



Regional Meeting on Community Education for Pesticide Risk Reduction

Guilin, Guangxi, China PR

20-23 October 2009

Executive summary:

The Regional Meeting on Community Education for Pesticide Risk Reduction, jointly organized by the Government of China PR and the FAO Vegetable IPM Programme, was held in Guilin, Guangxi, China PR from 20-23 October 2009. Thirty-six participants representing core Greater Mekong Sub-Region countries as well as observer countries, resource persons and FAO Vegetable IPM Programme staff participated in the meeting. Partners from International NGO networks such as Pesticide Action Network – Asia Pacific and the Field Alliance and local partner CSOs in each country involved in the collaborative ongoing Pesticide Risk Reduction work in the GMS also participated in the Meeting.

The activities included (i) country presentations and other presentations on work carried out by NGO partners, (ii) theme presentations and discussions on Studies in Support of Pesticide Risk Reduction Programmes, Sustainable Management of Rice Plant Hoppers and Associated Virus Diseases, and Climate Change Impact on Crop Production and Protection and Adaptation Strategies, (iii) field visit and feedback on observations, and (iv) discussions on community education initiatives for pesticide risk reduction in GMS.

The Regional Meeting aimed to:

- 1. share highlights of accomplishments in the past years resulting from PRR farmer training and community education initiatives implemented under National IPM Programmes and awareness raising, health and environmental education and advocacy work carried out by CSOs;*
- 2. strengthen regional networking on matters concerning IPM, Pesticide Risk Reduction and farmer/community education among nationals, partner organization representatives and FAO staff; and*
- 3. assess needs, opportunities and strategies for continued regional and national collaboration for strengthened impact and sustainability of the Pesticide Risk Reduction Community Education initiatives.*

Evaluation by participants of the Meeting indicated that the organization and facilities were excellent and the coverage of the contents was very good. Among others, suggestions for future meetings included provision of more guidance for GO and NGO collaboration, sharing of final results of data from pesticide-related studies being carried out by partner CSOs, selecting field activities to visit that are more related to pesticide risk reduction programmes and the organization of a regional workshop on integrating climate change issues in FFS curriculum.

1 Background

Since 2003, it has been the practice of the *FAO Regional IPM Programme* to organize yearly meetings among project staff, national counterparts, and related organizations for progress reporting, planning of annual workplans and experience sharing. When Phase I of the Swedish-supported “*Towards a Non-toxic Environment in Southeast Asia*” commenced in 2007, these annual meetings have also been used by FAO and its programme partners, in particular the Working Group on Community Education for Pesticide Risk Reduction, as a forum to address various community education initiatives and related pesticide policy issues. These meetings have facilitated a dialogue on GO-NGO collaboration as to strengthen the impact and sustainability of community education programmes. China PR hosted the last Regional Meeting on Community Education for Pesticide Risk Reduction during the period 20-23 October 2009.

Objectives

The overall objectives of this meeting were:

- To share highlights of achievements in the past years resulting from PRR farmer training and community education initiatives implemented under National IPM

Programmes and awareness raising, health and environmental education and advocacy work carried out by CSOs;

- To strengthen regional networking on matters concerning IPM, Pesticide Risk Reduction and farmer/community education among nationals, partner organization representatives and FAO staff;
- To assess needs, opportunities and strategies for continued regional and national collaboration for strengthened impact and sustainability of the Pesticide Risk Reduction Community Education initiatives.

Participants:

A total of 36 people attended the Regional Meeting including:

- 23 participants from five member countries (Cambodia, China PR, Lao PDR, Thailand and Vietnam) within the FAO-supported IPM Programme,
- 3 participants from two countries with ongoing IPM activities and National IPM Programmes (Bhutan and Philippines), associated with the FAO-supported Regional IPM Programme,
- 10 participants from selected regional and international NGOs and donor organizations, resource persons and the FAO Vegetable IPM Programme.

The List of Participants and Contact Details is attached to this report as [Appendix 3](#).

2 Opening and Introductory Notes

The FAO Regional Meeting was officially opened with speeches from Mr. Zhang Zhongjun, Assistant FAO Representative – Programmes, Mr. Zhong Tianrun, National IPM Programme Coordinator/Vice Director General of NATESC and Mr. Jan Willem Ketelaar, the Chief Technical Adviser (CTA) of the Programme. The speakers welcomed participants and requested them to share their experiences and to learn from one another during the meeting.

Ms. Alma Linda M. Abubakar, Programme Development Officer explained the objectives and programme of the meeting (**Reference to Concept Note**).

3 Country Presentations (Reference to Country Presentations)

Each GMS country was asked to organize a presentation on about one or two case studies or selected activities implemented during the project period. These could include the process or results of innovative activities and/or topics of particular interest in that country's programme. The presentations included some examples of innovative initiatives. In addition to power point presentations, in some cases handouts were also provided. A summary of these country presentations are included below.

3.1 Greater Mekong Sub-region Countries

Chairperson: Dr. Prabhat Kumar, Senior Research Specialist and Coordinator (CSO-CGIAR Project), AIT

3.1.1 National IPM Programme in Cambodia

Mr. Chou Cheythyrit, Vegetable IPM Project Coordinator, FAO ICP for IPM in Vegetables

The National IPM Programme was initiated in 1993 by the Ministry of Agriculture, Forestry and Fisheries (MAFF) under the Department of Agronomy and presently is under the General Directorate of Agriculture (GDA). The overall goal of the Programme is to improve food security and safety through the promotion of Integrated Pest and Crop Management skills at the farming community level. Since 1993, the National IPM Programme has trained more than 700 District IPM Trainers; 2,530

Farmer Trainers; more than 152,000 farmers through FFSs and more than 6,700 school teachers and students; and formed 900 farmer clubs.

In July 2009, the IPM Programme started implementing the FAO-IFAD pilot project on Enhancing Agricultural Competitiveness of Rural Households in Greater Mekong Sub-region (GMS). The overall objective of the Project is to improve livelihood, income and agricultural competitiveness of rural households in the context of a regionally integrated Greater Mekong Sub-region. The project is working with a group of chili farmers in Rokarthom village, Chiro I commune, Tbong Khum district, Kampong Cham province. The farmers' group is growing organic chili for Thai Food Company. Under the pilot project, the following activities have been carried out:

- Field visit led by Ms. Orawan Ananvoranich, Regional Programme Coordinator, to identify the need of the farmers and select the pilot area.
- Study tour in Thailand involving all related project stakeholders - government officials, farmers and traders (total 10 persons).
- Field visit of Thai Organic Food Company to discuss with farmers on workplans and price structure for organic chili in the coming season.
- Curriculum Development Workshop to prepare the curriculum for FFS on organic chili.

The recently-started FAO-IFAD project is very crucial for farmers to learn about organic production, establish linkage with traders and help farmers get a higher price for chili products as to improve individual livelihoods as well as the whole community. It is also important in helping government officers learn about the full supply chain and organic production to motivate them to push for the use of organic practices in other communities to reduce rural poverty and improve the environment.

The future priorities of the National IPM Programme are:

- Developing policies/strategies in support of and activities focusing on reducing pesticide risk and improving agriculture production in a sustainable manner.
- Further strengthening capacity of the National IPM Programme.
- Further strengthening organic agricultural production for local and international markets.
- Mobilizing government funds to support more farmer education on IPM.
- Further finding support from various donors in different sectors for implementing the National IPM Programme.

Questions/Answers:

- Mr. Ho Van Chien from the Southern Plant Protection Research Center-MARD, Vietnam asked how many crops were being grown organically under the project. *Response: Only chilli, under the project. Many organizations in Cambodia are promoting organic agriculture on many crops but there is no certification yet at the national level.*
- Mr. Ho Van Chien asked what farmers use for seed treatment. *Response: Only hot water.*
- Mr. Vaithilingam Ragunathan, FAO Advisor for IPM and Pesticide Risk Reduction, Bhutan shared about his experience in India where a lot of chili is produced for the export market. Storage (low temperature storage facilities) has been introduced with minimal charges for farmers, to maintain colour and therefore higher price with good profit margins are ensured. He suggested that such storage facilities could be considered.

3.1.2 Development of PRR Programme in China PR

Mr. Shan Xunan, Agronomist, Pest Control Division, National Agro Technical Extension and Service Centre (NATESC)

The background of the Pesticide Risk Reduction (PRR) Programme in China

Yunnan and Guangxi provinces are both part of the Greater Mekong Subregion. They are the largest provinces in China and they grow agricultural products year-round. Rice, fruits and vegetables are the most important food and cash crops for farmers in these two provinces. However, these crops are also the ones most sprayed with pesticides. The Pesticide Risk Reduction Programme was initiated in Guangxi and Yunnan in 2007 and will run until 2010. The government partners in China include the National Agro-technology and Extension Service Center (NATESC), Yunnan and Guangxi PPS. The programme will build on the training capacity of the previously FAO-supported Vegetable IPM Programme. The emphasis on pesticide risk reduction training will be focused on rice, fruit and vegetable farmers, who are known to heavily rely on pesticides for pest control.

The main activities in Yunnan and Guangxi province

a. The PRR in Yunnan province

The Vegetable IPM Programme was introduced in Yunnan in 2003 with main activities focused on strengthening ongoing field training work and revising the training curriculum as to strengthen aspects of PRR. Up to now, 40 FFSs have been conducted in 20 counties of six prefectures. The main target crops include rice, vegetable, fruit, sugarcane, wheat, potato and maize. 1,238 farmers (47% female) have participated these FFSs.

A Refresher ToT was conducted from 11-17 August 2009 in Luliang county. Forty (40) facilitators from Yunnan, Beijing, Chongqing, Shanxi, Hubei and Shandong attended the training. The RToT was aimed at: (1) strengthening curriculum development and training on PRR and (2) strengthening skills of IPM and PRR Trainers' as to improve their FFS programmes.

b. The PRR in Yunnan province

Guangxi has not been previously exposed to IPM-FFS training. Hence, the main activities in Guangxi were focused on building the training team and developing the regional IPM-FFS capacity. Up to now, 64 FFSs have been conducted in 25 counties of eight prefectures. The main target crops include rice, vegetable, fruit and maize. 1,971 farmers (46% female) participated these FFSs.

A ToT was conducted from 7 April to 3 August 2008 in Baise City. Thirty-six (36) trainees from Guangxi, Tianjin, Jiangxi and Guizhou attended the training. The objectives of the ToT included: (1) establish and train a team of PRR FFS Trainers; (2) strengthen training skills and specialized knowledge of the Trainees; (3) design the curriculum for model PRR FFS; and (4) develop FFS workplans.

A mid-term FFS Evaluation and Experiences Sharing Workshop was conducted from 7-9 April 2009 in Guilin City. Sixty (60) facilitators from eight prefectures attended the workshop. The objectives included: (1) share experiences of IPM/PRR FFS implementation; (2) discuss FFS implementation problems and possible solutions; and (3) discuss program intervention needs and follow up workplans.

The introduction of FFS in Rongan county

Two FFSs were conducted in Rong'an county from 5 April to 5 December 2008. The target crop was kumquat, the major cash crop in the locale. About 70 farmers (25% female) received training. 80% of the trainees were in the age bracket of 30-49 years old and nearly 65% trainees had secondary education. Each FFS arranged 15 special topics and nine field experiments.

The main special topics of the FFS curriculum included: main growth management technologies of kumquat; coloring technology for kumquat; film technology for kumquat; identification of

false/poor quality fertilizer; sanitation and pruning technology; key insect pests of kumquat and control methods; identification of the pests; IPM technology for kumquat pests; basic knowledge on pesticides; pesticides and health; techniques for pesticide application; technology for rapid detection of pesticide residue.

The FFS have resulted in:

(1) Establishment of the Kumquat Cooperative Society in Rong'an county on 21 February 2009. Most members of the Cooperative were FFS alumni. Pesticide residue levels of produce met the prescribed standard. About 180 tons of kumquat from the Cooperative Society was sold to the supermarket in Shanghai.

(2) A survey showed that the farmers sprayed pesticides about 18 times/year before training or a pesticide consumption of about 5kg/mu/year. After the training, farmers reduced the number of pesticide sprays to 10-12 times/year and the pesticide consumption reduced to about 2.5-3kg/mu/year.

(3) After training, the farmers learned some non-chemical control methods (e.g., color trap and light trap) and started to apply these in their fields.

(4) FFS was regarded as a new training model by the local government and was placed on the county governmental work plan.

The development plan

a. Introduce marketing and agricultural products certification into the curriculum of ToT/RToT/FFS.

b. Strengthen follow-up/post-FFS activities, such as forming associations. Enhance the farmers' organization, management and market development skills through special training.

c. Encourage farmers' associations to develop local IPM products and help to link them with markets, exporters and enterprises.

d. Strengthen the communication between the graduates of ToT and FFS through some activities, such as experience sharing workshop, exchange visit, and so on.

No Questions/Answers on the presentation

3.1.3 Key findings of Pesticide Surveys Conducted in Sayabouly and Xiengkhouang Provinces, Laos

Mr. Tiangkham Vongsabout, Deputy Director of the Plant Protection Centre and Head of Technical Unit, Department of Agriculture, MAF

and
Ms. Khamphoui Louanglath, Deputy Director of Agriculture Regulation Division, MAF

The latest surveys of pesticides available at shops and markets in two northern provinces (Xaingabury and Xiengkhouang), jointly conducted by the IPM team in March 2009, showed that:

1.) Paraquat, a toxic herbicide, is mostly imported from China, Thailand and Vietnam.

2.) None of the pesticides, mostly originating from either China or Thailand, carried labels in Lao language; and,

3.) Licensed shops did not sell adequate personal protective equipment supplies. Although, the survey found a much reduced number of WHO-Class I pesticides on sale compared to earlier such surveys, the availability and use of toxic herbicides (most notably Paraquat) was much more extensive than earlier reported.

- The use of herbicides (Paraquat, Glyphosate, and 2-4 D Sodium Salt) among smallholder Lao farmers is gradually increasing. Some toxic insecticides of WHO class Ib (Methomyl, Carbofuran, Dicrotophos, etc.) are widely used for vegetable production.

- Recent anecdotic news articles have reported health concerns with regards to the intensive and indiscriminate use of pesticides, particularly in contract farming business and land concession for agricultural production.

