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Empowering Farmers, Improving

Techniques?

Integrated Pest Management in Cambodia and Thailand

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Empowering Farmers, Improving Techniques?

Integrated Pest Management in Cambodia and Thailand¹

Yunita T. Winarto²

People Centered Paradigm in Agricultural Development: an Introduction

It had been almost thirty years since Carson published her famous book *Silent Spring* (1962) that a serious effort to correct the Green Revolution paradigm in agricultural development began to take place. It was around the time of Farmer First: Farmer Innovation and Agricultural *Research* (edited by Chambers, Pacey and Thrupp 1989)'s publication that a concern to empower farmers was also began to take shape. Why did it take almost thirty years to seriously take action of what Carson already voiced in the early 1960s? Feeding the hunger, alleviating poverty, catching up the rapid growth of population had been the main concerns of the global world at the time Carson's book was published. The Green Revolution paradigm with its intensive high level inputs and technology was implemented elsewhere in developing countries in Asia following the discovery of the high yielding variety of rice and maize. Feeding people was the main agenda. Yet it was reached by placing the agricultural producers, farmers themselves, as the targets and subjects of the various intensive technological packages. They had to face the reality that their position in agricultural production was being put upside down. Loosing their freedom as producers on the one hand and following all the state's regulation in crop farming on the other hand, was the situation the farmers were trapped into after the forced introduction of the 'miracle seeds'. Moreover, various negative implications in plants' susceptibility to pests and diseases and other socio-economic and environmental problems occurred. To counter such a situation after

¹ This paper is prepared as a Working Paper for the Asia Research Institute, National University of Singapore. It is a 'work-in-progress paper' based on the undergoing field work in Cambodia and Thailand from mid of 2004 to end of 2005 following the implication of the Integrated Pest Management Programme in the two countries. The SEASREP (Southeast Asia Research Exchange Program) jointly funded by the Toyota Foundation and the Japan Foundation Asia Center support my in-depth study in Cambodia and Thailand in 2004–06.

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learning those problems, putting the 'last' first or placing the 'farmer' first were voiced strongly by a number of scholars.

Towards the end of 1980s, the FAO (Food and Agricultural Organization of the United Nations Organization) in collaboration with a number of scholars designed the so-called Integrated Pest Management (IPM) Programme which was later known as Community IPM in Asia (see From Farmer Field School to Community IPM in Asia, Pontius et al. 2002). This programme was designed to counter the negative implications of the Green Revolution technology and to empower farmers, the crop producers. The question is how to implement that new paradigm within the countries that are still struggling to improve productivity, alleviate poverty, and feed the increasing population? Not only that. The growing shortages of land and water resources, the climatic changes, as well as the increasing urbanization and industry that attracted more farmers to seek for better lives in the cities contribute to the existing constraints and problems in rice production. On the other hand, the recent trends in rice production and consumption are now standing not on one, but 'multiple revolution', including the revolution in 'gene' and rice nutrition (see Macintosh 2005). With such a move forward from the initial Green Revolution in the 1960s and the position of rice as the 'prime' commodity with its complex problems and challenges, it is understood if rice production would still be heavily managed by the state. The experience in Indonesia from the early stage of rice intensification in order to induce high productivity reveals the heavy-handed top-down program from the center up to the village level (see for examples Hansen 1978; Birowo and Hansen 1981; Hardjono 1983; Sawit et al. 1988; Fox 1991). People-centred development, on the other hand, requires the other way around (see for examples Chambers et al. 1989; Scoones and Thompson 1994). Hence, the question is: how to reconcile those two objectives in the state's development programme in agriculture? Would it be possible to just placing farmers as the 'first' without changing the paradigm in agricultural development? This is the question I would like to address in this paper by examining the cases of the Integrated Pest Management Programme in Cambodia and Thailand.

Community Integrated Pest Management Programme (CIPM) has a multi-faceted dimension. It first began with Farmer Field School (FFS) or a 'school without wall' to train a group of farmers in a learner-centred, participatory, and experiential learning process of the agro-ecosystem condition of their field which lasts for a full-cropping season. The basic format of training consists of three activities: agro-ecosystem observation, analysis and presentation of results; a special topic; and a group dynamics activity (see Gallagher 2003:5—6). Farmer Field School is only a starting point for the development of a sustainable agricultural system in a given locality. As Pontius *et al.* (2002:7) say:

The FFS sets in motion a longer-term process, in which opportunities are created for local leadership to emerge and for new, locally devised strategies to be tested. This longer-term process has been identified as community IPM.

