

Regional Programme: Towards a non-toxic environment in South-East Asia Phase I



Final Report
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Table of contents

Table of contents.....	2
1 Acronyms and abbreviations.....	4
2 Executive summary	5
3 Background.....	6
4 Sector development in the region.....	7
5 Progress report.....	7
5.1 Cross-cutting issues	7
5.1.1 Gender.....	7
5.1.2 Poverty perspective.....	9
5.1.3 Sustainability	10
5.1.4 Anti-corruption.....	12
5.1.5 Results and risk management	12
5.2 Regional activities.....	13
5.3 Overall objective.....	15
5.3.1 Results summary	15
5.3.2 Narrative report.....	16
5.4 Programme objective	17
5.4.1 Results summary	17
5.4.2 Narrative report.....	19
5.5 Immediate objective 1 (implemented by PAN AP and TFA).....	21
5.5.1 Results summary	21
5.5.2 Narrative report PAN AP	23
5.5.3 Narrative report TFA.....	26
5.6 Immediate objective 2 (implemented by FAO RAP).....	28
5.6.1 Results summary	28
5.6.2 Narrative report FAO RAP	30
5.7 Immediate objective 3 (implemented by FAO HQ)	32
5.7.1 Results summary	32
5.7.2 Narrative report FAO HQ.....	33
5.8 Immediate objective 4 (implemented by the Swedish Chemicals Agency)	35
5.8.1 Results summary	35
5.8.2 Narrative report Swedish Chemicals Agency	36

6	Organisation and administration.....	38
6.1	Collaboration with other projects and organisations	38
6.2	Steering group meetings	38
7	Budget follow-up.....	39

1 Acronyms and abbreviations

Acronym	
ABD	Agro-biodiversity
APPPC	Asia & Pacific Plant Protection Commission
ASEAN	Association of Southeast Asian Nations
CECAD	Center for Environment and Community Assets Development
CEDAC	Centre d'Études et de Développement Agricole Cambodgien
CGFED	Research Center for Gender, Family and Environment in Development
CPAM	Community-based Pesticide Action Monitoring
CSO	Civil Society Organisation
DALY	Disability Adjusted Life Year
ED	Endocrine Disrupting
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FFS	Farmer Field School
GHS	Globally Harmonised System
GMS	Greater Mekong Sub-region
ICEVN	Initiative for Community Empowerment
IFCS	International Forum for Chemical Safety
IPCS	International Program on Chemical Safety
IPM	Integrated Pest Management
IPPC	International Plant Protection Convention
JICA	Japan International Cooperation Agency
KemI	Swedish Chemicals Agency
LFA	Logical Framework Approach
MDG	Millennium Development Goals
MoA(I)	Ministry of Agriculture (and Irrigation)
MoAC	Ministry of Agriculture and Cooperatives
MoC	Ministry of Commerce
MAFF(F)	Ministry of Agriculture, Forestry (and Fishery)
MARD	Ministry of Agriculture and Rural Development
NALD	Non-profit Association for Development and Environment
NGO	Non Governmental Organisation
OISAT	Online Information Service on non-chemical pest management in the Tropics
PAN AP	Pesticides Action Network Asia & Pacific
PAN-NA	Pesticides Action Network North America
PEAC	Pesticide Eco Alternative Center
PIA	Pesticide Impact Assessment
PIC	Prior Informed Consent
POP	Persistent Organic Pollutants
RBM	Result-based Management
RCRD	Research Center for Rural Development
REAL	Rural Ecological Agriculture for Livelihood
SAEDA	Sustainable Agriculture & Environment Development Association
SAICM	Strategic Approach to International Chemical Management
SEK	Swedish kroner
SENSA	Swedish Environmental Secretariat for Asia
Sida	Swedish International Development Cooperation Agency
TFA	The Field Alliance
TEF	Thai Education Foundation
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
WHO	World Health Organisation

2 Executive summary

The programme has during the last three years made considerable achievements. New legislation has been developed and adopted, availability and use of WHO Hazard Class I pesticides have decreased, the use of IPM/FFS is increasing, with impact assessment studies showing positive impact of community education on pesticide risk reduction. Governments have begun to support the FFS concept by including it in policy documents and by funding its inclusion in government extension services. A school curriculum for agro-biodiversity has been developed and is being used in a large number of schools, a forum for discussions and exchange of information and experiences on broader chemicals management issues has been established.

Highlighted achievements

- More than 8 000 people have been involved in the “No Pesticide Use Day” Campaign, training, seminars and workshops on the risks of pesticides and over 2 200 farmers have been made aware of the health impacts of pesticides, the availability of highly hazardous pesticides as well as banned and restricted pesticides.
- PAN AP has spearheaded the “Ban endosulfan” campaign by providing timely technical information on the hazards of endosulfan and its alternatives and actively participated in the technical committees. Endosulfan is now listed in the Stockholm Convention on Persistent Organic Pollutants and the Rotterdam Convention.
- Capacity of relevant government agencies (extension services, crop protection services) and non-governmental development partners to conduct IPM field programmes has been strengthened in all 4 GMS partner countries. New curricula and training materials were developed with a focus on fortification of IPM-FFS with pesticide risk reduction learning modules. By June 2013 some 235 government extension workers and 32 farmer trainers had participated in Pesticide Risk Reduction Training of Trainers courses and 58 716 farmers (38% female) had participated in ‘fortified’ Farmers Field Schools supported by FAO with project resources in the Greater Mekong Sub-region. During this period, thousands of additional farmers benefited from participation in local government and/or other donor funded FFS programmes that were implemented with FAO technical and coordination support.
- The Field Alliance and its partners successfully implemented the Rural Ecological Agriculture for Livelihood (REAL) program in Cambodia, China, Laos, Thailand and Vietnam. Curriculum have been translated into local languages and integrated into the school and community action and learning programs. Over 150 teachers, officials and community members were strengthened on their understanding and application of agro-biodiversity and impact of pesticide use and approximately 2 500 students have participated in REAL activities. Regional workshops and exchange visits were organized to share successes, progress, plans, and solicit policy support in participating countries.
- Three countries were assisted with the preparation of new pesticide legislation. In two of these the new legislation has been adopted, while the third one is in the final stages of internal review. Inspection schemes for the enforcement of pesticide legislation were piloted in 2 countries and scaling up to national level has started in one of these.
- A network and a working group for regional cooperation on chemical management with representatives from key ministries and government agencies have been established.
- Development of legislation and strategies for chemicals management in Lao PDR, Cambodia and Vietnam has been enhanced through regional cooperation.

During September-November 2011, a mid-term evaluation of phase I of the programme was conducted by independent consultants from Professional Management and the FAO Office of Evaluation. The evaluation confirmed that the programme has produced expected outputs and outcomes. The content of the programme remains highly relevant to the recipient countries and continues to fit well with the Swedish government's priorities in the region. The evaluation acknowledges that it was correct to adopt a 10 year horizon for the programme in order to reach sustainable changes in the region.

3 Background

Over the past few decades, there has been a growing concern that chemicals, while essential for virtually every aspect of modern life and the economy, can cause significant adverse effects on human health and the environment. As a result, there was a global response to deal with the challenge through different commitments for action. These included the Bahia Declaration on Chemicals Safety in 2000, the Johannesburg Plan of Implementation adopted by heads of state in 2002 and the global adoption of the Strategic Approach on International Chemicals Management (SAICM) in 2006.

Despite such international commitments, when it came to chemicals management, the gap between industrialized and developing countries was widening. In developing countries, and particularly in South-East Asia, it was noted that there were major gaps in government policies and a lack of implementation of sound chemicals management. The harmful effects of chemicals, particularly pesticides, were further compounded by poverty, illiteracy and a lack of awareness of their dangers. For example, it was common to witness poor small-scale farmers who unknowingly mixed highly toxic pesticides with bare hands, the dumping of hazardous chemicals that infiltrated groundwater, open air burning of environmentally harmful substances and unacceptably high levels of pesticide residues in food.

Sida was concerned about such chemical related issues in the region and commissioned, in 2004, several studies to get an overview of the situation and to develop ideas for possible interventions. The studies documented that there were serious issues that needed immediate attention and that vulnerable groups were disproportionately affected. The studies highlighted that there was virtually no enforcement of laws and regulations around the management and use of such chemicals and a serious lack of capacity and political commitment to tackle the problem. This prompted a recommendation that regulations governing pesticides should be an important initial target in order to phase out WHO Hazard Class I (extremely and highly hazardous) pesticides. It recommended that a multi-sectorial approach including more effective regional cooperation should be used to tackle the issues.

In response to the recommendations, the programme, "Towards a Non-Toxic Environment in South-East Asia", was initiated in January 2007. Phase 1 of the programme was prolonged with three years in 2010. The programme builds on a strong partnership with well-established organisations that together had many years of experience on dealing with chemicals management issues in the region. The programme comprises four different components that contribute to awareness raising and

capacity building with regards to pesticides, industrial and consumer chemicals in the Greater Mekong Sub-region through multiple pathways. The programme's overall aim is to contribute to reduced health and environmental risks and better management of agricultural, industrial and consumer chemicals.