Conclusion and recommendations

The surveys were conducted during the off-season. It was found that pesticides used in the previous season (2008 wet season) included highly hazardous pesticides. In particular, herbicide use in two provinces was very high and was likely used on corn and vegetable production. These included WHO class Ib pesticides (Dicrophos and Zinc phosphide). The locations with high pesticide use are in four districts: Paklai, Thongmixai, Kenthao and Boten of Xaignabury province. All pesticides were illegally imported from Thailand.

At the traditional border and checkpoints in three districts - Paek, Kham and Khoun of Xiengkhouang province – pesticides were imported from Thailand and China. None of the pesticides carried labels in Lao language but were in foreign language. All farmers in these two provinces who were included in the survey did not use personal protective equipment (PPE) when handling pesticides, e.g., mixing and spraying. Most farmers stored pesticides in unsafe manner, e. g., in rice storage, rice mill, under the house, animal sheds. Some farmers kept pesticides in the field near water source or under the big tree and/or farm cottage. Empty containers were mostly disposed improperly in the field and some were kept to be re-used/re-cycled.

Recommendations

Future surveys should be conducted during the peak of the crop production as to enable the survey team to observe actual situation of pesticides storage, handling and exposure. This will allow for better assessment of the effect of pesticides on health and environment and provide information on pesticide use patterns which will also help to determine better project interventions. Intensive Training of Trainer (ToT) on pesticide risk reduction (PRR) and awareness raising activities for provincial and district staff should be organized. Farmer training on pesticides storage, handling and disposal should be organized by District Trainers as follow up activities aiming at enabling farmers to make their own local community action plan as to ensure appropriate handling of pesticides, especially high toxic pesticides (WHO class Ib) and that these will be no longer used. The outputs of this farmer training will be used for fortified FFS curriculum development. As outlined in the Laos Country Strategy Paper for the Pesticide Risk Reduction (PRR) project, community IPM and PRR training activities are to commence in two new provinces, namely Xiengkhouang and Xaiyabury.

Questions/Answers:

- Mr. Ho Van Chien from the Southern Plant Protection Research Center-MARD, Vietnam asked whether the standards being applied were based on a local GAP or the ASEAN GAP. *Response* from Ms. Khamphoui Louanglath: *National GAP standards are yet to be worked out. Hence, what is referred to is largely based on ASEAN GAP.*
- Ms. Alma Linda M. Abubakar from the Regional IPM Programme commented on her surprise that there were no Class Ia pesticides reported in the survey results. *Response* from Mr Thongsavanh Taipangnavong: *What we found out is that containers look similar to that of Folidol (methyl parathion) but what is inside is cypermethrin. Many farmers believe that it is good and strong because the container looks like that of Folidol. In the last four years they cannot find Class Ia pesticides. Previously methyl parathion (Folidol) was popular but is now banned in Laos.*
- Mr. Chou Cheythyrit, Vegetable IPM Project Coordinator, FAO ICP for IPM in Vegetables commented that the use of paraquat was mentioned in the survey report but not given much attention in the recommendations despite being one of the most toxic pesticides. *Response* from Mr Thongsavanh Taipangnavong: *Three years ago, nobody knew about Paraquat. NAFRI introduced the use of Paraquat through an agroecology project in the*

uplands. Farmers are now applying it three times more than the recommendation. Land concession areas and upland provinces in Lao PDR use a lot of herbicides including 2,4,D, glyphosate, atrazine and paraquat. There have been poisoning cases in the north and uplands, including, reportedly, some human deaths.

3.1.4 Community Biocontrol Labs in Thailand

Dr. Areepan Upanisakorn, Chief, Biocontrol Division, Department of Agriculture Extension, Thailand

Community Lab or community laboratory is a place where IPM farmers' groups conduct pest management activities. The farmers' groups produce bio agent or other pest control materials, e.g., herbs or fermented fertilizer, for use in their community/ies. The objective is to reduce pesticide use by providing other pest control methods. Community Lab is a project under the Department of Agricultural Extension (DoAE), Government of Thailand. There are six people responsible for Community Labs in the villages: one Extensionist, one local government representative, four volunteer IPM-FFS farmers. Community Labs carry out the following activities:

- Conduct IPM FFS for 25-30 farmers.
- Analyze monitoring data from FFS activities for planning on production of biocontrol agents and other pest control materials.
- Manage monitoring data for the early warning system of the community and district .
- Produce bio-control agents for use of community members and to sell to others.

Through the Community Labs, local governments take on more responsibility in support of the community's crop production.

This project started in 2008 with 130 labs in five provinces in the central region of Thailand. In 2009, the project was expanded to 346 labs in 25 provinces. Quality control measures implemented by the DoAE are crucial for production and application of pest control methods by farmers' groups.

Questions/Answers:

- Dr. Gerd Walter-Echols, Chief Technical Advisor, EU-China Biodiversity Programme (ECBP) mentioned that 25 years ago there was an outbreak of cassava mealy bug in Africa which was very successfully controlled by biological control. He asked if there was any relation between the species in Africa and the one present in Thailand. *Response: We have three species of mealy bug in Thailand. One of the species is the pink mealy bug that is similar to the African species. We have invited a resource person from Benin to train our staff on management strategies for mealy bugs. We have also imported bio-agents (parasitoid) from SA but the price is prohibitive and it is still under evaluation at the laboratory. We have used lacewings and found it to be effective. Chemical pesticide to control mealy bug costs USD300 per liter.*
- Dr. V. Ragnathan, FAO Advisor for IPM and Pesticide Risk Reduction, Bhutan commented that many years ago, nobody in Thailand believed that farmers can produce their own bio-agents. But IPM made it possible. There are bio-agents that have short shelf life and quality control should be taken into consideration. Parasitoid virulence should be monitored by the researcher, and ensure that parasitoid culture (e.g., time of harvesting) should be properly done.
- Dr. Prabhat Kumar, Senior Research Specialist and Coordinator (CSO-CGIAR Project), AIT commented that mealy bugs is also a problem in many neighboring countries and now has reached Thailand. It could become one of the serious pests and a threat to cassava farmers in Thailand. *Response: Mealy bug is only in one province and efforts are being done to contain it.*
- Mr. So Khanrithykhun, National IPM Programme Director, General Directorate of Agriculture of MAFF added that Cambodia has been trying to establish community labs in

the country but has found it difficult because they currently have only two laboratories that operate to respond to pest outbreaks. Cambodia would like to learn more from Thailand about community labs.

3.1.5 Pilot “Community Education Programme on Pesticide Risk Reduction and Safe Vegetable Production in Compliance with VietGAP and Market Access”

Mr. Ngo Tien Dung. Chief of Plant Protection Division, PPD-MARD and National IPM Programme Coordinator

Introduction

- The Vietnamese government has given priority to ensure agricultural production quality and food safety. In response to this MARD has placed renewed focus and support for food safety programmes. Policies have been issued to strengthen local agricultural production quality and food safety programmes.
- The Government’s pesticide policies have been effected and management mechanisms have been established. However, the PPD has limited resources and staff to provide efficient enforcement of existing regulations.
- At commune level, the People’s Committee has been authorized to act as the pesticide management units at grassroots level. However, they have not been active in enforcing regulations. There is a need to strengthen the capacities, enhance awareness of the local bodies (authorities, mass social organizations, farmers, etc.) and mobilize these stakeholders in implementing local programmes on PRR safe vegetable programmes that comply with GAP. There is also a need to improve the access of IPM alumni groups to markets.

Since 2008, the National IPM Programme with assistance from the FAO Regional Vegetable IPM Programme has carried out pilot “*Community Education Programmes on Pesticide Risk Reduction and Safe Vegetable Production in compliance with VietGAP/GAP and Market Access*” in Hanoi and Thai Binh province.

Under this model, there are two main areas of concern:

- 1) Support the Government in enforcing regulations including strengthening pesticide management at commune level particularly in relation to food safety and the Safe Vegetable Programme; and
- 2) Develop safe vegetable plots where farmer groups are trained on IPM, EIQ, GAP principles and improve their IPM techniques through field studies, technical training and marketing.

The pilot areas are located in Dang Xa Commune, Gia Lam District, Hanoi City and Thai Giang Commune, Thai Thuy District. Thai Binh province. The main activities that have taken place in the pilot communities are:

- 1) Participatory baseline survey;
- 2) Community planning meeting;
- 3) Training on awareness raising for (local authorities and mass organizations and pesticide dealers);
- 4) Development of management mechanisms at commune on vegetable production related to food safety and management, use and selling of pesticides;
- 5) Development of safe vegetable plots by farmer’s groups;
- 6) Evaluation and improvement of pilot programme activities, and,
- 7) Impact evaluation.

Questions/Answers:

- Dr. Prabhat Kumar, Senior Research Specialist and Coordinator (CSO-CGIAR Project), AIT asked what the difference is between VietGAP and ASEAN GAP. *Response: They are very similar. There are four models of GAP. We have developed VietGAP but in some aspects it overlaps with ASEAN GAP. Each country is expected to develop its own set of GAP. Thus, the VietGAP.*
- Dr. V. Rangunathan, FAO Advisor for IPM and Pesticide Risk Reduction, Bhutan asked two questions. The first was whether Vietnam had come across reduction in pesticide use in the pilot areas implementing Community Education on PRR. *Response: A pesticide list exists for vegetables and there is less consumption.* The second question was on whether there was a trend for using less toxic pesticides. *Response: Yes. EIQ is used for calculating which pesticides are less toxic to the environment.*
- Ms. Alma Linda M. Abubakar from the Regional IPM Programme commented that the strength of the model is that LGUs were given the mandate by the central government to develop their pesticide reduction policies. Hence, it was easier for the PRR community education model to work with local officials on initiatives to reduce pesticide use.

3.2 Non-GMS Country Government Presentations

Chairperson: Dr. Areepan Upanisakorn, Chief, Biocontrol Division, Department of Agriculture Extension, Thailand

3.2.1 IPM and Pesticide Risk Reduction in Bhutan

Mr. Doe Doe, Programme Director, National Plant Protection Center, Department of Agriculture, Ministry of Agriculture

Plans for agriculture development in Bhutan began in 1961. The first two plan periods focused on infrastructure and institutional development (1961 – 1971). In the third and fourth plan period (1972 - 1982), the agriculture intensification program included distribution of planting materials and plant protection chemicals - free of cost. The Fifth Plan period (1982 – 1987) gave more emphasis on plant protection with PP Inspectors in every District and provision for purchase of pesticides with no Central Plant Protection Agency. As a result, there was independent procurement and distribution of highly toxic pesticides - free of cost – and accumulation of Obsolete Pesticides (over 70 MT). No safety measures for health and environment were considered for pesticide use. With the establishment of the Plant Protection Program in mid-1980s (1985/86), a system for procurement and distribution of pesticides was established. However, pesticides were still provided free of cost under the EU-PP Project. During the period, fundamental shift in the plant protection service delivery took place with emphasis on Integrated Approach to Pest Management in contrast to the Pesticide-based Pest Control Approach. By late 1980s and early 1990, the NPPP participated in the Regional IPM Programme through the FAO IPM Inter-Country Programme in Rice.

The emergence of IPM as an approach to Pest Management and Pesticide Risk Reduction started in 1990-2000 when the Government took a number of Policy Initiatives that included, among others, the adoption of IPM as the Plant Protection Policy within the overall policy on sustainable development in the 7th Plan period (launched in 1992). Likewise, an IPM Development Project was funded by the EU in 1993. Other important developments were the removal of pesticide subsidy in a phased manner (1990-1995), the restriction and banning of toxic pesticides (1990s) and the introduction of Cash and Carry system for procurement and distribution of pesticides;

In the year 2000, the Parliament enacted the Pesticide Act of Bhutan and since then the Government has continued its initiatives for efficient pesticide management through Integrated Crop Management (ICM) approaches. The vision for Plant Protection and IPM in the next decade will be:

National Level:

- Government's policy emphasis on "Brand Bhutan" Promotion which means promotion of organic products and on environment and biodiversity

Ministry Level:

- Policy emphasis on institutional strengthening, i.e., strengthening the PP program through institution of Regional Centers and district level IPM officers
- Promotion of IPM as a pest management approach including the support and commitment of the Government to get the Vegetable IPM Programme started

No Questions/Answers on the presentation

4 GMS NGO Presentations (Reference to Other Presentations)

Chairperson: Dr. Areepan Upanisakorn, Director, Bio-control Group, Division of Pest Management, Department of Agricultural Extension, MAoC Thailand

4.1 Pesticide Action Network – Asia Pacific (PAN-AP) and Partners

4.1.1 "Broad awareness raising about issues related to agricultural chemicals: PAN AP Regional Overview 2007-2009"

Ms. Bella Whittle. Pesticide Action Network – Asia Pacific

The PAN AP Regional Pesticide Programme comprises Community-based Pesticide Action Monitoring (CPAM); policy research and advocacy; public education and awareness raising with a focus on Highly Hazardous Pesticides (HHPs); and information materials. PAN AP and partners are participating in "*Towards a non-toxic environment in Southeast Asia*" led by KemI and in Phase 1 have been involved in implementing "*broad awareness raising about issues related to agricultural chemicals*", with the objective of awareness raising, health and environmental education, and advocacy work in support of a non-toxic environment. PAN AP is working with CEDAC, PEAC, CGFED and An Giang University, and has since a visit to Lao PDR in 2008, beginning work with SAEDA-Laos and made contact with GOs and CSOs.

CPAM is underway in pilot sites in Cambodia and China; and baseline case studies have been prepared on pesticide use in both northern and southern Vietnam, with awareness raising activities at local and national level. At regional level, PAN AP coordinated a monitoring of health impacts of HHPs under conditions of use and in relation to the Code of Conduct. GMS partners participated amongst a total of 11 organisations from eight countries. Initial results show that HHPs are being used, often in situations where precautions are lacking and there is low awareness of specific identity of pesticides and their hazards; women are exposed and impacted; unsafe practices exist; and banned and WHO class I pesticides are still being used (e.g. monocrotophos in Cambodia). Huge efforts are needed with respect to HHPs to reach the 2020 goal of SAICM. Advocacy at the Rotterdam and Stockholm Conventions has focused on endosulfan and paraquat. Important recent decisions have been made by the Persistent Organic Pollutant Review Committee on endosulfan.