Further on, Pontius et al (2002:30) explain that: "Community IPM leads to farmer empowerment. It seeks to institutionalize IPM at the local level by putting farmers in control of the process of planning and implementing their own IPM programmes." The ideal objective was to enable farmers controlling the programs, and to make them masters of their own fields. By doing so, "The IPM movement... has helped farmers to move from the margin into a more powerful position vis-à-vis these technical, political, market and social forces," claimed Pontius et al (2002:2). Changing the position of farmers from the 'powerless' to a more 'powerful' one in the constellation of power relations involving various forces was in line with what the scholars say about 'putting farmers first', or 'beyond farmer first'. However, to implement this paradigm, the Food and Agricultural Organization as the leading organization in designing and disseminating Community IPM has to deal with the government in each country. There has been a long relationship between the state and the people in agricultural development in various countries in Asia, even though its history and condition is different from one another. Among various crops, rice is one main commodity that has been the major object of state's control. Into such a situation the CIPM was incorporated in each state's agenda, yet with variation in its adoption. Example of this are the timing of its incorporation into the state's policy and objectives (see Pontius et al. 2002:15); and the extent to which each state manages the program.

It is thus interesting to discover how, within 10 years only, the program has widely spread in 12 countries in Asia, and in other places in the world, including Africa and Latin America (see *Learning with Farmer Field School*, LEISA – Magazine on Low External Input and Sustainable Agriculture 2003, vol.19 no.1; Pontius *et al.* 2002:1). What has been happening in the ground when the state runs the 'people-centred development program' like CIPM? What contributes to

their 'success stories' and what are the constraints? Among the countries in Southeast Asia, Cambodia and Thailand are cases where the adoption time in each country was five years difference: 1993 for Cambodia and 1998 for Thailand. Why is there such a difference? Despite such a variation, how does the state's authority in each country manage the program? What similarities are there? This paper will examine these questions on the basis of my fieldwork in 2004—05 in Cambodia and Thailand.³

In relation to the present state of globalization in the world, including the flows of ideas such as the CIPM programme, I agree with Fox and Gingrich (2002:6—7) that more and more human beings experience similar conditions. Individuals in diverse states have to respond to the same challenges, opportunities, and problems created in the other parts of the world and transmitted globally. Fox and Gingrich (2002:7) say about the global connections and people's responses that:

Individuals may respond to these new interconnections in varying ways: sometimes, converging on their cultural similarities; at other times, conserving or even, emphasizing their cultural differences. These global connections and the heterogenous local responses to them legitimate a renewed comparative agenda for anthropology and related fields. If people all around the globe are increasingly reacting to comparable conditions, it becomes a more obvious challenge for scholars to compare how people react and what results culturally from their reactions.

In line with this, I also focus my work on how people in different places react to the introduction of the new ideas of the Integrated Pest Management. Since the ideas were formulated in the same approach of the Community Integrated Pest Management Programme with the standard methodology of the training program, its introduction in Asian countries provides a comparable condition. By carrying out a comparative study of how the states in two neighbouring countries

³ I did my ethnographic study of the evolutionary changes in knowledge and practices among rice farming communities following the introduction of the Integrated Pest Management strategy in Cambodia and Thailand. In Cambodia I focused my study in three villages (Kraing Leav, Thmey and Khley) in Kampong Chhnang province which belongs to DANIDA IPM Training Project under the Cambodia National IPM Program. In Thailand I carried out my study in Lad Bua Luang sub-district in Ayutthaya Province, Central Region where the Farmer Field School was run by *Chaipattana* Foundation supported by the Her Royal Highness Princess Sirinthorn and in collaboration with the Department of Agricultural Extension and the district agricultural office. To understand what is happening in the ground, I also focused my observation on how the state's authority in each country manages the programme. This paper is based on this latter data by also referring to the Indonesian case as a comparative understanding.