4 Sector development in the region

During phase 1 of the programme, chemicals management has become a more prioritized area in the region. All project countries were in the process of revising or drafting new chemicals legislation and pesticide legislation. The interest from ministries to take part in activities has been high and all countries send participants to meetings connected to global chemicals conventions (Stockholm, Rotterdam, SAICM etc.).

The use and availability of WHO class 1 pesticides (pesticides with high acute toxicity) has reduced in partner countries and steps to phase out other highly hazardous chemicals (e.g. paraquat, fipronil, endosulfan) have been taken.

Another important event in the region influencing the program is the changing situation in Myanmar. The willingness of the government to open the door for free elections in the near future made partners decide to include the country in the programme. Following approval from Sida, some fact finding and initial activities started. For example, observers from Myanmar were invited to take part in the 6th regional chemicals management forum in Lao PDR.

An additional slow but constantly ongoing change is the strengthening of China. The rapid development of the country affects all the neighbouring countries. In this program it means an increasing flow of chemical products and goods across the borders, sometimes leaving citizens and workers with very small possibilities to take protective measures.

There has been raised awareness about pesticide residues in food among consumers and an increased diversity of organic food at markets/supermarkets has been observed.

Current priorities in the region include: development of secondary legislation; improvement in pesticide registration, notably risk assessment; strengthening of enforcement capacity; further phasing out of highly hazardous pesticides; enhanced access to low toxic alternatives; introduction of GHS; management of empty pesticide containers.

5 Progress report

5.1 Cross-cutting issues

5.1.1 Gender

All partners have included gender aspects in the programme. The situation for women and other vulnerable groups (elderly, children, infants) has been highlighted and included in many activities. IPM training curricula take gender aspects into consideration and many project statistics are

disaggregated by gender. Below are some examples of activities and observations that have been made.

PAN AP and partners have included gender as part of the overall project’s framework. PAN AP ensures at least 50 % of women participation in the activities, campaigns and policy advocacy work. In this phase, at least 30 % of women have participated in events, trainings and workshops organized in partner countries. Organizations like CGFED and PEAC are women led organizations and have actively implemented development projects focusing on gender and the roles of women in agriculture. PAN AP has also organized capacity building workshops on leadership for the empowerment of rural women from China, Cambodia, Vietnam and other countries in the Asia Pacific region.

In the project sites in Vietnam, approximately 60-70 % of farmers are women and is the main labour force in production, including pesticide application, since men migrate to take jobs for additional income. Therefore, the programme sets out priorities for women's participation in the project activities. Assessing the role of women and men’s participation in housework, social and field activities were conducted at the project site before performing other activities of the project. Participants were community leaders, women's associations, teachers and farmers.

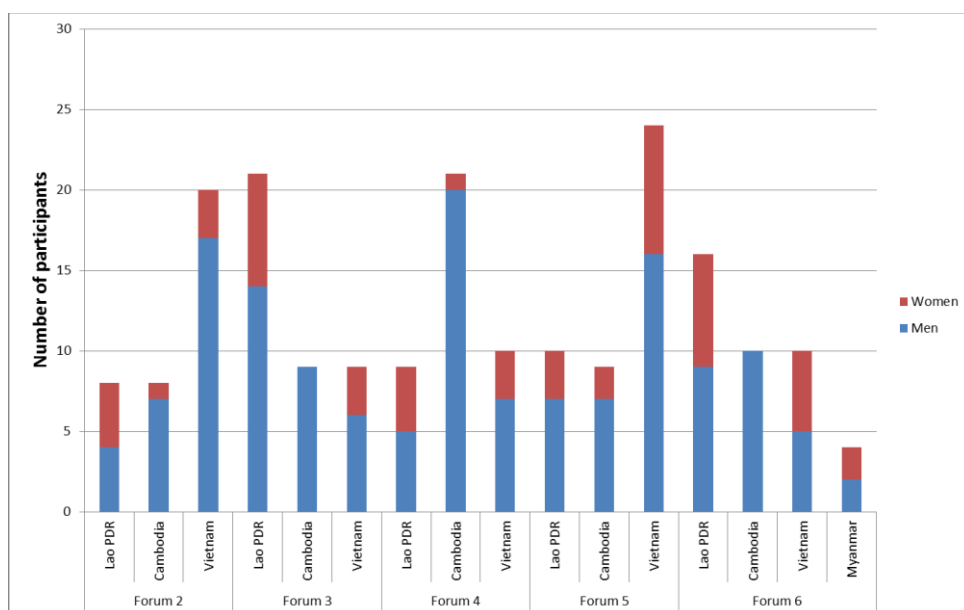
The assessment helped stakeholders to become more aware of the role of women in agricultural production and the risks to the reproductive health of women. The need for women participation in the project activities was identified.

Statistics show that the percentage of women that participated in the project activities was 62 % in TOT, 97 % in ABD activities, 91 % in PRR activities, and 68 % in the activities relating to sustainability of the project activities. The table presents data from Vietnam.

Activity	Number of women	Total number	Percentage women
Training Of Trainer (TOT)	24	39	62 %
Farmers involved in ABD activities (6 courses)	87	90	97 %
Farmers attended training on Pesticide risk reduction and involved in pesticide impact assessment (12 courses)	163	180	91 %
Farmers participated in project activities but funded by other sources rather than TFA	1 972	2 885	68 %

With regards to the ratios between male and female students who participated in the program activities, there is no big difference between the genders given the attendance of the children in the school.

Among participants at the regional chemicals management forums, mean percentage of women was 24 % (ranging between 0 and 50 % in the different country groups), see table below.



During next phase, the programme will expand its efforts to promote gender issues and reduce the negative effects thru targeted activities. To begin with, partners will follow the gender assessment of the program proposal and make a gender impact assessment study. The results will be used to add some gender specific outcomes to the program LFA as well as revising other outcomes, if appropriate. In this process, the programme will make use of the experience and knowledge on gender issues and the rights perspective within PAN-AP. Partners will also explore the possibilities to cooperate with other regional organizations focused on gender and human rights (e.g. Asian Farmers' Association (AFA), Asian Rural Women's Coalition (ARWC), Asia Pacific Forum on Women, Law and Development (APWLD), Asian Peasants Coalition and Asia-Pacific Resource & Research Centre for Women (ARROW).

5.1.2 Poverty perspective

The FAO regional IPM programme was initiated as a poverty reduction programme. The IPM training conducted under the framework of the programme funded by Sida has helped farmers cut down on pesticide use and other production inputs such as chemical fertilizers and seeds, which directly translates into savings on production costs. It has also helped poor farmers get better access to markets for their products. Vulnerability to climate effects is being mitigated through adjustments in cropping practices.

The programme has also been able to develop tools for the poorest people to protect themselves from dangerous chemicals by raising their awareness about the dangers of chemicals and measures to protect oneself. Implementation of the new globally harmonized system for classification and labelling of chemicals (GHS) makes it possible for all users of chemicals to know about the hazards and precautionary measures that need to be taken. With the same system in all countries it is easier to produce and copy information and training material that can reach all people. For most of the countries this is the first time they have a system for classification and labelling of chemicals.

The solution for alleviating the poverty of small food producers, protecting human health, ensuring environmental sustainability and securing the right to food for all, lies in the adoption and promotion of agro-ecological practices as succinctly described by the Special Rapporteur on the Right to Food, Oliver de Schutter in the 2010 report to the Human Rights Council. The Special Rapporteur makes a strong case with examples of agro-ecology practiced globally, that these are *“highly productive, highly sustainable and contribute to the progressive realization of the human right to adequate food”*. In this phase, around 60 000 farmers have adopted agro-ecologically based practices including methods of seed selection, pest control and fertilizers, while also using other crop intensification methods like practices promoting the System of Rice Intensification (SRI).

Criteria for selection of participants was developed and used in Vietnam, giving priority for poor and women to participate in project activities and small scale farmers were selected in all participating countries. Farmers’ awareness was raised and they were trained to produce higher yields. Based on the results of the survey, farmers participating in ABD and PRR activities reduced pesticide use on rice by 70-90 %, reduced the cost of chemical fertilizers by 25 % and increased productivity by about 12-16 %. These farmers had higher efficiency as compared to when they were not involved in the project. Integrated farming and domestication of ABD and seeds conservation in Thailand increased their income year round.

Improved health by reducing exposure to chemical pesticides contributed to the reduction of treatment costs and increased work capacity. Savings from reduced production costs and increased productivity, made it possible for mothers to buy bicycles for their children to go to school, others bought school supplies, beautiful clothes, or more milk for children (Vietnam) while communities in Laos and Cambodia gained periodic income from the ABD conservations. In addition, poor students in the programme gained more benefits from vegetables production and ABD conservation.

5.1.3 Sustainability

To an increasing extent, governments have taken measures for sustainable solutions. Legislation concerning both pesticides and chemicals in general has been revised or developed and is either adopted or in the process of being adopted. Legislation is an important way to ensure that the regulation of chemicals is consolidated in society and not only build on voluntary actions that more easily can change focus/priorities.