Informational materials include publications (including in local language by partners), books and monographs; updates to the PAN Germany hosted www.oisat.org and field guides; PAN North America www.pesticideinfo.org; and the PAN AP CPAM database, www.panap.net.

No Questions/Answers on the presentation

4.1.2 Community-based Pesticide Monitoring in Yunnan Province

Ms. Li Qing. Pesticide EcoAlternative Centre (PEAC)

China has become one of the highest pesticide producer and consumer in the past years. The use of pesticide has created a lot of issues, such as pesticide risk on the environment, human health and food safety. Awareness about pesticide concerns and the reduction of chemical pesticide use is very important for reducing pesticide risks.

This project aims to increase farmers' awareness on pesticide risk as to lead them to reduce chemical pesticide use and risks in rural communities. Pesticide problems associated with pesticide purchase, storage, mixing and spraying are popular in rural communities. In the past three years, to address these problems, a series of activities have been designed to increase farmers' risk awareness in two villages in Yunnan province of China. The activities included: (1) preparation and dissemination of training materials, (2) training of farmers on pesticide poisoning and alternatives as well as organic farming, (3) encouraging farmers to carry out pesticide monitoring and information sharing, (4) adopting alternatives and participation in alternatives development, and (5) national and international policy advocacy.

The project has resulted in (1) increasing the risk awareness of more farmers, (2) knowledge about pesticide poisoning, (3) reduction of chemical pesticide use and adoption of alternatives by some farmers, and (4) some farmers planting ecological rice. Additionally, more government officers are now concerned about pesticide issues and support pesticide reduction and more CSO members have started to pay attention to pesticide issues and promote ecological farming. More consumers have knowledge about pesticide residue and selected ecological products. In spite of these achievements, there is still a need to further improve farmers' risk awareness. Many farmers still do not use Personal Protective Equipment (PPE) when mixing and spraying pesticides, some still use highly hazardous pesticides - such as paraquat, pesticide poisoning still exists, and some product advertisements do not comply with the FAO Code of Conduct.

No Questions/Answers on the presentation

4.1.3 Pesticide Community Monitoring in Cambodia

Mr. Keam Makarady, Cambodian Center for Study and Development in Agriculture (CEDAC)

The main activities and achievements of the pesticide community monitoring in Cambodia 2007-2009 are listed below:

General Awareness on Pesticide Problems

1. Publications: the project produced three education materials: (1) 5,000 copies of the booklet on "*Pesticides and Its Problems*" was printed. The book also attached the list of pesticides available in Cambodia; (2) 10,000 copies of leaflets on pesticide risks on health were printed. Most of leaflets were disseminated through the CEDAC bicycle tour around Tonle Sap Lake; and (3) 2,000 copies of booklet on botanical pesticide were printed. It included 3 chapters: (1) Pests and Pest Controls, (2) Plant and Botanical Pesticide, (3) Best Practices of Farmers Using Botanical Pesticide.

2. Media

- **Radio programme:** The *Voice of Farmers* radio programme went on air. This is a *call-in live show* program aired one hour every week to raise public awareness on the negative impacts of pesticides and ecological agricultural techniques. The programme is aired on radio FM 93.5 (2007) and FM 99.5 (2008-2009). Project staff also provided interviews during regular programmes of other stations (FM102, FM103, FM 106.5, RFA, and National Radio).
- **Television:** Provided speakers on pesticides and pesticide-related problems for two TV stations: twice for "Good Morning Cambodia" of the National Cambodian (TVK) and twice for the Scent of Women program of APSARA TV.
- **Newspaper:** Provided interviews and information to three magazines (Smile, Our Health and Farmer magazine) for news articles on pesticide impacts.

3. Direct training/workshops

Organized 51 *Training/Workshops on Negative Impact of Pesticides and Alternatives* to 3340 people (1498 women) farmers, students and commune council members. The number of commune council members trained was:

2007: 552 (172 women) in 11 events;

2008: 1297 (570 women) in 25 events; and

2009: 1491(756 women) in 15 events.

Pesticide monitoring

The project selected 67 key farmers and six community youths in 35 villages of six provinces (Kandal, Kampong Cham, Prey Veng, Battambang, Takeo and Svay Rieng) after training workshops in their communes. The groups were given intensive trainings on the impact of pesticides on health and environment, alternatives and observation methods.

Survey on pesticide use and market was conducted by the trained key farmers and six community youths. The results of the pesticide monitoring showed: (1) more than 90% of pesticides were labeled in foreign languages (Vietnamese, Thai, English and Chinese); (2) there was an increase in the types of pesticide in Cambodia:

2007: 133 common names and 522 trade names,

2008: 147 common names and 606 trade names, and

2009:163 common names and 757 trade names.

Networking

Project staff has worked with other NGOs such as Pesticide Reduction Network in Cambodia (PRN-C), Networking of Ecological Agriculture Development in Cambodia (NEDC) and Cambodia Organic Agriculture Association (COorAA) to organize public campaigns and advocacy activities. We also closely worked with government agencies as MoE, MAFF and MoH on activities related to Pesticide Risk Reduction through meetings and workshops.

No Questions/Answers on the presentation

4.1.4 A Case Study: Chemical Pesticides in Sangthong District, Vientiane Capital, Lao PDR

Mr. Thongdam Phongphichith, Sustainable Agriculture and Environment Development Association (SAEDA)

Sangthong is among the poorest districts of Vientiane Capital. It borders Thailand along the Mekong River. It has a total population of about 26,000 people, which includes 37 villages with 5,034 families. The primary agriculture activities are lowland and upland rice farming. Commercial products include rice, corn, cassava, livestock, and vegetables.

The objective of the study was to gain a better understanding of the current use and impact of chemical pesticides in relation to local agriculture production and consumption, human, animal, and environmental health, and village livelihoods. In conjunction, opportunities for sustainable agriculture development and alternatives in the area were discussed and surveyed with local stakeholders. A variety of data was collected including the types and amounts of agro-chemicals imported, sold, purchased and used. Five villages were selected: four villages along the Mekong river: Ban Huay Hang, Huay La, Nasa and Pak Ton and one village about eight kilometers from the Mekong River, Ban Napor. Thirty percent of the total households were surveyed, which amounts to 164 households.

Rice seedling stock was composed primarily of local varieties (more than 90%) while for maize about 60 % were from hybrid varieties. Agriculture accounted for 57% income and 40% expenses. Herbicides were the most dominant agro-chemical in circulation: 53% Paraquat, 44% Glyphosate and others 3%. Use of pesticides in 97.4% of total households surveyed totaled

3,925 liters, averaging about 26.17 liters per household per year. The main impacts were on human, animal, environmental and livelihood health.

Agro-chemical prevalence in the area is increasing year by year. There is a lack of control, facilitating cross border illegal export and import. Many related hazards were found, including a general lack of knowledge and capacity to safely manage and handle pesticide exposed equipment, pre- and post- application, lack of information about impact on health, environment and animals; agriculture production costs increasing, while yield is actually decreasing from overburdened soil; agribusiness and plantation investments are increasing. There is little or no opportunity for farmers to gain access to relevant information or be able to exchange lessons learned in order to be better poised to make educated and informed choices.

Recommendations include developing and implementing strategies and policies to improve the capacity of both Thai and Lao border security to control illegal trafficking of banned agro-chemicals in Laos. Further research and production of information materials in Lao language to help improve awareness and knowledge in addition to supporting local government agency initiatives and ability to develop, implement and manage policies, and inform community members. Organize awareness and advocacy campaigns. Develop and promote sustainable agriculture alternatives to help improve local livelihoods, and safeguard the environment, natural resources, and local biodiversity.

Questions/Answers:

- Mr. Jan Willem Ketelaar, the Chief Technical Adviser (CTA) of the Regional IPM Programme expressed surprise on the reported high percentage of pesticides used, i.e., 14%, of class Ia and Ib. He suggested that it would be good to examine the pesticide formulation as they may in fact be class II. *Response: We are still analyzing the data. We will look at this issue.*
- Dr. Prabhat Kumar, Senior Research Specialist and Coordinator (CSO-CGIAR Project), AIT suggested to look at the data in detail as some of the percentages in the graph did not add up to 100% .
- Mr. Thongsavanh Taipangnavong, National IPM Expert, Laos asked which Class Ia pesticide was being referred to in the report and how the farmers knew how to tell the category/class of the pesticides being used. *Response: The farmers know the Class of the insecticide by the colour, although the containers look the same, and can be misleading.*
- Mr. Chou Cheythyrieth, Vegetable IPM Project Coordinator, FAO ICP for IPM in Vegetables asked which river was referred to in the report that could no longer be used. *Response: A river near the study area.*

4.2 The Field Alliance (TFA) and Partners

4.2.1 The Field Alliance Progress Report

Dr. Marut Jatiket. Director, The Field Alliance

The Field Alliance, a network of NGOs, formally worked with the FAO Community IPM during the 90's and jointly formed the TFA after the termination of the FAO Community IPM program. The aims of the TFA are to continue the development and sharing of expertise on IPM and related ecological agricultural practices in the regions. Under support from KEMI, the Rural Ecological Agriculture for Livelihood was used as pilot to develop schools and community-based programs to raise awareness and develop innovative community programs to reduce risks from agrochemicals to health and the environment. TFA partners under the KEMI support include the Agriculture Technology Services Association (ATSA) and Srer Khmer from Cambodia; Pesticides Eco-Alternative Center (PEAC) from China, the Non-Profit Association of Laos Development and Environment (NALDE) from Laos, the Center for Rural Progress (CRP) from Vietnam and Thai Education Foundation (TEF) from Thailand. TFA also works with the Philippines' School IPM Programme in Davao, Field Indonesia, FAO/UNESCO

Education for Rural People and UNESCO ESD Programmes. TFA works: (1) to build capacity of partner organizations in training, curriculum development and supporting systems for schools and community programmes and networking, (2) sharing of expertise, (3) information and dissemination of the REAL programmes.

In 2007, TFA organized a training workshop on the Farmland Biodiversity Conservation and Pesticide Impact Assessment on Health and Environment and visited to learn from Thai schools. TFA also provided on-going technical backstopping (i.e., training, planning, monitoring and forums) to strengthen the programmes in participating countries. At the end of 2008, TFA organized the REAL Progress Exchange Workshop in Phuket Thailand for 30 participants from Cambodia, China, Indonesia, Laos, Philippines, and Vietnam. The workshop provided the forum for partners to learn about Thailand National Environmental Education policies, Thailand Biodiversity Based Economy Development (www.bedo.or.th), FAO/UNESCO Education for Rural People, visit to School and Community BD Conservation (www.savingtheplanet.tv) and participated in Bring Back the Smile Project/ Thailand National REAL Forum. To date, the curriculum and materials have been adapted and translated in Khmer, Chinese, Laos, and Vietnamese languages. REAL activities have been integrated in school systems. Over 152 teachers, officials and others, including community members, have been trained on PIA and ABD with 2,535 students participating in various learning activities and projects. School and communities' understanding and awareness have been raised on the importance of ABD and pesticides impact on health and environment. Data on pesticides in communities has been documented and disseminated. Community ABD conservation activities have been implemented in Cambodia, Laos, and Philippines. Educational policy support has been solicited at various levels in collaboration with and through the efforts of key stakeholders in the community to support schools and community projects.

During the next phase from 2010-2013, the REAL programmes will focus on the expansion of the REAL schools and communities, pilot innovations on school-community risk reduction projects, bridging knowledge on agro-biodiversity utilization and management, assessing impacts of climate change, health related issues, linking national policies and donors and networking and dissemination

No Questions/Answers on the presentation

4.2.2 REAL Project Progress

Ms. Sun Jing. Deputy Director, Pesticide Eco-Alternatives Center (PEAC)

During January to July of 2009, the REAL project was implemented with the following objectives: 1) improve teachers' capacity and participation in Rural Ecological Agriculture for Livelihood; 2) extend REAL training within the current target schools; 3) pesticide monitoring and reduction advocacy; 4) experience sharing for extension.

According to the annual work plan prepared by school facilitators (headmasters and teachers) and based on discussion/feedbacks from teachers, PEAC assisted the schools to carry out a series of activities on natural enemies and their benefits (e.g., control pests), environmental impacts of pesticides, agroecosystem analysis and preparation of insect collection and benefits of agrobiodiversity-based ecological agriculture (rice-fish/rice-duck farming). Twenty-two teachers joined the TOT training on pesticide risks that improved their awareness on pesticide risks. PEAC assisted in the implementation of the 2nd phase of the pesticide risk survey in local communities that involved 68 students, 53 patients (farmers) and 11 teachers (who plant crops). The survey results showed that the awareness raising activities among schools and communities positively influenced local farmers. About 68% farmers who had been directly or indirectly

involved require more knowledge/information about pesticides and health, pesticide risk reduction and strategies to develop biodiversity-based ecological agriculture.

In order to involve more people in REAL training, PEAC assisted ten teachers edit a training handbook entitled, *Our Field-Rural Ecological Agriculture for Livelihood*. The handbook will be distributed to more school teachers to help them facilitate training exercises. The experience of integrating school-based REAL training was summarized by the Headmaster of Yousuo Primary School, Mr. Li Shi, and was submitted to Yunnan Provincial Bureau of Education. Through meetings, REAL training was also introduced to college teachers.

No Questions/Answers on the presentation

4.2.3 Rural Environment Agriculture and Livelihood (REAL) Project in Cambodia Ms. Pan Sodavy, Program Officer, Agriculture Technology Services Association (ATSA)

In Cambodia, the Pesticide Risk Reduction and Agro-biodiversity Programme under REAL is implemented in collaboration with provincial and district education departments and local authorities in Kampong Chhnang and Kampong Cham. Activities that have been carried out include a Training of Trainers (ToT) for school teachers. As part of the programme, pesticide-use related health and farmland agro-biodiversity exercises have been introduced to students. Examples of pesticide-use related health exercises are signs and symptoms of pesticide poisoning, classification of pesticides used by farmers, annual liters of pesticide exposure and household storage and disposal of pesticides. Activities on agro-biodiversity included observations of diversity in different ecological systems. The students observed a total of 175 species as a result of the study.