react to the introduced ideas, as well as the extent to which they adopt and implement it, I intend to also contribute to what Fox and Gingrich (2002:12) argue for the recent emergence of a 'rich plurality of qualitative comparative methodologies' in anthropology. In carrying out the comparison, I do not begin with any bounded unit of analysis such as the Cambodian and Thai nation, lowland rice ecosystems, or economic system of self-subsistence (refers to Cambodia) and market-oriented economic system (refers to Thailand). Instead, I start with the questions of who the agents in the selected places are who respond to that introduced 'global' idea, in what ways, with what reasons, objectives, and further results; and what the contextual factors are affecting their responses. In tracing the contexts, I have to first examine the various factors emerging in each particular place, i.e. with the Cambodian and Thai context. Nevertheless, without any boundaries defined in advance, I have the advantage and flexibility of discovering significant factors originating from outside the bounded units in time and space (also see Vayda 1983). The comparison also prevails on what are similar and what are different in both the individuals' responses and the contextual factors. At this stage it is still too early, however, to find out what 'cultural' results from their reactions are, or whether it is significant to discover "...what results culturally..." (Fox and Gingrich 2002:7) are from the actors' responses. My fieldworks on the chain reactions among rice farmers on the ground are still underway either.

'Global' Paradigm in 'Local' Context: Cambodia and Thailand

Observing the growth of the so-called Community IPM Programme in the last decade I could say that a 'flow of ideas' across state's boundaries was happening in the region, or, furthermore, across regional boundaries. Where did the ideas originate from? The Philippine was the country in which the first steps toward the creation of the IPM Farmer Field School (FFS) were taken. From 1978 through 1980 a farmer training program lasting for five consecutive planting seasons were held. The lessons-learned from this farmer training effort were then being incorporated in the IPM Farmer Field School in Indonesia. After conducting a pilot project of IPM FFS in Yogyakarta province in 1989, the FFS program was then introduced in six (6) provinces in Indonesia in 1990 followed by further dissemination nation-wide (see Pontius *et al.* 2002; Winarto 2004a). In 1992 the 'success story' of Farmer Field School in Indonesia was then spread to the other countries in the region through the so-called the FAO-Community IPM Programme

in Asia. Vietnam was the first country adopted the program in 1992 followed by Bangladesh in 1991 (Kevin Kamp, personal communication 2005); China, the Philippines, and Cambodia in 1993, India in 1994, Sri Lanka in 1995, Laos in 1997, and in 1998: Thailand and Nepal (see Pontius *et al.* 2002:15). Thailand, a rice-growing society, was one of the major exporters of rice in the region. Rice was already being exported more than a hundred years ago, even before the Bowring Treaty was signed in 1855 (Ingram 1971; Tanabe 1975; Phelinas 2001).⁴ Nevertheless, Thailand was one of the latest countries in the region adopting the FFS method officially. It came five years later than its neighbouring country, Cambodia. How did the state in the two countries respond to those incoming 'flow of ideas' and implemented them as part of the agricultural programme in each country?

The beginning: diverse responses

The 'new paradigm' in agricultural development in Indonesia was made possible in 1986 when the Indonesian President at that time, Soeharto, agreed to ban 57 wide-spectrum insecticides on rice following the decline of rice production due to the increased susceptibility of rice plants to brown plant hopper (see Wardhani 1992; Appendix 2 and 3, Winarto 2004a; also see Lim 1992 for the introduction of Integrated Pest Management in the Asia-Pacific context 1992; and Pontius *et al.* 2002). The initial objective was, therefore, to counter the negative implications of the Green Revolution technology that was forcefully introduced to the farmers in Indonesia in early 1970s, and enable the government to reduce the subsidy on chemical fertilizers and pesticides (see Wardhani 1992). Was this also the case in Cambodia and Thailand at the time the states decided to adopt this paradigm?