Extension and education programmes have been expanded or improved to enhance sustainable crop production.

All partners have worked closely with the local or national governments for their campaigns and advocacy work. In addition, PAN AP and partners have continuously been raising funds on an ongoing basis while working on relevant and current issues like climate change and bio-diversity based ecological agriculture. Sustainability at the local level is facilitated by the enabling and empowering processes employed in the awareness raising, education and action planning activities supported by programme partners. The processes are designed to strengthen ownership in planning, management and implementation of the local pesticide risk reduction programmes.

At rural community level, farmers become aware of risks associated with distribution and use of pesticides, learn about better management practices and agree on implementation of communication action plans for pesticide risk reduction. Local government and community organizations take part in implementation of action plans and work with the private sector to ensure enforcement of community regulations. As part of action plans, farmers can express interest in taking part in season-long Farmers Field Schools and learn about Integrated Pest Management practices. IPM-FFS graduate farmers organize, formulate groups and clubs, and then bargain for reasonable farm-gate prices for higher quality and safer food products through more rewarding value chains. Rural youth learn about the basics of ecology and IPM as part of their formal school curriculum and thus become literate about vital ecosystem services and agro-biodiversity for more responsible farming in the future. Since farmers are an ageing group it is important to involve youth to ensure that the knowledge about risks with pesticides is maintained and that the changes to more environmental friendly agricultural practices continue. Therefore, more focus will be on involvement of rural youth during the next phase.

All levels of counterpart government in participating countries have provided policy supports, personnel and funding contribution for the program activities but at different level depending on the capacity of the counterpart agencies. The programme will continue to encourage governments to take decisions and allocate funds for permanent support to IPM field programmes and development and implementation of curriculum for agro-biodiversity. Sustainability of efforts to reduce pesticide risks is consolidated by linking broad IPM field programmes that help farmers to change their pest management practices with regulatory reform.

The programme has established a working relationship with the Asia and Pacific Plant Protection Commission (APPPC). The Commission with its Standing Committees on Pesticides and IPM plays an important role in enhancing regional cooperation, training and harmonization of, for example, pesticides registration procedures. The Commission has a long-term role in enhancing collaboration in pesticides related issues in the region. Work connected to pesticide registration and harmonisation of pesticide legislation will continue to be elaborated in close collaboration with APPPC in order to ensure regional support.

A regional chemicals management forum has been established. The forum serves as a base for exchange of information, lectures, networking and pilot projects. The member countries Vietnam, Lao PDR, Cambodia and Myanmar have appointed focal points for the forum. In connection to the forum a joint working group for planning and further development has been created. Gradual transfer of more responsibilities and decision to the working group has increased the status of the group and persons in key positions at the concerned ministries participate in the meeting. During the next phase, more issues related to chemicals management will be discussed within the working group in order to further consolidate its existence and importance.

To reach sustainable results, pesticide issues will continue to be tackled from three angles that mutually reinforce each other:

1. Broad awareness raising among all relevant levels of stakeholders in the partner countries, from children and farmers to consumers and decision makers/policy makers;

2. Strengthening of regulatory control;
3. Promotion of integrated pest management (IPM) to make farming communities less dependent on pesticides and to help them move away from hazardous products.

Working on global level to influence the agenda of relevant conventions (Stockholm, Minamata, Ramsar, etc.) that are implemented by most countries is another way to reach sustainable results. Since partners were successful in influencing listing of chemicals in the Stockholm and Rotterdam Conventions as well as adoption of a resolution at the Ramsar Convention on reduction of pesticide use in rice paddy and wetlands, this work will continue to be prioritised during the next phase.

5.1.4 Anti-corruption

Partners have included corruption as a standard topic at the steering group meetings. At one steering group meeting, corruption was a special focus area and a representative from Transparency International held a presentation about the situation in the region.

Through its broad capacity building approach in the programme, working with both governments and strengthening of the civil society, the programme has had unique opportunities to enhance transparency in national activities regarding chemicals management. Strengthening of the regulatory framework generally results in better transparency, responsibility and accountability. Requirements are written down in laws and regulations and it becomes clearer who is responsible and accountable.

Regarding enforcement, the project has been aware of risk of abuse of power by inspectors given the very low salaries of inspectors and this has been taken into account when developing schemes for inspections.

5.1.5 Results and risk management

Programme partners have been working according to the principles of RBM, which includes making continuous risk analysis and risk management plans and, if found necessary, make adjustments in the programme plan. Risk management has been a continuous attention point by the partner organisations during implementation of the programme.

In the table below, risks identified at the start of the program and risk mitigation measures are presented.

Risks	Observations/Risk mitigation measures
Key staff at government and organizations can not commit enough time or resources in order to implement the program.	There have been several delays of activities due to this risk. During the programme, partners have learned to make more realistic work plans and at the same time tried to put forward arguments to the governments why they should give the area a higher priority
Political change in the countries makes adoption and implementation of new or revised legislation, farming methods and training difficult.	No major negative change during the period
The climate for NGO activities may change and make it more difficult to work in the region or individual	In general, the climate for NGO activities for this particular project has remained the same. One

countries.	exemption is, of course, Myanmar where the process to implement a democratic system has made it easier to work as an NGO/CSO. Partner organizations have begun to explore the possibilities for collaboration.
Staff turn-over in government and organisations delays implementation and can result in loss of competence and sustainability.	This risk is particularly high for Laos. The mitigating measure for Laos and other project countries has been to invite two persons to meetings.
Countries fail to spread the improved methods to larger groups of farmers.	Both Vietnam and China have made a substantial investment of their own resources into the IPM program. The IPM programme targets areas with high pesticide use/abuse. Lighter training in pesticide risk reduction has been introduced to reach larger numbers of farmers. For Phase II consideration will be given to use of media to get the basic messages out to reach even larger groups of farmers.
New legislation and registration schemes will not be enforced.	The lack of enforcement capacity is a problem. Partners have therefore decided to increase activities in this area during the next phase. Challenges range from lack of trained staff to inadequate legal procedures. Development of secondary legislation is a priority for Phase II
The willingness to improve regional cooperation and regional forum does not improve and delays the exchange of knowledge and finding regional solutions to crosscutting problems.	There have been several delays of activities due to this risk. During the program partners have learned to make more realistic work plans and at the same time tried to put forward arguments to the governments why they should give the area a higher priority

5.2 Regional activities

A regional workshop was held on licensing and inspection of pesticide retailers, which enabled countries to exchange experiences and to discuss issues of common concern. Participants appreciated the practical focus of the workshop and the opportunity to exchange information with colleagues from neighbouring countries and learn from each other how practical issues can be resolved.

Further, the project closely collaborated with a FAO regional technical collaboration project (TCP) to harmonize pesticide registration requirements within ASEAN and with the Asia Pacific Plant Protection Commission, which has Standing Committees on IPM and on Pesticides. As the FAO-TCP now has ended, it is envisaged that Phase II of the project will play an explicit role in continuation of the regional collaboration initiated under the TCP.

Four regional meetings/workshops were organized by the FAO Regional IPM/Pesticide Risk Reduction Programme in 2010 and 2011 to bring together project staff, national counterparts, and related organizations for progress reporting, planning of annual work-plans and experience sharing. These meetings have also been used by FAO and its programme partners, in particular the Working Group on Community Education for Pesticide Risk Reduction (WG-CEPRR), as a forum to address various community education initiatives - including curriculum development - 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 for pesticide risk reduction programmes.

Additionally, the FAO Regional IPM/Pesticide Risk Reduction Programme supported the development and implementation of various FAO implemented regional projects (e.g., GCP/RAS/268/AIT, GCP/RAS/253/ASB, TCP/RAS/3311) on farmer education and action research activities on ecological management of various invasive pest species otherwise prone to pesticide abuse.

Two regional workshops were organized for TFA's partners in 2010 and 2012 for training, exchange, reviewing and planning. Participants for the REAL regional workshops included partner CSOs, concerned governmental officials and policy makers. TFA also organized a study visit to the REAL program in Chiang Mai, Thailand, in 2011 for policy makers from Vietnam and Beijing, China.

PAN AP organised a regional FAO code monitoring capacity building workshop for partners from 10 countries in the Asia Pacific region to identify and monitor the implementation of the FAO Code in their countries.

Five regional chemicals management forums have been organised during the programme period with more than 150 different participants from Cambodia, Lao PDR, Myanmar and Vietnam. Evaluations of the Forums show that the participants are very satisfied with the topics, discussions and networks that have been created. Evaluations of the forums showed that mean score for the meetings was 4.3 of 5. Between 90 % and 100 % of the participants expressed that the topics have very high or high relevance for their work and that the network and knowledge that they have gained have very high or high usefulness.