Pesticide-use related health exercises (above-mentioned) were also introduced to farmers in three villages located near the schools. A total of 127 farmers (33 women) attended the training. A study involving 32 farmers collected information on signs and symptoms of pesticide poisoning they had experienced. (A summary of the results of the study can be seen in the powerpoint presentation.) The study showed that pesticide use is highest in mungbean (600 liters per ha) and rice (200 liters per ha) crops. In mungbean, the pesticides were mostly insecticides (e.g., Folidol, Bent 600, Lannate, Perkill 50EC, Marathon, Azodrin and Bos). In rice they were herbicides and rodenticides (e.g., 2,4 D and Mo-san).

Field Days were attended by farmers in the communities, village leaders, school leaders, students, VDC, district education officer and commune council members. In addition to findings of studies, Community Action Plans to address pesticide risks and loss of agro-biodiversity were developed during the Field Day. Project outcomes include: (1) school students could share what they learned with their families; (2) school students made good observations and could practice measures to address pesticide risks and loss of agro-biodiversity in their respective household; (3) school teachers were able to include lessons on PRR and ABD in their teaching programmes and school masters supported the activities; and (4) target communities paid more attention to pesticide risks and loss of agro-biodiversity.

No Questions/Answers on the presentation

4.2.4 Rural Environment Agriculture and Livelihood (REAL) Project in Laos Mr. Bandith Vongkaysone, Project Manager, Non-profit Association of Lao Development and Environment (NALDE)

The Rural Environment Agriculture and Livelihood (REAL) Project in Laos includes two components: (1) Agro-biodiversity Conservation and (2) Assessment of Pesticide Impact on Health and Environment. ABD activities engage students in collecting sample species on farmland habitats, assessing the functions of the species and making decisions on how to

conserve selected species that have reduced as a result of various factors, including pesticides. Under the component on pesticide impacts, pesticide surveys are carried out on the following: (1) brand name and common name; (2) type and toxicity level; (3) annual liters of pesticide exposure; and (4) storage and disposal of pesticides. Pesticide-related health surveys are also carried out to look into: (1) use of personal protective equipment (PPE); (2) behaviors and practices on pesticide use (e.g., spraying, smoking, eating during spraying); and (3) signs and symptoms of pesticide poisoning experienced by farmers. The REAL project also implemented Farmer Field Schools (FFS).

As a result of the project, a curriculum on biodiversity has been developed and the District Governor and District Education officials have assured their support for the project. In the past the farmers did not know about the negative impacts of agro-chemicals. They only knew that using chemicals made it easy for them to get a lot of profit from growing crops. At present, the farmers want to stop using chemicals due to findings from studies carried out under the REAL project.

No Questions/Answers on the presentation

4.2.5 School and Community Agro-Biodiversity Conservation and Chemical Impact Assessment to Health and Environment

Ms. Le Thi Thu Huong, Consultant, Center for Rural Progress

Since 1993, season-long FFS on IPM have been implemented in Viet Nam. The National IPM Programme has trained farmers on integrated pest management methods that protects the field ecology and farmland biodiversity and reduces the negative effects of chemical pesticides on human health. Initially, FFS programmes trained only adults. However, since 2007 with support from KEMI (Sweden) through the regional CSO, The Field Alliance, the Center for Rural Progress (CRP) began implementing the project "*Training Community and School in Biodiversity Farmland and Chemical Impact Assessment*" targeted at students in secondary schools.

The objectives of the project are: (1) to study the farmland biodiversity and factors that affect species and their habitat for use in developing local conservation programmes; (2) investigate chemical pesticide use in rural areas and their negative effects on human health and the environment; and (3) raise public awareness as to reduce chemical use in agriculture production in rural areas.

A summary of project activities and results follow. Grade 5 and 6 students from 5 schools in Ha Noi (old Ha Tay province) and 2 schools in Ca Ba Island have been selected for the pilot training programme. About 25 facilitators, who are school teachers and staff of Plant Protection Sub-Department of Ha Noi, were trained to facilitate the training. The training contents were integrated into main school subjects such as Biology, Art, Geography, Mathematics, English, and Literature. The field or household surveys were to be done as after-school activities by students. The results of the study on biodiversity were used to raise awareness about the situation of chemical pesticide use and their harmful effects on human health and the environment. The results were presented to the public through parents' meeting or meetings organized by different mass organizations in the commune. The school activities (for children) were integrated with FFSs training activities (for adults) to bring the issues to the community in order to develop action plans to reduce the chemical risks and protect farmland biodiversity.

No Questions/Answers on the presentation

4.2.6 Agro-Biodiversity Conservation and Pesticides Impact Assessment Project in Davao Del Norte Philippines: Updates

Mr. Mario E. Corado, Consultant, FAO Regional Vegetable IPM Programme

The Agro-BD and Pesticide Impact Assessment Project is a collaborative project between the FAO Regional IPM Programme for Vegetables and the provincial government of Davao del Norte. Other project partners include Thai Education Foundation, the National IPM Programme, the Department of Education and NGOs. The project commenced in 2007 and is being implemented in eight schools and by four farmer groups. The project aims to build the capacity of local trainers, farmers, teachers, and school children in conservation of Agro-BD and assessment of pesticide impacts in the community through schools and Farmer's Field School (FFS) activities. Agro-biodiversity projects such as conservation and sustainable utilization of local species of frogs, snail, catfish, and indigenous trees were established in participating schools and communities since its inception in September 2007. The conservation projects served as entry points for integrating biodiversity conservation and pesticides hazards concepts in schools' and Farmer's Field School curricula. Supported by capacity-building activities, the project has developed sessions and authentic portfolio assessment methods and lesson plans.

Pesticides from commercial croplands, most notably aerial fungicide sprays on banana plantations, adjacent to the project communities continue to be a major threat not only to the conservation projects but also to rural community health and the farming ecosystems. These observations and concerns are also shared by many organic farmers in Davao del Norte. In response to this issue, trainings were conducted to empower and develop skills of stakeholders to monitor the impacts of pesticides on human health and the environment. Lessons learned from the project implementation are: a) indispensability of strong local government and civil society groups, b) agro-BD conservation and pesticides impact assessment strengthens environmental education curriculum, and c) it requires time before tangible effects are realized. The project is now in its consolidation phase. Hence, opportunities are being provided for communities to assume greater role in the management of the project and ensure its sustainability.

No Questions/Answers on the presentation

5 Theme Presentation and Discussions

Chairperson: Dr. Areepan Upanisakorn, Chief, Biocontrol Division, Department of Agriculture Extension, Thailand

5.1 Pesticide Risk Reduction Impact Assessment Baseline Results, Dr. Gerd Walter-Echols, Chief Technical Advisor, EU-China Biodiversity Programme (ECBP)

As part of the Project "Pesticide Risk Reduction in South-East Asia" impact studies are being conducted in Cambodia and Vietnam to assess the impact of IPM training and other project activities on the reduction of pesticide risk. By now, the collection of baseline data has been completed, and the results from Vietnam were presented. The Vietnam baseline report focused on people's perception of pesticide risks and knowledge on pesticide risk reduction, as well as gave some observations of people's behaviors and decision making on the use of pesticides. The report made valuable recommendations for the project's training and community programmes, but not all data will be suitable to serve as baseline information for a later impact survey. There is a need to quantify some of the findings, either by using the EIQ or by developing own rating system for the degree of pesticide risk to the different exposed groups. The impact survey should focus on those parameters for which usable baseline information is available, or which can be used to describe improvements of pesticide risks due to the project's interventions.

Questions/Answers:

- Dr. Marut Jatiket, Director, The Field Alliance asked who collected the data. *Response* from Mr. Ngo Tien Dung: *For Vietnam, data was collected through a questionnaire. Farmers*

kept diaries of activities. Technicians were also trained on how to collect data. Dr. Gerd Walter-Echols commented that the purpose of the researcher was to provide focus and not to gather huge amounts of data.

- Ms. Alma Linda M. Abubakar from the Regional IPM Programme commented that for assessing impact it was useful to include external evaluators because it gives credence to the study. Involving universities and other groups is necessary, with the pros and cons that go with it. For example, the Vietnam study was done in collaboration with the Hanoi Agriculture University while in Cambodia it was done in collaboration with the Royal University of Agriculture.
- Mr. Jan Willem Ketelaar, the Chief Technical Adviser (CTA) of the Regional IPM Programme reminded everybody not to focus on issues related to the Vietnam study. The main purpose of the presentation was to provide a framework on how impact assessment studies might be implemented respective of National IPM Programmes. He added that it was expected that the discussion groups will have more detailed discussions on these issues.
- Mr. Doe Doe, Programme Director, National Plant Protection Center, Department of Agriculture, Ministry of Agriculture, Bhutan commented that pre- and post- surveys for impact assessment should focus on the same crops because changes in crops could influence survey results. *Response: This was pretty much taken into consideration in the Hanoi study.*

5.2 Innovations for Sustainable Management of Rice Brown Plant Hoppers

Mr. Yang Puyun, National Agro-technical Extension and Service Center, MoA and Mr. Wang Kaixue, General Station of Plant Protection, Guangxi Zhuang Autonomous Region, China

Rice Brown Plant Hopper (BPH) is distributed in most provinces in eastern China, In 2005-2008, the infested acreages went up to 14-17 million hectares, or about 55-60% of the total rice production area. In China, national BPH management strategies places emphasis on prevention and control based on ecological zones, including: (1) coordinating chemical and biological mechanisms, to reduce early generations of BPH populations and to avoid outbreaks of later generations, (2) managing the crop system and fertilization, and (3) conserving and using natural enemies.

Three case studies on sustainable management of BPH were presented. Case study 1 in Lingui county described the ecological engineering studies funded by the Asian Development Bank and the International Rice Research Institute. The project is testing two hypotheses: *Hypothesis 1: Implementing ecological engineering improves biological control of pests compared with farmer's practices using insecticides (control).* *Hypothesis 2: The ecological engineering practice of sowing flowering plants on bunds leads to a spatial effect such that control of pests is improved in rice close to the flowers, declines with distances into the crop and that this effect is absent in rice grown with farmer's practice using insecticides (control) and flowerless bunds.* Case study 2 in Wuming county, Guangxi Zhuang Autonomous Region described the use of bio-pesticides for pest control to protect and use natural enemies to suppress BPH populations. Case Study 3 in Guangxi Zhuang Autonomous Region described the practices of sustainable management of BPH through the ecosystem diversity approach including the use of light traps and rice-fish or rice-duck systems.

Questions/Answers:

- Mr. Ho Van Chien from the Southern Plant Protection Research Center-MARD, Vietnam asked what evidence there was on the effect of ecological engineering on biodiversity of flora and fauna in the rice field. *Response: This is not finished yet as they are still collecting data but it would be finished by January 2010.*
- Mr. Ho Van Chien from the Southern Plant Protection Research Center-MARD, Vietnam asked if farmers were using insecticides on soybeans. *Response: I think they do not use pesticides on soybeans, as they are used as a habitat for natural enemies. Planting on rice bunds can conserve spiders.*

5.3 Community Level Management of Brown Plant Hoppers and Associated Virus Diseases – Use of “Synchronized Cropping Seasons and Brown Plant Hopper Escape Strategy”

Mr. Ho Van Chien, Director, Southern Regional Plant Protection Center, PPD – Vietnam

During the year 2005 and 2006, there was an outbreak of the brown plant hopper *Nilaparvata lugens* (Stål) in the south of Vietnam. The brown plant hopper (BPH) carried two types of virus diseases: Ragged Stunt Virus (RSV) and Grassy Stunt Virus (GSV). The number of insects, the frequency of outbreaks and virus diseases that occurred were higher in the Mekong River Delta than elsewhere. The BPH infected areas were 107,000 ha and about 500,000 ha in 2005 and 2006, respectively. The area infected by virus diseases was 447 ha and 78,000 ha in 2005 and 2006, respectively. The Vietnamese Government issued a Decree to “stop rice export” early in November 2006. During the campaign, brown plant hopper control was expanded to around VND 110 billion for pesticide subsidies.

In the humid tropics, the BPH is active throughout the year and its population density depends on, among others, the availability of plants for food (Pathak 1968, 1969). Rice is the only suitable host (Nasu, 1964; Kisimoto, 1976; Okada, 1976). On alternate hosts, the insect can survive but does not multiply well (Mochida and Dyck, 1976). Consequently, during a fallow period or one when rice is not grown, the insect population will be much reduced. In well-irrigated areas, rice is planted twice or even thrice a year and staggered planting with short fallow intervals is common. Such a cropping system appears to stimulate the build-up of BPH populations resulting in serious outbreaks (Dyck, 1974; Fernando, 1975; Kalode, 1974; Otake and Hokyo, 1976). In the south of Vietnam, rice cultivation is carried out in several cropping seasons during a year. Thus, the cultivation must address the life cycle of brown plant hopper and their ability to transmit virus diseases at each stage of rice crop development. The “synchronized cropping season and brown plant hopper escape strategy using light trap systems to forecast the BPH migration” was recommended to farmers.

In fields where the use of “brown plant hopper escape” around 25 to 30 days after sowing was applied, the second migration/translocation had to be addressed. Thus, “soft” insecticide applications are timed to kill the nymphs that are produced by the immigrating adults. Insecticide applications for brown plant hopper control when the rice fields are at flowering stages until harvest are not recommended.

In 2007, the Southern Regional Plant Protection Center carried out nine field demonstrations for “community level management of BPH and associated virus diseases”. The strategies included the use of “BPH escape and synchronized cropping season”. Activities in the demonstration sites in dry season were paid for from local budgets and the activities in the wet season were paid for by FAO. Farmers who were not included in the pilot activities also applied the methods in large areas, i.e., 1.2 million ha in dry season and 1.4 million ha in wet season.

Rice paddy production was increased by 700,000 tons in 2007 compared to production in 2005 when there were high BPH populations and infection of virus diseases.

In 2008 to 2009, the area where the BPH escape strategy was applied was 2.4 and 2.2 million ha, respectively. To date, the rice production in the south of Vietnam is stable.

