



MID-TERM REVIEW OF PHASE II OF THE SIDA FUNDED
REGIONAL PROGRAMME “TOWARDS A NON-TOXIC
ENVIRONMENT IN SOUTH-EAST ASIA”

Swedish Chemicals Agency, reference number H13-01013

FINAL REPORT

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Abbreviations and acronyms

ABD	Agro-biodiversity
APPPC	Asia & Pacific Plant Protection Commission
ASEAN	Association of Southeast Asian Nations
CEDAC	Centre for Environment and Community Assets Development
CEDAC	Cambodian Centre for Study and Development in Agriculture
CGFED	Research Centre for Gender, Family and Environment in Development
CLM	Cambodia, Lao PDR and Myanmar
CPAM	Community-based Pesticide Action Monitoring
CSO	Civil Society Organisation
DALY	Disability Adjusted Life Year
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
GO	Government Organisation
HHP	Highly Hazardous Pesticides
ICERD	Initiatives for Community Empowerment on Rural Development
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
Keml	Swedish Chemicals Agency
LFA	Logical Framework Approach
MAFF	Ministry of Agriculture, Forestry and Fisheries
MARD	Ministry of Agriculture and Rural Development
MDG	Millennium Development Goals
MoA(I)	Ministry of Agriculture (and Irrigation)
MoAC	Ministry of Agriculture and Cooperatives
MoC	Ministry of Commerce
NALD	Non-profit Association for Development and Environment
NGO	Non-Governmental Organisation

OISAT	Online Information Service on non-chemical pest management in the Tropics
PANAP	Pesticide Action Network Asia & Pacific
PAN-NA	Pesticides Action Network North America
PEAC	Pesticide Eco Alternative Centre
PIA	Pesticide Impact Assessment
PIC	Prior Informed Consent
POP	Persistent Organic Pollutant
PPD	Plant Protection Department
PPPSD	Plant Production and Protection Sub-Department
PRR	Pesticides Risk Reduction
RBM	Result-based Management
RCRD	Research Centre for Rural Development
REAL	Rural Ecological Agriculture for Livelihoods
SAEDA	Sustainable Agriculture & Environment Development Association
SAICM	Strategic Approach to International Chemicals Management
SEK	Swedish kroner
SENSA	Swedish Environmental Secretariat for Asia
Sida	Swedish International Development Cooperation Agency
SRI	System of Rice Intensification
TEF	Thai Education Foundation
TFA	The Field Alliance
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WHO	World Health Organisation

1. Executive Summary

This is the final report for the Mid-Term Review (MTR) of phase II (2013-2018) of the Sida funded regional Programme “Towards a non-toxic environment in South-East Asia”. The review has been commissioned by the Swedish Chemicals Agency (hereinafter called KemI). The Programme is managed by KemI and has four major partners: KemI, the Food and Agriculture Organisation of the United Nations (FAO), the Pesticide Action Network Asia & Pacific (PANAP) and The Field Alliance (TFA), of which the latter of the two are Civil Society Organisation (CSO) networks. The four partners support implementation of the programme through their local partners (Government agencies and CSOs) in the six Programme countries Cambodia, China, Lao PDR, Myanmar, Thailand and Vietnam. The Programme also has an important component supporting regional collaboration on chemicals management issues.

The long-term vision for the Programme is better management and more sustainable use of chemicals, reduced risks from chemicals to health and the environment, more sustainable intensification of agricultural production and improved resilience to climate change.

The main recommendation of the MTR is that preparations for an upcoming new phase starting mid-2018 should be initiated very soon. The new proposal should focus on country-based institution building in Cambodia, Laos and Myanmar (these countries are referred to as CLM). It is recommended that the Programme’s perspective in the participating countries should widen from the present predominant focus on agro-chemicals to include industrial and consumer chemicals, as well as extend partner involvement to the private sector, including large-scale farmers. The priorities for each CLM country should be set according to needs, opportunities and country priorities.

An effort should be made to develop a theory of change for the Programme for a new phase and a results framework that has clear indicators for Programme outcomes and impact. Furthermore, it is recommended that a simplified Programme implementation structure be established, including implementation support in the region from a development consultant contracted to give management support.

The MTR concludes that the Programme is relevant for the needs in the region and in relation to the Swedish cooperation strategies. The Programme has produced better results than originally proposed in its results framework (although mostly outputs, not outcomes/changes are measured). Awareness on pesticide risks has increased among Programme beneficiaries, better laws and regulations are in place, and about 50 per cent of trained farmers use less hazardous pesticides and more biological control methods. The economic situation of the farmers has not changed much; the Programme has not yet properly addressed how to enable farmers to gain access to premium market niches for the safer food produced by farmers practicing reduced use of pesticides.

Chemical laws are mostly in place in the six countries involved in the Programme. Regulations are also mostly in place, and inspection systems are being set up to control the sale of hazardous pesticides. Nonetheless, additional institution building is needed across govern-

ment institutions for chemical registration, food safety, customs capacity and waste management including, especially, the enforcement of existing regulations. The MTR recommends preparing country-specific strategies and annual plans for institution building in the CLM countries, including measures for communication to and engagement with policymakers, to be supported by experienced colleagues from the six partner countries. An important objective of a future Programme would be to increase interest and funding at the national level to ensure long-term sustainability of Programme results.

The Programme has advanced in addressing gender equality and a human rights based approach in its Programme activities, and more can be done. In a new results framework for a possible new phase of the Programme, a clear perspective and indicators on measurable effects on environment and climate change should be sought. More reporting should be undertaken related to anti-corruption measures.

Support to the much-appreciated regional collaboration between the six countries should continue, with emphasis on support from the other countries to the CLM countries.

2. Introduction

2.1 BACKGROUND TO THE MID-TERM REVIEW

This is a Mid-Term Review (MTR) commissioned by the Swedish Chemicals Agency (hereinafter called KemI) of the Sida funded regional programme “Towards a non-toxic environment in South-East Asia” (hereinafter called “the Programme” or “the KemI programme”).

The results from the MTR are expected to be used by Programme implementing partners, the Embassy of Sweden in Bangkok and by Sida, for further improvement of the Programme in its current phase, and as a basis for decisions on the future of the Programme. In the Programme document, both a MTR and a final evaluation have been foreseen for the present phase.

There has been a growing concern that chemicals are causing significant adverse effects on human health and the environment in South-East Asia. In 2004, Sida commissioned several studies on the chemical situation in South-East Asia that confirmed the existence and general scope of chemicals management-related problems. Around the same time, the Swedish Government encouraged KemI to start supporting international development projects in their area of expertise. With the support of the Embassy in Bangkok, a project was identified between Sida, KemI, the Pesticide Action Network Asia & Pacific (PANAP) and the Food and Agriculture Organisation of the United Nations (FAO), which has a regional office in Bangkok and was running an Integrated Pest Management (IPM) programme in the region.

The Programme was launched in 2007 with an initial duration of five years, with a clear intention to extend the duration to 10 years. An evaluation of the Programme was conducted in 2011, with positive conclusions. The present second phase, which is the object of this MTR, started activities in August 2013 and is expected to end in June 2018, with a total budget of 99.3 million SEK or 11.5 million USD over five years.

The Programme is managed by KemI and has four major partners: KemI, FAO, PANAP and The Field Alliance (TFA), the latter two being regional CSO networks. The four partners support implementation of the programme through their local partners (government agencies and CSOs) in the six Programme countries of Cambodia, China, Lao PDR, Myanmar, Thailand and Vietnam. The Programme also has an important component supporting regional collaboration on chemicals management issues.

The long-term vision for the Programme is better management and more sustainable use of chemicals, reduced risks from chemicals to health and the environment, more sustainable intensification of agricultural production and improved resilience to climate change.

This report follows the structure of chapters prescribed in the Terms of Reference (ToR, see Annex 1). The MTR has benefited from a self-assessment made by the four partner organisations in February 2016, and from a recent Sida-commissioned report from Sida’s Helpdesk for Environment and Climate Change: “Improved quality of results framework for the regional KemI-programme”, from February 2016.

2.2 METHOD AND PROCESS

In the inception report for the MTR dated August 17, 2016, the Terms of Reference (ToR) for the assignment were discussed and detailed evaluation questions were presented. In addition, the Logical Framework Approach (LFA) of the Programme was discussed, and a preliminary proposal for a theory of change for the Programme was provided.

The ToR requested the MTR to be structured around the OECD/DAC evaluation criteria of effectiveness, cost-efficiency, relevance, sustainability, and the related issue of risk management. In addition, the ToR placed particular emphasis on four cross-cutting issues: Human Rights Based Approach; the poverty perspective; gender equality; and good governance. The ToR also proposed questions that are specific to the Programme, related to issues such as regional collaboration, relationship with external institutions, communication of results to policy makers, and private sector collaboration.

NIRAS Indevelop carried out the MTR from August to October 2016. The team consisted of Klas Markensten (Team Leader), Andrew McNaughton, Le Thi Hoa Sen and Hilda van der Veen. Ian Christoplos provided quality assurance to the evaluation methodology and reports. NIRAS Indevelop's manager was Josefina Halme.

The assignment started with a desk review (see list of documents in Annex 5), to inform the inception report. Between 5-9 September, two country studies were conducted, one in Cambodia and one in Vietnam. Field visits to Programme areas in the provinces were supplemented with interviews with beneficiaries, relevant government officials and other stakeholders.

In the week of 19 - 23 September 2016, KemI and other Programme regional partners organised two regional meetings in Bangkok as part of its regular Programme work (in this report these meetings are referred to as "*the regional workshop*"). Two members of the MTR team participated in part of these meetings as participant observers.

The first of the two meetings involved 13 government officials from participating Programme countries, responsible for chemical management at the national level. The purpose of the meeting was to prepare future meetings of the Regional Chemicals Management Forum, a key part of the Programme.

The second meeting had 45 participants - government representatives, the main four Programme partners, and civil society organisations collaborating with these partners (sub-partners). The objectives of this meeting were to discuss community education, policy and implementation challenges, preliminary findings of the MTR, strengthening regional networking and strengthening of partner collaboration at regional and national level.

During the regional workshop in Bangkok, the MTR team conducted interviews with 11 of the participants of the first meeting and stakeholders in Bangkok, and with 16 of the participants of the second meeting. The team also conducted five interviews with other stakeholders before the regional workshop (see Annex 4). The interview lists for the country visits are found in the country reports of Cambodia (Annex 2) and Vietnam (Annex 3). The selection of interviewees during the second meeting was made based on the criteria of country and part-

ners' coverage and seniority. The fact that so many government officials and representatives of partners and executing organisations were present in the same location this week, provided the MTR team with the opportunity not only to collect data but also to corroborate data and to discuss evaluation questions with a number of persons who hold significant knowledge of the chemicals management situation at different levels in the six countries.

Substantial time was set aside in the Regional Workshop agenda to discuss key programmatic issues as identified by the MTR team, and this was especially fruitful. To verify its initial findings from the desk review and the two country visits, the MTR team presented these to a plenary session of the Regional Workshop, supplemented with three topics for focus group discussion: i) Reporting and results, ii) Sustainability, and iii) Priorities for a possible new Programme after 2018 (see Annex 7).

The issues presented by the MTR team were discussed by focus groups of the six country delegations and by an additional group with representatives of the four regional partner agencies and others. The groups presented their conclusions, supported by analytical power point presentations. The group presentations and discussions indicated that there was a broad consensus on the observations made by the MTR team and the importance of the discussion points put forward.

2.3 LIMITATIONS

With the time and funding available for field work, the team was able to visit two countries, Cambodia and Vietnam. As such, findings and conclusions for the other Programme countries are not based on data from the field, but rather on the progress reports from the Programme partners and information received from the interviews at the Bangkok meetings.

The present LFA and monitoring system for the Programme are largely focused on outputs, with less emphasis on outcomes and impact. This made it difficult to ascertain changes at outcome/impact level (see also section 4.1). The situation in the region and in the participating countries, and the presence of other programmes with similar or complementary objectives to the Programme under review, make attribution of changes to interventions by the Programme challenging.

The Programme was started as a joint collaboration between KemI and organisations already present in the region, who in turn had on-going programmes and their own partners in the countries.

3. Background and context

3.1 THE PROGRAMME IN THE REGION

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 re-

sponse 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, the gap between industrialised and developing countries was widening when it came to chemicals management. 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. 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. At present, 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.

3.2 THE PROGRAMME OBJECTIVES

The objective of the Programme is the following:

Overall Objective (Impact): The Programme contributes to i) Better management and more sustainable use of agricultural, industrial and consumer chemicals; ii) Reduced risks from chemicals to human health and the environment; iii) More sustainable intensification of agricultural production and improved resilience to climate change.

Programme Objective, medium term: Strengthened capacity and regional collaboration for

efficient pesticide risk reduction and chemicals management within and among partner countries.

Immediate objective 1: Increased awareness and enhanced capacity in farming communities, schools, institutions and among consumers within partner countries to reduce the risk associated with pesticide use and enhanced use of alternatives.

Immediate objective 2: Enhanced international, national, and local advocacy on sustainable pest management/agriculture

Immediate objective 3: Strengthened capacity to innovate and scale-up Integrated Pest Management (IPM) and pesticide risk reduction training for sustainable intensification of crop production in partner countries.

Immediate objective 4: Strengthened regulatory framework for the control of pesticides in selected partner countries.

Immediate objective 5: Strengthened chemicals management capacity within authorities, industries and among relevant CSOs in the partner countries.

3.3 THE PROGRAMME PARTNERS

In addition to KemI, there are three other partners: FAO, PANAP and TFA. KemI is responsible for managing the Programme and for reporting its work and that of the partners to Sida.

For over than twenty years, FAO has been implementing a regional Integrated Pest Management (IPM) programme in Southeast Asia, focused on rice, cotton and, during the last decade, vegetable production. The Regional IPM programme is active in all of the target countries of the KemI Programme. FAO/IPM is an active partner, supporting national governments and civil society organisations in those countries to implement IPM/sustainable agriculture farmer training, and to develop the legal frameworks and regulatory regimes needed to implement IPM and the agro-ecological approach at national and local levels. Pesticide risk reduction is the core of the present Programme, and farmer education on IPM through Farmers Field Schools is the main intervention to contribute to that. At the policy level significant support was provided by the FAO-HQ based Pesticide Risk Reduction group and the FAO Regional Office Crop Protection Programme for strengthening the regulatory control of pesticides in the Asia region.

IPM is an ecosystem approach to crop production and protection that combines different management strategies and practices to grow healthy crops and minimise the use of pesti-

cides. IPM is a method for analysis of the agro-ecosystem and the management of its different elements to control pest and keep them at an acceptable level (action threshold) with respect to the economic, health and environmental requirements¹.

Increased awareness among all stakeholders about the issues at hand, from farmers to policy makers, is part of the IPM capacity building approach. Two of the programme's implementing partners are concerned primarily with awareness-raising, advocacy and training. They are PANAP and TFA.

PANAP² works through its local partners. PANAP has been establishing pesticide monitoring at the community level, making use of Community-based Pesticide Action Monitoring (CPAM), a comprehensive programme for awareness-building and empowerment of local communities. CPAM is a tool complimentary to the Farmer Field Schools (FFS) used in IPM training, which is based on Participatory Action Research. At the core of CPAM are community members, who undertake the research that encourages organising and action. The self-surveillance monitoring and recording of the impacts of pesticide use on health is intended to raise awareness of the hazards of pesticide use, encourage changes required to reduce the use of pesticides, adopt more ecological and sustainable practices; and to be used to pressure governments to implement better pesticide regulations and international conventions on pesticides.

At the same time, CPAM delivers documentation for the parallel strategy of PANAP of networking and advocacy work at the national and international level. With Programme funds, PANAP supports action research, community organisation, social media campaigns and policy development. Internationally, PANAP is represented in all the technical committees for Rotterdam and Stockholm conventions³, the key international agreements on the management of toxic chemicals.

¹ See www.vegetableipmasia.org : FAO Regional IPM/Pesticide Risk Reduction Programme in Asia. "Indiscriminate use of chemical inputs, both fertilizer and pesticides, puts agricultural production at risk. In particular, the overuse of pesticides is known to eliminate important ecosystem services resulting into secondary pest outbreaks which could potentially jeopardize national and regional food security. Intensive use of extremely and highly hazardous chemicals by small-holder farmers also continues to cause high incidence of farmer poisoning."

² www.panap.net

³ <http://www.pic.int/> The Rotterdam Convention (formally, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade) is a multilateral treaty to promote shared responsibilities in relation to importation of hazardous chemicals.

³ www.pops.int Stockholm Convention on Persistent Organic Pollutants is an international environmental treaty signed in 2001 and effective from May 2004, that aims to eliminate or restrict the production and use of persistent organic pollutants (POPs).

TFA focuses on education in target countries through its Rural Ecological Agriculture for Livelihoods (REAL) programme. Pesticide risk reduction has been a long-term focus for TFA-supported trainings and programmes. Their main role in the Programme has been to support local NGOs to work with teachers and school officials to develop educational modules at the primary and lower secondary school level, teaching students about especially highly hazardous pesticides (HHP) and health and the environment, and about agricultural biodiversity, with the intent that informed students will influence the pesticide risk reduction (PRR) behaviour of their parents. Community action on the safe disposal of pesticide containers and IPM and ecological agriculture practices are also supported, as is the production and use of botanical pesticides as home-made substitutes for toxic chemicals. The REAL program also promotes the empowerment of women through capacity building for women's self-help and savings groups, a starting point for building social (and financial) capital in communities. Ecological agriculture is integrated in the non-formal education in Thailand and Vietnam. Efforts are being made by TFA in several Programme countries to engage with national education authorities to incorporate agro-ecological modules into the formal school curriculums⁴.

KemI itself takes the lead among the partners in the Programme in promoting dialogue among participating country institutions on chemicals management generally, and on industrial and household chemicals and their associated risks. Annual Regional Chemicals Management Forums provide networking and exchange opportunities for Programme partners and national organisations, bringing together senior officials from competent authorities in chemicals management. KemI is taking an increasingly active role at the Programme country level on industrial and consumer chemicals, and on legal framework development.

The original ideas for the Programme originated from discussions in the region between the partners, stakeholders, Sida and KemI. KemI holds a very broad core competence in Sweden. At the time of these discussions, KemI did not, however, have extensive experience in the implementation of field level programmes. This was a reason for joining up with regional partner organisations, to deliver support at the country level. The strength of these partners was their own well-established and relevant programmes in the different countries.

⁴ www.thefieldalliance.org

4. Findings

The findings are presented according to the structure prescribed in the ToR with sections on effectiveness, efficiency, relevance, regional collaboration and sustainability, integration of cross-cutting issues, private sector collaboration and risk management.

4.1 EFFECTIVENESS

Questions related to effectiveness according to the ToR:

- *To what extent has the programme produced outputs and outcomes compared to the LFA?*
- *Is the programme on track? What is the prognosis for reaching the targets for outcomes and overall objectives within the programme period?*
- *Is anything impeding the effectiveness of the programme and its project modalities? If yes, what can be done to address this?*
- *Have programme partners implemented adequate monitoring and evaluation systems, reporting, transparency and accountability mechanisms as well as efficient financial management?*
- *How have budget cuts affected the programme?*

This section on effectiveness first refers to a report from a Sida helpdesk, followed by a discussion on the Programme's theory of change and LFA, including issues on the structure of monitoring and reporting, financial accountability and the effect of budget cuts. This is followed by a presentation of the results according to the LFA, and an answer to the question in the ToR on impediments to the effectiveness of the programme.

The short-term objectives of the programme described in 3.2 above have been assigned to the different implementing partners (PANAP, TFA, FAO and KemI); even though it was realised prior to Programme implementation that in certain areas there would be some overlap, partly to ensure synergy effects.

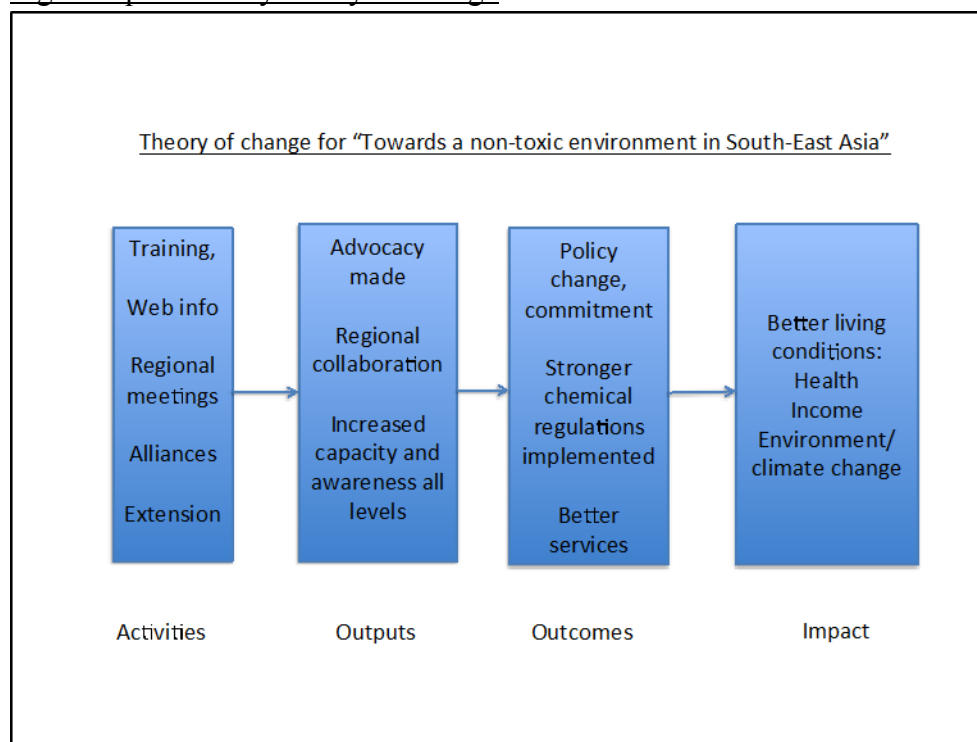
Prior to starting their collaboration as part of the KemI Programme, all four partners supported their own on-going programmes, this being one of the stated reasons for selecting them. As a result, partners continued to have strong identities within the Programme, and to implement their own organisational agendas within it, consistent with the Programme's objectives.

4.1.1 Theory of change and LFA

During the Programme's present phase, Sida has asked for more analytical reporting from the Programme in its annual dialogue with KemI. In 2015, Sida engaged its Helpdesk for Environment and Climate Change to assess, among other things, possibilities to improve the reporting of results at the outcome level. In its assessment report of February 2016, the Helpdesk stated that outcome and output indicators seemed to be mixed, and proposed that the impact objectives could be further developed and that the LFA should be revised.⁵ The Helpdesk also pointed out the need to develop a clear theory of change, describing the causal linkages between activities, outputs, outcomes and impacts. Representatives from KemI have stated that the report from the helpdesk has been received favourably by the Programme and the partners and that work has started in 2016 to attend to the proposals.

As was stated in the inception report, the MTR agrees with the views and recommendations presented by the Sida Helpdesk for Environment and Climate Change. A preliminary theory of change was presented as an illustration in the inception report (see figure 1).

Figure 1 preliminary theory of change



⁵ Sida's Helpdesk for Environment and Climate Change, Improved quality of results framework for the regional KEMI-programme, May 5, 2016

The programme aims to contribute to better living conditions for people, with a specific focus on the poor and the vulnerable. Lowering risks from the negative effects of hazardous chemicals can lead to better health. Using less chemicals and applying better and more sustainable production methods can increase the income of farmers, have positive effects on the environment and improve their capacity to adapt to climate change.

To reach the desired impact, three major pathways to change can be identified:

- Policy change, better laws and stronger commitment from politicians and major stakeholders on chemicals management.
- Improved regulations on pesticides and their implementation through stronger commitment and better skills among frontline enforcing agencies, leading to less availability and use of hazardous pesticides.
- Better services and support to farmers (e.g. more IPM coverage), communities, input vendors and local organisations, stimulating farmers to use better production methods and less hazardous pesticides.

The entry points for these three pathways of change are regional, national and local, and the relevance of the three pathways varies according to level. It also depends on the degree of real decentralisation in public sector structures, and the division of responsibilities and mandates between responsible government authorities.

The outputs that will lead to these outcomes are increased capacity for farmers, communities, teachers, retailers, government officers, etc. Beneficiaries can be trained in the better use and management of hazardous pesticides. With increased capacity and awareness people can also participate in advocacy for better management of pesticides. Regional collaboration among the participating countries can have positive influence on the policy and regulation processes in the countries.

At the regional workshop, the MTR team presented the advantages of having a more explicit theory of change, and of having a monitoring and reporting system that would be less focused on activities and outputs and more on outcomes and impact.

The views of the MTR team were broadly accepted during the regional workshop. For example, one country focus group stated: “We acknowledge that we should draw more attention to the Theory of Change and long-term impacts and that we need to reframe to results/outcomes based as opposed to being more activities based”.

4.1.1.1 Reporting

After reviewing the various progress reports prepared by the Programme and its implementing partners, the evaluation team found that reporting from the different parts of the Programme is mostly concerned with descriptions of the present status and predominantly focus on activities and outputs. There is less presenting of results in a context, and less of analytical reporting.

In the consolidated reporting of the Programme (e.g. Progress reports 2015 and 2016), the results are presented against the LFA, including baseline information and progress towards achievement of the Programme targets. Some outcome related information is found in the

LFA reporting, such as important statistics on how many farmers changed their use of pesticides after having received training.

In addition to the regular reporting of the Programme, a few impact studies have been conducted in Cambodia and Vietnam (see 4.1.2).

The *financial reporting* has not been assessed in detail by the MTR. The financial reports within the Programme are checked at each level. For example, local partners at national level, affiliated with the programme's CSO partners, deliver their audited reports to their main Programme partners. The main partners verify these reports, and they themselves are also audited.

Typically, the main partners also monitor the activities of the local partners twice a year. In turn, financial reports of the main partners are sent to KemI, which verifies the reports received. Sida also requires KemI to deploy special external auditors to audit development programmes financed by Sida, which can also include an audit of the accounts of local partners participating in the Programme.

KemI funds are transferred annually to the Programme's partners based on the initial budget for the five-year period. Following the severe budget cuts of the Swedish development aid budget in 2016 (in order to set aside funding to respond to the refugee crisis) in combination with an unfavourable exchange rate change for the Swedish krona, KemI decided to disburse only additional funds to Programme partners (on top of funding partners had been unable to disburse over the past year) and requested partners to make alternative plans for lower budgets for the future. However, Sida has now promised that the original budget will be made available, and the only partner that reported to the MTR team as having been marginally affected by the budget cuts was PANAP that cancelled a few seminars.