5.3 Overall objective

😊 = According to plan 😐 = Small deviations compared to plan 😞 = Not according to plan

5.3.1 Results summary

Overall objective (long-term objective)			
Health and environmental risk reduction through capacity building for the proper management, and sustainable use, of agricultural and industrial chemicals..			
Indicators	Results 2010- 2013	Assessment of progress	Comments
1. Declining trends in reported pesticide poisoning cases and food safety incidents related to pesticides residues.	<ul style="list-style-type: none"> Monitoring data show that hazardous pesticides are still widely used and pesticide poisoning cases are reported 	😊	<ul style="list-style-type: none"> No statistics available to show trends. However, availability of the most hazardous pesticides has declined. Release of the report “Global Chemical Outlook” by UNEP highlights the cost of inaction and aims to increase the awareness of adopting alternatives as a way of sound chemicals management. At the 3rd. International Conference on Chemicals Management (ICCM3) 65 governments supported a resolution on the progressive ban of HHPs and on safer alternatives. The draft resolution was proposed on a short notice and didn't go through. Work is underway to advance a resolution on HHPs at ICCM4 and draft resolutions and supportive language have come out of three SAICM regional meetings.
2. Reduced negative impact of industrial and agriculture chemicals on the environment	<ul style="list-style-type: none"> Limited monitoring data available. Approximately 2 700 pesticides containers were disposed in the concrete disposal tank in Cambodia. The amount of pesticides used was reduced between 70-90 % and the storage, disposal and cleaning behavior improved in over 70% of all participating communities. 	😊	Due to the fact that the programme is covering four countries and a large number of stakeholders and the fact that there are many on-going activities in the area of chemicals management the possibility to measure impact of the programme is limited.

5.3.2 Narrative report

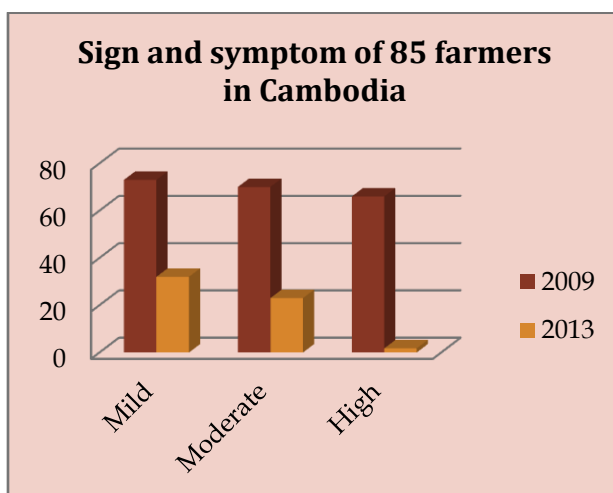
The programme has very limited statistics to support reporting on the overall objectives. Below, some examples of observations are included.

Concrete tanks were built for disposal of pesticides containers and the community transported containers off the island in Tonle Sap Lake in Cambodia. In Vietnam (Vong Xuyen commune) where the farmers applied alternative to chemical pesticide such as the biological control agent *Metarhizium anisopliae* to control Brown Plant Hopper. SRI and IPM practices were adopted and chemical pesticide use was reduced by over 90 %, urea was reduced by 25 % and the predators increased by 230 %.





Agrobiodiversity conservation, particularly of aquatic species, have helped create awareness and to reduce the use of toxic pesticides.

A majority of farmers are now using their own personnel protection while spraying and this has led to a reduction of signs and symptoms of pesticides poisoning (see below diagram). The storage and disposal of pesticides has improved over 70 % in all participating communities.



5.4 Programme objective

5.4.1 Results summary

Program objective (medium-term objective)			
Enhanced regional collaboration to strengthen capacity for pesticide risk reduction and chemicals management in the partner countries in South East Asia.			
Indicators	Results 2010-2013	Assessment of progress	Comments
1. Minimal or none availability of WHO hazard class 1 pesticides and chemicals on Annex A of the Stockholm Convention	<ul style="list-style-type: none"> Endosulfan was listed in Annex A to the Stockholm Convention in 2011 (i.e. it will be phased out globally). Observation of reduced availability of WHO hazard class 1 pesticides at pesticide retailers in Lao PDR and Cambodia. Monitoring data from plantations in Malaysia and Indonesia contributed to end the use of paraquat by one of largest plantation companies in the region. PAN AP contributed with information on paraquat poisoning incidents from the region as part of the documentations submitted to the Rotterdam Convention Secretariat. In Cambodia, only a few farmers are using Class Ia and mixing of more than 6 kinds of pesticides was reduced by at least 50 % and are mostly class III and IV in all participating countries. 		
2. Increased number of farmers using alternatives to chemical pesticides	<ul style="list-style-type: none"> Nearly 60 000 farmers have participated in fortified Farmer Field Schools and have gained knowledge about integrated pest management and alternatives to chemical pesticides. Increased national funding of IPM and FFS in government extension services. Publication and dissemination of an impact assessment comparing IPM and non-IPM farming Integration of curricula on ABD and PIA in schools and communities in the region. 		

Program objective (medium-term objective)			
Enhanced regional collaboration to strengthen capacity for pesticide risk reduction and chemicals management in the partner countries in South East Asia.			
Indicators	Results 2010-2013	Assessment of progress	Comments
	<ul style="list-style-type: none"> In Vietnam alone, over 3 000 farmers are using alternatives to chemical pesticides while over 1 500 farmers adopted ecological agriculture practices. Over 5 000 farmers participated in the conservation of the agrobiodiversity for livelihood. 		
3. Legislation established or modernized	<ul style="list-style-type: none"> All the countries has improved or is in the process of improving legislation for both pesticides and chemicals in general 	😊	The development of legislation is very dependent on the national process. The program has been flexible enough to give extensive support to the development of new legislation
4. Institutions established or modernized	<ul style="list-style-type: none"> Increased knowledge about chemicals management and the role of government in relation to industry and the public. More frequent contact between concerned ministries within and among countries in the region. Focal points for chemicals management issues appointed in each country. Establishment of a regional chemicals management forum Support to work within APPPC aiming at stronger regional cooperation on regulation of pesticides. 	😊	

5.4.2 Narrative report

Development within the program and in the region shows an increasing awareness and willingness to work with chemicals management for the benefit of health and the environment. Many important achievements have been reached, including new legislation, trained staff, new farming methods, strengthened institutions, a stronger civil society, better school curriculum, etc. At the same time, the need to intensify production and subsidies for inputs has encouraged increased use of chemicals. The efforts to develop legislation, institutions and raise awareness need to continue. Development both in the region and in other parts of the world, as reported in the UNEP report *Global Chemicals Outlook* (2013), point at many emerging challenges.

During the programme, many stakeholders have been fighting for a ban or phase out of the most dangerous chemicals since these cannot be handled in a safe way without advanced technology and trained staff. The programme has contributed to this development in different forms, by participating and supplying facts at international negotiations, by gathering facts from the field and training farmers as well as supporting improved pesticides management at state institutions. During the programme period, two frequently used pesticides (Paraquat and Endosulfan) were highlighted and some positive steps were taken towards global and local restrictions.

Through the Farmer Field School programme some 60 000 farmers have been trained on ecologically sound farming methods, pesticide risk reduction and Integrated Pest Management. Data was collected to assess the impacts of training in IPM and pesticide risk reduction on trained, exposed and non-trained participants. The impact assessment studies - using the Double Delta approach - focused on the impacts of the farmer training programme on the environment and the health of the farmers and communities. The study showed significant improvement of community education on improving pest management and reducing pesticide-associated risks for health and the environment when farmer used IPM instead. It also gave important inputs to national pest management policy reforms. The results are presented in the impact assessment report, *“Empowering Farmers to Reduce Pesticide Risks”*, prepared by the FAO Asia Regional IPM/Pesticide Risk Reduction Programme (<http://www.vegetableipmasia.org/docs/Empowering%20Farmers%20To%20Reduce%20Pesticide%20Risks%2028Oct.pdf>). The progress has encouraged the governments of Vietnam and China to increase their own support to farmer field school programmes and include it in their national plans.




The Pesticides Impact Assessment (PIA) implemented by all partners of the Field Alliance has helped create awareness on the impacts of pesticides to health and environment. It has empowered participating communities to take actions to reduce the risks of exposure and tracking status throughout the course of the project. Activities on agrobiodiversity (ABD) conservation have helped communities realise the importance of the conservation for their livelihoods and that adoption of ecological agriculture practices contributes to the increase of yield, income and the environment of the communities. Despite the success of the phase I achievements, much efforts are still needed for regional collaborations to be more responsive to the different level of pesticides issues of each participating country. Vietnam and Thailand are both importers and exporters of pesticides and produce pesticides. There is an abundance of pesticides available and residues in foods are occasionally found (findings published in Thailand). Greater efforts are needed to solicit collaborations among the national governmental agencies and at the regional level, particularly on



consumers, trade, residues and cross border transporting of pesticides. In Cambodia and Lao PDR, illegal pesticides are mostly available only in foreign languages. Thus, capacity building of governmental systems and supporting systems is greatly needed. The programme has been successful in addressing emerging issues during phase I but greater efforts and systematic collaboration are needed during phase II.