Cambodia: alleviating poverty, sustaining ecosystem

The Deputy Director of the Cambodian National IPM Programme mentioned that following the introduction of the IPM ideas, several IPM trainers from Indonesia and the Philippines came to Cambodia to introduce the Farmer Field School method as was taught in Indonesia. However, he

⁴ The Bowring Treaty—signed in 1855 and took effect in April 1856—was the result of the negotiation by Sir John Bowring from Britain and King Mongkut. When Bowring arrived in Siam in 1855, he found the monopolies of trade by the king, nobles, and Chinese. The objectives of the treaty were to end the state trading and trading monopolies, and force Siam to open the market and remove trade restrictions. On the other hand, King Mongkut had also the conviction that Siam must learn to live with the Western nations if she was to survive as an independent nation. Through this treaty, the Siam's economy was linked with world trade and markets (see Ingram 1971; Tanabe 1975; Kirsch 1975; Arghiroz 2001).

stated further that the situation in Cambodia was different from the two countries (Indonesia and the Philippines) where the Green Revolution technology was very intensively practiced. The Cambodian farmers were just at the learning stage of planting high yielding varieties and using chemical pesticides and fertilizers after the opening of Cambodia to international market in 1993. At that time, the multi-national companies introduced those products to Cambodian farmers, in particular in the border regions with Vietnam (Ngin Chhay, personal communication 2003). The farmers in my field sites remembered, however, that they learned to use chemical fertilizers for the first time soon after Pol Pot regime collapsed. Charny (1990) and Dennis (1990) also say that in the early 1980s, to release the Cambodian people from hunger and starvation, international aid agencies and bilateral donors shipped the imported modern short-stemmed seeds with its full complement of fertilizers, pesticides, knapsack, mist sprayers, hoe heads, pumps, tractors and power tillers.

This scenario of a leap forward into the Green Revolution was, according to Dennis (1990), not realistic for Cambodia which is dominated by a large continental river with its variation in annual floods and a very wide spectrum of ecological variability. Rainfall distribution, flooding pattern, topography, and soil types lead to very diverse rice-growing environments. In the wet season, rice is grown in the rainfed lowland, deepwater, and upland rice; while dry season rice is fully or partially irrigated (Javier 1997). So far, the high vielding variety released by the Cambodian Agricultural Development and Research Institute has been cultivated in the dry season irrigated areas. For non-irrigated fields, unreliable rainfall and poor soil quality were part of the main problems faced by farmers (see Mak 1997). Kiernan (1982) refers to the result of a survey of paddy soils in the countries of tropical Asia that Kampuchean soils are the poorest in four of 14 soil qualities and second or third poorest in seven others (also see White et al. 1997 for the low-potential soils in rain fed lowland rice which could restrict yield). Therefore, the inappropriate use of chemical fertilizers in generally poor soil quality could generate another pressing problem. On the other hand, pests and diseases were insignificant as compared to Indonesia and the Philippines (Ngin Chhay 2002; also see Lando and Mak 1994 for farmers' report that pests and diseases are not a major problem).

Despite all efforts to improve crops productivity, Cambodia is still one of the poorest countries in Asia. Council for Social Development, the Royal Government of Cambodia (2002:iii) recently

reports that in 2002, Cambodia's Human Development Index reached 0.543, moved up to the 'medium human development' as compared to 1990 when the index only reached 0.501. Poverty, however, remains widespread with 36% of the Cambodian population lives below the poverty line of US\$0.46—0.63. In relation to rice productivity, the main staple of Cambodian people, the country's average paddy yield is around 1.64 t/ha for rain fed rice and 3.01 t/ha for irrigated dry season rice as reported by DANIDA IPM Project II (executive summary n.d.). The latest figure reported by DANIDA for rain fed rice is not too significantly different from the national average of 1.45 t/ha in 1990, or 1.50, 1.42, and 1.38 t/ha for the early-, medium-, and late-duration rain fed lowland rice strands as mentioned by Javier (1997).

Into such a situation the leading agricultural officials in Cambodia perceived the CIPM programme as a promising means to increase productivity while also improving farmers' agroecological knowledge and skills. Cambodian farmers are seen as lacking the ability to manage crop production in an efficient and sustainable way (Ngin Chhay 2002). On the other hand, learning from the Indonesian and the Philippine cases of the negative impacts of the Green Revolution technology at the time the Cambodian opened its door to international market, there was a worry that farmers would adopt the high-level inputs such as chemical pesticides and fertilizers (Ngin Chhay, personal communication 2003). Pesticide abuse has been reported in secondary crops with its heavy users of highly toxic pesticides (Sodavy *et al.* 2000), also in the border regions with the neighbouring countries from the 'dumping of pesticides' from Vietnam and Thailand. Hence, the CIPM programme was perceived as a supplementary program to the government's policy in crop intensification to achieve high yields productivity, i.e. improving agriculture in terms of its sustainability (Ngin Chhay, personal communication 2003).