This conclusion is derived from: (1) some studies in the greenhouse, (2) light trap data, (3) observation of ecology of ricefields, and (4) observation of the interaction between each rice stage and virus disease in villages applying “community level management of BPH and associated viruses diseases”. In these villages, the farmers have maintained the delicate balance of the ecosystem. More studies are needed to make recommendations to improve rice production practices in the future towards more sustainable pest management.

Questions/Answers:

- Mr. Ngo Tien Dung, National IPM Programme Coordinator, PPD Vietnam commented that the disease had been observed in northern Vietnam. *Response: Due to wind patterns, it is expected that the pest will move to northern Vietnam, then to China, Korea and Japan.*
- Mr. Yang Puyun, National Agro-technical Extension and Service Center, MoA, China, commented that they needed more detailed information on the BPH outbreaks in northern Vietnam.
- Mr. Yang Puyun, National Agro-technical Extension and Service Center, MoA, China commented that there were studies done in China that WBPH also transmit a virus and cause yellowing symptoms. He added that management focus should not only be on BPH but on other rice planthoppers as well. *Response: It has been observed that WBPH also transmits the virus but IRRI has not confirmed this yet.*

5.4 Impact of Climate Change on Asian Crop Production and Protection: Lessons for IPM Programmes (with special emphasis on Mekong Countries)

Dr. Prabhat Kumar, Senior Research Specialist and Coordinator (CSO-CGIAR Project), Asian Institute of Technology (AIT)

The Asian region has witnessed rapid changes in weather variability in the last century. The annual temperature increase ranged from 1.0 – 1.40 in the last 100 years in SE Asian countries. Similarly, the spatial and temporal distribution of rainfall is changing, and so is the occurrence of extreme weather events. Among greenhouse gases, SE Asian countries emitted 5187 Mt CO₂ - equivalent in the year 2008, which is also increasing on year to year basis. Further it is predicated (IPCC, 2007) that there will be 2-4°C increase in temperature; alternation in rainfall; sea-level rise; and increase in extreme weather events and their combined effect will have pronounced effects on crop production and food security in the coming century.

In recent years a number of studies reported the effects of climate change on plant productivity (see Fuhrer, 2003 for a review). The predicted higher CO₂ levels generally increase the productivity of the plants. However this can be countered by the effects of rising temperature and reduced water availability.

Insect-pests and diseases directly depending on plant sources for food and shelter could be directly affected by a diverse range of factors including plant nutritional changes and changes in plant allocation to defensive compounds with increased CO₂ (Coviella et al., 2002). The effectiveness of natural enemies in controlling the herbivores will be a major influence. The prediction of an increase in the frequency and intensity of herbivore outbreaks through disruption of parasitoid-herbivore dynamics as climate becomes more variable is substantiated in a recent report by Stireman et al., (2005). The Asian smallholder farmers are especially extremely vulnerable to these changes and these changes are predicted to affect them most (especially in the Mekong delta and in countries like Indonesia and Philippines along with coastal regions in South Asia).

The IPM Programme and its network of farmer trainers and trained farmers (those who have undergone season-long trainings) could take the lead in designing adaptation strategies to address these challenges. Science-based planned intervention coupled with policy support by respective governments and agencies would be crucial aspects of future strategies. The current learning centered approach of farmer education programmes are better placed to begin iterative learning processes for capacity building of farmers, trainers and also assist governments with policy advice to cope with the large challenge of our time, i.e., the changing climate.

No Questions/Answers on the presentation

5.5 Paraquat; Health Effects and Alternatives

Ms. Evelyn Cubelo, Programme Officer, Pesticide Action Network, Asia and the Pacific (PANAP)

Paraquat is a non-selective, contact herbicide that kills weeds by stopping the energy producing cells and rapidly desiccating the tissue. It is used on fruit, plantation crops, cereals, and as defoliant and desiccant to dry crop plants (Tomlin, 2003). Paraquat is acutely toxic and classified as WHO Category II. Paraquat has no antidote. It enters the body through the skin or by ingestion, but may also be inhaled during certain application methods. The estimated lethal dose (via ingestion) for paraquat in human is 35 mg/kg (Extoxnet). One (1) teaspoon of concentrated paraquat can result in death. Systemic paraquat poisoning is characterized by burns to the upper digestive tract (when ingested), acute respiratory distress and multiple organ failure. Some chronic effects identified include developmental and reproductive effects, skin cancer and Parkinson's disease. The greatest risk to workers of fatal and serious accidents is during the mixing of the pesticide and loading of spray equipment, where contact with the chemical concentrate occurs. Conditions of use in many developing countries make it difficult to follow label instructions and recommendations. In the same way that it is also difficult for developing countries to apply protective measures due to expense, discomfort in tropical climates. Women are the major workforce on plantations in Malaysia - with 30,000 women workers. As reported by Tenaganita, women workers' regular exposure to herbicides (mainly paraquat) has resulted in myriad of serious acute and chronic health effects. With this health concerns, Sweden and Sri Lanka banned the use of Paraquat. Various groups like PAN UK, PANAP, Berne Declaration, and Foro Emaus called for phase out of paraquat as early as 2002. A study by Berne declaration and IUF (2008) found that safe alternatives to paraquat exist. Lastly, PAN Germany compiled various recommendations on growing crops without paraquat for small-holder farmers in the tropics using a combination of integrated with management methods and approaches.

No Questions/Answers on the presentation

5.6 Paraquat Study, Findings and Alternative Case

Ms. Sun Jing, Deputy Director, Pesticide Eco-Alternatives Center (PEAC)

Due to health problems resulting from the use of paraquat, more than 20 countries (including EU, Sri Lanka, etc.) have banned/restricted/withdrawn the chemical. During field work carried out by PEAC, we noticed that paraquat is one of the most popularly used herbicides in rural areas. However, few or none of the people knew the problems associated with the use of this herbicide. Furthermore, we did not find available data or report from studies in China on occupational risks related to paraquat usage in rural areas. Therefore, in 2006-2008, PEAC carried out a series of case studies on risks associated with paraquat use in Yunnan province.

Through interviews (farmers, agro-technicians, doctor, dealers), survey and literature studies, we collected information from around 200 farmers. Out of the forty-four poisoning cases, five cases were shared/reported by doctors and agro-technicians who joined the Paraquat Risk Training Workshop. According to presentations of rural doctors, due to several reasons, paraquat poisoning could be as high as 100%. The field survey also identified some risks relate to paraquat usage: lack of sufficient/efficient personal protective equipment, especially in the tropical region; storage of paraquat in kitchen or living in agrochemical warehouse. Moreover, due to low risk awareness and improper labels, farmers easily overlook the potential harm of paraquat. For example, the quick survey on farmers' understanding of a paraquat product's label showed that most farmers understood the product to be safe for human health, the crop and to the environment.

Based on the findings of the study, we carried out a series advocacy activities for relevant organizations and individuals to improve their awareness of risks associated with paraquat use and to promote safer farming practices. An example of activity that was undertaken was sharing of experiences on paraquat alternatives by farmers from CBIK project sites in Guangming

village, Xishuangbanna with farmers from other villages. The same farmers are now producing organic Pu-er tea.

No Questions/Answers on the presentation

5.7 Health Implications from Monocrotophos Use in India: A Review

Dr. Vaithilingam Rangunathan, Former Plant Protection Advisor, India and FAO Advisor for IPM and Pesticide Risk Reduction, Bhutan

Monocrotophos is one of the largely used pesticides (14000 KL) due to its cheap price (Rs.230-250 per litre) and easy availability. Though it is mainly used against cotton pests (5887 KL in 2006) its extended use against crop pests includes pests of rice, maize, sorghum, sugar cane, potatoes and fruit crops. Farmers in small-holder cultivation tend to use the same insecticide for all the companion crops including vegetables even if its use on vegetables has been banned since 2006 due to reports of high levels of residues in food items.

There are ample evidences of health implications from monocrotophos use in India which includes WHO sponsored study carried out in July 1999 to June 2000 from few hospitals in Andhra Pradesh, Haryana, Punjab and Karnataka and one Poison Information Centre in Ahmedabad, Gujarat. A total of 1531 cases of pesticide poisoning cases were recorded during this one-year period of which 609 cases were due to organophosphorus (OP) pesticides. Most of organophosphate compounds were not identified. However, out of the identified OPs, monocrotophos was involved in 86 cases, the largest number of poisonings due to an OP compound.

Other examples include cases in Burdwan and Tamluk, West Bengal. Monocrotophos and other OP pesticides poisoning resulted in death of farmers and children during 2001 and 2002, respectively. There is also the extensive retrospective hospital based study carried out in 2004 on all cases of pesticide poisoning from Warangal district of Andhra Pradesh that revealed 257 monocrotophos poisonings with 91 deaths during the year 2002 amounting to a case fatality rate of 35%. If the data from Warangal district is extrapolated to all 23 districts of Andhra Pradesh, the toll of annual deaths from pesticide poisoning may exceed 5000 and deaths from monocrotophos poisoning alone may be close to 2000, or 40% of the total deaths. Similarly, in Tamilnadu out of 187 OP poisonings 38 cases were due to monocrotophos (20% of all OPs) and 6 (15%) patients died in spite of continued care.

Acute monocrotophos poisoning and deaths have also been widely reported in other countries viz. Sri Lanka, Thailand, Philippines, Brazil, Paraguay, Egypt, Indonesia, Brazil and Latin America and Caribbean.

In conclusion:

- Monocrotophos is most frequently used in India, especially on cotton and other crops including vegetables due to easy availability and affordable price, despite the fact that it is a “Highly Hazardous” pesticide;
- Though there are ample evidences on monocrotophos poisoning and deaths, there is gross under-reporting of poisoning cases in India;
- A review of the hospital based studies on pesticides poisoning in India show that monocrotophos poisoning has been reported from all parts of India;
- It causes severe poisoning and has a high potential for causing occupational poisoning and it is accounted for higher case fatality rates than other pesticides;
- It is highly toxic to birds and it was strongly implicated in a large number of bird kill incidents affecting a wide variety of avian species;
- Its use is not permitted in the US, EU and China. However, India is lagging behind these three countries and also with the rest of Asia (e.g., Australia, Vietnam, Thailand, Indonesia, Philippines, Sri Lanka, Cambodia and Lao) where monocrotophos is no longer permitted for the use because of unacceptable health risks.

A number of examples world-wide have shown that banning or restricting the highly toxic pesticides can result in drastic reductions in pesticide poisoning and deaths. Despite important national efforts and support from WHO and FAO data on poisoning cases is generally very poor and limited hospital data. There is no collection of information on poisoning cases occurring at the community level, so far. Because of poor evidence based data, there is little awareness about the magnitude of poisoning problem. Therefore, urgent action is needed to:

- Consider banning the use and availability of monocrotophos and other most hazardous pesticides as recommended by FAO/WHO;
- Implement measures leading to Pesticide Risk Reduction through Integrated Pest Management-Farmer Field School approaches through well coordinated actions among the Ministry of Agriculture, Ministry of Health, Ministry of Environment and other concerned institutions to bring in significant health and environmental benefits in the developing nations.

Questions/Answers:

- Mr. Jan Willem Ketelaar, the Chief Technical Adviser (CTA) of the Regional IPM Programme showed workshop participants the document *Health Implications from Monocrotophos Use In India: A Review*, that was available at the FAO IPM Regional Office.

5.8 Pesticide Monitoring and Findings—outcomes from REAL project (2008-2009) Ms. Sun Jing, Deputy Director, Pesticide Eco-Alternatives Center (PEAC)

The REAL project site in Yunnan province is located in Yousuo town, Eryuan County. The county annually contributes 70% of fresh water for Erhai lake (the 2nd biggest fresh water lake in Yunnan province). All farmers there are practicing small scale farming, which is typical as most of the other places. Rice, garlic, broad bean and vegetables are the main crops. Pesticide usage and their associated problems are similar to those in other places, including: lack of effective/sufficient personal protective equipment, improper storage/disposal and improper usage that leads to risks.

From 2008-2009, REAL training and pesticide monitoring activities found that:

- local farmers use more insecticide (26%) than herbicide (23%) and fungicide (19%);
- moderate and low toxic pesticides are popular in local communities (35% and 38%), but there is still 27% use of highly hazardous pesticides;
- The highly toxic pesticides include omethoate, aluminum phosphate and the highly hazardous herbicide - Paraquat (emerged in 2009).

The survey also showed that dizziness/headache (63.6%) is the top symptom related to pesticide usage, followed by itching skin (47%), nausea/vomiting (42.4%), blurring of vision (34.8%) and sweating (25.8%). Survey respondents believed 80% of poisoning is related to suicide attempts (swallowing) and to residues on food. Poisoning is also due to accidental ingestion and use.

As to address the survey findings, from late of 2008 to 2009, PEAC carried out a series of advocacy and pesticide awareness raising activities among schools and local communities. The activities have resulted in a change in risk awareness of local farmers: (1) use of highly toxic pesticides reduced and low toxic pesticide increased; (2) 68% want to learn more about pesticide and health and ways to reduce pesticide risk; (3) 19.5% want to learn more about how to develop biodiversity-based ecological agriculture. About 95.8% of the teachers think it is necessary to reduce pesticide risks and pollution. They also shared their suggestions about the possible strategies reduce pesticide risks and pollution.

No Questions/Answers on the presentation

5.9 Pesticide Surveys – Laos and Vietnam: A Summary

Mr. Marut Jatiket, Director, Field Alliance/Thai Education Foundation

The Field Alliance/Thai Education Foundation supported Pesticide Surveys in Laos and Vietnam. The pesticide surveys looked into: (1) brand name and common name of pesticides used in the study areas; (2) type and toxicity levels; (3) annual liters of pesticide exposure of farmers; and (4) storage and disposal of pesticides. Health surveys collected information on: (1) clothes and equipment; (2) behaviors related to pesticide use - spraying, smoking, eating during spraying; and (3) signs and symptoms of pesticide poisoning experienced by farmers.

The results of the studies, comparing data between 2008 and 2009 showed that in 2009, Class Ia (extremely hazardous) pesticides were no longer being used and most chemicals used belonged to Class II (moderately hazardous) category. The amount of pesticides used had reduced from 539li/person/year to 235li/person/year in vegetable crops such as lettuce, Chinese mustard, Chinese chive, Chinese cabbage, string bean, spring onion and morning glory. The behavior after spraying of 68 persons had improved in terms of taking a bath, washing hands and washing clothes. Some behaviors still had to be improved like drinking and smoking without washing after spraying. All the respondents of the study (68 persons) cleaned their tanks after use. These were cleaned either in the river, near the well, poured into the soil or in the bathroom. Most farmers poured leftover pesticides into the soil.