A fundamental pillar of good chemicals management is strong institutions and a relevant legal framework. The program has been able to contribute to the improvement of legislation and train government staff in all participating countries. Both legislation concerning pesticides and chemicals in general has been or is being developed. A regional chemicals management forum has been established and partner countries have made commitments to participate and contribute to increased regional cooperation.

5.5 Immediate objective 1 (implemented by PAN AP and TFA)

5.5.1 Results summary

Immediate objective 1 (short-term outcome)			
Increased awareness among farming communities, consumers and decision-makers in South East Asia on the risks associated with pesticide use and their alternatives.			
Indicators:	Results 2010-2013	Assessment of progress	Comments
1. Various measures taken by target communities to create awareness and reduce pesticide risk	<p>PAN AP: More than 9000 people have been involved in “No Pesticide Use Day Campaign”, trainings, seminars and workshops on the risks of pesticides. Participants include a broad sector of segments of the public including government staff, the private sector, consumers; NGO’s, farming communities and rural youth.</p> <p>TFA: All participating schools and communities conducted the pesticides impact assessment activities. The results were shared and disseminated through local exhibitions, forum, campaigns, and regional workshops.</p>		
2. Reduction of negative impact of pesticides on human health and environment.	<p>PAN AP: Over 2000 farmers have been made aware of the health impacts of pesticides, the availability of highly hazardous pesticides as well as banned and restricted pesticides.</p> <p>TFA: Participating farmers have continued to improve their behaviours on personal protective equipment, spraying, storage and disposals of pesticides. Community concrete pesticides disposal tanks were built and utilized in pilot areas in Cambodia and Vietnam. Agrobiodiversity conservation for livelihood implemented in the target areas contributed to the increase of ABD, income, food security.</p>		
3. Number of youth and farmers participating	PAN AP: 490 farmers participating in schemes to apply		

Immediate objective 1 (short-term outcome)			
Increased awareness among farming communities, consumers and decision-makers in South East Asia on the risks associated with pesticide use and their alternatives.			
Indicators:	Results 2010-2013	Assessment of progress	Comments
in schemes to apply alternative and ecological practice	<p>alternative and ecological practice.</p> <p>TFA: Over 2500 students from 50 schools and 15 colleges participated in the program activities in the 4 countries. Over 5 000 farmers also participated in the program activities including agrobiodiversity conservation for livelihood, PIA, Integrated Pest Management (IPM) training.</p>		
4. Media attention on pesticide issues	<p>PAN AP: A variety of media campaigning tools (both conventional and new media) were used including newspaper articles, radio programmes, television programmes, Facebook, website and e-mails.</p> <p>TFA: REAL programs were broadcasted in community radio programs in Cambodia, Laos and Vietnam, Thailand and were televised in Laos.</p>		
5. Notification on incidents of pesticide poisonings to the Rotterdam Convention Secretariat and/or to the national authorities	<p>PAN AP: Paraquat incident reports from the Philippines and China were submitted to the Rotterdam Convention Secretariat. The Asian Regional Report was distributed to national authorities in the 2013 Rotterdam Super- Cop Meeting and the various other meetings, including the Stockholm Convention and SAICM meetings.</p> <p>TFA: Pesticides impact assessment tools and results were shared and disseminated with various agencies participating in the data collection for incidental reporting of pesticides poisoning for the Thailand's focal point of the Rotterdam Convention.</p>		

5.5.2 Narrative report PAN AP

Public education and awareness

PAN AP, through the work of partners, has made over 2000 farmers aware of the health impacts of pesticides, the availability of highly hazardous pesticides as well as banned and restricted pesticides.

Regionally, within the last three and a half years, more than 9000 people have been involved in “No Pesticide Use Day Campaign”, training, seminars and workshops on the risks of pesticides.

Participants include a broad sector of segments of the public including government staff, the private sector, consumers, NGO’s, farming communities and rural youth.

A variety of media campaigning tools were used including newspaper articles, radio programmes, television programmes, and e-mails. Through the OISAT database, PANNA’s database and PAN AP’s website, relevant documents have been uploaded, such as the list of highly hazardous pesticides, case studies on alternatives, information on international regulations and on the health and environmental effects of pesticide use. China has an interactive website that promotes ecological agriculture with 5 639 354 hits as of August 2013.

Partners have engaged and collaborated with government departments like the Ministry of Agriculture, National and Provincial Plant Protection Department, Ministry of Natural Environment, Women Unions, Farmers Unions and Youth Union.

PEAC has been able to involve officials from the government extension department in their pesticide reduction and educational exchanges between consumers and farming communities. Due to PEAC’s ongoing efforts, the MOA of China has announced a ban and phase out of liquid paraquat.

CEDAC’s public outreach through the media has included weekly radio shows, articles in newspapers and seminars have resulted in consumers demanding more organic products.

RCRD has been organising activities with students, farmers and government officials on the dangers of pesticide use which has resulted in awareness of the hazards of pesticide use and they were willing to take necessary steps to reduce their risk of being exposed to pesticides.

There have been farmer exchanges involving partners from Vietnam, Yunnan, Laos, India, Philippines and Cambodia on System of Rice Intensification and biodiversity based ecological agriculture, which uses less or no pesticides in the process. In Cambodia, network of farmers promoting ecological agriculture have been strengthened. CGFED is expanding their network by involving other CSOs in the north of Vietnam. PEAC outreach includes students, university lecturers and other CSO’s.

Partners have also translated materials on ecological agriculture and the risk of pesticide use. PEAC has translated relevant PAN AP books and key training and survey documents into Mandarin. PEAC has also influenced the government to support the additional printing of two publications and their distribution to all government extension offices in Yunnan. CEDAC has translated publication on Botanical Pesticides and a banned pesticide handbook into Khmer language. All partners have translated CPAM tools and various publications on pesticide impacts and the alternatives into their local languages.

Meanwhile, PAN AP has published technical information on endosulfan, glufosinate-ammonium, methyl parathion, chlorpyrifos, neonicotinoids, glyphosate, monocrotophos, methamidophos, fipronil and paraquat monographs as a policy advocacy tool for distribution. Other publications include “Breast Cancer: A wake up call”, “Pesticides, Breast Cancer and YOU!”, the updated version of “Sowing Poisons Reaping Hunger”, FAO code monitoring Handbook and Community Based Pesticide Action Monitoring Handbook.

Community based Pesticide Action Monitoring

CPAM is a process that empowers communities to document the impacts of pesticides on their health and environment and to take action. CPAM has been actively conducted in China and Cambodia and new partners SAEDA, CGFED, and RCRD have started preliminary plans to conduct CPAM in the project areas.

Over the span of 3 years, about 160 key farmers have served as CPAM facilitators and have continuously conducted CPAM at the local communes. The monitoring results indicate that highly hazardous pesticides are still being used and farmers are still being exposed.

Regionally, an FAO code monitoring capacity building workshop was held for partners from 10 the Asia Pacific region to identify and monitor the implementation of the FAO Code in their countries. In Cambodia, key farmers were involved in the monitoring of pesticides and report their results at the quarterly meetings of the commune. In Yunnan, the community monitoring provided information about pest outbreaks and pesticide use, which provided useful information needed to explore existing alternatives and for development of new ones. In Lao PDR, CPAM surveys were conducted in 10 villages in the Sathong district in collaboration with the local DAFO/PAFO. After review of the results, the community decided to have more restrictions on pesticides sold in their community. In collaboration with the IPM Vegetable programme, the Plant Protection Department of Vietnam and CGFED, a series of Farmer Field School and IPM trainings were organized for the community in the north of Vietnam. Baseline studies are available in North Vietnam (rice tea production) and South Vietnam (rice production), which resulted in workshops to convey the results.

New partnerships have been initiated in North Vietnam (Sustainable Rural Development) and the Philippines (PAN Philippines) whom will be participating in the programme during Phase II.

The CPAM activities with farmers and communities have contributed to an outreach to different sectors. For example, in Cambodia and China there are about 500 farmers planting vegetable crops with ecological agricultural methods, having switched from mono-cropping to multi-cropping.

Documentation on the trade of illegal pesticides coming in Lao and Cambodia has been published and shared with local authorities. Reports will be used for a regional advocacy campaign in the next phase.

Policy Advocacy

Community initiated monitoring by key farmers on compliance of specific provisions in the International Code of Conduct on the Distribution and Use of Pesticides has been successfully carried out in Cambodia and China. Results of this monitoring have been shared with government officials at the local level. At the Asian level, the Handbook on Community Monitoring and International

Advocacy was prepared, including how to monitor compliance of specific provisions of the Code, including farmer practices and retail stores. The survey questionnaires and background information from the handbook have been translated into Mandarin, Vietnamese and Khmer. The Asian monitoring efforts from CEDAC, PEAC, RCRD and CGFED along with 7 other organisations from Indonesia, Malaysia, India, Philippines, and Sri Lanka were compiled into a report, "Communities in Peril: Asian regional report on Community monitoring of highly hazardous pesticides use". The Asian report documents the use of highly hazardous pesticide under conditions that present a high level of exposure, including the lack of personal protective equipment, spillages while mixing, spraying and loading, poor storage and disposal practices.