The CIPM ideas and programs were thus adopted by the leading agricultural officials to increase rice production in an environmentally sound and sustainable manner while also improving farmers' skills. To portray that objective and emphasis, the agricultural official preferred to name the program as the Community Integrated **Crop** Management rather than the Integrated Pest Management (also see Winarto 2004b). The CIPM was then placed under the Department of Agronomy and Agricultural Land Improvement within a special program called the Cambodia National IPM Programme. The state was the organizer and the responsible body of introducing the people's paradigm in agricultural development with the support of multilateral agencies and

bilateral donors such as the FAO, DANIDA, PRASAC (European Union), and the international financial institution: The World Bank. In a later stage, a number of Non-Government Organizations were also being involved as the collaborators in providing financial support.

Thailand: reducing pesticides, loosing profits

Thailand, on the contrary, has experienced a much longer period than Cambodia in the expansion and development of rice farming, in particular in the Central Plain of Thailand. After the Bowring Treaty in 1855 and the increase of rice demands for export, the rice farms were gradually expanded and reached its peak in 1950 (Ingram 1971; also see Tanabe 1975). Tanabe (1975:4) says that at the end of nineteenth century, the Thai national economy was already based on the monoculture of rice. In 1989, rice was the largest crop in Thailand with 9.4 million ha under cultivation (Rumakom et al. 1992:219). Not only rice land was significantly expanded, but also the use of machinery. However, not until 1950s that the mechanization in Thailand was then gradually replaced the labour-force. The number of tractors rose rapidly in 1960s. Other items of mechanical equipment that were also being used by farmers were water pumps, boat engines, other transport equipment, and later, the harvesting machines. Ingram (1971) says that in the 1960s—70s, motor-driven machinery begun to play a significantly larger role in Thai agriculture than it did before. Tanabe (1994) argues that the expansion of machinery use occurred when labor was then moving rapidly off the land in the period where labor costs were rising following the industrial boom in 1950s to 1980s, and again in 1990s where the number of rice workers was rapidly declining (see Tanabe 1994:14). Besides the introduction of machinery, Thai farmers were also benefited from substantial government investment in facilities such as irrigation, transportation, and education (Ingram 1971). On the other hand, average national rice production was relatively low (2,400kg/ha) as compared to the national averages of other countries because of poor soil fertility, low use of fertilizer, inadequate crop protection from pests and disease, and inadequate water supply (see Rumakom et al. 1992).

In response to this, Rumakom *et al.* (1992) say that the government's policy in increasing rice production in the late 1960s was then based on the 'green revolution' paradigm. Even though Tanabe (1994) reports that high yielding variety was adopted later than the other developing countries, the adoption of rice strands suitable to Thai specific environments and the cross breeding of the high yielding variety (e.g. IR 8 and IR 5) with Thai varieties (see Ingram 1971),

and those resistant toward pests and diseases, began to flourish. The government also encouraged the growing of two crops of rice per year. The continuous cropping of the high yielding varieties throughout the year aggravated the build up of pest populations. Accordingly, minor pests became a problem (Rumakom *et al.* 1992; Tanabe 1994). Thus, the use of chemical pesticides was widely spread, in particular in the Central Region. The fertilizer application rate was also increased (see Tanabe 1994). Tanabe (1994:10) reports that the Central Region consumes more fertilizer than any other region. These are the phenomena found elsewhere when the Green Revolution technology was adopted. In Thai case, the gradual adoption by farmers themselves, as compared to the more forceful introduction of the new technology such as in Indonesia (see Hansen 1978), was probably due to what Ingram (1971:274) says that Thai farmers appear to be receptive to new crops and new techniques when they clearly understand the benefits they can expect to derive, despite the absence of a forced introduction.