4.1.1.2 Results

Based on the field visits and the interviews held at the regional workshop, the MTR Team was impressed with the strong engagement in the Programme by partners, national governments, NGO personnel, farmers and local authorities. While, as described above, there is a healthy discussion related to reporting of the Programme (outputs vs. outcomes/impacts) and related to measurements of impact, it is clear from the reporting that the Programme is reaching and overreaching the targeted outputs in the present LFA.

The Programme has made contributions to the overall objectives:

- Better management and more sustainable use of agricultural, industrial and consumer chemicals, for example the legal framework development support in Lao PDR and in Cambodia.
- Reduced risks from chemicals to human health and the environment. Examples include the various awareness raising and training activities, and the changes in PRR behaviours reported by farmers supported by national IPM programmes.
- More sustainable intensification of agricultural production and improved resilience to climate change. Interviewed farmers report making use of agro-ecological methods in

their farms. These methods, such as increasing soil organic matter, and crop diversification, are components of climate smart approaches

The focus in the Programme LFA and reporting is on short-term objectives, usually considered to be the same as outputs. In the subsequent sections, feedback will be provided on the results under the Programme's five short-term objectives.

4.1.1.3 Objective 1

Increased awareness and enhanced capacity in farming communities, schools, institutions and among consumers within partner countries to reduce the risk associated with pesticide use and enhanced use of alternatives.

Awareness of the risks associated with pesticide use is growing in all participating countries, supported by the work of the Partners and Sub-partners, as reported by interviewees and in the progress reports. The contribution of the Programme itself is difficult to separate from the general trend, but the output indicators concerning participation and evaluation of behaviour change in training activities are a reasonable proxy. Moreover, an analysis undertaken in Cambodia⁶ showed that knowledge and practices of pesticide use among IPM farmers, such as knowing the types of pesticides, and reduction of use of pesticide cocktails and highly hazardous pesticides (HHP), have improved significantly in comparison to non-IPM and control farmers in the study.

National IPM programmes begin with awareness-raising as part of pesticide risk reduction/IPM farmer training interventions, with quite powerful graphic and audio-visual messages. In the Programme this awareness has led to changes in the pesticide risk reduction behaviours reported by farmers. In most Programme countries the partners are also producing radio, television, print and social media materials, which reach a wide audience including farmers, consumers and policy makers. There is no data available from the Programme on the impacts of these outputs.

A 2016 longer-term impact study by CENTDOR in Cambodia concludes that “the Project has achieved its target to reduce total pesticide use, reduce the use of WHO Class I pesticide and to increase the adoption of alternative control methods as stated in project expectations, but that the achievement of the impact targets of the project is not only contributed from the direct interventions of the project but also from public awareness and policies to ban the high toxic

⁶ Impact Assessment of the Pesticide Risk Reduction through Farmer Field Schools. CENTDOR 2011

pesticides at national and regional levels too”.⁷ Project outputs by FAO at the level of legal framework development made important contributions to this outcome.

In China, Cambodia and elsewhere, project reports and interviews at the Regional Workshop indicate that in target areas, local communities and local authorities empowered with this knowledge are taking action. The banning of pesticide spraying in the vicinity of schools is a good example.

In one location in Vietnam, partners built linkages between the non-formal education system and the plant protection system, and later with the health-care system, in order to educate farmers, together with their children, to reduce pesticide use. Curriculum materials developed under the Programme were picked up and promulgated by the national department of continuing education under MOET. Similar efforts are underway, but remain in an earlier stage, in Cambodia.

On the capacity side, the essence of the IPM agro-ecological approach to management of crop production is that farmers acquire practical knowledge of how to identify and control pests and increase plant resistance to pests, using chemicals only as a last resort – knowledge which they are able to apply to their own fields. For increased awareness of pesticide risks among farmers to have any impact, empowerment through skills building and knowledge is a key requirement. Most of the many Farmer Clubs developed under the program have the capacity, and are practicing to a significant degree the skills needed to act on their awareness on pesticide risks.

The MTR team reviewed a number of reports from Programme partners showing increased returns to farmers from reduced use of pesticides, but overall the picture of economic benefits to farmers is not always obvious. Farmers interviewed were motivated to adopt alternative production methods and PRR practices for personal and family health reasons. However, with very few (but exciting) local exceptions, the potential extra profits from producing safe, “natural” and/or GAP certified food products are not realised. The challenge is to make farmers using PRR practices more successful economically, by enabling them to respond effectively to market demand for such products and linking them to markets that are willing and able to pay more for safer food products. There is a large literature on the issues around profitability of safe vegetables in Southeast Asia. However, this aspect has not been addressed to a great extent by the Programme.

⁷ Draft: July 2016, Technical Report: Support to Impact Assessment of Community Education for Pesticide Risk Reduction, Submitted to FAO IPM Programme of United Nation of the Food and Agriculture Organization (UN-FAO Cambodia) By Centre for Development Oriented Research in Agriculture and Livelihood Systems (CENT-DOR)

4.1.1.4 Objective 2

Enhanced international, national, and local advocacy on sustainable pest management/agriculture

Advocacy for PRR and agro-ecological approaches to food production is a significant part of all field activities in the Programme. In Vietnam, for example, partners organised a national seminar to present the results of a joint survey on the use of the hazardous chemicals Chlorpyrifos and Paraquat in agriculture. Farmer Field days and “No Pesticide Use Weeks” are a common feature of advocacy work in the Programme. All of the four partners produce information materials to support advocacy, and are active in international forums on PRR issues, drawing in part on experience with their local partners under the Programme.

4.1.1.5 Objective 3

Strengthened capacity to innovate and scale-up Integrated Pest Management (IPM) and pesticide risk reduction training for sustainable intensification of crop production in partner countries.

National IPM programmes are on-going in all six Programme countries, and has developed further in more economically advanced countries. Government funding is forthcoming (see 4.4.1 table 1 on financing for scale-up of the IPM programmes). Interviews and plenary discussions at the occasion of the regional workshop revealed a high need for identifying more resources, for example for training and deploying additional cadres of IPM Master Trainers.

In the work under the Programme on IPM and sustainable intensification of crop production, the MTR did not see much evidence of work on other important aspects such as conservation tillage or water management, other than some attention to compost making, and a success with no-tillage potato growing in Vietnam. Nor is there a strategic approach in the Programme to agro-ecological policy development, under which scaling up of IPM programmes might attract more resources.

4.1.1.6 Objective 4

Strengthened regulatory framework for the control of pesticides in selected partner countries.

Through FAO and KemI, the Programme has made significant technical support contributions to the early development of agricultural chemical management legislation in Cambodia, Laos, and Vietnam (and contributions as well in the other countries). Work is ongoing in these countries to help build the institutional capacity for monitoring and enforcement of regulations. For example, even with the difficulties caused by porous borders and limited resources for enforcement, bans in Cambodia and Laos on certain HHPs have resulted in major reductions in their use in some areas, as provincial staff have used inspection visits to educate agricultural vendors on pesticide issues, and inform them of their obligations under the law. Furthermore, the Regional Forums have enabled responsible officials to compare experience and approaches to implementation. However, much remains to be done.

With respect to the impact of strengthened regulatory frameworks, the most striking observation made in the impact study (2008-2015)⁸ was the significant effect of the banning and control of HHPs. The impact study indicated that there was no significant difference between the much lower use of pesticides over time in the IPM villages and in the control villages. As such it might be concluded that regulation can be a powerful instrument for awareness-raising and can lead to a change in behaviour. However, interviews with farmer groups in Cambodia and Vietnam clearly indicated that farmers learned about the hazards of pesticides and the need for PRR from the training provided by the sub-partners in the programme. More importantly, in the same training they learned the technical means to change their pesticide use behaviours consistently with this new knowledge.

4.1.1.7 Objective 5

Strengthened chemicals management capacity within authorities, industries and among relevant CSOs in the partner countries.

In the 2014 Progress report of the Programme, KemI reported “Increased knowledge about the Globally Harmonised System for Classification and Labelling (GHS), improved skills in applying the criteria for classification and labelling of substances and mixtures and understanding about enforcement of GHS, as a result of two regional workshops organised as part of the Programme.” In addition, the progress report indicated “strengthened regional capacity and collaboration in the area of chemicals management through the addition of Thailand as a permanent member of the regional collaboration, increased involvement of Myanmar and expanded exchange of information and cooperation between member countries”.

These workshop outputs will undoubtedly have built some capacity among responsible officials in member countries, as they have tried to come to grips with chemicals management outside of the agricultural sector. However, country representation in workshops does not always ensure that the “right” individuals are present. In addition, information is not always shared with colleagues upon return. The 2014 report underlined the need for activities in individual countries targeted to strengthen particular areas according to the specific needs of the national institutions, to be explored in 2015.

In the progress report of June 2016, KemI reports that during 2015, interest in capacity building within the area of chemicals management was explored at meetings between KemI and representatives from key ministries in Lao PDR and Cambodia. Both countries expressed that

⁸ Empowering farmers to Reduce Pesticide Risks. FAO 2013, available from: Vegetable-IPM@fao.org; www.vegetableipmasia.org

general capacity/knowledge building would be very beneficial. KemI is currently in the process of developing a suitable programme and timing for tailored training during 2016.

4.1.2 Impediments to effectiveness of the Programme

A question in the ToR is: *Is anything impeding the effectiveness of the programme and its project modalities? If yes, what can be done to address this?*

The Programme operates in a context of generally weak governance. For example, there are issues of corruption, irresponsible pesticide producers and vendors, smuggling over porous borders, ineffective implementation of regulations, and a weak voices of the poor. These are major impediments for development, in general, and also for the results of this Programme. An impediment is also the general lack of government funds in the poorer countries.

Also, as is noted in the Vietnam study for this MTR, the rapid economic development in some areas implies a need to look at possibilities of making agriculture more competitive compared to alternative occupations. Otherwise, there is a risk that “absentee farmers” use even more pesticides on their farms to lower the risks of losing production and to avoid using much manual labour. The risk of pest rebound is a possible effect of increased pesticide use, but absentee farmers are perhaps less likely to be well informed.

From the field observations and discussions with stakeholders in the MTR, it seems clear that the primary internal impediment to effectiveness of the Programme is the separateness of the work of the partners at the national level. The Programme is not one programme at the national level, but rather a cluster of sometimes very small projects, albeit with complementary objectives. The origin of this situation lies as described earlier in KemI’s quite reasonable decision to get the Programme moving quickly by bringing in partners with already relevant field operations and competent local sub-partners in each country. KemI’s partners have largely continued to do their own planning concerning field activity, working perhaps closely with their sub-partners but not with each other. Furthermore, KemI, by its own description, does not have the in-house capability to manage development work at the grass roots level. In the Programme countries, the sub-partners meet occasionally and share experiences, but they generally do not collaborate spatially or strategically. In the absence of specific joint country strategies for the Programme, many opportunities for synergy are missed.

4.2 EFFICIENCY

Questions on efficiency in the terms of reference:

- *Have the separate Programme activities been implemented in a cost-efficient manner?*
- *Is anything impeding the cost-efficiency of the Programme implementation? If yes, what can be done to address this?*

Effectiveness and efficiency are sometimes confused. Efficiency is about having low costs, as described in the OECD/DAC evaluation criteria. As stated in the inception report, the MTR has not had access to financial data and comparators or standards to make any rigorous statements on this issue.

In the country report on Vietnam (see Annex 3) examples are given of how the Programme was able to keep efficiency high and project budget costs low (see Box 1).

Box 1. Cost –efficiency in the programme in Vietnam

- Through collaboration between project partners, especially local partners including NGOs, government and farmers’ organisations, partners were able to make use of each other’s expertise for implementing project activities. As a result the project did not have to pay for the contracting of external experts. In addition, it was observed that local Programme partners have a higher commitment to project activities and target communities than external experts.
- Most of the project staff had been trained by previous projects, thus the project could build on existing expertise and did not have to start from zero. Project staff were all capable of managing and implementing the planned project activities. This is one of the reasons that most of the project activities were self-evaluated as having achieved their targets by 100% or sometimes over 100% as compared to targets/expected results, taken up in the project LFA.
- The programme activities are very much relevant to local people’s needs, and the programme was successful in engaging people’s participation, commitment and ensuring ownership, which also allowed for sharing project costs.
- The project objective is to reduce pesticide risk in agriculture while ensuring income for farmers in ways that align with the national and local government development strategies, as well as with local people’s needs. Therefore, the programme could more easily obtain contributions and participation from programme partners to reach its objectives.

On the other hand, the fragmentation of the Programme activities engendered by the lack of strategic planning at the country level can result in low efficiency. As pointed out earlier in this report, the Programme’s design is not an operation planned as a cohesive programme but a cooperation between different stand-alone organisations and their programming. This was, for example, found in the Vietnam field study where the different Programme activities were distributed to many communes, districts and provinces.

Web based instruments can lower the costs – PANAP and PEAC in China have for example launched online e-learning portals so that students, the public, farmers and consumers can interact and learn online. FAO has a website with many technical resources.

In summary, the MTR has observed that the Programme makes efforts to use funds in a cost-efficient manner but the fragmentation of activities is an impediment.

4.3 RELEVANCE

Questions on relevance in the terms of reference:

- *Is the Programme and its design relevant for addressing present major problem areas and needs? Does the programme design allow adjustments to changing circumstances and new opportunities?*
- *Have the established relationships with external institutions (ASEAN, ADB, Oxfam, APPPC etc.) been functional and beneficial for the programme? Suggest improvements,*

if relevant.

The Swedish policy document for support to the region (2010-2014), “*Strategy for regional development cooperation with Asia focussing on Southeast Asia*”, states that “particular consideration shall be given to chemicals management”. Recently, a new strategy has been adopted, entitled “*Strategy for Sweden’s regional development cooperation in Asia and the Pacific region (2016–2021)*”. The main objective of the new strategy is to support sustainable development in Asia through mutual interaction between human rights, democracy, gender equality, environment and climate change. Rights holders should have increased participation in policy, planning and implementation of sustainable natural resource management. The strategy is not operationalised yet. One message for the Programme is that it should continue to increase its focus on human rights and gender equality and work more intensively with environment and climate change issues. The Programme is deemed by the MTR to be in line with the old strategy and with more focus on rights, environment and climate change.

In the region, chemical management related matters continue to gain attention and priority. During 2015, ASEAN formed a special working group called “*ASEAN Working Group on Chemicals and Waste*” to promote regional coordination and cooperation in addressing chemicals-related issues, in support of relevant multilateral environmental agreements as well as in support of the Globally Harmonised System for Classification and Labelling of Chemicals (GHS). All countries in the Programme are, (or will soon be, which is the case of Myanmar) signatories to the relevant international conventions (Rotterdam, Stockholm, Basel, Minamata).

The following are notes on the relevance of the Programme and its objectives to the policy and situation in each of the participating countries:

Cambodia: As it is still a largely agricultural economy, pesticide issues are of special significance for Cambodia, which ratified the Stockholm Convention in 2006 and the Rotterdam Convention with some support from the programme. Cambodia adopted a new Law on Pesticides and Fertilizer Management in 2014. The implementation of this law has been the subject of support from the Programme. There is also a Law on the Management of Quality and Safety of Products and Services (2000), which addresses levels for all pesticides in fruit and vegetables and in food of animal origin. Cambodia has a large secondary industrial sector (led by the garment sector), but relatively little primary manufacturing industry. Agricultural, industrial, and household chemicals are imported in large quantities. The National Institute of Standards has very recently been mandated to convene an inter-ministerial working group on chemicals management, with a view to establishing a regulatory, monitoring and enforcement framework.

China: China ratified the Stockholm Convention in 2004, and hosts the Basel and Stockholm Convention Regional Centre for the Asia and Pacific Region (BCRC-SCRC China) at the School of Environment of Tsinghua University in Beijing. The “*Regulations on Safe Management of Hazardous Chemicals in China*” (Decree 591) were published in 2011. Administration is complex and multi-ministerial, and is coordinated by the Chemical Registration Centre of Ministry of Environmental Protection and the State Administration of Work Safety

– National Registration Centre for Chemicals. The recently announced government cap on growth in use of agricultural pesticides for use in China by 2020 is a step forward. The 2006 ban on the local use of broad-spectrum organophosphates was also a major regulatory advance.

Lao PDR: Lao PDR ratified the Stockholm Convention in 2006, and the Rotterdam Convention with some support from the programme. Lao PDR's Water Resources and Environment Administration (WREA) published a National Implementation Plan in 2010 with GEF and UNIDO support. Laos is actively developing a law on chemicals management, with support from the Programme. Responsibility for its implementation will be with the Ministry of Industry and Commerce, which will convene an inter-ministerial committee to support implementation. The new Minister of Agriculture has expressed a priority interest in food safety as well as the promotion of IPM.

Myanmar: Myanmar acceded to the Stockholm Convention in 2004 and enacted relevant legislation in 2013. Myanmar first participated in the Programme at the 6th Regional Forum in Lao PDR in 2013. The Myanmar Ministry of Agriculture has a Pesticides Registration Board, and the new Minister of Agriculture has indicated strong interest in HHP and PRR issues. Through two national workshops, the Programme supported strengthening of risk assessment capacity within the Pesticide Registration Board. The agricultural private sector in Myanmar has taken important initiatives in PRR in the fruit sector, with support from an industry association, which participates in the Regional Chemical Forum.

Thailand: Thailand ratified the Rotterdam Convention in 2002 and the Stockholm Convention in 2005. In 1997 Thailand developed its 1st National Master Plan on Chemical Safety Development. The National Environment Board published the National Plan of Action in 2007. The Ministry of Natural Resources and Environment (MNRE) has been assigned coordinating and control functions for carrying out the plan and for annual submission of a synthesised report. The Thai government presently has policies to support various departments and related agencies on the implementation of chemical and pesticide risk reduction and Agroecology. The country also has an active IPM programme involving various Ministries and Departments, including those on Agriculture and Education.

Vietnam: Vietnam ratified the Stockholm Convention in 2002, the Rotterdam conventions in 2007 and passed legislation for chemicals management in 2008 and new pesticide legislation in 2014. A chemicals management agency was created in 2009 in the Ministry of Environment, Vinachemia. It was subsequently relocated to the Ministry of Industry and Trade on the realisation that the country's control points for most chemicals are in the production and supply chains. On the industrial side, it is noteworthy that in 2014 the Vietnamese Government decided to phase out production and use of asbestos, given its adverse impact on human health. Asbestos has been an important construction material and export commodity. Vinachemia highly appreciates the inputs from the Programme - especially, but not only, the access to Swedish expertise, technology, and organisational models via KemI.

The question of whether the *programme design* is relevant for addressing the present major problem areas and needs, and allows for adjustments, as raised in the ToR, has no clear-cut

answer. The work of the partners has certainly focused on particular areas, and within these areas there has been good flexibility. For example, the policy component has been adjusted to the institutional, policy, and political developments in the Programme countries. However, there are other problem areas that the Programme is not fully addressing. For example, in the Programme document it is highlighted (p.12) that some new attention areas will be further elaborated during the present phase: involvement of the private sector, linking farmers to consumers, agro-ecology, consumer awareness on food safety, and use of new media platforms for advocacy. Some initiatives have been taken to advance in these areas, but as commented in Section 4.1.1, insufficient action has been taken, including aspects related to large-scale farmers, chemical production, and chemicals in consumer products. The present project design with four independent partners with their own specific agendas and fixed budgets has not been fully able to address the development of new areas.

In summary, the Programme is deemed to be relevant both from a donor perspective and in relation to the needs and priorities in the region and the participating countries. However, mostly because of its design the Programme has not been able to adapt to the emerging needs within the chemicals sector.

4.3.1 Relations with external institutions

ASEAN is a politically very important grouping. KemI has established contact with the new ASEAN working group on chemicals and wastes. At the working group meeting for the Regional Chemical Forum in September 2016, where the MTR team was present, it was discussed if a stronger relationship should be created with ASEAN. One problem with this was said to be that according to ASEAN principles, countries that wish to cooperate have to cooperate with all ASEAN countries and not a select few. That is, if Sida wanted to work *through* ASEAN the Programme would have to be working with all member countries. Working through ASEAN would also limit flexibility, the participants suggested.

UNEP, together with WHO, has responsibility for a regional forum for environment and health and would like KemI to support governments with training and problem-solving in the ASEAN countries. UNEP has worked on implementation of international protocols on chemical substances, and would like to cooperate with KemI on industrial chemicals and possibly customs support. UNEP does not need any funding, just technical support. A dialogue has recently begun at the senior staff level in Bangkok between UNEP and KemI on this possibility.

ADB is implementing a programme for agribusiness investment, the Core Agriculture Sup-

port Program (CASP), which Sida has also supported. Contacts have been made between the KemI Programme and the CASP. However, closer collaboration has not been agreed. According to a recent mid-term review the CASP needs to focus on its own targets, and ADB has now engaged a consultancy firm to manage the last phase of the project.⁹ ADB had earlier planned for a larger IPM/PRR programme in the region, which was shelved for internal ADB reasons.

OXFAM manages a programme called Gender Transformative & Responsible Agribusiness-Investments in South East Asia (GRAISEA), financed by Sida. It focuses on six countries (some of which also participate in the KemI programme) and provides support on developing value chains in palm oil and aquaculture. There have been informal consultations between GRAISEA and the KemI Programme. GRAISEA works not only with small-scale producers but also with other stakeholders. Some information sharing has taken place with FAO but otherwise there are not many connections with the KemI Programme. Sida has agreed to convene a meeting to discuss possible collaboration between the Programme and GRAISEA and ADB.

The Asia and Pacific Plant Protection Commission (APPPC) is a regional organisation for Asia and the Pacific, financed by its members. It has three standing committees: Pesticides, IPM and Quarantine. FAO finances a small secretariat in Bangkok and APPPC member countries make regular financial contributions towards implementation of biennial workplans of all three committees. The APPPC secretariat has cooperated closely with the Programme, and FAO in Bangkok is also a major partner.

KemI, PANAP and FAO have at times had intensive contacts with international chemical convention secretariats and with SAICM. Experience from the work in the Programme is fed into the work of the international groupings by all these three actors. International, national and local advocacy is an objective of the Programme.

In summary, the Programme has contacts with a number of organisations in the region. Of these, APPPC is perhaps most important as it is a regional organisation with similar aims as the agricultural part of the Programme. It could potentially play a role in supporting regional cooperation on agriculture chemicals, after the Kemi Programme ends (see further 4.4.2). ASEAN now has a chemicals working group and KemI has good contacts with them.

⁹ Aide Memoire TA 8163-REG: Implementing the Greater Mekong Subregion Core Agriculture Support Program Phase II: Findings and Recommendations of the Midterm Review, Asian Development Bank 2016

4.4 SUSTAINABILITY AND REGIONAL COLLABORATION

Questions on sustainability and regional collaboration in the terms of reference:

- *Does the programme promote/ensure a sustainable regional exchange and coordination in order to achieve pesticide risk reduction and good chemical management at national and regional level?*
- *Does the programme design and implementation strategies allow for synergies/synergistic effects and encourage further collaboration?*
- *To what extent have governments and development partners provided support and invested in the Programme and up-scaling of activities?*
- *Does the programme have a relevant and feasible strategy for promoting sustainability of programme results?*
- *Briefly assess the efficiency and effectiveness of communication of results for the ultimate purpose of influence on policy makers.*

Sustainability of the Programme in the environmental sense is not included here (see 4.5.5). This section deals with sustainability of Programme results and institutional sustainability.

The Programme document includes a relevant strategy for promoting sustainability of programme results. At the **local level** the programme aims at strengthening communities, increasing awareness, providing training to extension services and supporting farmers to use less pesticides and get less exposure. The establishment of savings groups and registration of IPM Farmer Clubs are encouraged because they are able to continue to fund pesticide reduction measures. Of the few Clubs actually interviewed in the field, several reported well-functioning savings and loan groups, and were negotiating with provincial agriculture authorities to obtain formal registration as cooperatives.

By introducing pesticide issues into the basic curricula in schools such training becomes sustainable, more so if the national curriculum is developed to include relevant PRR and agro-ecology materials. TFA has reported on such advances. Support on the development of value chains and organic agriculture by PANAP and national IPM programmes in most of the countries can create incentives for continued production with few or no pesticides, but there are only few examples in the reporting of the Programme of working such value chains, for example in Vietnam. In Cambodia, some IPM Farmer Club leaders affirmed that they would use their own funds to pay for PRR and agro-ecology technical assistance, once the direct support of the national programme ended.

However, as is shown in the Vietnam case study, there are also factors that work against sustainability. Changes are still new to people and they need time and access to funds to adopt new habits of pesticide use. Furthermore, the communes in Vietnam need to fully adopt the new pattern. Also, the Programme in Vietnam finances many small projects reaching smaller groups, and there is a risk that that in neighbouring communes the illegal trade in pesticides continues and will influence the Programme communes.

In Vietnam, the local and provincial authorities are financing IPM activities from their own budgets and they are engaged in decreasing hazardous pesticides, for example by controlling

vendors.

At the **national level**, one of the most potent measures for sustainability is new chemical laws, and accompanying regulatory and control measures. Technical assistance for pesticide registration under the Programme is designed to adapt to the fact that institutional capacity and government funding levels normally are low. This is done by using simple and inexpensive methods that could be sustainable. Training at all levels contributes to sustainability. In Cambodia, for example, the MTR met several responsible officials at provincial and national level who were IPM Trainers earlier in their careers. General awareness-raising supported by PANAP and partners contributes to consumer awareness on food safety, increasing demand for safe food. In Cambodia the “CEDAC Shops” have seen significant increases in organic rice and vegetable availability over the past few years, in some measure attributable to Programme inputs.¹⁰ One of the most important parts of the Programme’s strategy for sustainability at the national level is to integrate the objectives of the Programme into the policies of the governments, which can also lead to more funding being allocated under national budgets (see Table 1). Vietnam is a clear case where the government has instituted several national policies in support of PRR and IPM.

Table 1 provides available FAO information in four countries on government and donor investments in continued PRR training. All governments contribute, with Vietnam being the largest contributor. FAO has been instrumental in convincing governments and stimulating other donors to increase their financing of IPM activities.

Table 1 Estimates of FAO-GCP/RAS/229/SWE and government and donor investments for upscaling of the FAO piloted pesticide risk reduction training work in selected Greater Mekong Sub region countries during Phase II Programme “Towards a non-toxic Southeast Asia” (2013-16).

Investments (US\$) for period 2013-16	Cambodia	Vietnam	Lao PDR	China PR (Yunnan, Guangxi, Hainan)
FAO-GCP/RAS/229/SWE ¹¹	511,720	303,400	348,961	287,034

¹⁰ CEDAC, Regional Programme: Towards a non-toxic environment in South-East Asia Phase II, Six months Narrative Report on Pesticide Community Monitoring in Cambodia(January-June 2016), 2016

¹¹ Estimated FAO in-country expenditure for pesticide risk reduction training activities charged against Field Budget Authorization administrated through FAO Country Offices. This excludes costs for FAO local and international staff costs.