In addition, in a joint effort with PAN International, PAN AP provided the expertise to other PAN regional centres in Latin America and Africa to undertake similar community monitoring. The results from Senegal, Mali, Tanzania, Argentina, Bolivia and the United States, were published in "Communities in Peril: Global Report on health impacts of pesticide use in agriculture" and launched in Brussels in 2010. Both reports are available on the website. Interestingly, the results of the Asian monitoring in Malaysia initiated an independent investigation by a Danish newspaper which printed a series of articles in Denmark which prompted United Plantations, a Danish company in Malaysia and Indonesia, to stop the use of paraquat and monocrotophos in their plantations. In addition, the report was used as reference in the UNEP book on "Global Chemical Outlook" and it was mentioned that the Rotterdam Secretariat found the report useful in their work.

The international policy advocacy campaigns on endosulfan and paraquat together with PAN International have met success. In 2011, after years of intense work, governments agreed to list endosulfan in both Stockholm and Rotterdam Conventions. This triggered many countries to start phase out endosulfan. In 2013, China ratified the amendment of the Stockholm Convention that bans endosulfan. India, the world's largest producer of endosulfan, stopped its manufacture and use. PAN AP spearheaded the campaign by providing timely technical information on the hazards of endosulfan and its alternatives, on the ground evidence of its harm, and actively participated in the technical committees.



Regarding paraquat, the severely hazardous pesticide formulation paraquat dichloride (20%) has been proposed for listing to the Rotterdam Convention. India blocked its inclusion during COP 6 in June 2013 but it will however be considered again at COP 7. PAN AP and its partners submitted paraquat poisoning incident reports from China and the Philippines as part of the documentation to the Rotterdam Convention. Several countries in the Asia Pacific region have taken the lead in phasing out paraquat: Lao PDR in 2010, the Republic of Korea and China in 2012.

PAN AP with PAN International have been advocating for biodiversity-based ecological agriculture as a viable alternative to HHPs. Governments are beginning to pay attention and at COP 6 of the Stockholm Convention, governments decided that ecosystem-based approaches should be a priority when considering alternatives to endosulfan.

PAN AP has been participating in SAICM and FAO meetings, and has advocated for more government commitments for pesticide reduction and elimination. At the International Conference on Chemicals Management (ICCM3) in Nairobi, Kenya (2012), PAN AP in collaboration with partners around the globe lobbied governments to pass a resolution on the progressive ban of HHPs and their substitution for safer alternatives. The resolution had support from 65 countries on short notice. However, it needed more time to gain global support. After ICCM3, PAN AP, on behalf of PAN International and in collaboration with partners, drafted two papers, one on HHPs and another on endocrine disrupting pesticides, which were adopted as Thought Starter papers by the SAICM Secretariat. These papers were used to inform governments at the SAICM regional meetings and resulted in the approval of two resolutions (on HHPs and on ED pesticides) from the Latin American and Caribbean regional meeting of SAICM in August 2013 and the African regional meeting of SAICM in November 2013. Similar work at the SAICM Asia-Pacific regional meeting in 2014 is part of the campaign to advance a global resolution on HHPs and endocrine disruptors at ICCM4 in 2015.

5.5.3 Narrative report TFA

Since 2007, The Field Alliance and its partners have successfully implemented the Rural Ecological Agriculture for Livelihood (REAL) program in Cambodia, China, Laos, Thailand and Vietnam. The REAL program aims to create awareness on the importance of the Agrobiodiversity (ABD) and pesticide's impacts to health and environment and promotes conservation of the ABD and various alternative ecological agriculture practices for farmers in the target areas. During Phase I, TFA's partners included the following:

- Srer Khmer and Agriculture Technology Services Association (ATSA) in Cambodia
- Pesticides Eco-Alternative Center (PEAC) in China
- Non-Profit Association of Laos Development (NALD) in Laos
- Thai Education Foundation (TEF) in Thailand
- The Center for Rural Progress (CRP), Initiatives on Community Empowerment and Rural Development and Center for Environment and Community Assets Development in Vietnam.

Four Regional workshops and exchange visits were organised to train, share successes, progress, plans, and solicit policy support in participating countries. TFA has also provided technical supports

to networking partners in Philippines and received technical assistance from The Field Indonesia in organising the 2012 Regional Workshop and field visits.

The Agrobiodiversity (ABD) and Pesticides Impact Assessments (PIA) Curriculum were translated into local languages and integrated into the school and community action and learning programs. Approximately 2500 students, over 150 teachers, officials and community members and thousands of farmers have participated in the program and REAL activities, thereby being strengthened in their understanding on impact of pesticide use and application of agro-biodiversity.







Baseline data of the ABD and pesticides uses and behaviors were documented. Various ABD conservation projects aimed to increase food security, income, traditional medicine and bridging knowledge gaps among older and younger generations on the sustainable uses of the ABD. Local campaigns (Cambodia) exhibitions and dissemination of pesticides risks were organized to create awareness. Concrete tanks were built for disposal of pesticides containers in communities in Cambodia and Vietnam. To minimize the risks to aquatic species in Tonle Sap Lake, the collected pesticides containers were transported off the island by the community. Over 50 % reductions of the types and amount of pesticides used were achieved (Laos) through the adoption of the IPM farming practices and organic farming practices (Thailand). Farmers' positive behaviors on using personal protective clothing increased as well as safe storage and disposal of pesticides containers and thus reduced the risks to foods, children, water, and animals in all participating communities.

Dissemination of program achievement were carried out through community radio program, campaigns, exhibitions, forums, television (Laos), and presented at the national and international venues such as the training on the Thailand reporting system of the Rotterdam Convention, Thailand Pesticide Alert Network, Biology Education for Social and Sustainable Development, Singapore and the UNESCO Education for Sustainable Development, the 2012 U.S. Entomology Symposium and the FAO Agrobiodiversity Program in Lao PDR.

5.6 Immediate objective 2 (implemented by FAO RAP)

5.6.1 Results summary

Immediate objective 2 (short-term outcome)			
Strengthened capacity to innovate and scale up Integrated Pest Management (IPM) in partner countries			
Indicators:	Results 2010-2013	Assessment of progress	Comments
1. The quality of IPM/pesticide risk reduction training materials and national FFS standards developed and the degree of implementation/utilization of the training materials and standards in 4 partner countries.	Quality training materials on IPM for new crops, emerging and invasive pests and risk mitigation for climate change - with particular focus on pesticide risk reduction - developed in 4 and national FFS standards in 2 partner countries		New training materials included: Guidelines for curriculum development for Pesticide Risk Reduction, <i>Bactrocera</i> Fruit Fly IPM, Prevention and Management of Cassava Pink Mealybug. Most of these materials can be downloaded from the Programme website: www.vegetableipmasia.org
2. The number of trained trainers (ToT) and farmers in partner countries	Capacity to conduct IPM and PRR farmer training through organization of Training of Trainers and Refresher TOT courses expanded in all 4 GMS countries. As of August 2013, 235 IPM Trainers from Government and 32 Farmer Trainers were actively involved in the conduct of IPM-PRR farmer training. About 60 000 farmers (38% female) had participated in 'fortified' Farmers Field Schools and Pesticide Risk Reduction Farmer Training activities supported by FAO with project Trust Fund resources in the Greater Mekong Subregion.		
3. The quality on the co-operation in the regional networks of programme partners established on national and regional level as to ensure implementation of more relevant and effective training programmes with a focus on pesticide risk reduction	In all four member countries, mechanisms for the establishment of functional linkages with research institutions, private enterprises, traders and agricultural suppliers and non government organizations have been established. Programme experiences and results were shared at the bi-annual Asia Pacific Plant Protection Commission (APPPC) meetings and support was provided for implementation of the APPPC-IPM Standing Committee.		Communication and regional exchange is facilitated by the FAO-IPM Programme's website (www.vegetableipmasia.org) and its regular news releases, distributed through e-mail announcements to over 500 recipients. The website is intensively used, with over 81 000 hits by August 2013. Regular project review and planning meetings are held at local, national and regional level to review implementation progress and adapt work-plans, as necessary.

Immediate objective 2 (short-term outcome)			
Strengthened capacity to innovate and scale up Integrated Pest Management (IPM) in partner countries			
Indicators:	Results 2010-2013	Assessment of progress	Comments
4. Advanced state of institutionalization of IPM in at least one of the programme countries and increased level of uptake and buy-ins by government, donors and other development organizations	Substantial progress has been made with institutionalization of IPM and FFS in at least 3 programme member countries. Local and national policies have been enacted in Vietnam (e.g., Directives No. 1504-BNN-BVTV and No. 2388-BNN-BVTV) requiring the involvement of the community in pesticide risk reduction and use of IPM/GAP in safe vegetable production. Environmental, production and plant protection indicators from FAO-supported community education PRR programmes have been incorporated into the GoV's model for New Rural Development (Nong thon moi/Tam Nong). In China, the MOA-DSTE has taken up FFS as an important part of agriculture extension reform and FFS training in 800 counties nation-wide are on-going under the 800 million RMB (around US\$132 million) project funded by MOA-DSTE. Cambodia's MAFF allocates 87 861 000 Riels (around US\$21 965) for FFS under the National IPM Programme on annual basis.		