Seeing the increasing pests' problem, the government began to establish the concept of pest management in mid 1970s and implemented the methodology of Surveillance and Early Warning System (SEWS) nationwide in 1984 (Menakenit 2000). In 1985, the first international donor agency from Germany supported the IPM Programme in Thailand, but without directly facilitating farmers. In the CIPM Country-Thailand Report (www.communityipm.org/Countries/Thailand.htm) it is stated that the IPM implementation in the early and mid-1990s slowed until nearly stagnant due to technology transfer-oriented approaches by entrenched plant protection and extension systems, as well as close and mutuallybeneficial relationships between many government staff and the pesticide industry. Hence, at the time the FAO introduced the IPM paradigm within the Community IPM programme in Thailand in 1992, resistance was the government's response. The coordinator of IPM in Plant Protection Division in the Ministry of Agriculture and Cooperatives with whom the FAO-CIPM representatives worked with had great oppositions from the other officials of his positive attitude to adopt the idea. He faced lots of critiques and non-supportive responses. Why? At that time, the government was still instructing farmers to spray insecticides in controlling pests. Moreover, the government subsidized the pesticides to the farmers. The 'new paradigm' thus challenged the government's interests in using chemical pesticides, or, enforced them to reverse their own interests and recommendation to the farmers. Being reluctant and against the adoption of the program, that was the decision taken by the Director of the Plant Protection Division of the

Department of Agricultural Extension (DOAE) at that time. Despite facing such a great constraint and opposition, the coordinator of IPM programme who then was the chief of Weed Control Sub-division in Plant Protection Division decided to move forward to implement the Farmer Field School in one province in the Central Plain, supported directly by the FAO. In three years, he managed to run five FFS in two provinces. One of his previous staff told me the story:

At that time, because of lots of pressure, he (The Chief of Weed Control Sub-division in Central Region) decided to resign. He wrote a letter to resign. But, before he resigned, a TV channel invited that group of Farmer Field School. That group of farmers was very strong. Wherever they went, they would like to talk about the 'school'. One TV channel invited them.They were strong in the way of thinking and always talked about what they found in the FFS. ...The TV channel invited them, broadcasted lively, without script. In the broadcast, he said everything, and invited farmers to discuss about the program of FFS and the program of reducing the use of pesticides. And, the King watched that program. Some weeks later, there was a letter from the King to admire that TV channel, admire the Department of Agricultural Extension to conduct special session like that, and admire that it was a good program.

His Majesty the King appreciated that program as 'a very good project.' It was then followed by his letter addressed to the Ministry of Agriculture and Cooperatives announcing his acceptance of the FFS program under his initiative. His appreciation and acceptance came in 1997, five years after the first introduction of the 'new paradigm' in Thailand. The decision of His Majesty the King then significantly altered the DOAE's policy. From resistant to acceptance, that was the significant change in late 1997s. In 1998 the FFS program was then introduced widely. The Chief of Weed Control and coordiantor was asked not to resign, but instead, to continue the program. The Royal Support of IPM and FFS brought about the creation of the Institute of Biological Agriculture in and Farmer Field Schools (IBAFSS) the DOAE (www.comunityipm.org/Countries/Thailand.htm). This is an example of how, in the recent time of the bureaucrat's supremacy in governing the state, the King as a moral and spiritual leader of Thailand, a symbol of power and moral goodness (see Mülder 1992, 2000), could play a significant role in valuing any programs which could best serve his people's needs in reaching welfare and prosperity. "The King did not only see this program as saving the environment, but

also of changing people's ways of thinking," says a DOAE staff. Once the King decides, the governments should follow.

Such are the different responses of the two neighbouring states in adopting the 'people-centred' paradigm within the undergoing agricultural programs in each country. Whereas the Cambodian perceived the new paradigm as supporting their objectives in alleviating poverty while adapting it to their current needs and situations, the Thai saw it as opposing their interests in pursuing the policy of chemical-based pest management, thus jeopardizing the mutual benefits gained from its collaboration with pesticide industries. Adopting an entirely different paradigm or even contradictory objectives by those in power is not at all easy. Yet, it did happen and such was the beginning. How could those in power implement that 'people-centred' paradigm in the existing agricultural policy?

The state's governance: Community IPM and Farmer Field School in local setting

Once the state agreed to accept the 'new paradigm' within the context of agricultural development in her country, the state took the leading role as the organizer of that program. In such a situation, it is inevitable that a 'top-down' rather than a 'bottom-up' program took place in both Cambodia and Thailand.