Government (national, local)	123,899 (national, MAFF)	2,474,124 (national/MARD & local governments)	200,000 (national/MAF)	136,500 ¹² (national-NATESC and provincial-Yunnan& Guangxi PPS)
Other Donors	2,333,600 (IFAD-PADEE and ASPIRE ¹³)	3,711,186 (World Bank, Oxfam, private sector)	146,000 (IFAD, Helvetas/LURAS, SDC-TABI)	i
Total	2,969,219	6,488,710	694,961	423,534
% FAO investments of total	17	5	50	67

Civil society organisations need external funding to operate. PANAP now uses Sida funds for their activities in the region. If Sida funding ended, PANAP would probably increase fund-raising efforts for the region and redistribute some of the funds now used in other regions.

Companies, private and public, could contribute with funds. In Myanmar and Cambodia there are positive examples of companies providing both market outlets and technical assistance to reduced pesticide use in production of fruits and vegetables. The Programme, however, does not yet tap this source to a large extent. There are simultaneously a number of pesticide producers that aggressively combat efforts to ban hazardous pesticides and/or implicitly promote use of pesticides under the banner of IPM training, according to reports of the Programme.

In summary, the Programme has a relevant strategy for promoting sustainability of programme results. Many activities at the local level contribute to permanent changes in production systems and behaviour. At the national level, the Programme supports increased awareness, and new laws and regulations, if enforced well, are potentially potent instruments for sustainability. Government funding is forthcoming in all countries. Funds from donors other

¹² This figure includes the direct national and provincial government counterpart contributions in support of the FAO-GCP/RAS/229/SWE project work in the 3 target provinces only. It does not include the substantial funds provided by local governments at prefecture, county and municipality levels. Also not included is the support by the Beijing Municipality for upscaling the IPM-FFS in support of its food safety work as well as the MOA-DSTE national investments for upscaling the national FFS programme. The national government's RMB 800 million (USD 129 M) investment, intended to pilot and upscale FFS in 800 counties nation-wide, includes support for FFS on IPM in the 3 target provinces during the 2013-16 period.

¹³ This figure represents the 2016 IFAD-ASPIRE budget allocation for FFS work in Cambodia as well as the IFAD-PADEE project funding for FFS work for period 2013-16. Data for the World Bank support for FFS not included as not available at this time of reporting.

than Sida are supporting up-scaling of activities. Companies are not yet participating much.

4.4.1 Regional Collaboration

At the **regional level** there are different types of exchanges.

The Regional Forums, organised by KemI, meet on average every 9 months. Hosting rotates between the countries. Each country is represented by 10 participants while the host country has 20 participants – a total of 60-70 participants. A small working group meets before the next forum for updates and decisions on topics and dates. Participants come from a number of ministries involved in chemicals management. The topics vary. The last meeting was about chemicals in industrial products, and before that the topic was pesticide management. The meetings give the participants opportunities to agree on bilateral cooperation on specific issues.

The Programme partners themselves meet regularly at the occasion of bi-annual meetings with the Swedish embassy in Bangkok, and also in connection with other meetings or workshops on specific issues, such as training of registrars or the use of the FAO Toolkit Pesticide Registration. These workshops are often based on national needs but with participation of other countries. The partners have used their comparative advantages to collaborate on specific issues, for example in gaining access to government officials.

At the regional workshop in September 2016 where the MTR team was present, the future regional collaboration on chemical management was discussed. One issue that was discussed was whether or not the present group should be larger or smaller, for example including other ASEAN countries, or keeping it to the present or even fewer countries. The consensus was to keep the present group with its specific geographical focus.

The question of a sustainable continuation of regional exchanges is difficult. There is little possibility in the medium term that the governments themselves would finance the ample participation in Regional Forums that now takes place. ASEAN is too large for a more focused regional exchange for the countries in the Programme and has little expertise on chemicals. APPPC does have some funding from its members and from FAO and will continue to work on regional exchange on matters pertaining to pesticide management and IPM in case Sida funding comes to an end. However, APPPC is focused only on plant protection and not industrial and consumer chemicals.

In summary, at the regional level the Programme supports the Regional Forums and a number of workshops and collaborative activities that give synergy effects. Sustainable continuation of regional exchanges after the Programme ends is uncertain.

4.4.2 Communication of results

The communication of the results of the Programme is very important as a vehicle for influencing policymakers, and the general public, on the need for action against hazardous chemicals. Communication of results has been an issue identified by Sida as needing improvement. Section 4.1.2 of this report (Results), makes the observation that the lack of coordination at

country level is impeding the flow of information of project results to policymakers.

In the Programme report for 2015 it is stated:

“A lot of information is available from the Forum meetings organised by KemI. Forum reports and presentations are made available to all member countries but a major constraint is that the participants don’t share knowledge from the Forums with their colleagues and that different people come to the meetings. As a first step towards broader sharing of this information, KemI will make more documents from the Forums available on their official web site, www.kemi.se.”

The lack of web-based information from the project is a general problem. This could be a result of the fact that the partner organisations entered the Programme as separate entities with their own profile and web-based presence. FAO has a number of useful instruments easily available on its website such as technical guidelines on different facets of pesticide management, but no information is specifically presented on the Programme’s experiences. The other partners do not have extensive information easily available from the Programme either, although PANAP has plans to come up with a redesigned website with a more optimised search engine. KemI has started to increase information from the partners on its website.

One factor that can influence communication is that the monitoring and reporting from the Programme is not geared towards providing evidence based communicable results (see 4.1.1) There is a lack of reliable data and studies that can constitute the basis for active policy influence. The Programme could try to produce and use such data in more explicit and targeted policy briefs.

In summary, the communication of results from the Programme can be improved.

4.5 CROSS-CUTTING ISSUES

Questions on cross-cutting issues in the terms of reference:

Integration of cross-cutting issues (Human Rights Based Approach to development, including the poverty perspective, gender equality and good governance). Environment and climate change is also discussed in this section by the MTR team.

- *Are these cross-cutting issues well integrated into Programme design and activities?*
- *Is there sufficient knowledge about these issues among implementing partners and are they acknowledged and prioritised?*

4.5.1 Human rights

An interviewee from Vietnam at the regional workshop in Bangkok described how they treat cross-cutting issues in the IPM programme: “We select some key human rights issues and integrate them into the training, such as the lawful rights of women and children. The women farmers after the training disseminate to other people and teach them about their rights. They negotiate with local authorities about lowering the risks with pesticides, so the voice of women gets heard. And they ask compensation from the company selling bad seeds. And they dis-

cuss more openly the sharing of work between men and women.”

This illustrates that the principles of non-discrimination, participation, accountability and transparency are present in the Programme. Especially PANAP has a very evident rights-based approach with emphasis of the right to health and the rights of the child. TFA has also solid experience in this field. In the case of laws and regulations, the legislation supported by the Programme through FAO and KemI includes for example appeal procedures and special attention to vulnerable groups.

However, at the beginning of the Programme, a Human Rights Based Approach was not formulated in detail and there are few indicators related to human rights in the plans of the Programme. During the implementation, attention to HRBA has increased over time. In 2015, PANAP organised training on human rights, the Swedish embassy in Bangkok organised a human rights training for the regional partners in the Programme, and KemI will take part in training in 2016.

4.5.2 Gender equality

Gender equality is the cross-cutting issue that was most acknowledged and prioritised in the plan for the present Programme. Especially PANAP has a very strong profile in this regard. The IPM/PRR types of programmes work at community level with women as important participants. In the Vietnam country study in this MTR, it is stated: respondents at all field sites had the same answer when asked about the right to join in the project: “Everyone has a right to join the project. But priority is given to the poor and women”.

The original Programme proposal was assessed by the Sida Gender Helpdesk in 2013. It proposed a number of measures, and summarised: “The design of the proposal does not address the most critical issues, that is, the role and needs of female farmers regarding IPM, and the logical framework and monitoring system do not integrate gender issues in a way that ensures a gender focus during implementation.”

Following the Sida gender assessment, the Programme complemented the original LFA indicators for this phase on a number of points, such as including more gender-disaggregated indicators, number of women led activities, and reduced pesticide risks for women.

A gender impact assessment study mentioned in the plan for the Programme has been delayed but will be published in 2016 in the form of “stories on the ground” from the different parts of the Programme. The Partners are increasingly asking for and presenting gender-disaggregated data, which are used for better targeting of training and participation in different Programme activities. An illustration is the following table presented by TFA in the 2015 progress report from the Programme.

Table 6: Female roles with regards to pesticides

Country	Decide and select pesticides to use	Buy pesticides from shops	Read label when prepare for spraying	Mix/ dilute chemicals in spray session	Spray pesticides in the fields	Number of interviewed farmers
Thailand	16%	17%	15%	5%	11%	142
Lao PDR	0%	74%	0%	0%	0%	39
Vietnam	41%	59%	50%	39%	37%	180
Cambodia	17%	33%	0%	0%	0%	n/a

The table shows, for example, that in Vietnam, women are much more engaged in use of pesticides than in the other countries (the explanation being that in Vietnam most men are employed outside the agricultural community and only about 50 per cent come back to handle pesticide-related tasks).

Even if the Programme has made good progress as concerns gender equality, there is more to be done, as suggested by the Gender Helpdesk. If there will be a new phase of the Programme, a new assessment of both gender and other rights issues could be included in the preparations. The strong emphasis in the new Swedish development cooperation strategy on these issues makes this even more important.

4.5.3 The poverty perspective

The Programme does not have an overriding poverty objective. The main objectives are better management and use of chemicals, reduced risks from chemicals to health and environment, and more sustainable intensification of agricultural production and improved resilience to climate change.

The plan for the present phase does not include any section on poverty or poverty as a cross-cutting issue. In the Programme report for 2015, there is a section called “Poverty and human rights perspective” where effects of the Programme are mentioned as concerns the livelihood of farmers, income generation, and impact of pesticides on children’s health and intelligence. As suggested in section 4.1.1 (on theory of change), effects on health and income could be suitable long-term impact goals for a future programme, combined with environment and climate change. At the regional workshop it was voiced that more attention should be given to such outcomes and impacts.

Health effects of pesticides are difficult to measure in project monitoring, but numerous general studies are available on the negative effects of hazardous pesticides. A proxy for measuring health effects is the observed reductions of the use of dangerous pesticides, and the use of more protective equipment and safer methods for spraying could also be such a proxy, as long as these measures are sustained.

Anecdotal and scattered information is available from the Programme partners and sub-partners on the positive effects on farmers’ income, for example from China. The most con-

trolled study in the Programme is the FAO 2016 report entitled “Lasting IPM impact” from Cambodia and Vietnam with three observation periods in 2008, 2010 and 2015. The report shows “a lasting shift towards less toxic pesticides”, which could be expected to give positive health effects. The income of the farmers, however, did not increase much in IPM villages compared to control villages.

It should be noted that the primary objectives of the Programme are to reduce risks from chemicals, including pesticides. Large-scale corporate agriculture projects, mostly monocultures, are large users of pesticides. The effects of pesticides used by large-scale farmers impact the poor disproportionately, as agricultural labourers, and through negative effects on environment (soil, water, air and food pollution) in the communities near such projects.

The reporting on poverty effects of the Programme has improved over time and the Programme has indicated that this trend will continue. A new phase of the Programme after June 2018 would present an opportunity to introduce the poverty perspective even more in regular monitoring and reporting.

4.5.4 Good governance (anti-corruption)

Different ways to combat possible corruption are presented in the plan for the Programme from 2013:

- Audits and monitoring (see 4.1.1)
- Capacity building for governments and civil society to enhance transparency in chemicals management
- Stronger regulatory framework resulting in better transparency and accountability
- Control instruments for chemical inspection
- Inclusive and participatory approach in the Programme and results orientation
- All documentation produced by the Programme is available for the general public
- Empowerment of farming communities
- Monitoring International Code of Conduct on Pesticides Management

The reporting on anti-corruption in the progress report for the Programme for 2015 contains little concrete reporting. In fact, the whole plan from the Programme document from 2013 on what to do on anti-corruption is copy/pasted in the narrative in the progress report, with two minor additions.

Sida has financed training for partner staff in anti-corruption and during that training guidelines were developed that for example TFA and PANAP will use to improve their internal guidance on anti-corruption.

4.5.5 Environment and climate change

There are no specific questions in the ToR on these cross-cutting issues.

The Programme is called “Towards a non-toxic environment in South-East Asia”. The Programme has certainly had positive environmental effects, but it is not clear to what extent. The effects on climate change observed have mostly to do with adaptation to climate change

in the form of increased resilience for farmers using more resilient biological methods instead of (expensive) synthetic chemicals.

In the overall objectives there is wording on reduced risks to environment and improved resilience to climate change. However, there are no specific indicators to measure objectives such as soil quality, pollutants in water resources, productivity of land, biodiversity, ecosystem services. In the TFA projects, one activity is training farmers and students to periodically monitor the pesticides used in the communities and associated behaviours, and the status of agrobiodiversity or species of plants and animals in the farmland in order to track changes in biodiversity resulting at least partly (causes are complex) from pesticides used in the target area. One study in Cambodia showed that natural enemies in IPM systems can increase, an impact on biodiversity, but no such indicators are included in the M & E framework.

In the study *Empowering Farmers to Reduce Pesticide Risks* (FAO 2013) an attempt is made to measure effects on environment using the Ecology Index (EI). The result was that the environment impact in the project villages was much better than in control villages.

There are indicators that could be used as proxies for measuring effects on environment (and possibly health and climate change) such as reduced availability and use of pesticides known to have detrimental environmental effects, better storage and disposal of pesticides and empty containers, quantities of pesticides used, and indeed blood tests on school children as is being done in Thailand.¹⁴

Of these, the LFA includes the indicator number of farmers in projects managed by FAO who have reduced their use of pesticides and made increased use of biological control. In addition, there is information in some project reports on quantities of pesticides used but no compilation of this information. On climate change there is little to be found in the plans and reports of the Programme.

4.5.6 Summary of cross-cutting issues

The *human rights* principles of non-discrimination, participation, accountability and transparency are present in the Programme, spear-headed by PANAP. There are few indicators related to human rights, but increased attention is being paid by the partners in their work and reporting.

Gender equality is the cross-cutting issue that was most developed in the original Programme

¹⁴ The studies of pesticides impacts to children and communities in high risks areas were implemented in Laos, Philippines, Thailand and Vietnam

document. This has been further developed. The Programme has complemented the original LFA indicators on a number of points, such as including more gender-disaggregated indicators, number of women led activities, and reduced pesticide risks for women.

The poverty perspective is implicit in the whole programme but not an explicit objective. The health effects can be induced by the indicator ‘Decreased use by farmers of hazardous pesticides’. The information in reports on farmer incomes (less costs for pesticides, sometimes more manual work) is not conclusive and not gender-disaggregated.

The Programme has awareness about the danger of *corruption* and the different ways to prevent corruption such as audits, regulatory frameworks, inspections and a participatory approach. It is difficult to report on results of anti-corruption activities but some more reporting could be expected. Corruption has many facets, and a frank analysis of what corrupt behaviours are of interest, on the parts of which players, would be helpful.

Environment and climate change resiliency are part of the formulated objectives for the Programme but are generally not measured with indicators. One proxy indicator in the LFA for environment that can be used is number of farmers practicing reduced use of pesticides and increased biological control. The phasing out, through regulatory control, of highly hazardous pesticides known to have detrimental environmental effects is another possible indicator, but in both cases the baselines and means for objective verification of the indicators would need to be established.

Thus, the work of the Programme on gender equality and human rights is progressing, while focused work related to poverty, corruption, environment and climate resilience are not being actively monitored within the Programme.

4.6 THE PRIVATE SECTOR

Questions on private sector collaboration in the terms of reference:

- *Is the potential for collaboration/engagement with the private sector sufficiently used (also including farmers as small scale business)?*

In the MTR interviews, more than one national official privately expressed a potentially well-founded fear, at the prospect of having to confront powerful and well-connected private sector players in their countries over issues of corporate social and environmental responsibility, concerning pesticides and other chemicals. Large-scale farmers often use a lot of pesticides, which has effects on workers, consumers and the environment. The Programme has not to date given emphasis to the pesticide use by large-scale farmers. The most important activities in the Programme in this regard that have also made positive contributions is the work on bans and control of sale of hazardous pesticides - in the form of new laws and regulations, collecting information to influence via international negotiations, and awareness rising within the countries.

There are cases where private sector players are engaging, in a very constructive way, with farmer groups, CSOs and government. For example in Myanmar, the Myanmar Fruit, Flower

and Vegetable Producer and Exporter association is collaborating with FAO/IPM and with the Plant Protection Department to support “their” farmers to adopt IPM agro-ecological methods of pest control (fruit fly and seed weevils) in production of mango, melon, and pomelo, for the foreign market. The F&V Association members recognise that their advantage lies in having successful farmers producing quantities of high quality, especially “safe” products.

In Cambodia, most agricultural input suppliers who were visited by provincial inspection officers understood and complied with the request to remove banned pesticides from their shelves, in accordance with the law, and they also made other adjustments after receiving training.

Agro-input suppliers in many countries are to a limited extent offering pesticide alternatives in the form of biological control agents (BCA), and using their own extension staff to support farmers in learning how to use them, recovering the costs over time in increased sales.

IPM Farmer clubs can eventually become legal entities capable of carrying on business activities with limited liability for directors. These “social enterprises” can become vitally important nodes in the value chain, enabling agro-ecological farmers to access better markets on better terms.

On the non-agricultural chemicals side, participants in the regional workshop identified chemicals in textiles and especially in children’s clothes and toys as issues of concern, consistent with a proposal at the regional workshop to make “Children and Pesticides” a major theme as the Programme goes forward. Direct positive engagement with manufacturers of these products, in collaboration with national regulatory agencies, could be an appropriate initiative for the Programme.

There are thus several examples in the Programme of successful engagement with private sector players, and also of effective advocacy at the global level (e.g. PANAP and the International Monsanto Tribunal in The Hague in mid-October 2016). There are also many companies which seem to be intransigent. These issues are not unrecognised by the partners, and are mentioned in the Programme document. But with the limited level of Programme coordination at the national level, strategic approaches to private sector engagement in each country are lacking and could be improved.

4.7 RISK MANAGEMENT

Questions asked in the terms of reference:

- *How have assumptions and risks been followed up and handled by the programme partners?*
- *Have partners been able to adjust to new emerging needs/problems within the framework of the programme?*

As noted in the Sida assessment of the Programme proposal, the current Programme phase builds on structures of cooperation and implementation that have been well tested since 2007 and therefore the internal risks are low. What could be more threatening are the external risks.

The main identified risks in the Programme document are:

- Insufficient local capacity, including awareness, insufficient knowledge and willingness to continue the process (inspectors, farmers and the public's knowledge).
- Corruption at all levels in the society, which may affect the risks below;
- Local ownership, including responsibility and interest for pesticide and chemical management. Political will and awareness, including authorities/countries willingness to make investments in IPM training and legislation and enforcement of legislation.

The risk matrix with mitigation measures is updated every year and discussed at each follow up meeting with Sida. In the 2015 progress report, two risks were emphasised: funding and enabling environment for CSOs. The funding from Sida was at risk because of exchange risks and cuts in the Swedish development budget. This risk was mitigated by more rigorous handling of disbursements and eventually by Sida promising an unchanged budget. The Programme has some readiness for possible future budget cuts. An external threat noted was the worsening situation in Cambodia, Lao PDR and China that would potentially restrict CSO operations.

The MTR deems that the Programme's and risk management are satisfactory.

5. Conclusions and recommendations

5.1 CONCLUSIONS

5.1.1 Results, Theory of change, LFA and monitoring

The Programme partners have collaborated since 2007 and are very engaged in producing good results. The conclusion is that the Programme has produced more and better outputs compared to the targets set in the results framework in the Programme document.

The financial reporting and auditing of the Programme appear to be satisfactory. The budget cuts that were feared from changes in exchange rates and lower budget for Swedish development aid did not materialise.

The present LFA and monitoring system have deficiencies in that there is not an underlying agreed theory of change. The monitoring and reporting are biased towards activity and output reporting rather than towards outcomes and impact. There was a consensus voiced by partners during the regional workshop to increase focus in the present phase on monitoring and reporting to policymakers in the countries on outcomes and impacts, which is commendable.

A change in the results framework is warranted. The Sida helpdesk has provided a number of suggestions to improve the results framework, and in this MTR ideas about a new theory of change and a more outcome oriented results framework are also offered. However, the MTR Team considers it unwise to make a major overhaul of the present joint LFA for the Programme at this time. The reason is that the remaining time for the present Programme phase is

only about 1.5 years. In its assessment of the proposal for the present phase, Sida already indicated that it is likely that there will be a continuation of the programme. Sida generally requires about six months for its decision process. This leaves only a year for preparation of a new proposal, if there is to be no gap in the Programme.

Therefore, instead of reworking the present LFA, and including new and emerging issues, the conclusion is that it would be better that the Programme and specifically KemI focus on a thorough preparation of a new proposal. This proposal could include the changes recommended in this MTR report, and ideas from the helpdesk report.

5.1.2 Awareness and capacity building on IPM and PRR

According to an analysis in Cambodia by CENTDOR (FAO 2016), the farmers that have learnt IPM show retention of increased knowledge about many details related to hazardous pesticides. The best measure in the Programme of farmers' increased awareness and capacity is the fact that 50 per cent of the trained farmers after training use less hazardous pesticides and more biological control methods. Incidence of pesticide-related poisoning has also decreased as farmers use more risk reduction techniques. It is uncertain how much of the changed behaviour can be attributed to the effects of the Programme, how much is because of other factors in society, and it begs the question of how much of this change is sustainable.

The economic situation for farmers has on average not changed much by replacing pesticides with manual labour and biological agents. It is important to stress that replacing pesticides does not necessarily mean more use of labour. Labour is quickly moving out of contemporary agriculture and there is therefore a need to work on labour-saving alternatives. Partner activity in all countries addresses the economic issue to a limited extent, but they recognise its importance. More could be designed into country strategies in a future Programme to help farmers increase their income by linking them to markets for safe food.

In one province looked at in the Vietnam study in this MTR, the local and provincial institutions have taken policy and funding decisions to support continued IPM/PRR services to farmers. In other areas in Vietnam where the Programme has more scattered projects, the risks for losing long-term impact are greater.

5.1.3 Regulatory framework and chemical management institutions

The Programme's work with agriculture chemical management legislation, regulatory frameworks and inspection systems has moderately been successful. The fact that large-scale farmers who use significant quantities of pesticides, are becoming a larger component of the agricultural sector in countries in the region, warrants that the Programme focus more attention to the use of pesticides by this group.

More support is needed to continue the process of institution building for a spectrum of government institutions having responsibilities pertaining to the management of non-agricultural chemicals, such as implementation of regulations, registration, border inspection and import control, worker safety, food safety control, waste and data management. Also the government services for IPM need further support.

A major conclusion from this MTR is that there is no coherent country and institution building focus in the Programme, for example in the form of country-specific strategic and annual plans for institution building in the CLM countries, including measures for communication to and engagement with policymakers.

5.1.4 Efficiency

In the efficiency chapter (4.2), examples are given from the Vietnam study of cost efficiency measures, such as getting local financing. Better coordination and joint planning of country activities could probably further improve gains in cost efficiency. The MTR team did not have access to financial data or time to go deeper into this issue. The general impression from interviewing a number of involved people in the regional workshop is that the partner organisations make efforts to save costs for the Programme budget to allow for the implementation of all envisaged programme activities, and more.

5.1.5 Relevance, flexibility and project design, risks

The Programme is deemed by the MTR to be relevant both in relation to the needs and priorities in the region and the participating countries and from the donor perspective. The new Swedish development cooperation strategy for the region emphasises links between environment, climate change and human rights and gender equality. This can be important for a possible new phase of the Programme.

The design allows for important work in relevant areas, and the Programme has shown flexibility in adapting to changed circumstances and gives continued attention to risk management. But the present design, with four independent partners with specific agendas and fixed budgets, has not been wholly suitable for coordination at the national and local levels.

The major focus of the Programme has been on pesticide risk reduction in smallholder agriculture and on agro-ecology. There are still many important pesticide problems to solve in this domain in the region. The issue of pesticide use by large-scale farmers is not specifically addressed by the Programme, even though they are in theory subject to the same regulatory control. In practice they may have certain immunities not available to smaller players. And the development of new areas such as private sector collaboration, consumer and industrial chemicals and other emerging issues, even though envisaged by the Programme, have not received the attention they require to make significant advances in reducing the level of toxic chemical exposure.

5.1.6 Relations with external institutions and regional collaboration

The Programme has made contacts with other major programmes managed by ADB, OXFAM, IFAD and UNEP. There has been close collaboration with IFAD projects on IPM and some with other donor-financed projects. The Swedish embassy in Bangkok will invite the different donors to discuss further collaboration.

ASEAN has a working group on chemicals and wastes and KemI has good contacts with this group, which can be the basis for substantial collaboration in the possible new phase. The

Asia and Pacific Plant Protection Commission (APPPC) has its secretariat in Bangkok provided by FAO, and there has been some concrete collaboration with KemI and the Programme on legislative and regulatory issues. Such cooperation is expected to continue.

The regional collaboration within the Programme has been appreciated by the participants in the six countries. There are large Regional Forums every year, and workshops and partner meetings in-between. Topics have varied according to needs and circumstances in a flexible way. This regional collaboration is mostly at the level of information sharing. There have been a few instances of direct bilateral activities as a result, but more would be useful as part of a strategic plan in a new phase of the Programme.

5.1.7 Sustainability

The progress reports and interviews indicate that communities and farmers are supported in gaining awareness of pesticide related issues and to change their use of pesticides, and that many do it. These may be lasting changes, given the understanding that farmers have gained concerning health issues, even if the economic benefits are not there, but there was no data available to the evaluation team to prove this. Savings groups and local government funds are used to further sustainability as observed in the MTR country studies. Curricula in schools are changed to include PRR. More work could be done on value chains, linking farmers to better paying markets, to give profit incentives to farmers to produce safe foods.

Funding for IPM-type programmes have been forthcoming from provincial and central governments, most in China, Thailand, Vietnam and for IPM in Cambodia. Private companies are a hitherto relatively untapped source of funding. NGOs need continued fundraising for their work.

At the national level, the Programme support to new laws, regulation and control has contributed to sustainable results.

The regional collaboration in the Programme has given synergy effects. Sustainable continuation of regional exchanges after the Programme funding ends is uncertain.