5.6.2 Narrative report FAO RAP

The FAO Regional IPM Programme Management Unit (FAO-RIPM PMU), based at the FAO Regional Office for Asia and Pacific in Bangkok, has provided coordination and programme development support to programme staff and government counterparts in the Greater Mekong Subregion (GMS) member countries. For the purpose of capacity building for project planning and implementation by national counterparts, revised Country Strategy Papers (CSPs) were developed for the project extension period July 2010-August 2013. Project implementation has generally followed strategies outlined in revised CSPs, albeit with minor modifications, as to ensure that strategies and work-plans remained relevant and continued to address emerging developments and needs as identified by Member Country governments and other project stakeholders in the GMS.

At country level, FAO-RIPM had provided funding and technical support to strengthen capacities of government extension staff to implement pesticide risk reduction programmes. This support, channelled through National IPM Programmes, has been translated in various capacity building activities, including Training of Trainers and Refresher Courses, farmer training in Farmer Field School and pilot community education programmes on pesticide risk reduction. Pilot activities to demonstrate the added value of governments and civil society organizations working together in convergence areas were initiated. Curriculum development was supported for new crops, emerging and invasive pests, alternatives to chemicals (including biological control for pest management) and risk mitigation for climate change - with particular focus on pesticide risk reduction.

By June 2013 some 235 government extension workers and 32 farmer trainers had participated in Pesticide Risk Reduction Training of Trainers courses and 58 716 farmers (38% female) had participated in 'fortified' Farmers Field Schools supported by FAO with project resources in the Greater Mekong Sub-region. During this period, thousands of additional farmers have benefited from participation in local government and/or other donor funded FFS programmes that were implemented with FAO technical and coordination support.



A compilation of the Impact Assessment (IA) Studies carried out by independent research institutions Center for Development Oriented Research in Agriculture and Livelihood Systems (CENTDOR) in Cambodia) and the Hanoi Agriculture University (HAU) in Vietnam was completed and published in October 2013. The Faculty of Economics, Kasetsart University in Bangkok provided technical

oversight to the IA work. The IA studies document the impacts of training on pesticide risk reduction between PRR-IPM and non-PRR-IPM farmers in experimental, exposed and control villages in pilot areas in Cambodia and Vietnam using the “double delta” research approach. The report shows that project training led to improved knowledge, attitude and skills and motivated communities to take action to address pesticide risks. The change in practices led to reduced risks to farmers, communities and the environment. The IA work and results will support advocacy work as to encourage public and private sector actors to engage in and scale up community education for pesticide risk reduction. The publication can be downloaded from the programme website.

To strengthen pesticide risk reduction efforts, the FAO-RIPM engaged in the implementation of various other Trust Fund and FAO Regular Programme funded projects.




These included:

- FAO project GCP/RAS/268/AIT “*Area-wide integrated pest management of Bactrocera fruit flies in Southeast Asian countries*” with funding support from the Asian Institute of Technology. FAO-RIPMP was subcontracted by AIT to implement fruit fly IPM training and action research activities in the GMS region during period May 2010-August 2013. For more details on project progress, see website: http://ipm.ait.asia/?page_id=27
- Project GCP/RAS/253/ASB, funded by ADB as part of their support to the GMS-Core Agricultural Support Programme (CASP-2011-15) aimed at capacity building for spread prevention and management of invasive plant pests and diseases in the Greater Mekong Subregion. The project came to completion in December 2012. For a short brief on this project, see website: <http://www.vegetableipmasia.org/docs/Index/ASB.pdf>
- FAO Regional Technical Cooperation Project (TCP/RAS/3311), titled “*Capacity Building for Spread Prevention and Management of the Cassava Pink Mealybug in the Greater Mekong Suregion*”. This TCP became operational in February 2011 and continued up to 31 December 2013. For more information on this TCP project, see weblink: <http://www.vegetableipmasia.org/docs/Index/Technical%20Cooperation%20Programme.pdf>

FAO-RIPM coordinated and supported implementation of activities of the Standing Committee on IPM of the Asia Pacific Plant Protection Commission (APPPC) through its networks of National IPM Programmes. FAO-RIPM staff participated as observers in the planning sessions of the SC-IPM in the 27th and 28th sessions of the APPPC held in Manila, Philippines in 2011 and Jeju, Korea 2013, respectively.

5.7 Immediate objective 3 (implemented by FAO HQ)

5.7.1 Results summary

Immediate objective 3 (short-term outcome)			
Strengthened regulatory framework for the control of pesticides in 2-3 project countries			
Indicators:	Results 2010-2013	Assessment of progress	Comments
1. Legislative instruments for the control of pesticides more comprehensive in 2-3 project countries	New legislative instruments for Cambodia and Lao PDR have been issued. A new law for Vietnam is under consideration by Parliament.		
2. Inspection methodology developed and inspection pilot schemes completed for 2 countries. Scaling up of inspections started.	Inspection approach and methodology has been adjusted to the national situation. Comprehensive pilot inspections have been conducted in Cambodia and Lao PDR. Scaling up has started in Lao PDR.		
3. Regional collaboration in development of the legal framework for the control of pesticides	Limited support was provided to the work of the APPEC standing committee on pesticides and related FAO workshops on harmonization of pesticide regulations in Asia.		During Phase I, funding for regional activities on pesticide management has been available from other sources. For Phase II more direct financial support from the project is envisaged.

5.7.2 Narrative report FAO HQ

New pesticide legislation has been issued in Cambodia and Lao PDR. A new law is under development in Vietnam. The programme has provided extensive support in the form of:

- analysis of the overall legal framework for the control of pesticides
- drafting of proposals for new pesticide legislation
- review of draft pesticide legislation
- stakeholder consultation (Lao)
- translation and publishing of new legislation.

The assistance was provided with close involvement of the FAO Legal Development Service.

Efforts to strengthen enforcement of pesticide legislation have focused on establishing and operationalizing inspection schemes. A regional workshop was organised for heads of departments to exchange information and experience among countries on licensing and inspection of pesticide retailers. Training materials, inspection manuals and information booklets have been prepared, tested, translated and distributed. Pilot inspection schemes have been implemented in selected provinces in Cambodia and Lao PDR. Scaling-up started in Lao PDR with national-level training of inspectors and three rounds of nation-wide inspections have been completed. Scaling-up in Cambodia will be initiated once a new regulation on inspection has been issued. So far, about 80 inspectors have been trained. Over 400 pesticide retailers received in-the-shop training and an information booklet.






Other activities related to enforcement have included:

- I. quality control of pesticides in Lao PDR, where the project arranged for testing of samples in Hanoi
- II. assistance to the development of a national plan for a coordinated approach to pesticide residue testing in Lao PDR. This plan is under implementation and the project has supported some of the training of analysts
- III. assistance to a JICA initiative to establish a laboratory for quality control in Cambodia.

A foundation has been laid for stronger regional collaboration on pesticide regulatory issues: The programme has supported selected participants to meetings of the standing-committees on IPM and Pesticide Management of the Asia and Pacific Plant Protection Commission (APPPC) and related FAO workshops to enhance harmonisation of pesticide regulations. The APPPC committees drew up priorities that were adopted by the APPPC. Over the next years, the project aims to more directly support the implementation of some of these activities.

5.8 Immediate objective 4 (implemented by the Swedish Chemicals Agency)

5.8.1 Results summary

Immediate objective 4 (short-term outcome)			
Strengthened Chemicals Management Capacity within authorities, industries and stakeholders in the partner countries			
Indicators:	Results 2010-2013	Assessment of progress	Comments
1. Chemicals management measures taken at different institutions in the four countries	<ul style="list-style-type: none"> Chemicals legislation has been adopted in Vietnam. Legislation is under development in Cambodia, Lao PDR and Myanmar. A Forum Working Group with permanent representatives from the member countries has been established. All countries show great interest in taking part in the regional chemicals management forum and send relevant participants to the meetings. A joint action plan for chemicals management has been developed by the Forum member countries. 		
2. The quality of the measures taken	<ul style="list-style-type: none"> Adopted/developed legislation is very ambitious, but sometimes hard to implement. 		
3. No of staff trained in chemical management at industries and authorities and the quality of the trainings.	<ul style="list-style-type: none"> Around 165 different participants have participated in the five regional chemicals management forums. Many participants have participated in two or more Forums. Evaluations of the forums show that the participants are very satisfied with topics of the meetings (mean score 4.3 of 5). 		

5.8.2 Narrative report Swedish Chemicals Agency

During phase 1, chemicals management has become a more prioritized area in the region. All countries were in the process of revising or drafting new chemicals legislation. KemI and partners managed to build a strong network with key ministries in the core countries, Lao PDR, Cambodia and Vietnam. The regional chemicals management forum became established as well as the working group for the development of the regional cooperation. Five chemicals management forums were held with a total of around 165 different participants. Many of the participants took part in two or more Forums. Around twenty different topics (see table below) were presented by experts from different countries and discussed among the participants.

