ecology and nutrient management, recognizing that often a key to better and sustainable rice production is the better understanding and management of local soils and plant nutrition needs. Additional field studies on ecology and management of Bakanae (*Giberella fujikoroi*) disease and rice slender bug (*Leptocorisa sp.*) were conducted by farmers in direct response to crop protection problems identified during a first season Farmer Field Schools.

Vegetable IPM training

Following a range of field studies to develop a curriculum for Vegetable IPM training during the period 1998-9, a first season-long Vegetable IPM Training of Trainers Course was organised during the first half of 2001. This TOT allowed 36 Provincial and District Government extension workers to become Vegetable IPM Expert. These trainers subsequently facilitated 71 Farmer Field Schools in the major vegetable production areas in the country (Vientiane Municipality & Province, Luang Phabang, Khammouane, Savannakhet, Saravane and Champassack). By November 2001, 2,130 vegetable farmers had participated in these season-long Farmers Field Schools and had subsequently become IPM expert. Crops targetted for IPM training are primarily crucifers (e.g. head cabbage), tomato, cucumber and yardlong bean. As follow-up to field schools, farmers have continued to meet and learn together in many locations, often facilitated by Government IPM trainers. In particular, IPM farmer groups in Vientiane Municipality and Vientiane Province have initiated field studies on the ecology and management of Bacterial Wilt, a major production constraint in wet season tomato production. These studies have included variety evaluation trials in efforts to identify locally suitable varieties with better Bacterial Wilt tolerance.

3 Policy Developments

The Lao Government considers rice self-sufficiency as highest priority with regards to its agricultural policy agenda. Increased land area has come under irrigation in the last few year and farmers are starting to grow new high-yielding varieties with increased inputs of inorganic fertilizers. More and more farming communities are now starting to grow dry season crops using newly introduced varieties for the first time. Thus, there is a great need for farmers to receive appropriate education to learn how to grow newer high-yielding varieties and to learn how to productively and sustainably manage inputs like inorganic fertilizers. As of yet, use of pesticides

is not common among Lao rice farmers. In that sense, the IPM Farmer Training program is not a 'classical' pesticide reduction program but rather a farmer education program that aims to sustainably intensify rice production in the irrigated lowlands. Vegetable production, in particular organic production, is being promoted by the Lao Government. Use of pesticides in vegetable production is generally on the rise even though it remains low in comparison with common practices in other Mekong countries. For this reason, the Lao Government actively supports farmer training in vegetable production. Also training of farmers in production of various vegetable crops during the off-season (e.g. tomato production during the wet season) remains of high priority to the Lao Government. This in efforts to promote vegetable production and to reduce (illegal) import of vegetables from neighboring countries (e.g. Thailand) during the off-seasons.

The Lao Government recognizes the National IPM Program as a key Government extension and education activity. In particular, it recognises the *farmer-education* nature of the program, demonstrated by the absorption of the National IPM Program by the recently established National Agriculture and Forestry Extension Service. However, Lao Government support has so far not been translated in financial support for FFS-implementation as part of the regular Government programs and budgets.

4 Developments in Community IPM

In many locations, farmers have become IPM trainers themselves after participation in a field school. These Farmer Trainers are often assisting District IPM trainers in the facilitation of new Farmers Field Schools. The key role of farmers themselves in IPM training, both for the purpose of geographical spread of IPM training as well as for sustainability of ongoing farmer study work, is being recognized by the National IPM Program. A recent (September 2001) Farmer Training TOT, organised by the National IPM Program, brought together many Farmer Trainers from the various irrigated rice producing provinces for a three-week period to enhance their technical and nonformal education skills. A range of follow up activities after an initial field school have allowed both rice and vegetable farmers to continue meeting and study important crop production and protection matters. Examples of these follow up activities, facilitated by a range of development agencies, have been provided in Section 1 and 2 above. It must however be noted that many of these study activities are being initiated and facilitated by Government extension workers. It is quite possible that many more farmer groups have assisted in training other farmers as well as continued to meet and study on a regular basis, without support from the District Government, but this has not been documented so far.

5 Other Developments

Curriculum development, both for rice and vegetable training, remains an ongoing and inspiring process as to innovate existing IPM training curricula. Most exciting has been the recently (March 2001) initiated work on curriculum development for soil ecology and nutrient management. As mentioned above, the impressive results of higher yields obtained by IPM farmers, can be explained by the more rational use of inorganic fertilizers. It is expected that an

even better understanding of soil ecology and plant nutrient needs, will allow farmers to capture the benefits of optimal use of inorganic fertilizer inputs. The National IPM Program highly supports this soil ecology work and this will remain an important activity for the future. Curriculum development for vegetable training remains an important aspect of IPM work, particularly the development of curricula for a range of new vegetable crops. Off-season production poses additional challenges for curriculum development. An example of this ongoing work is the development of curricula for off-season tomato production, which focuses very much on ecology and management of Bacterial Wilt (*Ralstonia sp.*), the major production constraint in wet season tomato production.

6 Future Plans and Priorities

The Lao Government continues to support the continuation and expansion of the National IPM Program. During the last year (2002) of FAO support for rice-IPM training work, the National IPM Program will continue to implement rice Farmers Field Schools on a more limited scale compared to the previous years. The continuation of innovative curriculum development work on soil ecology remains a high priority for next year. Also documentation of results of farmer IPM training will be an important work area for the final year of FAO's Community IPM support to the Lao PDR. In the Lao PDR, much IPM training work in rice-based cropping systems remains to be done. In particular, the Government would like IPM training to expand to rainfed and upland production systems. Integration of IPM and innovative nonformal education methods in the curriculum of Agricultural Colleges remains a high priority. It would also be desirable that the Lao Women's Union and the Lao Army could be involved and benefit from IPM training. The NGO community will increasingly be called upon to develop and fund IPM training programs in close collaboration with the local Government. The Lao Government strongly recommends that FAO supports the National IPM Program with Project Proposal development for the continuation of funding for rice IPM training work beyond 2002.