5.1.8 Communication of results

The communication of the good results of the Programme are very important as a means for influencing policymakers and the general public on the need for action against hazardous chemicals. The lack of coordination at country level in the Programme impedes the flow of information to policymakers. The websites of the four partners do not provide enough evidence from the Programme, and the monitoring and data collection is not geared to give substantial validated experience to be used to influence policymakers. The partners plan to increase the information of Programme results available on their websites, but generally policy makers do not make decisions based on such material. Well-developed and targeted policy briefs are required.

5.1.9 Cross-cutting issues

There are few indicators related to human rights but increased attention is being paid by the

partners in their work and reporting.

Gender equality is the cross-cutting issue that was most developed in the original Programme document, and this has been further developed. The Programme has complemented the original LFA indicators on a number of points, such as including more gender-disaggregated indicators, number of women-led activities, and reduced pesticide risks for women.

The poverty perspective is implicit in the whole programme but not an explicit objective. The health effects can be induced by the indicator “Decreased use by farmers of hazardous pesticides”. The information in reports on farmer incomes (less costs for pesticides, more manual work) is not conclusive and not gender-disaggregated.

The Programme has awareness about the danger of corruption and the different ways to prevent corruption such as regular financial reporting, audits, regulatory frameworks, inspections and a participatory approach. It is difficult to report on results of anti-corruption activities but some more reporting could be expected. A clear analysis is lacking of what are the corrupt activities, and by whom, which should be of direct concern to the Programme.

Environment and climate change are part of the formulated objectives for the Programme but not measured with indicators. One proxy indicator in the LFA is number of farmers practicing reduced use of pesticides and increased biological control. Another could be phasing out, through regulatory control, of highly hazardous pesticides known to have detrimental environmental effects.

In conclusion, the work of the Programme on gender equality and human rights is progressing, while focused work related to poverty, corruption, environment and climate resilience is not being actively monitored.

5.1.10 Private sector

Collaboration with the private sector is a way to increase better management of pesticides, often without using government or donor funds and with good sustainability. There are several cases of such collaboration in the Programme, but more could be done both in the agricultural sector and concerning production of industrial chemicals and their use in consumer products such as food, clothes and toys. At the same time, the large producers of hazardous pesticides are very much a disturbing factor that needs to be constrained by work on laws, regulations and control.

5.1.11 Risk management

The risk matrix for the Programme with mitigation measures is updated every year and discussed at each follow up meeting with Sida. The MTR considers the risk management satisfactory.

5.2 RECOMMENDATIONS

5.2.1 Focus on results management in new proposal

It is recommended that the changes discussed in this MTR report concerning a theory of

change, LFA, monitoring and reporting be included in the preparatory work on a proposal for a possible next phase of the Programme. For such a future phase, there should also be a new monitoring system. This should focus on fewer, clear, measurable and mainly outcome-related indicators. These should be measured every year and compared over time. For the next phase, increased cooperation should be established with academic resources in the region to support design and planning of monitoring and impact studies.

For the remaining period of the current phase, there could be more focus on reporting on outcomes and impacts and conveying these facts to policymakers.

5.2.2 Programme design for country institution building in CLM countries

It is recommended that the Programme focuses more on strategically planned work in the CLM countries (Cambodia, Laos, Myanmar), where the needs are greatest. The emphasis should be on building of sustainable institutions in these countries. The regional collaboration within the Programme should continue with focus on the institutional capacity building in the CLM countries. The resources and knowledge in Vietnam, Thailand and China should continue to be tapped for the benefit of the CLM countries. Other countries could be invited ad hoc to meetings for specific purposes.

In each CLM country the possible next phase of the Programme should make annually updated country plans for institution building in key institutions for chemical management. KemI does have technical knowledge and experience, but it does not have long experience of institution building in developing countries. To make the institution building happen, there is thus need for locally or regionally based expertise on these issues.

An approach including additional areas of the chemical problems in the Programme countries should be looked into, of course based on national priorities. KemI has a very wide mandate and is well suited to handle a wider approach. There is a need to make choices in each country so as not to end up with unwieldy programmes without clear focus.

The present Programme design is relatively static with the four partners and related NGOs. For a new Programme phase, possibilities to change the design of the programme to better respond to the need for more focused institution building in the CLM countries and a wider approach should be considered.

One option is to continue with KemI as the main manager of the Programme, strengthened by a development consultant firm with its team leader based in the region. The funds would be managed by KemI and there could be two parts: one budget going to FAO for agriculture chemicals issues and another budget for KemI's own work and support to NGOs, the NGO part being monitored by the development consultant on behalf of KemI. The consultant would also support the national focal points in the planning, coordination and reporting from the institution building in the three countries. The second part of the budget would also contain funds for regional support for the Regional Forums managed by Kemi with logistic support from the development consultant and for technical support from one country to another, also managed by the consultant. One such option is illustrated in Annex 6

To prepare for a possible new Programme based on national needs and resources, it is recommended that Sida commission a pre-appraisal mission that will undertake fact-finding and suggest elements that should be included in the project proposal for a new phase.

5.2.4 Sustainability

The focus in the Programme should be on sustainability and institution building in the CLM countries, to have the governments taking responsibility for work towards the objectives of the Programme. The regional collaboration should have the same focus. There may be no funding available for Regional Forums after the Programme eventually ends altogether but they should continue during a possible new Programme period.

5.2.5 Communication of results

The communication of results of the Programme should be improved in order to be used more effectively at country level and internationally. Communication strategies for the Programme (and for a next phase) should be made, and specific communication strategies for each CLM country for influencing policymakers should be produced as part of the recommended country strategies.

5.2.6 Cross-cutting issues

In view of a possible new phase of the programme, a Human Rights Based Approach linked to environment and climate change should be pursued, also to fit with the new Swedish strategy for development cooperation with Asia and the Pacific. This should include a continuation of the on-going work to increase attention to gender equality.

There has been increased awareness on health issues related to pesticides in the region and the Programme should continue to support that development. The issue of increased incomes for farmers is important not only from a poverty perspective but also to create better incentives for farmers to continue using less pesticides. The questions of value chains and markets for safe food could be given more attention in the Programme if given priority in the country strategies.

In a new results framework for a possible new phase of the Programme, indicators on measurable effects on environment and climate change should be sought. More reporting should be undertaken related to anti-corruption measures.

5.2.7 The private sector

The successful collaboration with the private sector that already started, mainly in the agricultural production domain, should continue. So should institution building to increase controls on companies producing and selling hazardous pesticides. Large-scale agricultural producers are important pesticide users and should be given more attention.

Annex 1 - Terms of Reference

Terms of Reference for the Mid-Term Review (MTR)

This document outlines the terms of reference for the mid-term review of Phase II of the regional development cooperation programme entitled “Towards a Non-Toxic Environment in South-East Asia”. The review will cover the main features, experiences and results of the Phase II programme to date (from mid 2013 to date), make suggestions for any adjustments in programme design, strategies and work plans for the remaining years of Phase II (until the end of June 2018). The results will be used by the programme partners for further development and implementation of the programme as well as by the Embassy of Sweden in Bangkok and Sida as a part of their reporting to the Swedish government and as a base for future decisions concerning the programme.

1. Background

Chemicals management in South-East Asia

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. At the Fourth Session of the International Conference On Chemicals Management (ICCM4) in September 2015, it was concluded that governments, industry and other stakeholders need to commit and stay engaged in order to accelerate progress and achieve the 2020 goal; by 2020, chemicals are produced and used in ways that minimize significant adverse impacts on human health and the environment.

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 also recommended that a multisectorial 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. 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.

During September to November 2011, independent consultants from Professional Management and the FAO Office of Evaluation conducted a mid-term evaluation of phase I of the programme. The evaluation confirmed that the programme has produced expected outputs and outcomes and that 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 acknowledged that it was correct to adopt a 10-year horizon for the programme in order to reach sustainable changes in the region. In 2012, programme partners applied for a second phase of the programme with largely the same focus, but with a greater geographical scope. In June 2013, Sida approved the second phase and programme activities started in August 2013.

At present, the programme comprises five different components that contribute to awareness-raising and capacity building with a human rights based approach related to pesticides, industrial and consumer chemicals in the Mekong region countries through multiple pathways.

The geographical scope of the programme is South-East Asia, with a primary focus on the Mekong region countries: Cambodia, China (Yunnan, Guangxi and Hainan provinces), Lao PDR, Myanmar, Thailand and Vietnam.

The long-term vision of the programme is to contribute to:

- Better management and more sustainable use of agricultural, industrial and consumer chemicals
- Reduced risks from chemicals to human health and the environment
- More sustainable intensification of agricultural production and improved resilience to climate change

The programme's mid-term objective is "Strengthened capacity and regional collaboration for efficient pesticide risk reduction and chemicals management within and among partner countries".

Short-term objectives:

1. Increased awareness and enhanced capacity in farming communities, schools, institutions and among consumers within partner countries to reduce the risk associated with pesticide use and enhanced use of alternatives (implemented by PAN-AP and TFA)
2. Enhanced international, national and local advocacy on sustainable pest management/agriculture (implemented by PAN-AP and TFA)
3. Strengthened capacity to innovate and scale-up Integrated Pest Management (IPM) and pesticide risk reduction training for sustainable intensification of crop production in partner countries (implemented by FAO RAP)
4. Strengthened regulatory framework for the control of pesticides in selected partner countries (implemented by FAO HQ and KemI)
5. Strengthened capacity for chemicals management within authorities, industries and among relevant CSO's in the partner countries (implemented by KemI)

Pesticides issues are tackled from three angles that mutually reinforce each other: (i) broad awareness raising; (ii) strengthening of regulatory control; (iii) capacity building for pesticide risk reduction training and promotion of integrated pest management to make farming communities less dependent on pesticides and to help them move away from hazardous products.

The program has a total budget of 99.33 Million SEK.

Swedish policy and priorities

Sustainable use of natural resources and protection of the environment are fundamental goals of the Swedish development cooperation. Sound management of chemicals is one of the priority areas for achieving these goals.

Sweden has been pioneering in the development of sound chemical management and was the first country in the world to create a public authority, the Swedish Chemicals Agency (KemI), with the mandate to develop an efficient and sound chemicals management. The Swedish Parliament has adopted 16 environmental objectives (miljömål) of which one is a policy in support of achieving a non-toxic environment. Sweden is today very active in international efforts to reduce the environmental and health impacts of hazardous chemicals.

Through research, Sweden has also contributed to much of the understanding of the interaction between chemicals and the environment. The Swedish government has come to pay attention to the incorporation of this work into the Swedish development cooperation. In the declaration of parliament 2004 and its Environmental emphasis and in the Letter of Appropriation for several years Sida is mandated to cooperate in the area of chemical safety. In KemI's instruction it is stated that KemI shall contribute to the environmental work in the Swedish international development cooperation. Priority should be given to assisting Sida in the work with capacity development in cooperation countries that

will lead to the development of an effective chemical management and the implementation of international conventions and regulations.

The Swedish government's current regional strategy for South-East Asia (2010-2015) declares that one of three strategic areas of cooperation is the environment and climate, sustainable use of natural resources; which includes building institutional capacity and environmental protection in South-East Asia. The strategy specifically mentions chemicals management as one of the key areas where Sweden has comparative advantages. A new strategy for Asia (2016-2020) is under development and the government's instruction to Sida points out the following prioritized areas:

- Improved environment, reduced climate impact and strengthened resilience to impacts on the environment, climate change and natural disasters
- Strengthened democracy, gender equality and respect for human rights

The instruction is that Sida should prepare a proposal covering the whole of Asia. Also small island states in the Pacific should be included. Sida has submitted a proposal document to the government and a decision on a new strategy for regional development cooperation in Asia is expected in June/July this year.

Programme partners

- FAO Regional Office for Asia and the Pacific: works directly with relevant government departments and NGOs in the countries concerned in developing and implementing national IPM programmes, and provides the Secretariat for the Asia and Pacific Plant Protection Commission.
- FAO Headquarters, Pesticides Risk Reduction Group: works directly with government departments responsible for regulatory control of pesticides and receives assistance from the FAO Legal Development Service and the Secretariats of the Rotterdam Convention and the International Code of Conduct on the Use and Distribution of Pesticides.
- Pesticide Action Network for Asia and the Pacific (PAN AP): a civil society organisation with longstanding programmes on awareness raising about pesticides and on community involvement in monitoring pesticide use. Under this programme, PAN AP assists national partner CSOs in the programme countries with initiating or strengthening programmes on awareness raising, advocacy and monitoring.
- The Field Alliance (TFA) is a CSO network in South East Asia that works through the Ministries of Education and assists with the development of school curricula on pesticides, biodiversity, agro-ecology, etc. The underlying strategy is that education of children in rural areas in these subjects will influence not only their own approach to farming later, but also has a proven direct positive effect on the farming practices of their parents as the approach is designed to question practices of their parents and to encourages discussion towards change.
- The Swedish Chemicals Agency (KemI): the government agency responsible for chemicals management and pesticides issues in Sweden. Besides its administrative responsibilities and overall programme coordination, KemI itself also plays an active technical role in Objective 4 and is responsible for implementation of Objective 5.

2. Purpose of the mid-term review

The mid-term review is intended to make a well-informed assessment of programme implementation progress to date and spell out recommendations for strengthening implementation during the remaining years of Phase II. The MTR should also assess the strategy and measures taken this far by the programme to achieve sustainability of results. It should also make a judgement on whether donor resources made available for Programme implementation are well spent to date and provide advice on efficiency, effectiveness and budget adjustments, if needed. Equally important, this mid-term review should review the respective roles, tasks and responsibilities assumed by Programme implementation partners at regional and national level and provide advice on adjustments needed. The results of the

mid-term review will be documented in a formal report to be shared with the donor and with Programme implementation partners and government counterparts in Programme member countries.

3. Scope of the mid-term review

The Review Mission (Mission) will assess the programme according to the following criteria¹⁵:

EFFECTIVENESS

- To what extent has the programme produced outputs and outcomes compared to the LFA?
- Is the programme on track? What is the prognosis for reaching the targets for outcomes and overall objectives within the programme period?
- Is anything impeding the effectiveness of the programme and its project modalities? If yes, what can be done to address this?
- Have programme partners implemented adequate monitoring and evaluation systems, reporting, transparency and accountability mechanisms as well as efficient financial management?
- How have budget cuts affected the programme?

COST-EFFICIENCY

- Have the separate programme activities been implemented in a cost-efficient manner?
- Is anything impeding the cost-efficiency of the programme implementation? If yes, what can be done to address this?

RELEVANCE

- Is the programme and its design relevant for addressing present major problem areas and needs? Does the programme design allow adjustments to changing circumstances and new opportunities?
- Have the established relationships with external institutions (ASEAN, ADB, Oxfam, APPPC etc.) been functional and beneficial for the programme? Suggest improvements, if relevant.

REGIONAL COLLABORATION AND SUSTAINABILITY

- Does the programme promote/ensure a sustainable regional exchange and coordination in order to achieve pesticide risk reduction and good chemical management at national and regional level?
- Does the programme design and implementation strategies allow for synergies/synergistic effects and encourage further collaboration?
- To what extent have governments and development partners provided support and invested in the Programme and up-scaling of activities?
- Does the programme have a relevant and feasible strategy for promoting sustainability of programme results?
- Briefly assess the efficiency and effectiveness of communication of results for the ultimate purpose of influence on policy makers.

¹⁵ Criteria recommended by OECD/DAC and adopted by Sida as standard yardsticks for the review of development interventions.

INTEGRATION OF CROSS-CUTTING ISSUES (THE HUMAN RIGHTS BASED APPROACH TO DEVELOPMENT, INCLUDING THE POVERTY PERSPECTIVE, GENDER EQUALITY AND GOOD GOVERNANCE)

- Are these cross-cutting issues well integrated into programme design and activities?
- Is there sufficient knowledge about these issues among implementing partners and are they acknowledged and prioritized?

PRIVATE SECTOR COLLABORATION

- Is the potential for collaboration/engagement with the private sector sufficiently used (also including farmers as small scale business)?

RISK MANAGEMENT

- How have assumptions and risks been followed up and handled by the programme partners?
- Have partners been able to adjust to new emerging needs/problems within the framework of the programme?

4. Composition of the Review Mission Team

The review mission team should comprise of 3-4 team members. Between the Team Leader and the other mission members there should be regional expertise (or access to regional expertise) in each of the following fields:

- a. Chemicals management, including pesticides, industrial and consumer chemicals
- b. Integrated Pest Management (IPM), agro-ecology and natural resource management
- c. Rural development, education and extension services

Cross-cutting issues such as the human rights based approach to development including the poverty perspective, gender equality and good governance) communication and private sector cooperation.

A Team Leader with:

- At least 10 years of experience in review of large and complex development cooperation projects
- Ability to manage a team and to deliver within agreed time periods
- Fluency in English and demonstrated reporting skills
- Knowledge of the Greater Mekong Subregion (GMS)

Two to three other team members (complementing the team leader) with:

- Experience and skills falling within the above fields (a-d) and complementing the team leader
- In depth knowledge of the GMS region
- Review/assessment experience

The candidacy of the team leader and the team members will be approved by KemI.

5. Suggested timetable and itinerary of the Review Mission

The review mission is scheduled to take place in August-September 2016. The mission will start with a desk study. The review mission team will receive written documentation on the programme, including summaries for each country programme.

The review mission team will meet the reference group up front the assignment in order to discuss the data gathering. Following this briefing, the team will undertake a small number of country/field visits to selected project sites in the region (2 to 3 visits).

The country/field visits will be followed by further interviews of relevant stakeholder in conjunction with a regional workshop that is planned to take place in mid-September. This meeting will give the

mission team the possibility to listen to country reports and discussions as well as have individual meetings with selected stakeholders.

The interviews and field visits will be wrapped up with a debriefing session during the last day of the regional workshop where the mission will present their preliminary findings and conclusions. Programme partners as well as representatives of the participating countries, implementing agencies and donor partners should join this debriefing session.

Following this, the review mission team will have two weeks to complete the draft review report.

The draft report will be circulated for comments to the reference group who will have a minimum of two working weeks to provide written comments. Following this, the review mission team will have one additional working week to review the comments and incorporate them as he/she feels is appropriate, completing the final report.

The review mission team leader bears responsibility for the finalised report, which will be submitted to KemI within the schedule above. KemI will submit the report to the programme partners and donor together with its comments (management response).

6. Consultations

The review mission team shall consult with the reference group concerning the proposed schedule and layout of the field visits. The mission shall also consult with concerned national agencies, national and international project staff, and selected farming communities during field visits. Although the mission should feel free to discuss with the authorities concerned anything relevant to its assignment, it is not authorized to make any commitments on behalf of the Government, the donor, KemI, FAO, PAN AP or TFA.

The review report should be sent to the reference group for comments before its finalization in accordance with section 5 above.

The reference group comprise the following members:

- Representative from Sida/Embassy of Sweden, Bangkok
- Representative from KemI
- Representative from PAN AP
- Representative from FAO
- Representative from TFA
- Swedish Chemicals Agency

7. Reporting

The review mission team is fully responsible for its independent report which may not necessarily reflect the views of the Government, the donor, KemI, PAN AP, TFA or FAO. The report should be written in conformity with the headings shown below:

1. Executive Summary
- Main Findings and Recommendations
2. Introduction
3. Background and Context
4. Findings
 - Factual evidence, data and observations that are relevant to the specific questions asked by the review mission team.
 - Effectiveness
 - Efficiency
 - Relevance
 - Regional collaboration and sustainability
 - Integration cross-cutting issues (the Human Rights Based Approach to development, including the poverty perspective, gender equality and good governance)
 - Private sector collaboration
 - Risk management
5. Conclusions and Recommendations
 - Conclusions
 - Recommendations
6. Lessons Learned
7. Annexes (at least these three, plus technical and analytical annexes if needed)
 - Terms of Reference
 - List of places visited and key persons met by the review mission team
 - List of documents and other reference materials consulted by the review mission team

8. Specification of the tender

The tender should be written in English and sent to the Swedish Chemicals Agency, Att: Ule Johansson, P.O. Box 2, SE-172 13 Sundbyberg, Sweden. The envelope should be marked with “Tender, reference number H13-01013” The tender should also be sent in electronic format to kemi@kemi.se, with copies to ule.johansson@kemi.se and jenny.ronngren@kemi.se. It must be filed no later than the 30th of May 2016.

The tender should have the following content and structure;

- Specification of the company (name, address and contact person(s)) responsible for the tender.
- Information about the persons that will carry out the review including their CV and personal references (name and telephone number)
- Proposed methodology and implementation plan, and any comments to the ToR.
- Total price for the assignment including work and expenses such as travel costs, excluding VAT.
- Specification of date when the assignment can start.

Administrative regulations

The tender procedure will follow Swedish law on public procurement (LOU).

The tender can be decided without prior negotiations.

The tender should be valid until the 30th of June 2016.

KemI will use the conditions as written in the KemI standard consultancy agreement, see annex.

Evaluation of the tenders

In order to evaluate the tender the requirements under section 4 and 5 has to be fulfilled.

When KemI evaluates the tenders the following criteria (ranked as below) will be used:

- The competence and experience of the team members according to CV and personal references
- The proposed methodology and plan for implementation of the assignment
- The price in Swedish Kronor (SEK)

Annex 2 - List of People Interviewed and Consulted

This is the program for interviews at the regional workshop, followed by a list of interviews made before the workshop. List of persons interviewed in Cambodia and Vietnam is found in the respective country reports, Annexes 6 and 7.

Program for interviews at regional workshop with the MTR team, September 19-23, 2016

Time	Interview 1	Interview 2
Monday, September 19		
15.00-16.00 Skype	Ms Roxanne Abdulali, Programme Manager, Oxfam, Asia Regional Centre, Bangkok	
16.30-17.30 Lobby, Suko-sol	Ms Kakuko Nagatani-Yoshida Regional Subprogramme Coordinator for Chemicals and Waste, UNEP Regional Office for Asia and the Pacific Mobile: 099 321 6751	
Tuesday, September 20		
9.00-10.00	Mr Borin Chan Head of National Institute of Standard, Ministry of Industry and Handicrafts of Cambodia	Mr Rithirak Long Deputy Director General Environment Protection, Ministry of Environment of Cambodia
10.00-11.00	Dr (Ms) Khin Pa Pa Soe Assistant General Manager, Ministry of Industry of Myanmar Ms Thet Mar Htwe Assistant Factory Manager, Caustic Soda Factory (Thaton), No. 3 Heavy Industries Enterprise, Ministry of Industry of Myanmar	Ms Wanna Rodratana Hazardous Substances Control Bureau, Department of Industrial Works, Ministry of Industry of Thailand Ms Jariya Mitroupathump, Department of Industrial Works, Ministry of Industry of Thailand
11.00-12.00	Dr (Mr) Luu Hoang Ngoc Deputy Director General, Vietnam Chemicals Agency (Vinachemia), Ministry of Industry and Trade	11.30-12.30 Dr (Mr) Thamana Lekprichakul, Program Coordinator/Deputy Secretariat Manager, Working Group on Agriculture,

Time	Interview 1	Interview 2
		Asian Development Bank
13.00-14.00	Mr Sivong Sengaloundeth, Deputy Director of Food and Drug Department, Ministry of Health of Lao PDR	Ms Souvanny Keothanongkham, Department of Industry and Handicraft, Ministry of Industry and Commerce of Lao PDR
14.00-15.00	Ms Amornrat Leenanithikul, Senior Pharmacist, Food and Drug Administration of Thailand Ms Yuwaree Inna Independent Consultant, Adviser on Chemicals Management to the Food and Drug Administration of Thailand	
15.30-16.30	Mr Piao Yongfan, Senior Plant Protection Officer, Secretariat for Asia Pacific Plant Protection Commission (APPPC), FAO Regional Office for Asia and the Pacific	
Wednesday, September 21		
14.00-15.00	Mr Nguyen Quy Duong, Deputy Director General, Plant Pro- tection Department, Ministry of Ag- riculture and Rural Development of Vietnam	Mr Bandith Keothongkham, Director of Rural Development Sole Co. Ltd., Lao PDR
15.00-16.00	Mr Ngin Chhay, Director of Rice Department, Gen- eral Directorate of Agriculture, Min- istry of Agriculture, Forestry and Fishery of Cambodia	Mr Phoukaothong Sykaisone, Head of IPM Unit and National IPM Pro- gramme Coordinator of Lao PDR Ms Vornthalom Chanthavong, Programme Assistant, FAO IPM Office, Lao PDR
16.00-17.00	Ms Khamphoui Louanglath Adviser, Former Director of Regula- tory Division, Department of Agri- culture, Ministry of Agriculture and Forestry of Lao PDR	Ms Watchreeporn Orankanok, Expert, DOAE, Ministry of Agriculture and Cooperatives of Thailand. Current chair the APPPC Standing Committee on IPM

Time	Interview 1	Interview 2
		Ms Khanitha Pongprecha, Subject Matter Specialist, Plant Protection Promotion, Soil and Fertilizer Management Division, Department of Agricultural Extension, Ministry of Agriculture and Cooperatives of Thailand
Thursday, September 22		
8.30-9.30	Mr Ars Ponhet, Director of Sa Kaeo Vocational Training and Development Centre for Thai People along the Border Areas, Office of Non-formal and Informal Education, Ministry of Education of Thailand	Mr Zhu Xiaoming, Agronomist, Division of Pest Control, National Agro-technical Extension & Service Center (NATESC), Ministry of Agriculture of China
9.30-10.30	Ms Swe Swe Oo, PPD/DOA, Ministry of Agriculture, Livestock and Irrigation of Myanmar	Ms Sandar Myo, Adviser, Myanmar Fruit, Vegetable and Flower Producers and Exporters Association
10.30-11.30	Mr Romy Quijano, Director, PAN Philippines	Mr Sonexay Komxaysana, Deputy Head, Agriculture Extension Section, Lao PDR Thongdam Phongphichit , Co-director, Sustainable Agriculture and Environment Development Association (SAEDA), Lao PDR Mr Bounlap Pathilath, AnProgramme Manager, Sustainable Agriculture and Environment Development Association (SAEDA), Lao PDR
12.00 – 13.00	Jan Willem Ketelaar, Alma Linda	

Time	Interview 1	Interview 2
	Abubakar, FAO	
Friday, September 23		
7.45-8.30	Ms Sarojeni Rengam, Deeppa Ravindran, PANAP	
8.30-9.30	Mr Jayakumar Chealaton, Co-director, PAN India	Ms Wang Yi Yan, Consultant, Institute for the Control of Agrochemicals, Ministry of Agriculture of China Ms Yang Hong Yan, Executive Director, Pesticide Eco-Alternatives Center (PEAC), China
9.30 – 11.30	Ule Johansson, Jenny Rönngren, KemI	