Forum	Topics
2	<ul style="list-style-type: none"> • Institution building, examples of agencies, how to divide responsibilities, staff requirements, resources needed. • Risk Communication/GHS. Classifying and labelling of chemicals. Legislation, responsibilities, information and awareness raising • Risk management, bans and registration. (Tools for risk management, registering chemicals, creating lists, product registration, etc)
3	<ul style="list-style-type: none"> • Implementing the Globally harmonized System for classification and labelling, GHS. • Preventing chemicals accidents and safety distances. EU regulation and experiences • Phasing out mercury. Swedish experiences and international development
4	<ul style="list-style-type: none"> • Chemicals and hazardous waste • Lead in paint • On-going work in UNEP. Guidance on development of legal and Institutional Infrastructure and measures for recovering cost of national administration (LIRA) and cost of in action. • The draft chemicals law in Cambodia • In depth presentation of Swedish experience from phasing out mercury. • Chemicals in products (Introduction, present situation, risk reduction measures and EU legislation
5	<ul style="list-style-type: none"> • Overview of the negotiations of a global legally binding instrument on mercury • Chemicals management in Thailand • Swedish hands on experience from phasing out mercury • Using Borax in small scale gold mining. • A possible new phase of the regional forum. What should a new period of 5 years contain?
6	<ul style="list-style-type: none"> • Latest news from the negotiations of a globally binding instrument on mercury • Mercury phase out in the health care sector, presentation of projects in the Philippines • Mercury phase out in Artisanal Smallscale Gold Mining (ASGM) • Presentation of “Global Chemicals Outlook” and “Cost of Inaction” • Presentation of the UNEP guidance “Development of Legal and Institutional Infrastructures for Sound Management of Chemicals and Measures for Recovering Costs of National Administration” (LIRA-Guidance)

Evaluations of the Forums show that the participants are very satisfied with the topics, discussions and networks that have been created. Evaluations of the forums showed that mean score for the meetings was 4.3 of 5. Between 90 % and 100 % of the participants expressed that the topics have very high or high relevance for their work and that the network and knowledge that they have gained have very high or high usefulness.



Activities connected to the implementation of GHS have been increasing. All the countries have or are in the process of implementing the new system for classification and labelling. For most of the countries this means going from no official system to one of the most comprehensive system so far. For the protection of health and environment, information about the chemicals is one of the most important tools. Without information and proper knowledge it is difficult for the user to protect him/herself. This new information will be important on all levels of society and not the least for the poorest people. The programme has contributed with important support for the implementation of GHS.

The Forum member countries have developed and agreed on a common action plan for the next five years. The action plan serves multiple purposes, both identifying the most important areas of concern as well as showing a commitment from the countries.

Four pilot projects have been carried out. Three of them covered different aspects of handling mercury. The results will be very useful since all of the countries now intend to implement the new Minamata convention aiming for a worldwide phase out of mercury. The fourth pilot project has aimed to investigate the need for education and research in the field of ecotoxicology and sustainable development in the region. The preliminary results show a need to develop this field and the program will support academic institutions to develop a proposal and apply for funding. All results will be shared and used in the next phase of the regional cooperation.

After the political changes in Myanmar the country was introduced and included in the programme. Fact finding activities showed both a great interest for cooperation as well as a need to reform institutions and legislation. Already the first year of participation in the regional collaboration, the programme could comment on a draft chemicals law and later arrange an awareness raising workshop in cooperation with the Ministry of Industry in Nay Pyi Taw. Officials from key ministries participated as observers at the 6th regional forum in Lao PDR.

Although several steps towards improved chemicals management have been taken there is still a great need to increase the efforts to further strengthen the legal and institutional capacity for chemicals management in the region.

6 Organisation and administration

6.1 Collaboration with other projects and organisations

Partners have established contacts with the following institutions:

- Asia Development Bank, Bangkok and its GMS Core Agricultural Support Programme in particular
- Chemicals Information Centre at Chulalongkorn University, Bangkok
- Asia Pacific Plant Protection Commission
- ASEAN-GIZ Biocontrol project for sustainable agrifood systems
- CGIAR and other national/regional research institutes: IRRI, CIAT, IMMI, various local universities (e.g. Kasetsart University, Hanoi Agricultural University)
- International and local NGOs: SEARICE, VECO, OXFAM
- Private Sector: Seed companies (e.g. East West Seed), biological plant protection product providers (e.g. BCRL, Koppert)
- International Conventions: Ramsar Wetlands,

6.2 Steering group meetings

The steering group have met six times during the period. The group was used both to follow up progress of results, to coordinate upcoming activities as well as for strategic discussions. Sida participated at most meetings sharing latest news from their horizon and giving input to program activities.

7 Budget follow-up

Component	Activities	Organisation	Indicative budget according to agreement (USD)	Indicative budget according to agreement (SEK)	Transferred by Keml (SEK)	Estimated expenditure (SEK)	Percentage	Balance (SEK)	Comments
1. Broad awareness raising	Community Empowerment through CPAM	PAN AP	355 000	2 520 500	5 680 000 + 274 000	2 980 776	49		Due to the two month prologation of phase 1, an additional transfer of 274 000 SEK was made
	Community Exchange Programmes		30 000	213 000		144 833	2		
	Documentation of illegal pesticides		20 000	142 000		58 681	1		
	Policy Research and Advocacy		105 000	745 500		687 877	11		
	PIC Convention		36 000	255 600		158 575	3		
	Public Education and Awareness Raising		184 000	1 306 400		1 210 924	20		
	Online Database and Information Communication		60 000	426 000		464 398	8		
	Sharing of Alternative Techniques		10 000	71 000		35 875	1		
	Administration					283 056	5		
	Total PAN-AP		800 000	5 680 000	6 025 000	6 024 994		6	
	Curriculum/materials development	TFA	14 000	99 400	3 116 900 + 284 000	106 015	3		Due to the two month prologation of phase 1, an additional transfer of 284 000 SEK was made
	School education programme		240 000	1 704 000		2 203 858	69		
	Policy support		16 000	113 600		154 520	5		
	Regional exchange and capacity building		169 000	1 199 900		328 947	10		
Programme management and administration				403 648	13				
Total TFA		439 000	3 116 900	3 408 000	3 196 988		211 012		
2. IPM field programme	Needs and priority intervention identification	FAO RAP	175 000	1 242 500		679 333	3		
	Communication & partner networks established/maintained		250 000	1 775 000		1 132 221	5		
	Curriculum/training material development & action research		240 000	1 704 000		2 717 331	12		
	Training of Trainer capacity building		750 000	5 325 000		3 396 664	15		
	Farmer training		1 075 000	7 632 500		9 057 771	40		
	Establishment/strengthening M&E systems		160 000	1 136 000		1 585 110	7		
	Awareness raising, impact assessment and advocacy work		230 000	1 633 000		2 943 776	13		
	Policy development		60 000	426 000		1 132 221	5		
	Total FAO RAP			2 940 000		20 874 000			
3. Regulatory framework pesticides	Development of pesticide legislation	FAO HQ	220 000	1 562 000		1 085 090	33		
	Strengthening capacity to enforce pesticide legislation		370 000	2 627 000		1 315 260	40		
	Development of pesticide residue testing capacity and pesticide quality control		55 000	390 500		263 052	8		
	Strengthening regional collaboration on pesticide regulatory issues		110 000	781 000		328 815	10		
	Specific surveys, studies, workshops		35 000	248 500		295 934	9		
	Total FAO HQ			790 000		5 609 000			
Total FAO		3 730 000	26 483 000	26 500 000	25 932 579		567 421		

Component	Activities	Organisation	Indicative budget according to agreement (USD)	Indicative budget according to agreement (SEK)	Transferred by Keml (SEK)	Estimated expenditure (SEK)	Percentage	Balance (SEK)	Comments
4. Chemicals management capacity building	Chemicals management forum	Keml	437 000	3 102 700		2 095 000	49		
	Chemicals management regional activities		390 000	2 769 000		2 182 042	51		
	Subtotal Keml		827 000	5 871 700		4 277 042			
5. Overall programme management and general technical support	Overall program management	Keml	340 000	2 414 000		2 573 411	42		
	Technical support to the program		220 000	1 562 000		1 967 908	32		
	Review, evaluation, reporting		90 000	639 000		1 061 007	17		
	Stakeholder meeting		120 000	852 000		0	0		
	Supplementary transfer of funds to PAN AP and TFA					558 000			
	Subtotal Keml		770 000	5 467 000		6 160 326			
	Total Keml	1 597 000	11 338 700	10 437 368	901 332				
TOTAL			6 566 000	46 618 600	35 933 000	45 591 929		1 679 771	The budget in the agreement from 2010 assumed an exchange rate of 7.1 SEK/USD. Changes of exchange rates and conversions between different currencies is reflected in the estimated expenditure and this is the reason why the reported balance is larger than the difference between budget and total expenditure.