The studies showed that color codes on pesticide labels are not specific and are confusing. Farmers perceived that mixing different products made pesticides stronger. However, most farmers wanted to seek alternative methods, i.e., IPM.

No Questions/Answers on the presentation

6 Plenary Summary Notes on Theme Discussions (Reference to outputs of theme discussions)

Chairperson: Dr. Prabhat Kumar, Senior Research Specialist and Coordinator (CSO-CGIAR Project), Asian Institute of Technology (AIT)

Participants selected the group to join depending on their interest. They were divided into three groups for more detailed discussions on the themes below; each group comprised of GO and NGO representatives. The outputs of the theme group discussions and questions raised during the plenary are provided herewith:

Group 1: Studies in Support of Pesticide Risk Reduction Programmes

Members of Group 1 were interested in discussing the following topics:

- who uses which information;
- how to reduce pesticides on a big scale;
- integration of pesticide risk reduction in public education;
- paraquat reduction in high risk groups;
- alternative options to reduce pesticide risks;
- illegal pesticide and foreign language labels;
- post-FFS activities;
- educate trainers about health effects;
- how to efficiently conduct studies;
- success story promotion;
- strategies to generate policies and implementation support.

It appeared that most members were interested in some kind of strategy for either farmer education, program implementation or policy support on national or regional level. Discussions gradually focused on the need to identify and engage the key stakeholders for pesticide risk reduction. Building an alliance between the interested parties was seen as crucial. The parties interested in pesticide reduction are not only found in the agricultural area, but also in the health, environment or economics field. Every program eventually needs persons who can use the information about pesticide risks for promoting their own political ambitions or the interests of their institution. With the right connections, such persons can sometimes achieve pesticide restrictions in a short time while the normal process might take years. In any event, programs need both a bottom-up advocacy movement as well as contacts with top-down decision makers.

Questions/Answers:

- Mr. Jan Willem Ketelaar, the Chief Technical Adviser (CTA) of the Regional IPM Programme commented that the APPPC will develop a database with registration status of pesticides in the region.

Group 2: Sustainable Management of Rice Plant Hoppers and Associated Virus Diseases

In Asian countries that grow Japonica, Indica and Hybrid rice varieties, there are three species of plant hoppers (i.e., Brown plant hopper, Small brown plant hopper and White back plant hopper) that can carry virus diseases and transmit these to rice plants. Rice plant hoppers directly cause hopper burn and indirectly transmit virus diseases. Thus, rice hoppers are always threat to rice production.

Climatic changes make it difficult to grow rice because it affects plants, herbivores and natural enemies, plant diseases and vectors, viruses and the agroecosystem.

Rice plant hoppers can translocate (from field to the other field), migrate (inside country) and emigrate/immigrate (between countries) by wind direction or typhoon.

The group feels that there is a need to have an International Network to monitor migration and the population characteristics (including genetic structures) of the rice plant hoppers. Exchanges should occur between East Asian and Southeast Asian countries based on:

I. Good information on pests (RPHs and Viruses) situations.

1. Light-trap data.
2. Information on area infected.
3. Field pest intensive/incidence and severity *OVERTIME*.

II. Forecasting systems between countries.

1. Cambodia
2. China
3. Philippines
4. Thailand
5. Vietnam

III. Website (Software)

IV. Training of farmers

1. Identification of “RPHs/virus disease” symptoms and natural enemies
2. Cultural methods:
 - a. Synchronous planting
 - b. Escape strategy.
 - c. Optimum seed and fertilizer rates
 - d. Resistant/tolerant varieties (RPH/virus)
 - e. Weed control
 - f. Water saving

3. Pesticide resistance/safety and efficacy (safety to crop plants, human-health, environment, etc.)
4. Eco-system services/ecological-engineering (grow wild flowers on bunds in order to attractive NEs/habitats for pest management.
5. Guidelines, leaflets, posters, etc.
6. Multi-media (local magazines, radio, TV, etc.)
7. Demonstration field sites
8. Field day/cross visits/workshop
- 9 “KAP” pre- and post-survey (questionnaire set, codebook, SPSS data analysis) reports
10. Publishing results of activities and studies

Questions/Answers:

- Mr. Mario Corado, FAO Vegetable IPM Consultant from Phillipines commented on the importance of the ‘underground system’, i.e. healthy soil (in addition to the activities ‘in the air’ and ‘on the ground’).
- Dr. Prabhat Kumar, Senior Research Specialist and Coordinator (CSO-CGIAR Project), AIT suggested that the SRI method is worth trying as a strategy to address problems associated with plant hoppers.

Group 3: Climate Change Impact on Crop Production and Protection and Adaptation Strategies

Members of the group came up with three main areas for discussions on climate change issues. A summary of results of group discussions follow:

Community education on climate change

Methods like modified PRA etc. were discussed as a means to develop a baseline for the CC adaptation work. It was also felt that some initial experiences that is available with other groups working on FFS in Asia, like in Andra Pradesh, India, could be studied first and lessons learned could be used. Possibly an iterative process of community sensing could be tried, which could be modified every year with practical experiences.

Monitoring

Thoughts were given on AESA process and analysis. It was felt that weather parts of AESA could be further enriched with local weather information to facilitate in-depth discussions on the ongoing crop management. But probably for long terms effects, these changes may not be good enough. Everyone agreed that more thought and time is needed to discuss this aspect.

Adaptation strategies

Based on experiences of Trainers and farmers some areas were identified where adaptation to the local bio-physical condition may be needed. These include the following areas:

- Seeds (indigenous versus GM crops);
- Participatory plant breeding;
- System of Rice Intensification;
- Clay and Green;
- Information availability and collaboration;
- Collaboration for action research;
- Community planning.

Finally as recommendation, the group proposed a **Regional Workshop on Climate Change and IPM-FFS** to logically think about and initiate work on integrating climate change in FFS in IPM programmes.

Questions/Answers:

- Dr. V. Ragnathan, FAO Advisor for IPM and Pesticide Risk Reduction, Bhutan commented that in India a pilot project on e-surveillance is underway with the support of

FAO. This involves weekly reporting with the use of small cellphone-like devices which measure humidity, temperature, and can be hooked on to a computer.

- Mr. Jan Willem Ketelaar, the Chief Technical Adviser (CTA) of the Regional IPM Programme shared information about the APPPC meeting in August where the IPM Steering Committee met and discussed climate change and its impact on plant protection. *They plan to work on this in the biennium, they are starting work in Bangladesh: FAO is working with communities on regional and local activities. In the longer term we need to work on strategies for communities, especially the most vulnerable.* Mr. Ketelaar also urged participants to subscribe to the FFS list-serve where much discussion takes place on climate change issues.

7 Feedback on Visits to Guangxi Field IPM Programmes (Feedback on Field Visits)

Chairperson: Mr. Mario Corado, FAO Vegetable IPM Consultant, Philippines

Participants were divided into two groups; each group comprised of GO and NGO representatives. Summary of observations on field visits are provided herewith:

1. Ecological Engineering

The pilot activity on Eco-Engineering in Hushan Village, Chadong township, Lingui county is funded by ADB and implemented by IRRI and NATESC. Forty farmers households are involved in the study facilitated by an IPM Facilitator. The hybrid rice crop (105 days duration) was transplanted at 15-20 days. At the time of the visit, the crop was in the harvesting stage. The study aimed to compare the effects of Farmers' Practice with the eco-engineering (use of border crops) set-up in terms of: (1) dynamics of pests and natural enemies every 2 weeks using YST, water pan, pit-fall trap, sweep nets; (2) classification and identification of arthropods; and (3) yields and economic analysis. The eco-engineering treatment used soybean and sesame as border crops and no pesticides were used in the treatment. The control treatment (FP) was separated from the eco-engineering treatment by a barrier (small bund).

The group observed the following:

- Target insect-pests were BPH, case worm, leaf folder and stem borer;
- The research design and implementation could have benefited from more functional interactions with farmers;
- Farmers are not involved in collecting data on insect-pests and NE; they collect only cultural practice data;
- Data collected not yet analyzed;
- The treatments should be well marked and laid-out;
- This would be a great example for post-FFS activities for farmers adaptation in future;
- The activity creates awareness on biodiversity and the valuable contribution/effects of borders;
- Helps to bring back lost indigenous practices of using border rows;
- Eco-engineering enhances natural biodiversity existing near the canal;
- The crop's flag leaf was not healthy;
- Research for what ? and for whom?

2. Farmer Field School:

Not available

Questions/Answers:

- Mr. Ngo, Tien Dung, National IPM Programme Coordinator, PPD Vietnam asked why there were sesame and soy border crops in the ecological engineering demonstration plots.

Response: They have a long flowering phase, are beneficial to farmers' income, and it is also a tradition to plant border crops.

- Dr. Prabhat Kumar, Senior Research Specialist and Coordinator (CSO-CGIAR Project), AIT asked what control practices were used for stemborers in the FFS. *Response: Light traps.*
- Mr. Mario Corado, FAO Vegetable IPM Consultant from Philippines commented that the species of stemborer was interesting and that more information was needed.

8 Country-level discussions on GO-NGO collaboration on Community Education Initiatives for Pesticide Risk Reduction in GMS (Reference GO-NGO collaboration)

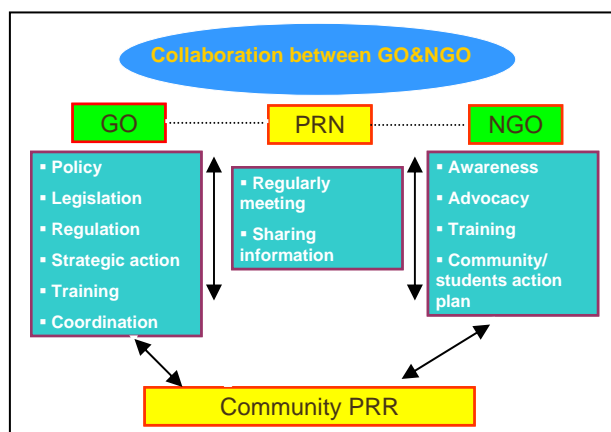
Participants were divided into country groups; each group comprised of GO and NGO representatives. Summary discussions are provided herewith:

Cambodia

The government-implemented National IPM Programme and partner NGOs decided to organize the following activities to strengthening Community Education for Pesticide Risk Reduction in Cambodia:

- **Partners' Meeting:** The meeting will be conducted by the National IPM Programme under the General Directorate of Agriculture (GDA) and involve NGOs carrying out activities on Pesticide Risk Reduction. The meeting will be organized twice per year to share information on pesticide risks and set up strategies and methodologies to strengthen pesticide risk reduction activities in Cambodia.
- **Pesticide Risk Reduction Network:** The National IPM Programme and NGOs will work together to update information and solve problems encountered. NGO Forum Cambodia organizes a network meeting every two months and invites government institutions, including the National IPM Programme, and all NGOs carrying out activities on Pesticide Risk Reduction and Agriculture Development.
- **FFS on PRR:** Srer Khmer and ATSA will educate students on Biodiversity and the National IPM Programme will educate parents of these students through Farmer Field School on PRR in order to reduce pesticide risks in the whole community and improve the environment as well as livelihoods.
- **Community Workshop:** The National IPM Programme and CEDAC will conduct two workshops together in two communes on Pesticide Risk Reduction aimed at eliminating Class I pesticides.
- **Marketing of Organic Vegetable Products:** CEDAC will open two new shops in Kandal and Siem Reap provinces in collaboration with the Provincial Department of Agriculture. In Kandal province, 30 IPM farmers will be selected to produce organic vegetable for supplying the shops in Kandal province and Phnom Penh. In Siem Reap, the IPM farmers will be selected to produce the organic vegetables to sell in the CEDAC shop.
- **Publication of Agriculture Watch Bulletin:** National IPM Programme and NGOs will continue to work together to produce the bi-monthly bulletins that mainly focus on pesticide risk reduction for distribution to farmers and other stakeholders.

The following diagram summarizes the planned GO-NGO collaboration in Cambodia:



Detailed activities and who will implement these are provided in Annex 5.

Questions/Answers:

- Mr. Mario Corado, FAO Vegetable IPM Consultant from Philippines commented that there is not much coming from the community and that activities were more top down.
- Mr Jan Willem Ketelaar, the Chief Technical Adviser (CTA) of the Regional IPM Programme said that [the presentation] was good and made two comments: (1) What was missing is concrete action, e.g. pilot sites for PRR; and (2) With regard to the request, pointed out for additional funding support - that the role of FAO IPM is in innovation, not so much expansion. Mr. Ketelaar encouraged participants to look for local donor support.
- Mr. So Khanrithykhun, National IPM Programme Director, General Directorate of Agriculture of MAFF added that NGOs and GOs focus on rural areas. NGOs and GOs collaborate to avoid duplication and competition, and will continue in the same way for the purpose of improving livelihoods of farmers. He added that he had participated in FFS with NGOs and has observed remarkable overuse of chemical pesticide and fertilizer. Even though there are bans, traders still sell banned pesticides and herbicides particularly in commercial plantations and without regard for social and environmental impacts.

China

GO-NGO collaboration in China is expected to include:

- Experience and information sharing
 - Conduct of exchange visits to project sites
 - Attendance in relevant meetings and workshops
 - National IPM Programme to provide technical backstopping to NGOs
 - NGO to share experiences on pesticide and health concerns, e.g., paraquat, monocrotophos, etc.
- Collaboration on development of pamphlets and manuals on public awareness raising

The Workplan for the FAO-China Pesticide Risk Reduction Project includes the following activities:

1. RTOT in Guangxi
2. Case studies in Yunnan and Guangxi
3. Impact Assessment Presentation and Policy Recommendation Workshop in Yunnan
4. FFS in Yunnan and Guangxi
5. Farmer Congress in Yunnan and Guangxi
6. LTOT in Guangxi
7. Manual Development

Questions/Answers:

- Mr Jan Willem Ketelaar, the Chief Technical Adviser (CTA) of the Regional IPM Programme asked the group to identify concrete activities where GO and NGO can work together. *Response: People from PEAC are to be invited to Guangxi to share experiences on how they do case studies, and to also share information on health impacts from the Paraquat studies. PEAC also invited IPM to participate in BPH workshop in November.*
- Mr Yang Puyun, Director of Pest Control Division, NATESC commented that he will send an expert to attend the PEAC meeting.