Other interviews

Name	Position	Organisation
Mari Albihn	Senior adviser	Sida
Göran Haag	Senior adviser energy and environment	Sida
Ms Sarojeni V. Rengam	Executive director	PANAP
Ms Deeppa Ravindran	Pesticide Programme Coordinator	
Arne Svensson	Director	Professional Management
Harry van der Wulp	Senior Policy Officer (Pest and Pesticide Management) Plant Production and Protection Division	FAO

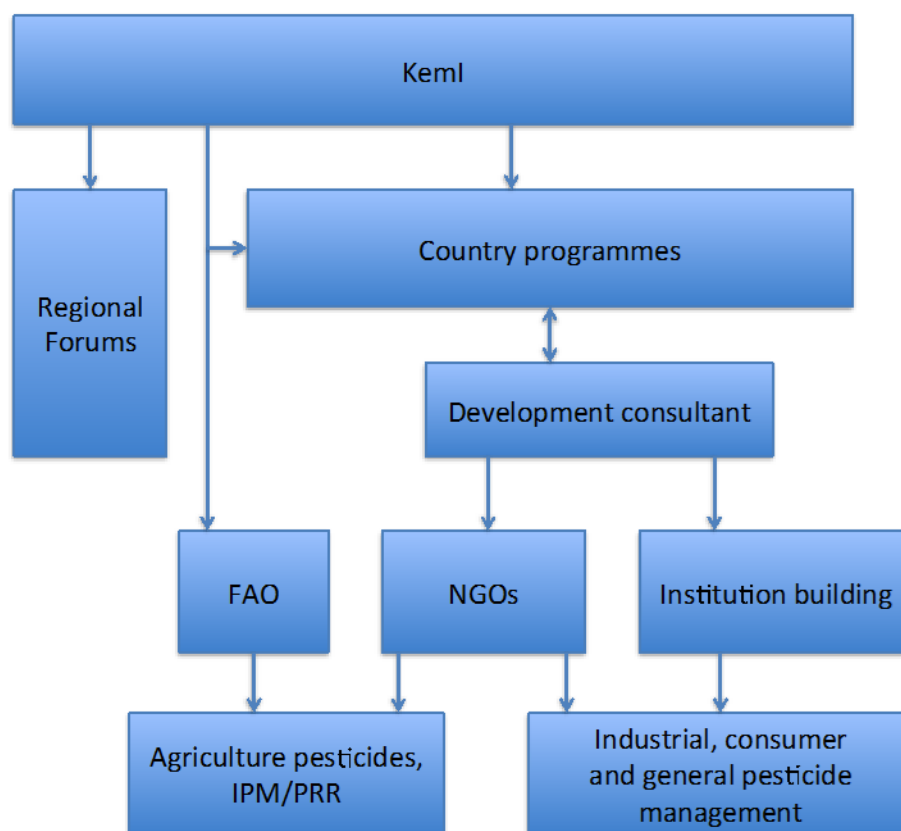
Annex 3 - List of main documents

AUTHOR/ORGANISATION	YEAR PUBLISHED	TITLE
Agriculture Technology Services Association (ATSA)	2016	Rural Ecological Agriculture for Livelihoods (REAL) Annual Report 2015
Agriculture Technology Services Association (ATSA)	2016	Project site description for MTR Sept 2016
Agriculture Technology Services Association (ATSA)	2016	Rural Ecological Agriculture for Livelihoods (REAL), 1 st semester report 2016
Asian Development Bank	2016	Aide Memoire TA 8163-REG: Implementing the Greater Mekong Subregion Core Agriculture Support Program Phase II: Findings and Recommendations of the Midterm Review
Center of Initiatives on Community Empowerment and Rural Development (ICERD)	2016	Vietnam Country Report 2015
CEDAC	2016	Regional Programme: Towards a non-toxic environment in South-East Asia Phase II, Six months Narrative Report on Pesticide Community Monitoring in Cambodia(January-June 2016)
Common Fund for Commodities	2013	Newsletter 1 April 2013, Improving Myanmar's mango supply chain
FAO-RAP	2013	Empowering Farmers to Reduce Pesticide Risks
FAO	2015	Back-to-office report
FAO	2016	Policy Component –Rolling Work Plans August 2016
FAO	no date	FAO In Action in Asia and the Pacific, different leaflets
FAO	2016	Lasting IPM Impact
Global Forum for Rural Advisory Services	2012	Guide to evaluating rural extension
Herman Brouwer and Jim Woodhill et al	2015	The MSP Guide; how to design and facilitate multi-stakeholder partnerships
Ian Christophos	2010	Mobilizing the potential of rural and agricultural extension
Methods Lab	2015	Multi-project Programmes; Functions, Forms and Implications for Evaluation and Learning
Ngin Chhay et al, International Journal of Agricultural Sustainability	2016	Rice productivity improvement in Cambodia through the application of technical recommendation in a farmer field school
Pesticide Action Network Asia and the Pacific(PANAP) and partners	2016	Evaluation Report for Phase II Mid 2013 to July 2016
Professional Management	2011	Mid-Term Evaluation of the regional programme “Towards a non-toxic environment in South East Asia”
Sida, Open Aid, http://openaid.se/sv/activity/SE-0-	No date	KemI Kemikaliehantering 2010-13, Mekongländerna

SE-6-5100004201-ASS-41010/		
Sida	2011	Environmental and Climate Change Indicators
Sida	2013	KemI Regional Agric. Chemicals prog. 13-18 , In-depth Relevance Assessment
Sida	No date	Underlag för det regionala utvecklingssamarbetet i Asien
Swedish Ministry for Foreign Affairs	2016	Strategy for Sweden's regional development cooperation in Asia and the Pacific region 2016–2021
Rural Ecological Agriculture for Livelihoods (REAL)	2016	Annual Report 2015
Sida's Helpdesk for Environment and Climate Change	2016	LFA with Helpdesk comments
Sida's Helpdesk for Environment and Climate Change	2016	Improved quality of results framework for the regional KEMI- programme
Swedish Chemicals Agency	2013	Towards a non-toxic environment in South-East Asia Phase II, Program document
Swedish Chemicals Agency	2014	Regional programme: Towards a non-toxic environment i South-East Asia Phase II, Annual workplan 2015
Swedish Chemicals Agency	2015	Regional programme: Towards a non-toxic environment i South-East Asia Phase II, Progress report 2014
Swedish Chemicals Agency	2015	Regional programme: Towards a non-toxic environment i South-East Asia Phase II, Annual workplan 2016
Swedish Chemicals Agency	No date	Towards a Non-toxic South-East Asia
Swedish Chemicals Agency	2016	Report from self-assessment of programme partners
Swedish Chemicals Agency	2016	Regional programme: Towards a non-toxic environment i South-East Asia Phase II, Progress report 2015
Swedish Ministry for Foreign Affairs	2016	Strategi för Sveriges regionala utvecklingssamarbete i Asien och Oceanien 2016 – 2021
Swedish Ministry for Foreign Affairs	2010	Strategy for regional development cooperation with Asia focusing on Southeast Asia September 2010 – June 2015

Annex 4 - Possible organisation for a new programme phase

Illustration of project design recommendations proposed in final MTR report:



KemI would be responsible for the Sida funding for the phase III of the Programme. KemI would decide on the budget for FAO, which through its regional office in Bangkok would work with pesticides in agriculture, small scale and large scale, and with related institutions. FAO and the development consultant would have frequent consultations, and if possible be in the same office building

KemI would procure a development consultant for institution building and most of the non-agricultural country work. The consultant would have an office and team leader in the region, with the possibility to allocate resources for technical support in the CLM countries, primarily from the six participating countries.

KemI would provide technical support resources to the institution building in dialogue with FAO and the development consultant. KemI would organise the Regional Forums, with logistical support from the development consultant.

NGOs would be part of the country strategies and plans and would be monitored by the development consultant. Their annual budgets should be approved by KemI.

The planned work in each of the CLM countries would be discussed and harmonized between

the government focal point and the partners engaged there in a process led by the development consultant. The decision on country strategy approval would be taken by the countries in close consultation with KemI and active partners. The funding package for the strategy implementation would be decided by KemI..

At regular intervals, consultations would be held with responsible government organisations and the actors within the Programme in the respective Programme countries, organised by the development consultant.

Annex 5 - Questions for group work at the regional meeting

Discussion points for Mid-Term Review session, Bangkok, September 2016

1. Reporting

The programme could have a more explicit theory of change, linking outputs to medium-term outcomes and long-term impacts. The programme produces a number of outcomes and impacts but they are not always reported or part of the LFA matrix. Studies such as the thorough study of impacts 2010-2015 in the IPM programme are very helpful for reporting actual changes caused by the project.

The Mid-Term Review will not propose that the programme should do a complete remake of the LFA. But there could be more monitoring and reporting of annual and long-term changes in outputs. And the outcomes and impacts could be included to a larger extent in the reporting. This would also be valuable for communication of results to policymakers in the countries.

Question: How can the reporting from the programme be improved?

2. Sustainability

Sustainability is mainly an issue of continued processes in the countries. Laws and regulations are mainly irreversible and therefore a sustainable result. But the implementation mechanisms for laws have to be functioning so that the training activities and controls will continue.

The farm level component needs government responsibility and funding to be sustainable. The regional activities are also dependent on continued funding, as are most CSO activities.

Question: How can sustainability of the programme results and the work of country institutions be realised?

3. A programme after 2018?

The interviews made by the MTR team indicate that the situation in 2018, when the present programme ends, will in many ways be different from when the programme started in 2013. There will probably be laws on chemicals in all the countries, and processes ongoing to implement the laws. However, there are issues not touched by the programme so far such as industrial chemicals or pesticide use by large-scale farmers.

It is also likely that there will to 2018 be continued progress in most countries in the work with the small farm and community level. But there will be a need for continued processes on issues such as increased training, community strengthening, value chains, food safety, organic farming, marketing, education of pesticide sellers etc.

A possible continuation of a programme after 2018 would therefore probably be different in some ways from the present programme. It would perhaps need to be organised differently also.

Question: If there would be a new programme from 2018 – which would be the main objectives and expected outcomes? How should it be set up and administered?

Annex 6 – Vietnam field visit report

Annex 7 – Cambodia field visit report

MID-TERM REVIEW OF PHASE II OF THE SIDA FUNDED REGIONAL PROGRAMME “TOWARDS A NON-TOXIC ENVIRONMENT IN SOUTH-EAST ASIA”

Annex 7 - Vietnam field visit report

This is one of two country studies made for the Mid Term Review (the other, from Cambodia, is found in Annex 2). This MTR has the task to assess Programme implementation progress to date and propose recommendations for strengthening implementation in the remaining years of Phase II and to suggest a strategy as well as measures to achieve sustainability of Programme results. This report is produced based on information from reviewing secondary data (reports, published papers, leaflets) and interviewing different groups of respondents, including Programme local partners, government authorities’ representatives from national to commune levels as well as farmers (see list of respondents in part 7 of this report). A set of questionnaires designed by the review team was used for interviewing. For effective use of available time and budget of the MTR assignment, the field survey focused on the Northern provinces of Vietnam because most of the local partners and beneficiaries are located in the Northern areas. Four out of five local partners in Hanoi (SRD, ICERD, CGFED, and FAO-IPM), and four out of ten project supported provinces (Ninh Binh, Nam Dinh, Hanoi, and Bac Giang) were involved in the field survey (more details about the program schedule of the field survey could be found in part 8 of this report).

1. Executive Summary

The second phase of the Kemi Programme started in 2013 and includes 6 countries: Vietnam, Laos, Cambodia, China, Myanmar and Thailand. In Vietnam, 5 local partners are involved in the project – Plant protection department (PPD-MARD), and 4 CSOs: Center of Initiatives on Community Empowerment and Rural Development (ICERD), Research Center for Gender, Family and Environment in Development (CGFED), Research Center for Rural Development (RCRD) and Sustainable Rural Development (SRD). The evaluators preparing this Mid-Term Review (MTR) found that generally all Programme activities have been carried out according to the Programme plan. Some awareness raising activities (training) were even more extensive than planned. Stakeholders (farmers and leaders) highly appreciated the Programme ideas and approach, and though it was expressed that though the Programme budget is small, it has been recognised that the Programme has provided a seed or a catalyst effect, facilitating stakeholders to come together for a safer life. Because of its relevance to the development strategies at both national and local levels, it is the judgement of the evaluator that the Programme activities have been able to create considerable changes in the communities. Examples are behavioural changes in disposing of pesticide containers after use; applying biological control techniques (rice-fish models, bio-bedding in livestock production, earth worm raising); changes in policies of pesticide use and trading; changes in farmers’ income; and chang-

es in environmental aspects (though the impact on the environment cannot be proven at this point in time it is expected that through improved management of empty pesticides containers, better control on the trade of pesticides and improved management and reduced use of chemicals in agriculture, the environment will suffer less from the overuse of chemicals). The Programme results were generally cost-efficient and will probably be sustainable. However, there were some shortcomings and challenges that need to be considered in the next two years of the Programme's implementation to ensure the effectiveness and the sustainability of the Programme outcomes after the Programme comes to an end:

- (i) The collaboration among local partners should be strengthened. Among local partners, a focal point (coordinator) should be appointed for all project activities. In this way all local partners can share with each other what they have done and all involved stakeholders would better understand the holistic picture of the Programme's objectives, outcomes and results across the country;
- (ii) Introduction to farmers of alternative methods to replace the use of hazardous pesticides and herbicides (Paraquat) is needed;
- (iii) Developing linkages between farmers, CSOs, government and the private sector, especially between farmers and market enterprises to reduce the risk of pesticides in agriculture and to stimulate the production and consumption of ecological agricultural products;
- (iv) Facilitate the involvement of the Department of Planning and Investment (MPI) and Ministry of Finance (MOF) at national level and departments at local levels to ensure that new policies are implemented at the community level;
- (v) Continue and pay more attention to the communication of Programme results (successful IPM, FFS, etc.) via media, community field visits to project sites, and community or inter-community quizzes or competitions about PRR.

2. Background and Context

Like other developing countries in Asia, prior to the 2000s the Vietnam government promoted the application of pesticides in agricultural production to promote agriculture output and to enhance productivity. However, the lack of information and low awareness of farmers, and weak management by related government departments, have led to an increase in the volume of hazardous chemicals being imported/produced and an over-use of pesticides in agriculture. This has resulted in serious problems of poisoning (Susmita Dasgupta et al, 2005)¹. In re-

¹ Dasgupta S., Craig M., David W., Nhan Thi Lam, and Khuc Xuyen, 2005. Pesticide poisoning of farm workers: Implications of blood test results from Vietnam. World Bank Policy Research Working Paper 3624

sponse to this, the Vietnamese government has been trying to reduce or even remove pesticide dependency in agricultural production (Pham Gia Hoi et al, 2013)², by releasing regulations and laws to restrict pesticide use, such as increasing import tax and banning a list of toxic pesticides (Decree no. 92-CP/1993; Directive no. 29/1998/CT-TTg; Decree no. 92-CP amended in 2002).

However, these laws and regulations have largely been unenforced because of many factors (C. Wilson, C. Tisdell, 2001 cited in Pham Gia Hoi et al, 2005), particularly the detail of the regulations, unclear or overlapping responsibilities of the implementing departments, and farmers' perceptions of pesticide use and their practices. This was the situation when Sida started to provide support to the country, in collaboration with KemI and project partners, through implementation of the "Towards a non-toxic environment in South-East Asia" Programme in 2007.

In the first phase (2007-2011), the Programme was evaluated as very successful in supporting Vietnam, Laos, China, and Cambodia to reduce pesticide dependency in agriculture. The programme demonstrated ecological and sustainable agricultural production models in 3 provinces (Hai Duong, Ha Noi, and Thai Binh). Successful models included minimum tillage potato production and IPM and System of Rice Intensification (SRI) in Hanoi, Bac Giang, Quang Binh, and Ninh Binh provinces. The Programme had also formed a pesticide management network in the region including Vietnam with CSO representation including CGFED, RCRD, and ICERD. The evaluation also stated that the Programme had strengthened pesticide management regulations and legislation. Further, in Vietnam the Programme mainstreamed pesticide management in education at schools and together with MARD, PPD and the education department at district level organized training and campaigns for reducing pesticide use in agriculture. The Programme outputs and outcomes were according to the evaluation highly appreciated by the target countries, including Vietnam, and the countries requested a scale up of Programme outcomes for the second phase.

A second phase of the Programme was approved and started in August 2013 and lasts until June 2018. The second phase of the Programme covers 6 countries: Vietnam, Laos, Cambodia, China, Myanmar and Thailand of which 2 countries (Myanmar, and Thailand) were added after the first phase of the Programme.

The Programme focuses on the following 5 objectives:

- (i) Increased awareness and enhanced capacity in farming communities, schools, institutions and among consumers within partner countries to reduce the risk associated with pesti-

² Pham Gia Hoi, Arthur Mol & Peter Oosterveer, 2013. State governance of pesticide use and trade in Vietnam. *JJAS - Wageningen Journal of Life Sciences* 67 (2013) 19– 26.

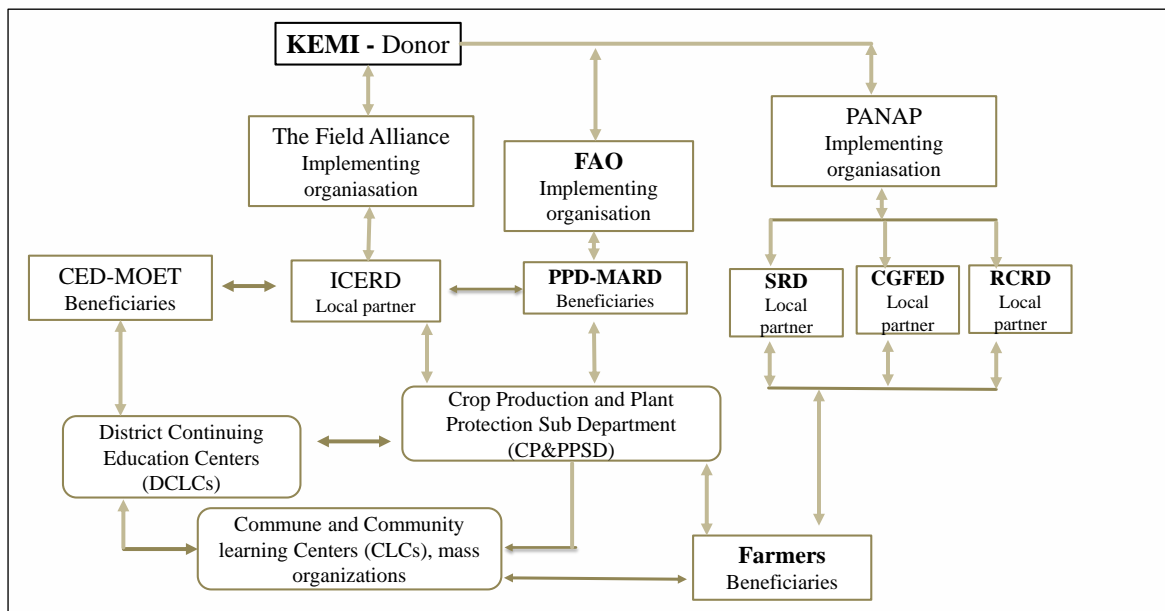
- icide use and enhanced use of alternatives.
- (ii) Enhanced international, national and local advocacy on sustainable pest management/ agriculture.
 - (iii) Strengthened capacity to innovate and scale-up Integrated Pest Management (IPM) and pesticide risk reduction training for sustainable intensification of crop production in partner countries.
 - (iv) Strengthened regulatory framework for the control of pesticides in selected partner countries.
 - (v) Strengthened capacity for chemicals management within authorities, industries and among relevant CSOs in the partner countries.

3. Findings

In Vietnam, the Programme has five partners: PPD-MARD, ICERD, SRD, CGFED, and RCRD. Roles and linkages among local partners and regional organisations are shown in figure 1. It can be seen from figure 1 that the CSOs: SRD, CGFED, and RCRD are partners of PANAP. ICERD is The Field Alliance-TFA's partner. PPD-MARD is FAO's local partner.

PANAP and its three local partners are responsible for objective 2 and a part of objectives 1 and 3. TFA and ICERD are in charge of objective 1. PPD-MARD is in charge of objectives 3 and 4. Kemi is responsible for objective 5.

Figure 1: Project partners and linkages



3.1 EFFECTIVENESS AND PROGRAMME OBJECTIVES

Objective 1: Increased awareness and enhanced capacity in farming communities, schools, institutions and among consumers within partner countries to reduce the risk associated with pesticide use and enhanced use of alternatives.

ICERD in collaboration with DPP, Department of Continuing Education - Ministry of Educa-

tion and Training (MoET), was tasked with the implementation of the project component *Rural Ecological Agriculture for Livelihood (REAL)*, which in addition to the project areas supported in the previous programme phase (Hanoi, Quang Binh and Bac Giang) was expanded to include an additional 3 new provinces: Lao Cai, Yen Bai and Ninh Binh, thus supporting in total 6 provinces.

This programme aims at building linkages between the non-formal education system and the plant protection system. During project implementation it is in addition expected to build linkages with the health care system. The aim is to educate farmers, together with their entire families, to reduce pesticide use, and to improve farm income and environmental conditions.

The REAL project has built and strengthened linkages between students and parents, and with the farmers directly involved in field management trainings through community learning centres. Under this objective, ICERD:

- Developed a training curriculum to raise awareness on pesticide management, health impacts, environmental protection and agro-biodiversity. So far, the training curriculum on pesticide management has been tested, revised, finalised and approved by the national department of continuing education under MOET. This training curriculum has been uploaded on the ICERD website and the MOET homepage, making it accessible to 11,000 Community Learning Centers (CLCs) in about 600 districts in all 63 provinces and cities. It was reported by representatives for MOET and ICERD that all 11000 CLCs have downloaded and used the curriculum for training.
- Organized Training for Trainers (TOT) on “*Agro Biodiversity Conservation and Utilization and Pesticides Impact to Health and Environment*” for 86 governmental staff, from the Plant Protection Department and Department of Continuing Education/Non-formal Education under the Ministry of Education and Training. In addition, training was organized on “*Initiatives for Community Empowerment and Rural Development*”, from four provinces: Bac Giang, Lao Cai, Ninh Binh and Yen Bai, including the District’s Continuing Education Centre & District Plant Protection Station, extension workers from three provinces (Lao Cai, Ninh Binh, Yen Bai), government staff, and high school teachers.
- Organised community workshops to establish a baseline for gender analysis.
- Established rice-fish clubs: a club of 15 women in the community of Xuan Phu was set up, trained and practiced Farmer Field School (FFS) rice-fish production. All women who own lowland rice fields can join this club. Even though the club only counts 15 members so far the number of households who have learned and applied the rice-fish models have already increased to 34. Two more rice-fish clubs have been established in Quang Binh province. The total number of members in women’s clubs is 187.
- Conducted a participatory assessment of pesticide use at 12 communes of 6 provinces (Bac Giang, Lao cai, Hanoi, Ninh Binh, Quang Binh and Yen Bai) and the results were used for communication on pesticide risk reduction (PRR).
- ICERD in collaboration with the 12 Commune Womens’ Union have encouraged and supported women to participate in agro-biodiversity (ABD) conservation, PRR, and Sustainable Rice Cultivation.

The discussions and field visits to ICERD’s at Quynh Son and Xuan Phu project sites revealed that all Programme activities at these sites have been implemented according to the

plan. The number of training courses on ABD, Bio-bedding techniques, rice fish techniques, household herbal garden techniques, and Pesticide impact assessment (PIA) organised by ICERD was even higher than in the approved plan (Rural Ecological Agriculture for Livelihood- REAL) because some neighbouring communities (in Ninh Binh, HaNoi and YenBai) recognised the benefits of the trainings and organised extra trainings by themselves. It is reported that a total of 3,884 people, of which 2,595 were women (67%), participated in REAL activities at different levels.

Under objective 1, SRD and CGFED also organized a workshop for 300 students and teachers on the impacts of pesticide use during a NO PESTICIDE WEEK in Phu Tho province. One book on “Poisoning our Future” and a Video “Children and Pesticide” were translated into Vietnamese and distributed to participants.

CGFED also organised one training to raise awareness on the dangers of pesticide overuse and agriculture models that use less chemical inputs or are entirely chemicals free, in which 35 farmers (30 women and 5 men) in Hai Hau district participated. CGFED also organised one study visit to an organic vegetable production model at Trác Vãn commune, Duy Tien district, Hà Nam province for 41 farmers (35 women and 6 men). As a result of capacity building activities conducted under this objective, as of June 2016, 123 households practised earthworm farming, applying the closed loop agriculture model based on vermi-culture. This model helped farmers in saving production costs and increasing their income by approximately 30-40%.

Results from interviewing ICERD staff and beneficiaries ranging from national to community levels in combination with field observations showed that all activities under this objective have been implemented according to the plan and been very successful. All the respondents interviewed were happy with the results.

Objective 2: Enhanced international, national and local advocacy on sustainable pest management/ agriculture

CGFED, RCRD and SRD are responsible for activities under this objective. These three CSOs have organised a joint survey on the use of Chlorpyrifos and Paraquat in agriculture in Phu Tho, Nam Dinh and An Giang provinces (300 farmers were interviewed) and then organised a national seminar in Hanoi to present the results of this joint survey. Over 80 participants, including policy makers, scientists, local NGOs, farmers, victims of pesticide poisoning and local media participated. The results of the joint survey were also shared at the provincial workshops in Phu Tho, Nam Dinh and An Giang Provinces where local authorities and farmers attended (one workshop was organized in each province with more than 40 people participating in each province).

Four Farmer Field Days were organized in two provinces of Bac Giang and Quang Binh with 280 farmers (49% female) participating, to disseminate information and exchange lessons learned.

A “Green Environment Day” campaign was also organized by a community learning centre in Quang Binh with over 700 participants (50% female) including students, farmers, teachers, community leaders, farmer’s unions, women’s unions, and youth unions.

Pesticide containers were collected and over 4000 trees were planted in schools and other public places. All farmers in the 18 communes have been encouraged to collect and not to dispose of containers on the fields, especially not in the vicinity of waterways. However, no data for the number of collected pesticide containers is available.

In Bac Giang and Nam Dinh where no pesticide container collection tanks were available, pesticide containers were mixed with household and agricultural waste and which ended up being burned in the open. This may create other environmental problems for the communities. In Ninh Binh the local authority provided support for placing tanks on fields, even though they still had no concrete plans on what to do when the tanks are full. This remains a big problem that both farmers and local leader were worried about.