Cambodia: forming a national committee, lacking extension system

As initiated in Indonesia with the formation of the Indonesian IPM National Programme, the Cambodian also formed a Cambodia IPM National Programme to manage the IPM programme throughout the country. This national body was placed under the responsibility of the Department of Agronomy and Agricultural Land Improvement (DAALI), the Ministry of Agriculture, Fisheries and Forestry (MAFF). However, there was no rigid structure as stated by its Deputy Director: "The National IPM Programme is free to run their own program as long as it is in line with the government's policy." Freedom to run the program was the advantage the Deputy Director gained from the Ministry. It is interesting to note that the Deputy Director of the program himself sees a significant difference between the government's policy and the IPM programme in terms of its approach. Whilst the government's policy and recommendation to the farmers to be experts, through learning by doing, and taking up decisions on the basis of their

own learning (Ngin Chhay, personal communication 2003). It is on the basis of this philosophy that he differentiates the program's approach from other government's policies in agriculture with its main emphasis as the Green Revolution in reaching higher productivity. The Cambodia National IPM Programme then designed the program and its detailed strategies, as well as the curriculum for training the trainers and the farmers.

When the national programme began its activities in 1993, no extension system had been established. The government just formed the Department of Extension in 1999. Hence, the extension system has not had a long history as the Thai and Indonesian cases. 'The main problem in Cambodia is the poor extension system. There is a big job in setting up the extension system,' says an agricultural expert working for the Asian Development Bank in carrying out research in Cambodia. Without any established extension system used as a means to carry out the program such as the Thai government has, how does Cambodia deal with the program? IPM facilitators indeed play a significant role in the entire program in disseminating and transferring the new ideas, knowledge, and skills through FFS and follow-up activities (also see Gallagher 2003 of the important role of facilitators in FFS). To fill in the gap of the nonexistence extension workers, the national program recruited some staff from the Department of Agronomy and Agricultural Land Improvement (DAALI), as well as non-government people (e.g. teacher, to be trained as District Trainers (DT). It does not mean, however, that all agronomic staff has the agronomic background in their education, nor having the experience as farmers. The Provincial Coordinator of IPM, the vice-chief of DAALI in the province told me the story of how almost all qualified people were killed during Pol Pot regime. As a consequence,

The government collected the healthy persons started to work for the government, even though they were not highly educated and had no experience. ... So, after Pol Pot, the government had the policy to collect anybody who wanted to work for the government, did not mention the skill in agriculture.

After the recruitment, they were trained in technical agricultural schools. Some of them were then recruited to be the IPM facilitators and underwent a Training of Trainers (TOT). However, the Cambodian also selected some potential IPM farmers to be trained as Farmer Trainers. In collaboration with the government staff (District Trainers), they were then assigned to facilitate FFS in other places. Such recruitment was also taken place in Indonesia and in some locales in Thailand,⁵ but not in my field site (in Ayutthaya province) yet. My observation reveals some significant changes among these farmer trainers, not only of their individual capability in facilitating other farmers, but also of being the 'new model farmers' in their locality. Unfortunately, when the program of selecting and training IPM farmers for FFS on rice crop was terminated under DANIDA Phase I IPM Training Project, the training for farmer trainers (in FFS on rice) and the assignment to facilitate FFS on rice also ceased. Hence, the education for farmers to be facilitators is again, only part of the 'top-down' program. It is also part of the 'budget' driven as has been approved by the international donor agencies. Once the budget is finished, the program terminates. The National IPM Program staff also move to another program to pursue, e.g. moving to the other kinds of crops (secondary crops), and an integrated rice-fish-vegetable Farmer Field School, leaving behind the groups of IPM farmers and potential farmer trainers without any continued follow-up programs. Has a similar 'top-down program as determined by the budget allocation/approval' also been implemented in Thailand?