Lao PDR

Activities will focus on high use areas, especially rubber and corn. The Lao Government is focusing on ‘clean agriculture’ including farmer practices, ToT, pesticide-free and organic approaches.

Questions/Answers:

- Mr Marut Jatiket, Director of The Field Alliance asked for more information about the Monitoring and Evaluation system that was presented by Laos. *Response: Monitoring by Trainer and farmer who have been trained already. The day before, there were long discussions about the issue that there was yet there no training on an M & E system. NGO and GO would like to organize M&E workshop and know how to evaluate activities.*
- Mr Marut Jatiket commented that the activity on marketing in Xienkhouang was only to be carried out by SAEDA and not in collaboration with the Government programme.
- Mr. Marut Jatiket inquired about what Participatory PR was. *Response: Survey and training and follow-up activities: collaboration between SAEDA and PAN AP.*
- Dr. V. Rangunathan, FAO Advisor for IPM and Pesticide Risk Reduction, Bhutan asked if Government and NGOs invite each other to meetings and workshops and if farmers also involved? *Response: Only key farmers (selected), not all farmers.*
- Dr V. Rangunathan: who are ‘key farmers’, as the understanding varies? *Response: Key farmers are farmer facilitators, but they are limited. Need to select and choose key farmers.*
- Mr. Doe Doe, Programme Director, NPPC-DoA, Bhutan asked who was the target group of the intensive training that is being carried out in four provinces. *Response: District/Provincial trainers, followed by a ToT for farmers.*
- Mr. Doe Doe asked why the activity was called ‘awareness campaign’. *Response: This may be a wrong word or misunderstanding. Mr. Jan Ketelaar added that some awareness raising may be needed for local level: it was more ‘capacity building’.*
- Mr. Doe Doe said that this was a very good opportunity for extension training after the training: a campaign, which could have added advantage as a post-FFS activity. *Response: There should be two components: 1) Training for extension workers and 2) awareness raising. Already we have begun awareness raising, sent out press releases weekly, and are planning to use TV as a medium also.*

Vietnam

Not available

Questions/Answers:

- Mr Marut Jatiket, Director of The Field Alliance asked what is meant by mentioning two communes as pilot sites twice in the presentation. *Response: There would be 2 in the north and 2 in the south provinces: 4 communes in 4 provinces in total.*
- Mr. Bella Whittle, Pesticide Action Network – Asia Pacific mentioned that unfortunately PAN AP’s partner CGFED was not able to participate in the workshop mentioned in the presentation, but would be interested in the plan. She asked if it was possible to let them know about planned activities. *Response: This has been raised with CGFED but the National IPM Programme has not seen their plan yet and still need to discuss with them.*
- Mr. Ho Van Chien from the Southern Plant Protection Research Center-MARD, Vietnam added that once they are back in Vietnam, the coordinators of PRR activities will select the





staff to continue with the project. He also mentioned that lot of foliar fertilisers are used, these should also be included as a focus of activities. A stakeholder workshop will be held in October and November.

Summary Discussions of country groups are attached to this report as **Appendix 4** Summaries of Country Group Discussions on ongoing Community Education Initiatives for Pesticide Risk Reduction in GMS (for GCP/RAS/229/SWE countries)

9 Workshop evaluation

In order to help improve future Regional Meetings, an evaluation of the current one was conducted by obtaining feedback from participants on its strength and weaknesses. The results of the evaluation exercise are provided below.

Participants' Evaluation of **the Programme Overview** (answers expressed as % - based on the number of responses received)

Feel very, very good	Feel good	Feel so-so	Feel sad
			
8 = 40%	11 = 55%	1 = 5%	0





What needs improvement and how:

- For information about organization, write-up included in the programme will help participants understand details even before the training. Make relevant presentation sessions shorter;
- Need to involve the environment sector for the next programme overview;
- Time is limited. Some presentations went over the allotted time.

Other remarks:

- Good to share information;
- Great! We feel very confident to work towards sustainable development;
- Good to obtain a lot of information on Pesticide Risk Reduction, trend to ban highly toxic pesticides;
- Share more experiences on common activities;
- All activities very well organized and implemented;
- Clearly set out expectations of participants for the meeting;
- Focus on programme highlights;
- Contents of the meeting is good;
- The presentation was informal.

Participants' Evaluation of **Country Presentations** (answers expressed as % - based on the number of responses received)

Feel very, very good	Feel good	Feel so-so	Feel sad
			
5 = 20%	18 = 72%	2 = 8%	0

What needs improvement and how:





- Should be provided some guidelines for preparing presentations;
- Presentations dragged on too long and participants lost interest;
- There is scope for further improvement to achieve quality output/sustainability;
- A general presentation format?
- Screening presentations before presentation?
- Introduce and train more facilitators for the programme;

- Some resource persons provided more theories than practical experience. They need to give practical experiences;
- Should have more sharing techniques not just powerpoints;
- More successful examples of community activities should be introduced by the relevant countries;
- More attention should be paid to capacity building of sale and market information for farmers;
- Should share the curriculum for FFS on PRR among countries;
- More details will be good, especially the supporting materials (handbooks, guidelines) and following support training.

Other remarks:

- Content of presentations focusing on innovations;
- Country presentations and discussions good;
- Enjoyed in-depth case studies;
- Introduction of new ideas;
- We shared many good things in doing directly with farmers in rural areas;
- The way to build collaboration between GOs and NGOs;
- Cross regional updates;
- Improved information on activities of National IPM Programmes for Trainers and leaders;
- Presentations of GOs is good;
- Schedule is not too tight;
- Topics are relevant to the activities implemented by countries;
- Allocate some time for working and sight seeing;
- Contents were well arranged.

Participants' Evaluation of **CSO Presentations** (answers expressed as % - based on the number of responses received)

Feel very, very good	Feel good	Feel so-so	Feel sad
			
5 = 23%	13 = 59%	4 = 18%	0





What needs improvement and how:

- Should organize spot-visitation in the well-operated sites;
- Need more close linkages with GO for better delivery to achieve better results;
- Review of presentations to tailor them to group experiences;
- Should be stronger collaboration with GO;
- Strengthening cooperation;
- Should share the final results of data analysis;
- Time was limited; language barrier needs to be addressed for better understanding and interactions, e.g., questions, discussions, sharing were limited;
- CSO network development;
- Please control time!

Other remarks:

- Useful results, information and experience;
- Was good to have more time to allow each organization to speak, in comparison to last year;
- Sharing and information exchange and best practices;
- Informative;
- CSO presentations are good;
- More information shared and having some lessons learned;
- New information shared;
- Findings of survey conducted by CSOs were interesting and positive;

Participants' Evaluation of **Theme Discussions** (answers expressed as % - based on the number of responses received)

Feel very, very good	Feel good	Feel so-so	Feel sad
 2 = 8%	 13 = 57%	 8 = 35	 0





What needs improvement and how:

- Communication with country programmes need to be improved for presentation in Programme as per the objective of the meeting. In that sense, the translation of the broader objective needs clarity among National IPM Programmes;
- The facilitation part could have been better. However, a lot of energy and initiatives need to be put forth by National IPM Programmes and NGOs;
- The discussions could have been improved – the specific pesticides (paraquat/ monocrotophos) differed from the impact assessment of the programme discussion so it was difficult to discuss all in one group session with limited time. Maybe next time there should be separate discussion groups and clear Facilitators;
- Short time to highlight;
- Content should be based on the ground/practical information rather than general concepts;
- Themes with specific case studies on community education is possible.
- Need to include more health impact of pesticides;
- Need format of presentation to avoid different formats that are not so easy to understand;
- Facilitation should make everyone share ideas/actions/plans;
- Climate change – the topic is too complicated to discuss in the meeting;
- Somehow was partly inconsistent with the meeting objectives. It's broad though. IPM alone may not help!
- Not enough time for discussions;
- Not so focused on certain topics; discussions on solutions to certain issues/themes will be more beneficial;
- No guidelines for discussions so some groups did not reach the theme.

Other remarks:

- The topics and presenters for the FDs were very relevant and interesting;
- Appropriately addressed;
- Diverse and informative topics;
- Come up with some new ideas for PRR;
- There are some participants who do not do well on the topic;
- Still lack knowledge of farmers who are engaged in crop cultivation;
- Not enough food for man, pesticide residues.

Participants' Evaluation of **Field Visits** (answers expressed as % - based on the number of responses received)

Feel very, very good	Feel good	Feel so-so	Feel sad
 1 = 4%	 14 = 64%	 6 = 27%	 1 = 5%

What needs improvement and how:





- Visits to non-programme sites could be reduced since it took much time and was not relevant or distracted the programme;
- Field studies on agro-eco-engineering need precision planning based on baseline survey;

- Should prepare available information about the site and about activities to visit;
- Maybe better if information on what one will find in the field is provided prior to the visit;
- Should have longer period to explore issues with farmer community;
- Lack of exchange with farmers and overall background/understanding of the local community;
- Should control time and arrange suitable time and activity; travel a long time to see only a few activities; should be realistic.

Other remarks:

- Given the short time available, the FFS visit was well organized covering different activities;
- Actual/hands on experience of farmers;
- Be given a good chance to think about livelihood of people to live with their natural resources. For example, pesticide and natural environment, pesticides and livelihoods;
- Wish to collaborate with FAO Programme;
- Good organization and we have learned a lot;
- Good organization for field trip;
- Farmers who are participating in project increase knowledge;
- Good to learn from activities in the field;
- Time of visit in the field;
- Good to meet farmers and see the field.

Participants' Evaluation of **Community Education Programmes for PRR** (answers expressed as % - based on the number of responses received)

Feel very, very good	Feel good	Feel so-so	Feel sad
			
2 = 12%	13 = 76%	1 = 6%	1 = 6%

What needs improvement and how:





- We will improve the post-FFS activity;
- Impact in pilot study area may be utilized to draw the attention of policy makers for appropriate action to minimize risks;
- Plans did not go very deep;
- A simple question might need to be kept in mind for your effective delivery of collaborative efforts towards imploring the overall scenario of human health, livelihood and the environment. Are we giving our best towards the goals that we have set or are we just trying to get a project done efficiently?
- Should have more discussion meeting;
- Need to be clear about how to collaborate between GOs and NGOs;
- Need guidance to discuss to get common ideas;
- GOs and NGOs to discuss and set up strategies to work together;
- Countries should have detailed action plan to build up GO&NGO collaboration;
- Joint strategies will be needed but not only for sharing or planning; making participants from different sectors (GO and NGO) understand the importance/benefits of collaboration will be helpful to promote collaboration; funding information or support is necessary;
- For planning should provide guidelines so that all countries can make plans in the same format.

Other remarks:

- GO and NGO collaboration;
- PRR plans;
- Laos and Vietnam very good collaborative projects with NGOs (with Government extension workers);
- Made programme think about collaboration;
- Good to have to sit together and work out collaboration;

- Good they (NGO/GO) can plan together.

Participants' Evaluation of **Organization and Logistics** (answers expressed as % - based on the number of responses received)

Feel very, very good	Feel good	Feel so-so	Feel sad
 20 = 71%	 7 = 25%	 0	 1 = 4%

What needs improvement and how:

- Serve less oily food;
- Make drinking water available in the room;
- Time should be allotted for short briefing about areas for field visits;
- Schedule is too compact;
- During sessions, country representatives should sit close to each other;
- Time management of presenters and Chairpersons needs much work;
- Extended presentations only took time from other presentations and made participants lose interest;
- Programme too tight/too much work;
- Room is too hot (both bedroom and meeting room);
- Hotel is too far from town;
- Hotel is not clean.

Other remarks:

- Very good!
- Very good local organization and support!
- Organizers are very kind and accommodating!
- Timekeeping is good!
- No more comment;
- Excellent accommodations!
- Excellent support staff!
- Good food!
- Nice arrangements!
- Well organized!
- Very, very good!
- People are friendly !
- Organizer worked very, very hard!
- Hospitality, accommodations, transport, food were really excellent. I am most appreciative and grateful for that!
- Good accommodation!
- Good mixture of activities – work and fun!
- Good as always!
- Structure of sessions is good!
- Transportation and food good!
- The organizer was good!

Other comments received were:

- I received more information about herbicide effects and shared experiences on IPM Programmes of other countries. It will be good if we could learn more about pesticide effects, especially images or pictures of insecticide effects should be added in the presentations;
- Logistic arrangements were excellent but National IPM Programmes (GOs) should have sat together and NGOs should have sat together for more interaction.

10 Wrap up and Closing notes

Mr. Zhong Tianrun, National IPM Programme Coordinator/Vice Director General of NATESC, Ms Bella Whittle from PAN AP, and Mr Marut Jatiket, Director of The Field Alliance and Mr. Jan Willem Ketelaar, the Chief Technical Adviser (CTA) of the Programme delivered the closing remarks for the Regional Meeting.

10.1 Mr. Zhong Tianrun, National IPM Programme Coordinator/Vice Director General of NATESC

Mr. Zhong Tianrun thanked the Guangxi PPS and NATESC for successfully organizing the meeting. He also thanked the participants for participating in the meeting and invited them to visit China again.

10.2. Ms Bella Whittle, Pesticide Action Network – Asia Pacific

Bella Whittle in her closing remarks thanked the hosts, NATESC and Guangxi PPS for organising the workshop and their hospitality; and expressed appreciation to the FAO-IPM Programme, for involving PAN AP in the planning stages. She mentioned that the meeting was a good opportunity to share experiences on the work done so far in the Programme and discuss possibilities for collaboration.

10.3 Mr Marut Jatiket, Director of The Field Alliance

On collaborative GO-NGO work, there is very limited funding for innovations and expansion mostly has to be supported by local Governments. NGOs continue to work together on innovations and assist organizations to secure funding - locally and outside. In the presentations, were only two specific collaborations at field level (Vietnam and Laos). In China and Cambodia it was only activities based. Maybe it is time to do some homework to think about these and we hope to see more innovations in future.