- Nineteen (19) training courses on pesticide impact assessments (PIA) have been organised for about 700 participants who were students and farmers, trained at District Continuing Training Centres (CLC) in six provinces (Bac Giang, Hanoi, Lao Cai, Ninh Binh, Quang Binh and Yen Bai). Pesticide impact assessments were then conducted for about 390 households in all the provinces mentioned above. Results of the PIA were presented at 22 training courses on PRR and BDA techniques with 514 participants. The PIA results were also published on websites of the ministry of education and ICERD.
- According to ICERD progress report, twenty-two training courses on agricultural techniques have been organised for the 514 participants in the 6 provinces mentioned above. The training courses covered techniques on rice-fish cultivation, household herbal gardens, bio-bedding livestock production (chicken and pig), earth-worm raising and bio-organic fertilizer production. There was no record of the number of households applying these techniques at the time of conducting this MTR, except for the number of households applying rice –fish techniques (34 households) in Bac Giang province.
- CGFED, SRD and RCRD have organised various communication activities to disseminate information on pesticide use to farmers not only at the project sites but also country wide through campaigns (once a year at the occasion of “No pesticide week”); workshops at national and local levels on “Harmful pesticides, the impact on health and the environment” (11 workshops with more than 1000 participants, including government staff, farmers, students, teachers at secondary schools); translated, printed and disseminated 500 copies of a book on “Poisoning our future: children and pesticides”; 350 booklets on “Breast Cancer, Pesticides and you”; 350 booklets on “children and pesticides”; 700 factsheets and 10 posters on effects of pesticides on children and women health; See:
<http://www.panap.net/sites/default/files/Knowledge-Attitude-and-Practice-KAP.pdf>; <http://www.onlinejournal.in/IJIRV2I6/164.pdf>;
<http://www.panap.net/sites/default/files/CPAM-HaiHau-CGFED-and-PANAP-2015.pdf>

Based on the results of the field mission and a review of project documentation, the evaluator concluded that all of the activities implemented under this objective align with the targets taken up in the LFA.

Objective 3: Strengthened capacity to innovate and scale-up Integrated Pest Management (IPM) and pesticide risk reduction training for sustainable intensification of crop production

in partner countries.

FAO-IPM based in Hanoi, in collaboration with PPD (MARD) and many NGOs coordinated and expanded the network of government and civil society organizations in order to increase commitment to the empowerment of rural communities and to improve smallholder farmers' knowledge and skills on ecologically sound agricultural production and protection by testing and scaling up *Save and Grow (SG)* activities. This included:

- FFS on PRR, SG, Rice-fish culture, SRI and IPM in most of the project sites. In each province, there were at least two IPM FFS and two field experiments on rice cultivation techniques per year. Further, there were numerous trainings on PRR, SG and SRI practices during the FFS (about 14 training sessions per FFS).
- Organized trainings for IPM staff at the province, district, and commune level on monitoring and evaluation/quality control to ensure quality of IPM and refresher courses on technical topics twice a year with about 26-30 participants per training. These activities were conducted for IPM staff in Ninh Binh, Quang Binh, HaNoi, Bac Giang, Nam Dinh, Lao Cai, Yen Bai, Hoa Binh. All of the respondents in Hanoi, Bac Giang and Ninh Binh provinces highly appreciated the training content, which was focussed on pests, diseases and on specific crop species; and included an introduction on alternative ecological-low cost pest control measures (*Metarhizium anisopliae* for Brown backed rice plant hopper, rice – fish cultivation, reducing rice seeds and density for less pests and diseases).
- Mobilised funds from government and other donors for PRR (IPM, FFS): This activity has been well implemented and the results passed expectations in Ninh Binh, Bac Giang and Ha Noi because the departments of agriculture and rural development at provincial level were able to collaborate with the KemI Programme and provide financial support from the provincial people's committee (PPC). Ninh Binh's PPC issued policies to support 4 billion VND (~US\$ 200thousand) for Yen Thanh and Khanh Thanh communes in 2 years (2016-2017) to conduct together with FAO-IPM, IPM trainings and FFS. In Hanoi, authority funds allocated for PRR have been able to cover at least 100 field experimental classes on organic and safe vegetables per year.
- Minimum tillage has been applied in 22 provinces with about 4500 households using this technique. Project partners evaluated that minimum tillage practices were able to increase profit for farmers from 60% to 73%, as a direct result of reducing costs (labour, pesticide and fertiliser use).
- Leaflets on rice-fish techniques, no tillage potato, and BDA were produced, printed (3000 copies) and uploaded on the website of DPP-MARD, FAO-IPM and ICERD for free downloading.

So far, the network of government and civil society organisation has been expanded to 10 provinces (Lao Cai, Yen Bai, Bac Giang, Thai Nguyen, Phu Tho, Hanoi, Nam Dinh, Ninh Binh, Quang Binh and An Giang). Within the network, MONRE, MARD, especially PPD at national level and PPPSD, and CLCs at local level together with civil society organisations conduct IPM trainings, livelihood models and PRR communication activities. The remaining 53 provinces and cities in the whole country have access to the IPM training materials through the CLCs.

Objective 4: Strengthened regulatory framework for the control of pesticides in selected partner countries

Through the Programme, support was made available to Vietnam, including the development of a new law on Plant Protection and Quarantine, which includes a chapter on pesticides. It was issued in December 2013. In 2014, the Programme made FAO HQ-Legal Department staff available to review and help finalise its English translation. Draft reports of a FAO\GEF project on pesticide management were reviewed and discussed with PPD. The Senior FAO Policy Officer based in Rome has reworked the manual for training on pesticide risk reduction and the draft is available for approval by PPD-MARD.

From information gained from documentation and interviewing, it can be summarised that activities under objective 4 in Vietnam were well implemented. Respondents were all satisfied with implementation towards this objective.

Objective 5. Strengthen capacity for authorities, industries and CSOs for Pesticide Management: Established network for collaboration and information sharing between partner countries

Activities under this objective were undertaken by KemI. According to KemI reports, two regional workshops on the globally harmonised system for classification and labelling and enforcement were organised in 2014. Representatives from government staff of Vietnam participated in these two workshops. The second workshop was organised in Vietnam combined with a study visit at an international chemical company in Vietnam to inform the participants about its on-going work on implementation of the globally harmonised system. During 2014 and 2015 KemI organised the 8th and 9th Regional Chemical Forums. The 8th forum was in Myanmar in 2014 and the 9th forum was organised in Vietnam in 2015. Representatives of all project local partners (CSOs), and beneficiaries departments (PPD, FAO-IPM) and Ministry of Industry and Trade in Vietnam participated in these two forums. Interviewees who participated in the two forums highly appreciated the forum's contents and expressed that the forums provide good opportunities for them to share and learn about experiences of chemical management among the countries.

In addition, the capacity of CSOs and government staff in Vietnam has been strengthened through their participation in regional networks (PANAP) and APPPC.

From the documentation, the evaluator concludes that activities under this objective were well implemented and align with the Programme LFA.

3.2 OUTCOMES

The project has created significant positive changes for the target communities and stakeholders. The sub-sections below provide details on the project's results as related to important changes. These changes were assessed based on project reports, by interviewing individual or groups of farmers, local leaders, and project staff; and based on observations made by the evaluator during field visits in the country.

3.2.1 Awareness and behaviour changes at local level

Hai Hau district: More than 30% of the farmers at project communes in Hai Hau have directly participated in the project, but most people at the communes know about the project. One women's pioneer group with 3 sub-groups (one group producing safe vegetables; one group keeping earth worms and safe chicken/ducks (chicken and ducks were kept by earth worm and rice instead of industrial feeds); and one group developing mixed gardens (earth worms, safe pigs, safe chicken, and safe ducks) have been established. The leader of the women's pioneer group said that recently many others have wanted to join but they have to organise a meeting for all members to discuss how they can manage a larger group. According to the respondents at the project sites, especially in Ninh Binh, and Gia Lam, 100% of farmers know about IPM and about 80% of them practice IPM techniques on rice and vegetables. 100% of farmers interviewed said they disposed of pesticide containers at common tanks. There were almost no pesticide containers observed on rice crop fields in these areas during the visit.

As compared to Hai Hau district the results showed greater impacts in Ninh Binh and HaNoi, thanks to greater support from local authorities. Not only farmers but also local leaders at the project communes agreed that without the start-up of the project, they would not know much about the management system of pesticide trade and use in agriculture. Now they know more about the management systems, related management regulations, laws, and policies.

PPD staff expressed that the project has created changes in their approach for training and awareness raising activities. Before, they normally trained farmers based on theory, but now thanks to the programme they have started applying the ecological-based approach for training. They also concluded that training content must be based on the field monitoring of pests and disease development and trainings should always be conducted at the field sites.

3.2.2 Income changes

Some evidence presented below originating from farmers and authorities show that income from applying biological controls and alternative ecological agriculture production techniques improved farmers' income considerably.

In Hai Hau district, the application of worm, chicken and pig in closed-loop production systems brought significantly higher income for members of the 3 women groups of Hai Son commune. Mrs. Doan Thi Gam (village 5, Hai Son commune) was a clear example of this and many women groups in the district and the neighbouring district of Hai Thuy have visited her. Income for Mrs. Gam's household increased by more than 50%, to at least 100 million VND (~US\$5000) per year, by applying the "closed-loop" production system. From keeping earthworms, she did not only sell worms (every 3 days resulting in an income of 3.2 million VND (~US\$160)), she also produced feed from earthworms, cereals and biomass for pigs, chicken, ducks, and fish. She did not have to purchase industrial feed that is quite expensive and her pigs, fish, ducks and chicken have been sold at higher prices (about 10%) than the others in the communes because of the safe and good meat quality.

In Ninh Binh district, the commune record showed that applying SRI and IPM regulations for the Summer-Autumn crop 2016, rice productivity increased about 100kg per ha (3%) in comparison to the conventional rice fields. In addition, costs for rice production were reduced by approximately 30%. The farmer Mrs. Len and many other respondents said that the important

point is that they now have safer products for the family and community, while they do not pay much attention to improved yields.

3.2.3 Environmental changes

It is difficult to evaluate environmental impacts of the Programme because it requires time to evaluate the environmental impacts and the scale of individual projects is still small. Pesticide-related illness has to some extent increased as a result of the application of pesticides during previous years. During the Programme's duration pesticide poisoning cases did not occur at the commune level. In addition to this, most of the respondents expressed that their local environment has been improved a lot compared to the situation before the project and it is very much different in comparison to the neighbouring communes in terms of waste management, especially the handling pesticide containers after use (expressed by people and leaders in Thai Yen and Khanh Thanh communes).

In Ninh Binh province, one of the visible environmental changes is the disposal of pesticide containers after use. Two years ago (before the project), pesticide containers could be found everywhere around the crop fields, especially at the canals where farmers take water to dissolve pesticides for spraying. But now pesticide containers are rarely found.

Similar to this, people in Bac Giang province said that about 3 years ago, around this time of the year (September), if they would go to the crop fields they could observe very clearly "red grass" along the canals and inter-field roads, because people used herbicides to burn grass. The grass turned red only a few hours after spraying. But since the project, no one uses herbicides any more, instead they let the grass grow and cut it close to their crop fields. However, the management of empty pesticide containers remains a problem since both leaders in Ninh Binh and farmers in the two Programme communes do not know what they are supposed to do when the concrete containers are full.

In Bac Giang, no concrete disposal container has been placed on crop fields yet. Farmers just collect pesticide containers and mix them with household waste, which ends up being burned.

3.2.4 Policy changes

At least 4 new circulars and policies have been issued at the national level, (including a Joint Circular No. 05/2016 / BNN-BTNMT TTLT on Guidelines of collecting, transporting and processing pesticide containers after use on 05 May 16 2016 by the Ministry of Agriculture and Rural Development and the Ministry of Natural Resources and Environment; MARD's Direction No. 2027 / QD-BNN dated June 2, 2015 on the promotion of application of IPM for the period from 2015 to 2020 was issued by MARD; Government enacted a "Scheme on reduction of greenhouse gas emissions in agriculture and rural areas by 2020" and promotes upscaling of SRI to reduce use of agro-chemical inputs and cut back on greenhouse gas emissions in rice cultivation; MARD's Decision No. 802 / QD-BNN-TCTL, dated 21 April 2014 on the Action Plan of restructuring irrigation scheme. In particular, according to MARD, by the year 2020 the irrigation infrastructure must be improved to allow at least 30% of rice areas in the whole country to adopt SRI and other environment friendly initiatives. All these circulars have been issued partly as a result of the advocacy activities in this project (workshops,

meetings, communications).

At the provincial level (Ninh Binh province), based on the KemI Programme, the provincial PPC has made a decision to, together with the KemI Programme, support the two Programme communes to become safe-agricultural-production communes by the end of 2017. It can be said that the project has had a significant influence on policy changes, especially at the national level. However, the remaining big questions are: how to ensure that these policies will also be implemented? Where will the funding necessary to ensure implementation come from?

3.2.5 Other effects

The District People's Committee of Hai Hau district, Nam Dinh province issued policies promoting ratoon rice to reduce chemical use on 4000 ha of rice; The policy stated that no Paraquat could be used in transplanting rice, no water could be used to flood out weeds, and no field burning could be practiced to clear the field before the crop season. Farmers in Hai Hau said that when they joined the women pioneer groups, they had a chance to discuss this and they had to develop and try to successfully use several methods to reduce pesticide use and increase income: for example by hanging a nylon bag with water in the fruit field to avoid insects/fruit flies, and self-produced feed for chicken, ducks and pigs from their worms and agricultural by-products. These activities have significantly increased their income by more than 150 US\$ (3 million VND)/month/ household. Further, their family and neighbours have safe food to eat and they indicated that they feel happier. However, with respect to related diseases (cancer, neurological effects, birth defects/reproductive effects), the incidence, as local people have been stating themselves, is still increasing as a result of overuse and misuse of pesticides and chemicals in the past. The project has only been on-going for 3 years and has been focussing on small community groups, therefore, further time and efforts are required to start seeing continued changes in behaviour and related health problems.

Before the project's start, people normally bought pesticides from wherever it was easiest for them, and they would apply Paraquat. It was informed in the meetings with Hai Hau district people committee and Hai Son commune women union that some shops still keep selling Paraquat but no one buys.

In Ninh Binh, vice chairman of Yen Thai commune expressed that this project created more work and more duties for the commune's staff but they all felt happy because they now understand the system of managing chemical use in agriculture (rules, regulations, laws, and roles of different agencies) and their tasks in contributing to control and manage the use of chemicals. Before the project they did not know much about these issues. It was also stated by the commune leaders that all farmers in Yen Thai commune are now aware the dangers of misuse or overuse of chemicals in agriculture. More than 80% farmers at the commune have followed the IPM regulations, and no unregulated market trade in pesticides has been observed at the commune recently. Farmers have changed from buying pesticides from the open market to buying at their cooperative. They changed from depending on instructions from the sellers to the guidance of extension staff. However, while recognizing the danger of pesticide use, some farmers do not want to apply any other control methods to avoid additional costs of time and money. It was explained by interviewees at Yen Thai commune that because of un-

stable income and low benefit from agriculture production, farmers wanted to move away from this sector, or they just want to apply techniques that are cheap, comfortable and less time consuming.

3.3 COST-EFFICIENCY

The evaluator considers that in all the Programme activities there were elements of cost-efficiency. This can be shown by the following:

- Through collaboration between project partners, especially local partners including NGOs, government and farmers' organisations (FOs), the partners could make use of each other's expertise for implementing project activities. As a result the project did not have to pay for the contracting of external experts. In addition, as local partners of the program, they to some extent have higher commitments to project activities and target communities than external experts.
- Most of the project staff had been trained by previous projects, thus the project could build on existing expertise and did not have to start from zero. Project staff was all capable of managing and implementing the planned Programme activities. This is one of the reasons that most of the Programme activities were self-evaluated as 100% or over 100% as compared to expected results taken up in the project LFA.
- The Programme activities are very much relevant to local people's needs so they were successful in engaging people's participation, commitment and ownership and this also allowed for sharing project costs.
- The project objective is to reduce pesticide risk in agriculture while ensuring income for farmers in ways that align with the national and local government development strategies, as well as with local people's needs. Therefore, the project could more easily mobilize contributions and participation to reach its objectives.

3.4 RELEVANCE

- Programme activities and objectives meet well local people's needs. The risks of pesticides is currently a hot issue in Vietnam which is a direct result of many poisoning cases as well as related diseases making people worry about their food sources and effecting their morale. People are getting scared of buying food at the market, restricting their consumption, their choices, and reducing food diversification, which in turn affects agricultural production. Therefore, not only government agencies but also farmers and consumers have a great interest in the positive outcomes of the Programme.
- The Programme is also aimed to meet government development strategies at national and local levels, therefore, even if the Programme disposed of limited funding, some local partners (such as DPP) were able to request and obtain governmental funds to support the project activities at national and provincial levels. Examples of this are the following:
 - In Hai Hau district, Nam Dinh province, the provincial and District Women's Union as well as the District People's Committee have a close collaboration with CGFED to implement activities. In collaboration with CGFED they organised training activities, campaigns, demonstrations of safe-economic livelihood models, and supported farmers to access credit for applying ecological livelihood models (worm-safe chicken-pig

and vegetable production and marketing).

- In Ninh Binh province, the Provincial People’s Committee issued a decision to support the two Kemi supported project communes (Yen Thanh and Khanh Thanh communes) to achieve the status of safe agriculture production communes in 2017. The province has been investing 2 billion VND (~100 000 USD) in each commune over two years, together with allocating 3 field-based staff from the provincial level to allow for daily morning consultations, in order to support the two Kemi supported project communes to be able to manage chemicals safely.
- During the evaluation, most of the respondents expressed that the Kemi Programme is “small” but that they considered the Programme to be a seed or a catalyst for authorities at all levels and farmers to collectively achieve the target of safe and sustainable agriculture more easily, which has for many decades been considered the most difficult task for the agriculture sector. An example of this is that the project started encouraging farmers to collect the pesticide containers after use but there haven’t been any places for disposing and treatment after collection. The project then introduced the model of setting up concrete pesticide container collection tanks on fields in Ninh Binh plant production and protection sub department (PPPSD) and PPC. As a result PPC allocated fund for allocating containers on the rice field with every 1 ha having 3 containers.

3.5 REGIONAL COLLABORATION AND SUSTAINABILITY

- The existing collaboration between the four partner organisations (FAO, PANAP, Kemi and TFA) and with local partners and organisations is crucial for the Programme’s effectiveness and sustainability. According to the results of interviewing representatives of the local partners, these collaborations have however been created vertically, and the horizontal collaboration between local partners has been relatively loose. Horizontal collaboration needs to be strengthened to ensure its sustainability after the project comes to an end.
- Sustainability of project results depends largely on the continuing function of the regional networks (such as APPPC, and the regional pesticide reduction network) that have been established and facilitated by Asian countries as well as KEMI. APPPC is being funded by country government members and Vietnam is a member of the commission.
- New policies that have been advocated by the project can help support the sustainability of project outcomes. However, to implement such policies, it is important for the remaining years of the project to call for more support and collaboration of other government departments, especially the Ministry of Finance and the Ministry of Planning and Investment. Such policies cannot be implemented at the local level without the voice and agreement from these departments, as well as national and provincial budget allocations to make their implementation feasible.
- At the local level, especially the commune level, some communes in Nam Dinh, Ninh Binh and HaNoi have developed their own regulations with the agreement of their residents. For example at Van Duc commune, Gia Lam District, Hanoi, one of the regulations is that if anyone disposes of pesticide containers in the wrong place, he/she has to pay 1.5 - 3 million VND depending on the number of discarded pesticide containers being found. The more transgressions, the higher the level of the fine (for example: 1st time offence, fi-

ne is 1.5 million, second time offence, fine is 2 million, 3rd time offence fine is 2.5 million or higher). The level of the payments depends on the national law of environmental protection.

In Ninh Binh and Bac Giang, there were agreements signed between the Commune People's Committee and households to reduce risks from pesticides and protect the environment. The monitoring and penalising/sanction mechanisms are based on the community's traditional regulations.

So these local regulations and policies can be considered a good indicator of project sustainability.

3.6 INTEGRATION OF CROSS-CUTTING ISSUES

The stakeholder interview results indicated that the human rights based approach, poverty perspective, gender equality and good governance have been well integrated in the project planning, implementation as well as monitoring. In all activities, gender was mentioned and the percentage of women participating in the project was very high (50%-70%, and this is shown in all annual reports, progress reports and confirmed during the field visit). In many cases women are leaders of the groups. Respondents at all field sites had the same answer when asked about the right to join in the project: "Everyone has a right to join the project. But priority is given to the poor and women". Respondents had also been trained on human rights, focusing on the lawful rights of women and children and how to use the human rights knowledge to negotiate with local authorities for PRR or manage illegal trading of pesticides.

Regarding poverty reduction, in general all project activities have been designed focusing not only on pesticide reduction and safety but also on improving income for farmers. This is the crucial condition for farmers' adoption of such practices and for long-term sustainability.

Good governance has been well mainstreamed in the project design. All local partners mentioned that everything is transparent and strict. Any changes made to the project and its activities need to be reported in advance and need higher-level approval.

For financial controls, all local partners have to undergo end-of-year auditing. For project activities and implementation, the project's lead organisations (TFA, PANAP, FAO HQ or FAO-IPM) organised periodical visits (at least twice a year) to monitor project activities.

3.7 PRIVATE SECTOR COLLABORATION

- Project results did not show any clear collaboration between the private sector, farmers, government, and NGOs. Some activities have been facilitated by SRD, CGFED and FAO-IPM to link safe production areas with markets (e.g. participation at the agricultural product fair in Hanoi). However, no linkages between safe producers and consumers or markets has been made with support from the project.
- In relation to the pesticide risk reduction aspect, agreements have been signed between local authorities (in Ninh Binh and Hanoi) and pesticide shops on following the government regulations and requesting pesticide sellers/distributors to provide information on the use and purpose of pesticides prior to purchase.

3.8 RISK MANAGEMENT

- Regular monitoring of project activities by using key informants from the community, DPP and community mass organisations - such as women's unions, youth unions and farmers' unions - in combination with periodical visits to the project sites by project staff, was one of the main strategies to monitor changed circumstances and manage and mitigate project risks.
- Participatory methods and making use of indigenous knowledge in designing and implementing project activities was considered a suitable project approach to minimize risk.

3.9 FOLLOW UP OF EVALUATION 2011

In comparison with the evaluation of 2011, similarities were found in many aspects, including relevance of the project to local people's concern and the government's development strategy; the Programme design and implementation was cost-efficient. The strength of each of the Programme partners as well as local people was well tapped into for achieving the project objectives. The Programme has been considered a "*catalyst element*" for the country's IPM and food safety program.

The MTR (2016) found almost no information in Vietnam regarding management responses to the following recommendations proposed by the 2011 evaluation:

- Study the communication strategies and methods for dissemination of information on the results of pesticide risk assessment to reach the general public through children and empower the citizens as customers and consumers.
- Results of the impact assessment on PRR done by Hanoi University should be disseminated widely to larger areas (to all stakeholders within the project areas as well as outside of project areas e.g. through mass media).
- Government should review its policies on the issue of control of pesticide import, distribution and promotion and collaborate with the neighbouring countries to control illegal pesticide trade/ distribution over borders.
- Coordination and cooperation between governments, CSOs, research communities, universities, and the private sector need to be strengthened when it comes to pesticide policy formulation and implementation, and institutional networking.

4. Conclusions and Recommendations

All project activities have been carried out according to the Programme plan. Some awareness raising activities (training) were even more extensive than planned. Stakeholders (farmers and leaders) highly appreciated the project ideas and approach and it was expressed that though the Programme budget is small, it has been recognised that the project has functioned as a catalyst, encouraging stakeholders to come together for a safer life. Because of its relevance to the development strategies at both national and local levels, all project activities have created considerable changes in project communities. Changes have been made in different aspects, such as behaviour changes in disposing of pesticide containers after use; applying biological control techniques (rice fish, bio-bedding in livestock production, earth worm raising); changes in policies of pesticide use and trading; changes in farmers' income; and changes in

environmental aspects (though a positive impact on the environment cannot be proven at this point in time it is expected that with improved management of empty pesticides containers, better control on the trade of pesticides and the improved management and reduced use of chemicals in agriculture, the environment suffers less from the mismanagement and over use of chemicals). The project results were also revealed as cost-efficient.