10.4 Mr. Jan Willem Ketelaar, Chief Technical Adviser/Team Leader, FAO Regional Vegetable IPM Program, Bangkok

The CTA expressed his thanks, on behalf of FAO, to all participants, organizers and resource persons for their contribution in making this a successful meeting. Everyone was invited to Dinner hosted by the Chinese Government before the Regional Meeting was declared closed.

10 Acknowledgements

Sincere thanks are due to the collaborating institutions and many people who have contributed to the success of the Bi-Annual Meeting, in particular:

- All country participants from National IPM Programmes and partner Civil Society Organizations (CSOs) and representatives from regional CSOs for their presentations and active participation and cooperation in all the sessions,
- The Chinese Government, Director and staff of the National Agro-technical Extension and Service Center, MoA for hosting the meeting,
- All resource persons for freely sharing their knowledge and experiences during formal presentations and discussions with participants, and
- The FAO Regional Vegetable IPM Programme staff for making the Regional Meeting on Community Education for Pesticide Risk Reduction possible.

Appendix 1 Concept Paper
Regional Meeting on Community Education for Pesticide Risk Reduction
Guilin, Guangxi, China PR, 20-23 October 2009

Background:

Since 2003, it has been the practice of the *FAO Regional IPM Programme* to organize yearly meetings among project staff, national counterparts, and related organizations for progress reporting, planning of annual workplans and experience sharing. When Phase I of the Swedish-supported “*Towards a Non-toxic Environment in Southeast Asia*” commenced in 2007, these annual meetings have also been used by FAO and its programme partners, in particular the Working Group on Community Education for Pesticide Risk Reduction, as a forum to address various community education initiatives and related pesticide policy issues. These meetings have facilitated a dialogue on GO-NGO collaboration as to strengthen the impact and sustainability of community education programmes. As Phase I draws to an end in June 2010 and as programme development for a 3-year Phase II programme extension is underway, it appears timely to take stock of achievements of Community Education for Pesticide Risk Reduction initiatives undertaken by all Programme partners in the Greater Mekong Subregion and to identify areas of future work, including strategies to further strengthen collaboration among all Programme partners on Regional and National level.

Objectives:

The overall objectives of this meeting will be:

1. To share highlights of accomplishments in the past years resulting from PRR farmer training and community education initiatives implemented under National IPM Programmes and awareness raising, health and environmental education and advocacy work carried out by CSOs;
2. To strengthen regional networking on matters concerning IPM, Pesticide Risk Reduction and farmer/community education among nationals, partner organization representatives and FAO staff;
3. To assess needs, opportunities and strategies for continued regional and national collaboration for strengthened impact and sustainability of the Pesticide Risk Reduction Community Education initiatives.

Organising and Funding Body:

In consultation with Regional Programme partners (e.g. PAN-AP and The Field Alliance), the meeting will be organized and hosted by staff of the Guangxi Plant Protection Station and National Agro-Technology Extension and Service Center (NATESC), Ministry of Agriculture, China PR and the FAO Regional IPM Programme. All costs, including participant travel, will be covered by the FAO IPM Programme.

Dates, Location and Schedule:

The Meeting will be held at the Tao Jiang hotel in Guilin, Guangxi, China PR. The meeting will be held for four days (not including travel) from Tuesday to Friday, October 20th to 23rd, 2009. The tentative schedule is attached.

Participants:

Participants at the proposed workshop will total some 35 persons, including representatives from each of the core Greater Mekong Sub-Region member countries (Cambodia, China PR, Lao PDR, Thailand, Vietnam). Selected representatives from Regional Partner Organizations, other National IPM Programmes in the Asia region, resource persons and FAO staff/consultants will also be invited to participate in the meeting.

Preparation:

Each country is expected to prepare for the various agenda items included in the meeting. A brief outline of these expected preparations, along with general logistical information, is attached in the Information Note.

Appendix 2 Programme
Regional Meeting on Community Education for Pesticide Risk Reduction
Guilin, Guangxi, China PR
20-23 October 2009

Date	Time	Activity
Monday 19 Oct		<ul style="list-style-type: none"> ● Arrival of participants ● Registration ● Preparations for the meeting (exhibition/participants work on their own in respective country-groups)
Tuesday 20 Oct	08.30 AM	<ul style="list-style-type: none"> ● Opening/Introductory notes and Regional Programme Overview ● GMS <i>Country Government</i> Presentations (Chairperson, to be identified) <ul style="list-style-type: none"> ⇒ Cambodia ⇒ China PR ⇒ Lao PDR ⇒ Thailand ⇒ Vietnam ■ Non-GMS Country Government Presentations <ul style="list-style-type: none"> ⇒ Bhutan ⇒ Philippines
		<ul style="list-style-type: none"> ● Lunch
	PM	<ul style="list-style-type: none"> ● GMS <i>NGO</i> Presentations (Chairperson, to be identified) <ul style="list-style-type: none"> ⇒ Pesticide Action Network – Asia Pacific (PAN-AP) and Partners (CEDAC-Cambodia, PEAC, Yunnan, China PR, SAEDA, Lao PDR and Research Centre for Rural Development, Vietnam) ⇒ The Field Alliance and Partners (ATSA/Srer Khmer-Cambodia, PEAC, Yunnan, China PR, NALDE, Lao PDR and CRP, Vietnam)
	18.00	<ul style="list-style-type: none"> ● Welcome Reception and Dinner, hosted by the Chinese Government
	Evening	<ul style="list-style-type: none"> ● Night boat cruise in Guilin (Two rivers and four lakes)
Wednesday 21 Oct	08.30 AM	<ul style="list-style-type: none"> ● Theme Presentations & Discussions: (Chairperson, to be identified) <ul style="list-style-type: none"> ⇒ Impact Assessment of Pesticide Risk Reduction Training, Dr. Do Kim Chung, Hanoi Agriculture University (HAU) ⇒ A Summary of Pesticide Survey Reports, The Field Alliance ⇒ Innovations for the Sustainable Management of Rice Brown Plant Hoppers and Associated Virus Diseases, Mr. Yang Puyun, Deputy Director Pest Cont Div, NATESC; Mr. Wang Kaixue, Director, Guangxi PPS; and Mr. Ho Van Chien, Director, Southern Regional Plant Protection Center-MARD, Vietnam ⇒ Paraquat, Health Concerns and Alternatives, Pesticide Action Network – Asia Pacific
	PM	<ul style="list-style-type: none"> ● Theme Presentations/Discussions: <i>continued</i> ● Plenary Summary Notes on Theme discussions
Thursday 22 Oct	AM/PM	<ul style="list-style-type: none"> ● Cruise trip on Lijiang River, meanwhile: <ul style="list-style-type: none"> Country-level discussions on GO-NGO collaboration on Community Education Initiatives for Pesticide Risk Reduction in GMS
	Evening	<ul style="list-style-type: none"> ● Farewell Dinner hosted by FAO IPM
Friday 23 Oct	AM	<ul style="list-style-type: none"> ● Field Visit to Guangxi IPM Field Programmes
	PM	<ul style="list-style-type: none"> ● Feedback field visits ● Plenary Presentations on Country-level strategies and plans for collaboration ● Wrap up and Closing notes
		<ul style="list-style-type: none"> ● Departure of participants

Appendix 3 List of Participants and Contacts
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Guilin, Guangxi, China 20-23 October 2009

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Appendix 4 Summaries of Country Group Discussions on ongoing Community Education Initiatives for Pesticide Risk Reduction in GMS (for GCP/RAS/229/SWE countries)

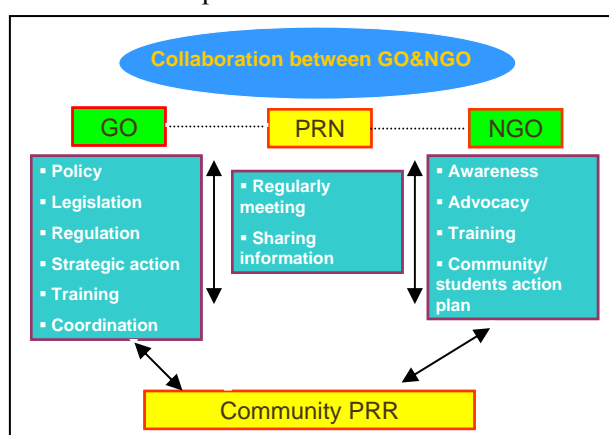
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 Ms. Pan Sodavy, ATSA
 Mr. Keam Makarady, CEDAC
 Mr. Mr. Chou Cheythyrih, FAO Vegetable IPM Programme
 Mr. Pou Sovann, Srer Khmer

Discussion outputs follow as presented by **Mr. So Khanrithykhun**, on behalf of the National IPM Programme and the NGOs:

The following diagram summarizes the planned GO-NGO collaboration in Cambodia:



The following activities will be undertaken:

Activities	GO	NGO
Workshops and Meetings	Coordination meetings among GO and NGO	Communities, teachers, students
FFS	Communities	Students/communities
Campaign	Coordination	Responsible
Publication	X	X
Mass media (TV and radio)	X	X
Marketing of chemical free/organic products	- Frame work - Legislation - Certification: GAP/Organic - Pilot activities	Pilot local market

China P.R

Members:

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 Mr. Yang Puyun, NATESC
 Mr. Shan Xunan, NATESC
 Mr. Zhou Jinyu, Yunnan PPS
 Mr. Wang Kaixue, Guangxi PPS
 Ms. Sun Jing, PEAC
 Ms. Li Qing, PEAC
 Ms. Hu Xinmei, FAO Vegetable IPM Programme

Discussion outputs follow as presented by **Ms. Hu Xinmei**:

Areas identified for cooperation between GO and NGO

- Experiences and information sharing
 - Conduct exchange visits to project sites
 - Attend relevant meetings and workshops
 - National IPM Programme provide technical backstopping to the NGO
 - NGO share experiences on pesticide and health concerns. eg.paraquat, monocrotophos
- Collaboration on development of pamphlets and manuals on public awareness raising

GO and NGO Collaboration workplan:

- PEAC will invite people from NATESC to participate in a workshop concerning transboundary BPH control to be conducted in mid-November in the year 2009.
- FAO/China PRR project will invite staff from PEAC to RTOT to be conducted in Guangxi during the period Nov.4-10,2009 to share experiences on community education, paraquat and health study and related global regulatory policies.
- More collaborative activities will be formulated on case-by-case basis based on the common areas identified between the two sides.

China Country workplan for the year 2010 under PRR project:

- RTOT in Guangxi
- Case studies in Yunnan and Guangxi
- Impact Assessment Presentation and Policy Recommendation Workshop in Yunnan
- FFS in Yunnan and Guangxi
- Farmer Congress in Yunnan and Guangxi
- LTOT in Guangxi
- Manual Development

Collaboration Between GO and NGO

Activities	DOA	IPM	SAEDA	NALDE	Oxfam.B
1. National Workshop on Pesticide Effect to health and environment	✓	✓	✓	✓	✓
2. Pesticide Risk Reduction (PRR): - TOT on IPM and PRR (Refresher course) in target high pesticide use		✓	✓		
3. Pilot Farmers Field Schools - Conduct pilot farmer field school on IPM-PRR	✓	✓	✓	✓	✓

4.Raising awareness/Campaign on PRR					
-Awareness raising activities through TV, Newspaper, Posters, Leaflets, and Radio broadcast	✓	✓	✓	✓	✓
5.Intensive training on pesticide in 4 provinces (Vientiane Capital, Vientiane province, Xiengkhouang & Xayaboury)	✓	✓	✓	✓	✓
6. Participatory PR community in 4 districts (Hatsaifong, Xaisettha, Naxaythong & Xaythany), Vientiane capital	✓	✓	✓	✓	✓

Lao PDR

Members:

Mr. Tiangkham Vongsabout, DoA

Ms. Khamphoui Louanglath, DoA

Mr. Bandith Vongkaysone, NALDE

Mr. Thongdam Phongphichith, SAEDA

Mr.ThongsavanhTaipangnavong, FAO Vegetable IPM Programme

Discussion outputs follow as presented by **Mr. ThongsavanhTaipangnavong** on behalf of the National IPM Programme and the NGOs:

Activities	National IPM Programme	SAEDA	REAL
1. Pesticide Risk Reduction (PRR) curriculum development	✓		✓
2. Pesticide Risk Reduction (PRR) ToT	✓		
3. Pilot Farmers Field School	✓		✓
4. Exchange workshop	✓	✓	✓
5. Baseline survey	✓	✓	✓

6. Awareness raising /campaign on PRR	✓	✓	✓
7. Training on PRR Monitoring and Evaluation	✓	✓	✓
8. IPM-GAP FFS	✓		
9. SA-Farmers Group		✓	
10. Action Research	✓	✓	✓
11. Biodiversity and Conservation Agriculture Fair	✓	✓	✓
12. Impact Assessment on PRR training	✓		
12. SA curriculum development		✓	

Vietnam

Members:

Mr. Ngo Tien Dung, Plant Protection Department-MARD

Ms Le Thi Thu Huong, CRP

Ms. Nguyen Thu Nga, CRP

Mr. Tran Tanh Binh, An Giang University

Not available

Appendix 5 Resource Materials:

Berne Declaration and IUF, 2009. *Goodbye Paraquat: Palm Oil, Banana and Tea Producers Saying No to Hazardous Pesticide*. Available at: http://www.evb.ch/cm_data/Goodbye_Paraquat.pdf

Isenring, 2006. *Paraquat: Unacceptable health risks for users*. Berne Declaration, PAN AP, PAN UK. Available at: http://www.evb.ch/cm_data/EvB_Paraquat_E.pdf

PAN Germany, 2008. *How to Grow Crops without Paraquat: Field Guide to Non-chemical Management of Grasses, Sedges and Broadleaf weeds for small scale farmers*. Available at: http://www.oisat.org/downloads/field_guide_without_paraquat.pdf

PAN AP, 2009. *Community Monitoring of SAICM Implementation, Initial Results of the Community Monitoring and International Advocacy Project in Asia*. Available at: <http://panap.net/uploads/media/monitorgrep.pdf>