However, there were some shortcomings and challenges that need to be considered, which include:

- **Limited collaboration between local partners:** Collaboration between the partner organisations such as TFA, PANAP, FAO, KemI and their local partners in Vietnam seems to be good but among the local partners in Vietnam it is still loose. Although annual meetings have been organized in Bangkok for all partners to discuss and share their work, and PPD staff have been invited to conduct some trainings for target communities of other local partners (SRD, CGFED and ICERD), there has been no regular collaboration between them. Especially, FAO-IPM in Vietnam does not know what has been done by SRD and CGFED, and CGFED and SRD do not know what has been done by ICERD.
- With respect to reporting (annual report, progress reports, etc.) SRD and CGFED submit to PANAP in Malaysia; PPD sends its reports to FAO-IPM in Hanoi and FAO-IPM Hanoi sends its reports to FAO RAP; while ICERD send their reporting to TFA.
- In order to advocate and sustain Programme outcomes, there should be one local partner (among the current partners) who would function as a focal unit to coordinate the Programme activities of local partners. This is not only important for advocacy but also for effective monitoring and managing of Programme activities and outcomes.
- Programme funds are limited but have been distributed to quite a large number of various activities and to many communes, districts, and provinces. Therefore, it is really difficult to recognise the Programme's outputs and outcomes, except for in Ninh Binh where there have been many changes at the community level thanks to the project and the close collaboration of the PPC. In other project areas, changes have been observed but only on a limited scale (e.g. of people who participated directly in the Programme). Most of the partners' representatives agreed that the Programme would get better outputs, and more significant and more sustainable outcomes, if the activities were more focused and linked as chains in a production system in a specific community. Due to many reasons, SRD, CGFED, RCRD and ICERD had to find their own suitable communes (project sites), while FAO-IPM had their own areas. There were no linkages among project areas and even among project activities. Therefore, to some extent the Programme seems to be very fragmented.
- One of the project objectives is to build and strengthen linkages/collaborations between farmers, GOs, CSOs and the private sector. However, there wasn't any evidence proving those collaborations, in particular linkages between NGOs, GOs and farmers with private sector were missing in the project results observed.
- In the context of Vietnam, the collaboration between NGOs and GOs as well as mass organisations (womens' unions, farmers' unions, youth unions) is very important for sustaining project outcomes, especially in the case of pesticide management because there exists a hierarchical system from the national to the commune level for plant protection, and

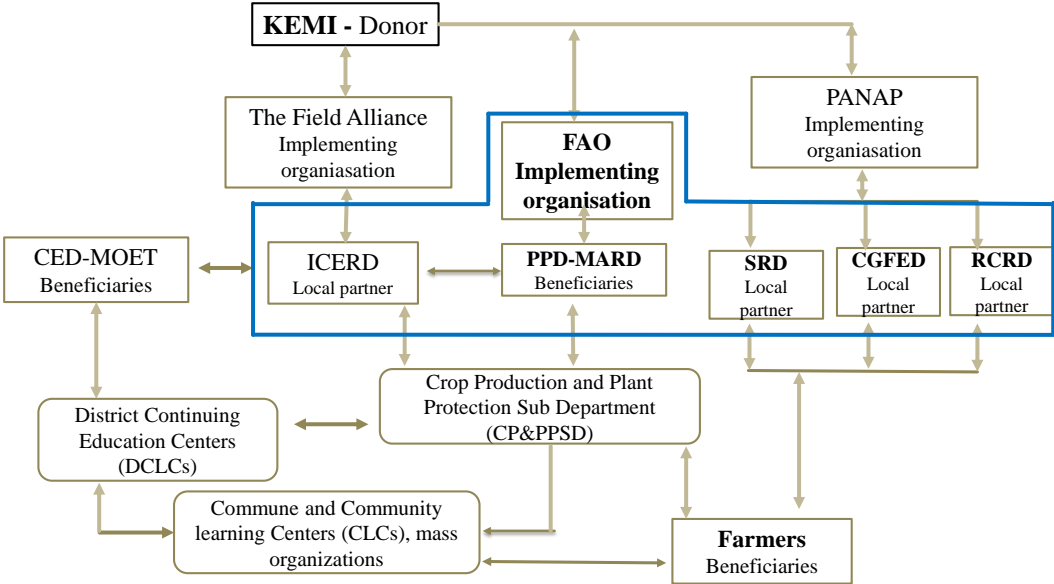
the government is very much concerned about safe production practices. However, there is a lack of collaboration among these organisations in most of the project areas. In Nam Dinh province, CGFED collaborated mainly with the Womens' Union but not with DPPSD (though they invited DPP staff for some trainings). In Bac Giang province, there was collaboration with schools and CLC (Moet) and DPP, but not with mass organisations. In Ninh Binh, only DPP (including RPPC) is working on the project activities. It would be more effective and more sustainable if NGOs, DPP and mass organisations would work in close collaboration in the same area to share, learn, monitor, and support each other and to tap into the strength of each partner for the project.

- In some areas, there is not enough evidence to persuade farmers away from hazardous chemicals and there is a need to identify alternative methods to replace the current hazardous chemicals while ensuring income and benefits for farmers. The project has not been providing enough attractive alternatives for farmers yet.
- As mentioned by many respondents, especially local leaders, reducing pesticides and chemical use should not only focus on the way people apply pesticides and chemicals and raising their awareness on the management of chemicals and pesticides, but it is also important to identify the determining factors which influence their decision to use pesticides and other chemicals in agriculture or not. When such factors have been identified it is easier to design a project approach that can reach the project goal. For example, one of the reasons for applying chemical fertilizer and hazardous pesticides is that farmers do not want to invest much time, labour and thought on agricultural production because it is risky and it is a low income source. Many farmers are trying to move away from agriculture to find off-farm or non-farm work. Therefore, they want to apply techniques that are simple and get results quickly. Hence, consideration of alternative agriculture production systems that increase people's safe income is needed.
- It was mentioned by most respondents, especially local leaders, that although the Programme has created some changes in awareness and behaviour of local people, sustainability of those changes is very uncertain. Below are listed the three main reasons that need to be considered during the final years of the Programme when trying to work towards project sustainability:
 - Changes are still new to people, they need time to familiarise themselves with them and for them to become habitual. Practices are new, and they are still trying to adapt themselves to them and become more familiar with them, but if the project stops supporting or facilitating them then it would be possible that they return to their old practices, especially in those communes where new practices have not yet been fully institutionalised.
 - Changes have been made but these changes have been made by a small group of people. How to scale up efforts with limited funds and time remains a big question.
 - Pesticide trade has been quite well controlled at the project sites (as reported by local leaders). They have some rules and regulations, and agreements with both users and traders. However, challenges remain to exist when the neighbouring communes are unable to control the trade of pesticides and when because of labour shortages for agriculture, people apply pesticides because it seems more attractive for people than biological control.

Within the next two years, to ensure the effectiveness and sustainability of the project outcomes after the project comes to an end, the following **recommendations** are suggested:

- (i) All shortcomings and challenges mentioned in section 4 should be taken in to account seriously.
- (ii) The collaboration among local partners should be strengthened. Among local partners, a focal point (coordinator) should be appointed for all Programme activities. In this way all local partners can share with each other what they have done and all involved stakeholders would better understand the holistic picture of the Programme’s objectives, outcomes and results across the country. The linkages among local partners recommended are shown within the blue lines in the following figure (Figure 2).

Figure 2: Recommended linkages among local partners in Vietnam



- (iii) Introduction to farmers of alternative methods to replace the use of hazardous pesticides and herbicides (Paraquat) is needed;
- (iv) Developing linkages between farmers, CSOs, government and the private sector, especially between farmers and market enterprises to reduce the risk of pesticides in agriculture and to stimulate the production and consumption of ecological agricultural products;
- (v) Facilitate the involvement of the Department of Planning and Investment and Financial Departments at national (Ministry of Planning and investment-MPI and Ministry of Finance-MOF) and local levels to ensure that new policies are implemented at the community level.
- (vi) Continue and pay more attention to the communication of project results (successful IPM, FFS, etc.) via media, community field visits to project sites, and community or in-

ter-community quizzes or competitions about PRR.

5. Lessons Learned

- Involving all stakeholders (CSOs, GOs, private sectors, institutions, etc.) who have responsibilities or interests in the management of pesticides in agriculture and who have an interest in reducing the risks resulting from the inadequate management of pesticides would make the project outcomes more comprehensive.
- CSOs, private sector, and GOs all have their own approaches to reducing pesticide risks in agriculture while safeguarding and/or increasing farmers' income. Therefore, the engagement of these organisations in the same Programme and increasing their collaboration has led to many benefits in the Programme design (better approach), implementation (cost-efficient because they share experiences, exchange expertise, etc.), and for sustaining the Programme outcomes. In addition, there should be increased private enterprise engagement in the project.
- The Programme has established not only national but also international networks that are considered by many partners as an effective instrument to manage pesticide trade and use in agriculture.
- Community-based and farmer-based participation is important in PRR also for accountability. Farmers can monitor each other in pesticide container disposal and the purchase and use of hazardous pesticides, and they can monitor pesticide shops in selling illegal chemicals. Farmers were also asked to sign an agreement to commit to correctly applying IPM regulations (Ninh Binh province) and to monitor each other.
- The Programme applies a "systematic approach" in dealing with pesticide risk reduction. Many stakeholders, including farmers, school children, teachers, leaders, policy makers, and pesticide traders are involved in the project. For the awareness-raising objective, the Programme employs "community education" approaches. As a result, entire communities can access information through direct trainings, TOT, farmer-to-farmer trainings/sharing, and through communication means (loudspeaker, community meetings, and women group meetings).
- Community approach: all people in the community have to follow the regulations. Or at least all households having the same crop field should together apply the regulations. Otherwise, if some households will apply IPM (biological control) while the neighbours do not, pests and diseases can spread out easily. In addition, pesticides from conventional practices can spread to IPM fields. All of these factors have been considered at the project sites.
- Many local leaders and Programme staff mentioned that the project has applied an *action research* approach. Most of the project activities are based on community participation research (field research) and participatory assessment (PIA). Therefore, project activities are very much relevant to communities' needs. Most of the farmers at the project sites were impressed by the training on the dangers of pesticide use and farmers' common bad practices in applying pesticides. As a result of these trainings they observed significant changes in pesticide use within the community. For example, most farmers now try to protect themselves when applying pesticides.

6. List of People Interviewed and Consulted

Name	Position	Organisation
Mr. Nguyen Quy Duong	Deputy director	PPD
Mr. Ngo Tien Dung	Staff	PPD
Mr. Do Hong Khanh	Staff	PPD
Mrs. Nguyen Thi Hoa	Deputy director	SRD
Mrs. Nguyen Kim Thuy	Director	CGFED
Mr. Nguyen Trung Kien	Deputy Director	ICERD
Mr. Pham Van Long	Staff	ICERD
Alma Linda Abubakar	Staff	FAO-IPM
Mr. Tran Van Hieu	Staff	FAO –IPM Hanoi
Mr. Nguyen Van Chuc	Vice chairman	Yen Thai commune
Mr. Vu Van Tai	Farmer union	Yen Thai commune
Mr. Nguyen Van Phan	Staff	DPPS Yen Mo district
Mr. Vu Van Nha	Chairman	Yen Thai commune
Mr. Vu Khac Hieu	Director	DPPSP Ninh Binh province
Mrs. Do Thi Thao	Vice director	DPPSP Ninh Binh province
Tran Thi Len	Head of Commune women Union	Hai Son commune, HH district, Nam Dinh province
Mrs. Hoa	Farmer	Hamlet 5, Hai Son commune, HH district
Mr. Chinh	Vice chairman	HH district
Mrs. Nguyen	Head	Hai Hau dis- trict women union
Mrs. Chi	Staff	Hai Hau dis- trict women union
Mrs. Hoa	Staff	Hai Hau dis-

		strict women union
Mrs. Hoa	Head	Department of Vinachemi
Mr. Thang	Staff	Vinachemi
Nguyen Van Huu	Farmer	Xuan Phu commune, Bac Giang
Pham Van Chien	Farmer	Quynh Son commune, Bac Giang province
Mr. Chung	Deputy principle	Quynh Son secondary school
Mr. Hau	Teacher	Quynh Son secondary school
Mrs. Kieu	Teacher	Quynh Son secondary school
Mrs. Hong	Farmer	Xuan Phu commune
15 farmers of the rice-fish club, Xuan Phu commune		Xuan Phu commune
Mr. Nguyen Song Ha	Assisstant FAO Representative (Program)	FAO Hanoi

7. Schedule for MTR mission in Vietnam

Date	Time	Place	Details
Monday, 5 Sept.	08.30-09.00	PPD Office, 149 Ho Dac Di, Ha Noi	<ul style="list-style-type: none"> Briefing with PPD-MARD
	09.00-11.00		<ul style="list-style-type: none"> Briefing with all partners (FAO, CGFED, SRD, ICERD, National IPM Programme)
	14.00-16.00	Vinachem (21 Ngo Quyen, Ha Noi)	<ul style="list-style-type: none"> Meeting with KemI partner VinaChem
Tuesday, 6 Sept.	Morning	Hai Hau, Nam Dinh	<ul style="list-style-type: none"> Field visit to CGFED activities in Hai Hau district, Nam Dinh province
	Afternoon		<ul style="list-style-type: none"> Travel to Ninh Binh Meeting with PPSD Ninh Binh
Wednesday, 7 Sept	Morning	Yen Mo, Ninh Binh	<ul style="list-style-type: none"> Field visit to Community Education Programme on PRR in Yen Thai commune, Yen Mo district, Ninh Binh province
	Afternoon	North Region Plant Protection Center (Hung Yen)	<ul style="list-style-type: none"> Visit to production of biological control agents in Northern Region Plant Protection Center-Hung Yen Meeting with Northern Region Plant Protection Center Travel to Hanoi.
Thursday, 8 Sept		Yen Dung, Bac Giang	<ul style="list-style-type: none"> Field visit to ICERD activities on Rural Ecology and Agricultural Livelihoods (REAL) and Pesticide Impact Assessment (PIA) in Yen Dung district, Bac Giang province Travel to Hanoi.
Friday, 9 Sept	Morning	Gia Lam, Ha Noi	<ul style="list-style-type: none"> Field visit to Van Duc commune, Gia Lam district model for safe vegetable and pesticide management. Meeting with Hanoi PPSD about Community Education Programme on PRR and how local governments scale up IPM/PRR programmes

MID-TERM REVIEW OF PHASE II OF THE SIDA FUNDED REGIONAL PROGRAMME “TOWARDS A NON-TOXIC ENVIRONMENT IN SOUTH-EAST ASIA”

Annex 8 - Cambodia field visit report

1. Background and context

The “Towards a non-toxic environment in South-East Asia Programme” (hereinafter “the Programme”, or “the KemI Programme”) is intended to address the hazards of agricultural, industrial, and consumer chemicals in six countries in the region (China, Cambodia, Laos, Myanmar, Thailand, and Vietnam). Thus far in Cambodia, on the ground, it has focused mainly on agricultural chemicals especially pesticides as the highest priority. Industrial and consumer chemical issues are beginning to receive attention from government, as Cambodia is signatory to the relevant international conventions, and concerned Cambodian officials participate in regional dialogues including the ASEAN “Working Group on Chemicals and Waste”, and the Programme’s Regional Forums. The Law on Pesticides and Fertilizer Management was passed in 2012, with important assistance from the KemI Programme in the preparation of the draft, through capacity building inputs from FAO. A number of highly hazardous pesticides (HHP) have been banned. Institutional and capacity limitations have constrained implementation, but some important progress is being made. For example, interviews with the Provincial Department of Agriculture in Prey Veng Province revealed that the Inspection Office has recently carried out a number of monitoring visits to agriculture input suppliers, to educate them about banned hazardous pesticides. Follow up visits showed that most complied with the law banning certain HHP and removed the offending items from their stock (how was not discussed).

In Cambodia, pesticides are widely used in agriculture, while public awareness of their hazards has become widespread since work began on this aspect in 1996. The National Integrated Pest Management (IPM) Programme is well established after long-standing support from FAO’s International Regional IPM Program and a series of donors, and has some government funding and a legal mandate. However overall funding of the program is currently about 10% of what it was in the past decade. The National IPM program is the primary partner to the Programme in Cambodia.

The local Cambodian NGO “Agriculture Technical Services Association (ATSA), with modest support from the Programme Partner “The Field Alliance” (TFA), has been working with the provincial Departments of Education to train teachers and students in awareness of highly hazardous pesticides (HHP), and in understanding agricultural biodiversity as a key sustainability resource. ATSA also delivers training, mostly to village women’s groups, in preparation and use of botanical pesticides, and in formation of women’s savings groups, which can become a key social capital starting point for interventions related to capturing economic bene-

fits from safe food production.

The other Cambodian local NGO partner is “Cambodian Center for Study and Development in Agriculture” (CEDAC). With support from “the Pesticide Action Network – Asia Pacific” (PANAP), CEDAC is doing: education on pesticide impacts using commune-level workshops; village trainings on ecological agriculture and market linkages including “Good Agricultural Practice” (GAP) certified rice from farmer groups using agro-ecological practices; pesticide hazard awareness raising through radio and social media; Community-Based Pesticide Monitoring; and networking and advocacy.

Cambodia has participated actively in the work of the Regional Forum, a dialogue platform managed by the Programme to facilitate sharing experience among national institutions involved in policy and regulatory development, and in compliance and reporting on obligations under the various relevant international conventions (Stockholm, Rotterdam, Minamata, and others). Cambodia has very little primary industry, in the sense of large scale processing and manufacturing. The garment industry, the mainstay of the manufacturing sector, is the source of toxic chemicals from textile processing dumped in rivers. Industrial and consumer chemicals are imported, but quantitative data are limited due to the porous borders with Vietnam and Thailand.

The National Institute of Standards in the Ministry of Industry and Handicraft was recently mandated to convene a multi-stakeholder Committee on Management of Dangerous Goods, including eighteen Ministries. Guidelines will be developed on handling of dangerous goods, classification, worker safety, a list of banned substances, etc. Licensing and import permits, and border inspection will also be addressed. A chemical data management system will also be established.

2. Methodology

In response to the Terms of Reference, the consulting team prepared an inception report including an evaluation matrix and interview questions, based on relevant documentation provided by the client, including previous evaluation reports and numerous progress reports and other materials provided by the partners and the local NGOs involved. Field work was of two types:

- i. Semi-structured interviews with focus-groups in Cambodia and in Vietnam with stakeholder community members in villages where the Programme is active, supplemented with key informant interviews of local, provincial and national officials and others. These were done by one Team Member in each of the two countries (with a translator in Cambodia). They were supported by the coordinators of sub-projects in each case, over a short period of only five or six days in each. Villages for site visits were purposively selected by implementing partners to give exposure to successful and moderately successful cases.
- ii. Two members of the MTR Team (the Team Leader and the member responsible for Cambodia) participated in meetings of the working group for preparation of the Regional Chemicals Management Forum, and a Regional Workshop of the Partners 19-23 September 2016, and used the opportunity to have hour-long key informant inter-

views with representatives of most stakeholder organizations involved in the Programme.

Information on the Cambodia component of the Programme, gleaned from these three sources, forms the basis of the findings, conclusions and recommendations which are the subject of the present report.

3. Findings

At the level of overall objective (Impact) the Programme is intended to contribute to:

- Better management and more sustainable use of agricultural, industrial and consumer chemicals
- Reduced risks from chemicals to human health and the environment
- More sustainable intensification of agricultural production, and improved resilience to climate change.

The Programme is intended to do this by strengthening capacity and regional collaboration for efficient pesticide risk reduction and chemicals management, within and among partner countries (medium term outcome).

In the following section, the Cambodia findings are presented for the evaluation criteria and questions posed in the Terms of Reference for the Review, specifically for each of the short term objectives specified in the logical framework of the Programme.

EFFECTIVENESS

To what extent has the Programme produced outputs and outcomes compared to the LFA? Is the Programme on track? What is the prognosis for reaching the targets for outcomes and overall objectives within the Programme period? Is anything impeding the effectiveness of the Programme and its project modalities? If yes, what can be done to address this? How have budget cuts affected the Programme? Have Programme partners implemented adequate monitoring and evaluation systems, reporting, transparency and accountability mechanisms as well as efficient financial management?

1.1.1 Objective 1: Increased awareness and enhanced capacity in farming communities, schools, institutions and among consumers within partner countries to reduce the risk associated with pesticide use and enhanced use of alternatives

All three sub-project local partners in Cambodia have worked with raised awareness of the risks of pesticides to human health and to the environment, and to increase capacity to do something about it, as follows:

CEDAC

CEDAC has been carrying out commune workshops and village training sessions in their target areas in Kandal Province, focused on ecological agriculture and market linkages. The workshops include videos and other presentations on the nature of pesticide risks. In the first half of 2016 alone, CEDAC carried out five such trainings, with nearly 300 participants,

mostly women.

The training sessions aim to raise awareness of community members, farmers and local authorities about the adverse impacts of pesticide on health and environment. They also provide farmers a technical introduction to agricultural production methods, which enable them actually to reduce pesticide use. This is complemented by an introduction to the emerging market demand in Cambodia for milled rice certified under “Good Agricultural Practice” (GAP) standards, a value chain which CEDAC is in the early stages of facilitating with milling infrastructure and contract negotiations with buyers. This market access is a key aspect of capacity building for pesticide risk reduction (PRR) as it can enable farmers to reap economic benefits from reduced pesticide use, in addition to the well-recognized health benefits. Farmer Leaders interviewed in the CEDAC sites stated that the trainings in the Programme had contributed directly to their increased awareness of PRR matters, the content of the training had been specific and rich enough to make the point very clear to them. CEDAC beneficiaries have already the opportunity to sell “safe” food products through the CEDAC shops in urban centers in Cambodia. This is an important pilot exercise. The CEDAC shops are subsidized and the MTR Team considers that they are not independently sustainable. But it’s a start on building farmer access to premium markets. There are private players in this market (e.g. Natural Garden shops) which are developing a client base, and have a hard time getting supply of safe vegetables.

The CEDAC “Farmer Nature” program component works with local FM radio stations in several provinces, using farmer and adviser interviews to put out key agro-ecology and PRR messages to a very wide audience. In the first half of 2016, twentyfour such talk shows were broadcast in several provinces. Interviews have been provided to other media: newspapers and radio such as Phnom Penh Post, Voice of America, Radio Free Asia, and guest speaker to two radio stations relating to pesticide issues and food safety in Cambodia. Social media use is very widespread in Cambodia, especially among the youth both rural and urban. CEDAC has Facebook pages (“Pesticide Cambodia”) which present the agro-ecology and PRR messages in attractive formats. These messages reach farmers, as indicated in the interviews, as smart-phones are ubiquitous in rural Cambodia. They likely reach the younger consumers, who are interested and internet literate. It seems unlikely that they reach policy makers in any significant way.

CEDAC also supports a number of safe food retail outlets in several parts of the country, “the CEDAC Shops” which provide information on safe food and agro-ecosystem matters alongside the rice and fresh produce from participating farmers. The CEDAC shops are in a way the exception that proves the rule, concerning limited Programme attention to market access for producers of safe, GAP or organic food. This because they buy only from participants in CEDAC supported groups, and are themselves something of a “hot-house flower” in that this aspect of CEDAC’s work has been heavily funded by external donors. It is not yet apparent how they will fare when that support comes to an end.

In collaboration with PANAP, CEDAC is piloting Community Based Pesticide Monitoring (CPAM) in several locations, including the testing of PANAP’s new mobile app for data collection. In one location the Commune Council and the teachers have implemented a ban on

the use of pesticides near to the local school. In Cambodia, the Commune Councils are the lowest level of elected authority, and have mandates for natural resources management among many other things. CPAM is a way to develop the pesticide regulatory and enforcement framework from the bottom up.

CEDAC also runs a few agro-ecology training farms. The Team visited one in Trapeang Krangang Commune, where Agriculture Bachelor of Science graduates were taking advanced training in agro-ecological farm management, including demand driven selection of crops (e.g. lemongrass and lady finger/okra which have high demand and high prices for chemical free product). The Team met several very inspiring youths who want to become successful farm businessmen and -women, using the techniques they are learning.

The 2011 evaluation reported that PANAP/CEDAC had positively influenced PRR behaviors in CEDAC's target communities. The MTR Team interviewed a group of leaders of Farmer Associations supported by CEDAC in Takeo province, including "key farmer" leaders, a Commune Councilor responsible for Agriculture and Water matters, and several women who were elected leaders of farmer associations in their villages.

About half understood that the money for CEDAC's intervention has come from the Swedish people via Sida. Most had personal or family experience with pesticide poisoning and were well aware of the signs and symptoms. Most were using botanical pesticides on the home plots for family consumption, but found the effort to collect raw materials and make the concoctions too time consuming for use on crops grown for sale. Some were still spraying by the calendar on rice (IR504 variety) destined for the Vietnam market, although they report that they are beginning to use their agro-ecological knowledge to make empirical judgments about the level of pest activity and the need for pesticide use. CEDAC is introducing low-cost disposable protective clothing and masks, and participants in the interviews reported willingness to use appropriate methods for disposal of these and of empty pesticide containers.

ATSA

The Field Alliance provides Programme funds to the Agriculture Technology Services Association (ATSA) as part of its "Rural Ecological Agriculture for Livelihoods" (REAL) regional project. In two provinces (Battambang and Kampong Chhnang) ATSA is working in two ways to raise awareness and build capacity for PRR:

- i. Working with women's community groups to train members in agro-ecological concepts and PRR. ATSA provides some technical support to group members to implement PRR practices, especially the preparation and use of biological pest control methods in particular botanical pesticides. It appears they do not provide other key aspects of the farmer field school training given by the National IPM Program (see below), especially the ability to analyze pest and natural enemy levels in the field, as a basis for decisions on use of pesticides either chemical or botanical. Misuse of any pesticide is known to lead to pest resurgence at a later stage.
- ii. Training teachers to work with secondary school students on agro-ecology (agro-biodiversity, ABD). ATSA is working with the Provincial Departments of Education Youth and Sport in the two provinces to gain access to about twenty schools in total,

training two teachers per school. Trained teachers support students in conducting agro-biodiversity surveys near their homes, and in understanding pesticide risks.

The logic here is that students aware of pesticide and agro-ecology concepts will in the long term be more informed citizens, as farmers or otherwise, and in the short term they will influence their parents to change their pesticide use practices.

The long term impacts are possible but not measurable. The short term impacts are unlikely to materialize unless the parents receive technical training and support to implement agro-ecological and PRR practices. However interviews with ATSA staff revealed that the two components largely do not overlap geographically, nor are any of ATSA's target villages receiving support from the IPM program. So the technical training needed for implementing PRR approaches is mostly lacking for the families of students trained in the Programme.

ATSA is planning an approach to the recently appointed and very dynamic Minister of Education Youth and Sport, with a view to establishing agro-ecology and PRR components in the national curriculum. However a draft policy brief has not yet been prepared.

IPM

Integrated pest and crop management is an agro-ecology-based holistic system that integrates a variety of methods to manage and protect crops. IPM skills enable farmers to grow healthy crops with high yields, potentially leading to production sustainability and socioeconomic effectiveness while reducing pesticide use, thus safeguarding human and animal health and protecting the natural environment. The Cambodian National Integrated Pest Management (IPM) Program was initiated in 1993 with support from FAO and IDRC. Since the beginning, the IPM program has received support from at least thirty-five different agencies including multilateral and bilateral development partners and international NGOs but from different donors at different times.

In 1998 Integrated Pest and Crop Management was formally declared as one of the country's key crop production strategies. In 2002 IPM was formally established as a National Program under the General Department of Agriculture (GDA) in MAFF. The main objectives of the program are to reduce dependence of farmers on agricultural chemicals especially pesticides; to develop the capacity of agriculture trainers and extension workers; and to educate farmers on agricultural technologies by enhancing their knowledge of field agro-ecology and by developing skills in managing crops effectively. The IPM program is active in most provinces of the country, and from 1993 to 2015 has trained over 245,000 farmers (about 50% female), over 3,000 farmer trainers (35% female) and nearly 1,000 IPM trainers (36% female). These are impressive numbers but represent only a fraction of Cambodian farmers.

According to briefing documents from the IPM program Coordinator the results from impact studies showed that IPM farmers have increased technical knowledge and decision-making skills. They are able to get higher yields with reduced pesticide applications and had lower costs of production. The brief concludes that IPM training leads to more sustainable and cost-effective production, reduction of ecological disruption and environmen-

tal contamination, reduction of public health hazards due to toxic residues in food, and improvements of livelihood, biodiversity, and marketability of products.

The MTR Team interviewed members of IPM farmer Clubs, supported by the IPM Program with Kemi Programme funding in three provinces. Three clubs were visited, including one at the very early stages and one mature club which had been in existence for several years. Respondents confirmed that the initial training and on-going technical support they received has made them very much aware of the hazards of inappropriate pesticide use, and provided them with the technical knowledge and skills needed to practice agro-ecological methods leading to PRR and better family health. However most respondents confirmed that while the health benefits were sufficient to engage them in PRR practices, they were not making significantly larger incomes, although some higher incomes were reported in studies¹. Those few farmers interviewed who were getting premiums for safe food, usually only from friends and neighbors, were getting premiums up to 30%. The MTR considers that there is likely a general opportunity being missed in the domain of branding and farmer-market linkages.

On the issue of increased profits for PRR compliant farmers, the Team noted that the IPM program has taken a few important steps on farm to market linkages. One report², presented at the National Multi-stakeholder Workshop on Agro-ecology Transition, 30th – 31st March 2016, documents a Programme experiment funded by FAO and IFAD with production and marketing of organic chili. In that experiment, a team of 10 persons including Government officials, chili farmers and traders undertook a study tour in Thailand on Contract Farming, Organic Vegetable and especially Chili crop production and Organic Fertilizer. Four IPM farmer field schools were conducted to educate farmers during one crop cycle on how to grow organic chili. 69 farmers (39 women) were educated on Organic Chili Production. An Organic Farmer Cooperative was formed, which made contact with traders for purchasing organic produce from the cooperative.

In Battambang province, the PDA has strongly supported and promoted marketing of safe vegetable crop of two IPM Clubs. The club leaders and members are provided a booth to display their agricultural products in Provincial Fairs and some National Fairs for promoting their products to other buyers as well as customers. Currently, more and more buyers come to purchase the vegetable products in the farmers, according to the club leaders.

Under a Letter of Agreement with FAO, the Cambodian NGO Centre for Development

¹ Ngin Chhay et al, International Journal of Agricultural Sustainability, Rice productivity improvement in Cambodia through the application of technical recommendation in a farmer field school

² FAO Fact sheet “Farmers’ Journey from FFS to a Cooperative”

Oriented Research in Agriculture and Livelihood Systems (CENTDOR) carried out in 2014 and 2015 an impact assessment of the community education for pesticide risk reduction work done by the IPM program. The study addressed 1). Programme Monitoring, 2). Long term monitoring and 3). Ecological and environmental study.

The conclusions of the study were:

- Part I: IPM-PRR Programme has achieved its public awareness target indicators as set in the project document. However, it is acknowledged that the results are partly due to national and regional policies to ban WHO Class I pesticides, and public awareness campaigns on the negative impacts of pesticides, which were implemented by other projects.
- Part II: IPM farmers reduced risks from pesticide use and incidences of pesticide poisonings significantly comparing data from baseline surveys to midline and to endline surveys, while achieving net profits which are higher than those of Non-IPM and control farmers, although the statistical significance of the data presented to support higher profits is debatable.
- Part III: Numbers of natural enemies in IPM farms are higher than numbers of natural enemies in the Non-IPM farms in all proposed indicators both in the vegetable and rice farms.

As discussed in the main MTR report to which this report is an annex, the Programme has a general problem of assessing impacts and the causal relations between outputs and results or impacts. A lot of data is collected by the Partners and sub-Partners for their periodic reporting, but no overall monitoring and evaluation strategy exists in the Programme to pose such questions in research terms, and to ensure that the relevant data is collected to answer them.

1.1.2 Objective 2: Enhanced international, national, and local advocacy on sustainable pest management/agriculture

Project reports and interviews in communities and at the Regional Workshop indicate that in Cambodia in some target areas, local communities and local authorities, empowered with knowledge from training implemented through the Programme, are taking action on the banning of pesticide spraying in the vicinity of some schools. With PANAP support, over 3 years CEDAC has hosted over 100 radio talk shows, which cover a broad range of topics including System of Rice Intensification (SRI), food safety, consumer's issues, No Pesticide Use Weeks and the Protect Our Children and from Toxic Pesticides campaign. CEDAC and ATSA both maintain Facebook pages with appropriate information and messages.

PANAP with CEDAC are developing a mobile app to improve data collection in community pesticide action monitoring (CPAM). This data is intended for analysis and advocacy use at the local and national levels.

The National IPM programme is innovating the formation of a Federation of IPM farmer Clubs, to provide a vehicle for advocacy and sustainable mutual support.

Advocacy for sustainable agriculture and PRR at the national level in Cambodia is not strong.

Senior staff of the sub-partners take opportunities to advocate in governmental forums and privately among their superior officers, but there is no overall coordinated strategic plan for advocacy for policy change.

1.1.3 Objective 3: Strengthened capacity to innovate and scale-up Integrated Pest Management (IPM) and pesticide risk reduction training for sustainable intensification of crop production in partner countries.

The problem of scaling up IPM and PRR to cover the majority of Cambodian farmers is not being addressed in a concerted or strategic way. IPM was officially declared early on as one of the country's key crop production strategies, with the aim of making IPM the standard approach to crop management in Cambodia. The IPM program is charged with the facilitation and coordination of all IPM activities in Cambodia irrespective of donor agencies and crops involved. However the program lacks funds to engage the existing, and to train new, qualified personnel who have the knowledge and skills to be able to provide farming communities with relevant and effective services in response to local needs.

While the IPM program has some funding from the national budget, overall the level of funding including donor funds is according to interviews at the regional workshop a bit over USD 100,000 per year³, of which the KemI Programme contributes about 20%.

There is no long-term strategic plan for scaling up IPM in Cambodia to the level required by a properly implemented, agro-ecology based, national sustainable agriculture intensification program.

1.1.4 Objective 4: Strengthened regulatory framework for the control of pesticides in selected partner countries.

As a still largely agricultural economy, pesticide issues are of special significance for Cambodia, which ratified the Stockholm Convention in 2006, and adopted a new Law on Management of Pesticides and Fertilizer in 2012 and Rotterdam Convention in 2013, with support from the Programme through FAO. There is also a Law on the Management of Quality and Safety of Products and Services (2000), which addresses levels for all pesticides in fruit and vegetables and in food of animal origin.

Officials from the various Cambodian agencies concerned (Ministries of Commerce, Industry, Environment and Agriculture) participate in the Regional Forums.

³ Estimates from the interviews with Programme staff

1.1.5 Objective 5: Strengthened chemicals management capacity within authorities, industries and among relevant CSOs in the partner countries.

On the Industrial chemicals side, Cambodia has a large secondary industrial sector (led by the garment sector) but relatively little primary manufacturing industry. Agricultural, industrial, and household chemicals are imported in large quantities. The National Institute of Standards (NIS) has very recently been mandated to convene an inter-ministerial working group on chemicals management, with a view to establishing a regulatory, monitoring and enforcement framework. KemI has begun a dialogue with NIS to explore what support might be made available under the Programme, drawing on KemI and regional technical expertise.

EFFICIENCY

Have the separate Programme activities been implemented in a cost-efficient manner? Is anything impeding the cost-efficiency of the Programme implementation? If yes, what can be done to address this?

The MTR was not given information on which to base an assessment of cost efficiency.

The fragmentation of the Programme activities engendered by the lack of strategic planning at the country level can result in low efficiency. As pointed out above, the Programme's design is not cohesive, but consists of parallel operations and some limited cooperation between different stand-alone organizations and their programming. Thus cost-saving collaboration and synergies are likely missed.

On the other hand, financial reporting is well-structured hierarchically through the partners to KemI, and externally audited. The outputs are being delivered on budget and mostly according to plan, by which one may surmise that the operations are being carried out with reasonable efficiency.

RELEVANCE

Is the Programme and its design relevant for addressing present major problems Does the Programme promote/ensure a sustainable regional ex-change and co-ordination in order to achieve pesticide risk reduction and good chemical management at national and regional level? Do the Programme design and implementation strategies allow for synergies/synergistic effects and encourage further collaboration? To what extent have governments and development partners provided support and invested in the Programme and up-scaling of activities? Does the Programme have a relevant and feasible strategy for promoting sustainability of Programme results? Briefly assess the efficiency and effectiveness of

communication of results for the ultimate purpose of influence on policy makers for the Programme? Suggest improvements, if relevant

In Cambodia some 80% of people live in rural areas, and perhaps 60% or more are involved directly in agriculture. Damage to human health from exposure to hazardous pesticides is a well recognized problem in the region⁴. This includes Cambodia, where in every interview carried out by the MTR with farmer groups, at least a few participants had direct personal or family experience of the recognized symptoms of pesticide poisoning, and most knew of a neighbor or family member with such experience. The Programme is therefore highly relevant to the need, in that it informs stakeholders at all levels of these issues, and through IPM offers workable technical (agro-ecological) alternatives to the use of hazardous pesticides. The position of the National IPM Programme in the framework of Cambodian agricultural policy has been noted above. The Programme has made a major and sustainable contribution in the form of support to the development of the new law, and it is resuming its support for implementation after a hiatus due to issues in the relevant government department, now resolved.

All of the Cambodian sub-Partners in the Programme participate strongly in the Regional Workshops, and through their senior Partners channel information on their experience into international forums on these issues. However as noted there is a lack of coherence among the activities between the sub-Partners.

In the context of Cambodian governmental support for public health and sustainable agriculture programs, it is notable that IPM gets the national funding that it does, limited though that may be. Funding from development partners (donors) is limited, though several major donors⁵ have made substantial contributions to IPM in Cambodia in the past.

Sustainability of results in IPM rests firstly on the awareness, skills, and commitment of the farmers and their local organizations, as well as on their ability to advocate effectively for PRR related activities and investments to be funded by local government. Some IPM Farmer Clubs interviewed asserted that they will pay for IPM technical assistance out of their own funds (well-functioning savings groups developed with Programme assistance).

As noted above, within the Cambodian component of the program, there are communications emanating from sub-Partner activities which are effective in terms of overall awareness raising in the country. And there have been a number of incidents where senior officials have taken useful action to promote Programme objectives, as in the case of the MAFF Minister supporting an Organic Village. But at the Programme level, indeed at the Country level, there

⁴ "Children and Pesticides – Protect our Children from Toxic Pesticides" www.panap.net

⁵ IDRC, Danida, World Bank, IFAD, others

is no overall strategy or activity plan to engage directly with policy makers in government nor in the corporate private sector.

REGIONAL COLLABORATION AND SUSTAINABILITY

Does the Programme promote/ensure a sustainable regional exchange and co-ordination in order to achieve pesticide risk reduction and good chemical management at national and regional level? Do the Programme design and implementation strategies allow for synergies/synergistic effects and encourage further collaboration? To what extent have governments and development partners provided support and invested in the Programme and up-scaling of activities? Does the Programme have a relevant and feasible strategy for promoting sustainability of Programme results? Briefly assess the efficiency and effectiveness of communication of results for the ultimate purpose of influence on policy makers

Participation in regional collaboration is facilitated by regional workshops and the Regional Forum. The Programme is developing support for bilateral technical working exchanges to address specific regulatory problems (standards development for example). Actual working collaboration in regional context by Cambodian participants has been limited.

INTEGRATION OF CROSS-CUTTING ISSUES (THE HUMAN RIGHTS BASED APPROACH TO DEVELOPMENT, THE POVERTY PERSPECTIVE, GENDER EQUALITY AND GOOD GOVERNANCE)

Are cross-cutting issues (human rights, poverty perspective, gender, good governance) well integrated into Programme design and activities? Is there sufficient knowledge about these issues among implementing partners and are they acknowledged and prioritized

For the Cambodian sub-partners, the four cross-cutting issues are clearly acknowledged in the design of activities. The human right to health is central to the PRR work. The poverty perspective is not explicitly addressed, but for example the savings group work is intended to give poor people especially women access to economic opportunity. In the Cambodian situation, women are predominantly represented in training activities, and partners collect data in a gender-disaggregated basis wherever possible. IPM Farmer Clubs are in practice local civil society organizations, capable of advocating directly with local authority for necessary actions for PRR.

PRIVATE SECTOR COLLABORATION

Is the potential for collaboration/engagement with the private sector sufficiently used (also including farmers as small scale business)?

Engagement with the private sector is discussed above. Some Farmer Clubs will take on the form of social enterprises as they achieve formal registration. There is little or no collaboration with the corporate private sector.

4. Conclusions and Recommendations

4.1 PROGRAMME FOCUS, COORDINATION AND FUNDING.

For Cambodia, where industrial activity is quite limited compared to the other countries except perhaps Lao PDR and Myanmar, and where most of the population is in the rural areas, pesticide risk reduction is clearly the priority focus for work on the ground. Moreover, while the local NGOs involved are doing excellent work, their contribution is necessarily small compared to that of the national IPM program, which has government funding and mandate,

The IPM program in Cambodia is seriously under-funded compared to the need. Overall funding from all sources is currently at about USD100,000/year now, or 10% of what it was at its peak around 2005 with World Bank and Danida funding, and is episodic in structure as donor priorities have shifted. There is no long-term strategic plan for scaling up IPM in Cambodia to the level required by a properly implemented, agro-ecology based, sustainable agriculture intensification program.

On the industrial and consumer chemical side, the Government is now taking an initiative to put into practice its obligations to public safety under the Conventions. The responsible officials in the National Institute of Standards (NIS) in the Ministry of Industry and Handicraft (MoIH), and those in the Ministry of Environment, have benefited greatly from their participation in the Regional Forum and other Programme activities, in terms of their grasp of the issues and the available means for addressing them. But their capacity needs considerable further development.

There appears to be little if any coordination of Programme activities on the ground. At best, the partners meet occasionally while participating in NGO Forum and KemI events. There appears to be no geographic overlap of sub-project activities, no shared planning, and no synergy at the field level. This is a problem at the Programme design level, not a matter of poor performance of the sub-partners, who on the whole have done a very good job in their projects.

4.1.1 Recommendation 1:

For pesticide risk reduction in agriculture, all activities in any future Programme should be coordinated by the National IPM program. FAO, PAN AP and TFA are key partners, but their support should be coordinated by the National IPM programme. Local NGOs, perhaps but not necessarily including ATSA and CEDAC, should be awarded grants/ contracts to deliver specific outputs required by the Programme, on a competitive basis in response to calls for proposals. In the short term, for the duration of Phase 2, the partners should be strongly encouraged to seek synergies in their work through quarterly activity planning meetings, chaired by the IPM Coordinator. We are not suggesting here that donor funds should flow through the National IPM Program – it is a question of better coordination.

4.1.2 Recommendation 2:

Consistent with its own overall strategy, FAO should take the lead (with Sida/KemI support)

in working with the National IPM program, the other development partners, the responsible private sector, and the farming communities, to develop a long-term strategic plan for generating the financial (and human) resources needed to make IPM a self-sustaining leader in the move to sustainable agriculture in Cambodia.

4.1.3 Recommendation 3:

In the present Programme, KemI should move quickly, seizing the opportunity to provide support to the NIS as Convener of the new Working Group on chemicals management. This support should take the form of technical exchange visits with partner agencies in regional countries. Technical and institutional development consultancy inputs from the same partner agencies and from KemI itself would be useful. KemI could also support NIS develop a more comprehensive national strategy for chemical management including non-agricultural issues.

4.2 FARMER MOTIVATION FOR BEHAVIOR CHANGE

Farmers will change their behavior if they perceive benefit to themselves and their families for so doing.

Household and community-level awareness of dangers of pesticides is widespread in Cambodia, after more than twenty years of effort, and continues to grow. More could be done. Farmers are motivated to adopt alternative production methods and PRR practices for personal and family health reasons. However with very few (but exciting) local exceptions, the potential extra profits from producing safe, “natural” (*tomacheat* in Khmer) and/or GAP certified food products are not realized. The challenge is to make farmers using PRR practices successful economically.

There is a very large body of knowledge and on-going research and programming activity in Cambodia on vegetable and rice value chains, funded by a range of development partners (USAID, ADB, IFAD, GIZ, EuropeAid, and others). Proven means exist for delivering differentiated (safe) food products to premium markets in Cambodia and internationally. There are a number of Cambodian private enterprises in these value chains, and their businesses are mostly supply-limited⁶.

In general the Programme in Cambodia is not addressing these market constraints and opportunities in any systematic way.

⁶ This statement is based on the author’s conversations with many of the proprietors, during field work in early 2016 in preparation for the imminent USAID funded Cambodia Commercial Horticulture Value Chain Promotion project (Hort-VCP project), the successor to the “HARVEST” project now completed. See www.cambodiaharvest.org.

4.2.1 Recommendation 4:

Much more attention needs to be directed at the value chain for safe food produced by participating farmer groups. In the present phase, CEDAC, ATSA and the IPM program should be encouraged and assisted to divert resources into developing market linkages, building on the experience they already have and on the existing project resources described above. In the future, this market driven aspect of motivating farmers to adopt PRR – agro-ecological approaches to sustainable livelihoods should be much more central to the design in the Programme in Cambodia.

4.3 TARGET BENEFICIARIES

With the changing demographics of Cambodia, and advancing mechanization of agriculture, it is unlikely that there will be as many small-holder farmers in the country, twenty years on. However the field work in the program is targeted exclusively at smallholders and the rural poor. If the objective is to reduce the use of toxic chemicals in agriculture, then much more effort needs to be directed at medium and large commercial operations in addition to the smallholder farmers. With some apprehension, Programme partners point out the difficulty of influencing the behavior of powerful companies and the well-connected local business elite.

Advocacy of this type is the special competence of PANAP and to a degree of TFA. Moreover FAO as a UN Agency has special power to convene a dialogue and to gain access to decision-makers both public and private. Note also that the agro-ecological approach is scale neutral, and can be applied to large-scale operations if management sees the real value in so doing.

4.3.1 Recommendation 5:

PANAP and TFA should be encouraged in the present phase to develop an analysis of the issue of PRR in large-scale agriculture, to guide the design of the possible next phase of the Programme.

4.4 CLIMATE CHANGE, WATER MANAGEMENT, AND COMPOST

Climate change gets “honorable mention” in partner training activities. However many farmers interviewed said that they are not able to manage water so as to have supply in the dry season. Water management is about capture, storage, delivery and retention in the soil. Some work is being done with compost (see below) which deals in part with soil moisture-holding capacity, but the other aspects are nowhere being addressed in the Programme. This is especially critical for intensive vegetable production which needs reliability of product supply in order to capture premium markets.

Compost in agro-ecological systems is much more than a substitute for chemical fertilizers, being fundamental to soil and plant health in ways that are now much better understood than they were back in the days of the Green Revolution. Compost production is a part of most FFS programs. But the actual quantity of compost made and applied by most farmers is small, due to labor cost and shortage of raw materials. This limits yield and therefore profits. One solution is the mechanization of compost production using readily available equipment (walk-

ing tractor, brush cutter, shredder), and harvesting wet season fallow vegetation as inputs. Such operations can be scaled to suit farmer groups e.g. IPM Clubs, or local private enterprise at commune level.

4.4.1 Recommendation 6:

The IPM Programme coordinator should get in touch with the various networks of people and institutions in Cambodia working on water management in ecological agriculture, to begin developing a relevant component for the proposal for the next phase.

4.4.2 Recommendation 7

Ways need to be found for the commercially viable mechanization of composting on a local, commune level scale. The IPM Programme should use small grant funds (perhaps under an FAO letter of Agreement) to solicit an investigation of options for an approach.

4.5 IMPACT ASSESSMENT

The partners have lots of output data, but very little impact analysis. All stakeholders recognize the difficulty of attributing impacts to a particular funding stream, when partners have their own programs with multiple donors. The Cambodian NGO CENTDOR has done some impact analysis on the IPM component, under a letter of agreement with FAO. There are some data sets, e.g. from ATSA which could be explored for impact insights. CENTDOR has sufficient human resources to do much more impact assessment work, but not sufficient funds.

4.5.1 Recommendation 8:

In the current phase, funds should be allocated to increase CENTDOR's impact assessment work, beginning with a scoping of what data is actually available with the other partners. For the possible next phase of the Programme, the design team should be specifically mandated to address the impact evaluation issue.

4.6 POLICY DEVELOPMENT AND IMPLEMENTATION

The MAFF Department of Agricultural Legislation (DAL) has successfully promoted the Law on Management of Pesticides and Fertilizer and Stockholm and Rotterdam and Conventions, with support of FAO under the Programme. Due to personnel issues, only limited progress has been made in implementation of the law and conventions. Issues of border control and enforcement of restrictions on sales of HHP are complicated and under resourced. Recently the DAL has had important staff changes.

4.6.1 Recommendation 9:

FAO should move quickly to re-engage with DAL to restart support to the implementation of the Law on Pesticides and the two Conventions.

5. Acronyms for the Cambodia field visit report

ASEAN	Association of Southeast Asian Nations
ATSA	Agriculture Technical Services Association
CEDAC	Cambodian Center for Study and Development in Agriculture
CPAM	Community Based Pesticide Monitoring
FAO	Food and Agriculture Organization of the United Nations
FFS	Farmer Field School
GAP	Good Agricultural Practice
HHP	highly hazardous pesticides
IDRC	International Development Research Centre of Canada
IFAD	International Fund for Agricultural Development
IPM	Integrated Pest Management
KemI	Swedish Chemicals Agency
LFA	Logical Framework Analysis
MTR	Mid-term review
NIS	National Institute of Standards
PANAP	Pesticide Action Network – Asia Pacific
PRR	Pesticide risk reduction
REAL	Rural Ecological Agriculture for Livelihoods
Sida	Swedish International Development Cooperation Agency
TFA	The Field Alliance

6. List of People Met (Only Key person recorded in the list)

Date: 5-9 September 2016

No.	Name	Positions	Instistitutional / Location
1.	Chou Cheythyrieth		GDA/PNP
2.	Ngin Chhay		GDA/PNP
3	Keam Mkarady		CEDAC,PNP
4	Soun Seng	Executive Director,	CENTDOR, PNP
5	Pan Sodavy	Program Manager	ATSA
6	Meas Chendamu,ny	Project Coordinator	ATSA
7	In Sovann Mony	Deputy Director PDA, BTB	PDA, BTB
8	Phang Sisophea	DT/	Thmorkol district/BTB
9	Klot Chanpheng	District Trainer/ farmer promoted	Thmorkol district/BTB
10	Ream Rot	Group Leader-IPM/PRR	Oh Taky commune, BTB (1)
11	Kean Kheam	Deputy - IPM/PRR	Oh Taky commune, BTB
12	Chim Chanthen	Member	Oh Taky commune, BTB
13	Hun Bunhoun	Group Leader-IPM/Farmer's Club	Tamoeun commune, BTB (2)
14	Sang San	Deputy-IPM/Farmer's Club	Tamoeun commune, BTB
15	Kim Mom	Treasurer	Tamoeun commune, BTB
16	Ly Yan	Field Trainer	ATSA Staff
17	Oem Kunthea	Group Leader -Saving& Vegetable	Peam Ek commune,BTB (3)
18	Tor Sros	Deputy- Saving& Vegetable	Peam Ek commune,BTB

No.	Name	Positions	Instistitutional
19	Oeu Saoly	Secretary- Saving& Vegetable	Peam Ek commune,BTB
20	Heng Kimsreang	Deputy Director	PDA-Kg. Chhnang
21	Cheng Pheng	Group Leader- Saving& Vegetable	Por Pel commune, Kg. Chhnang(4)
22	Yoen Moeun	Deputy- Saving& Vegetable	Por Pel commune, Kg. Chhnang
23	Pov Sophy	Secretary- Saving& Vegetable	Por Pel commune, Kg. Chhnang
24	Ouch Sarom	Teacher, Secondary School	Por Pel commune, Kg. Chhnang
25	Sok Vnny	Teacher, Secondary School	Por Pel commune, Kg. Chhnang
26	Ly Sam Ol	District Trainer/	Rolea Pha Ear district,Kg. Chhnang

27	Meas Sophath	DT/	Rolea Pha Ear district,Kg. Chhnang
28	Hout Savath	FT/ Farmer promoted to be FT	Rolea Pha Ear district,Kg. Chhnang
29	Pen Chanthoeun	Group Leader-IPM/Farmer's Club	Pong Ro commune, Kg. Chhnang
30	Choub Chanbopha	Deputy-IPM/Farmer's Club	Pong Ro commune, Kg. Chhnang
31	Thou Chantha	Treasurer	Pong Ro commune, Kg. Chhnang
32	Him Thea	Commune Council member	Sambour commune,Takeo
33	Eang Phally	Representative of farmer Asso.	Sambour commune,Takeo
34	Hea Nhor	Representative of farmer Asso.	Sambour commune,Takeo
35	Siang Khoeun	Representative of farmer Asso	Sambour commune,Takeo
36	Nhem Pokea	Representative of the teachers	Sambour commune,Takeo
37	Hun Chhart	Leader of Community Developm.	Sambour commune,Takeo
38	Luy Soeng	Representative of thefarmers	Sambour commune,Takeo

No.	Name	Positions	Institutional
39	Touch Aiy	Treasurer/ Saving group	Sambour commune,Takeo
40	Toem Meng	Secretary/Saving Group	Sambour commune,Takeo
41	Lim Dem	Treasurer/ Saving group	Sambour commune,Takeo
42	Ek Kimson	Leader of Farmer Association	Sambour commune,Takeo
43	Tho Narith	Young Graduate / CEDAC	Trapiang Kranhoung com./Takeo
44	Pen Vannak	Chief of Vegetable/CEDAC	Trapiang Kranhoung com./Takeo
45	Kong Sokeae	Young Graduate / CEDAC	Trapiang Kranhoung com./Takeo
46	Chhoem Chanthy	Chief of Vegetable/CEDAC	Trapiang Kranhoung com./Takeo
47	Ouk Samnag	PDA Director	Prev Veng province
48	Choun Saban	Director of IPM program,-PV	PDA/Prey Veng province
49	Y Kadum	PDA Officer /PV	PDA/Prey Veng province
50	Buy Lot	PDA Officer / PV	PDA/Prey Veng province
51	Bun Sakhorn	PDA Officer / PV	PDA/Prey Veng province
52	Hem Sitha	FT/ Farmer promoted to be a FT	Chey Kampok com./ PV
53	Aum Phean	FT/ Farmer promoted to be a FT	Chey Kampok com./ PV
54	Ket Roeun	FT/ Farmer promoted to be a FT	Chey Kampok com./ PV

55	Saum Morn	Group leader/IPM- PRR	Park Pry village
56	Khuth Born	Deputy/ IPM- PRR	Park Pry village
57	Lok Thoeun	Treasurer	Park Pry village
58	Kong Skhorn	DT/ IPM-PRR	Angkor Rech com./ PV

No.	Name	Positions	Instistitutional
59	Khun Kimlonn	DT/ IPM-PRR	Angkor Rech com./ PV
60	Phim Navy	DT/ IPM-PRR	Angkor Rech com./ PV
61	Chhay Tonh	Group Leader/IPM-PRR	Ouknha Em village
62	Soun Samin	Deputy	Ouknha Em village