Thailand: transferring technology through extension system

Following the letter of His Majesty the King, the Ministry of Agriculture and Cooperatives formed a national IPM Committee in 1999 directly under the Ministry's responsibility, but it was last only within two years, up to 2001.⁶ From 2001 up to now, the Farmer Field School activities have been organized by the agricultural offices in the districts and provinces under the Department of Agricultural Extension's responsibility. This department (DOAE) deals directly with farmers through the extension system and not the Department of Agriculture which has as its main job carrying out research in agriculture. The DOAE also has the main objective to promote the concept and practice of biotechnology under the Biological Control Institute and its nine headquarters of Biological Control Center through extension system (Menakanit 1997). The IPM programme was thus organized within the established system of extension. The Farmer Field School method became an integral part of the DOAE's policy to disseminate technology.

⁵ In the Community Integrated Pest Management Country Report – Thailand it is reported that 40 localities in 18 provinces across four regions of the country already have FFS conducted by Farmer Trainers (see <u>www.communityipm.org/Countries/Thailand.htm</u>, p.2)

⁶ The first person adopting the FAO-IPM Farmer Field School method in his position as the Rice IPM Coordinator and then as the Director of the Biological Agents and Farmer Field School Institute, was then appointed as the secretary of the National IPM Committee in 1999 following the letter of His Majesty the King of Thailand. Due to some reasons, e.g. the pressures from the pesticide industry and the lack of full support from his colleagues in the ministry, he resigned in 2001. After that, the activities of the National IPM Committee declined and the committee itself was no longer in operation.

"If we need to train farmers, we should use FFS method," said the Director of Pest Management of the Department of Agricultural Extension. The FFS method here refers to the participatory and experiential discovery learning process. In other words: "...both the top-down and bottom-up training methods were there in FFS," explained the Director. The 'top-down' refers to the source of technology and its transfers down to the farmers. The 'bottom-up' refers to the 'participatory training method' held in FFS. As also stated in the CIPM Country Report-Thailand (www.communityipm.org/Countries/Thailand.htm),

The primary IPM Programme under the Thai Department of Agriculture Extension (DoAE) under the Ministry of Agriculture and Cooperatives (MoAC) is *Transferring Agricultural Technology through the Farmer Field School Process*. This program is implemented through the Institute for Biological Agriculture and Farmer Field Schools (IBAFFS), established in 1999 under Royal Initiative by His Majesty the King of Thailand.⁷

Accordingly, several other projects in improving farmers' skills and techniques in agriculture also have to use FFS as the main vehicle. In fact, the government's budget to run FFS is not enough. Combining several projects means pooling the budgets from several sources. The keyagents in transferring the technology are the extension workers, and they are the ones who have to incorporate and/or combine those several 'top-down technique transfers' in the FFS. If financial support is provided by another party, such as the Chaipattana Foundation led by Her Royal Highness Princess Sirithorn, the funds could be allocated to run the FFS in collaboration with the DOAE. The extension workers under the guidance and control of DOAE staff carried out the FFS. In such a situation, farmers are still the recipients. From another point of view as expressed by a previous FAO-IPM staff, the emphasis is more on 'technical aspect of IPM' rather than the 'social one'.

⁷ In Lad Bua Luang, Ayutthaya Province where the FFS was run with the support of the *Chaipattana* Foundation in collaboration with the DOAE, the FFS methodology is perceived as the best way to provide correct knowledge about rice farming. It is based on the assumption that farmers lack of knowledge in the production process, i.e. as practiced in the inappropriate use of chemical fertilizers and overdoses of chemical substances. The project was named as: 'The Biological Method Sample Field' with its emphasis on providing knowledge of Biological Method Pest Management to the farmers (Department of Agricultural Extension and the Royal Project Cooperating Commission Office 2002).

The problem does not stop at the FFS. Another critical question is the extent to which the government has a continued program of improving the extension workers' skill in implementing FFS and facilitating farmers, or continuously recruiting new batches of FFS trainers. The answer again lies on the budget allocation and approval. Without sufficient budget allocation and approval by the Director of DOAE, the continuous regeneration of FFS trainers and a long-season training for new batches of extension workers in a so-called Training of Trainers cannot be held. If so, how does the empowerment aspect and institutionalizing IPM at the community level could be realized?

Thailand: Two seasons Farmer Field School, no follow up programs

In Thailand, facilitating farmers in building up organization capability has not been part of the DOAE's program. "Farmers can organize by themselves... Farmers are quite experienced... They are very information-oriented..." these are parts of the explanation as seen by the Director of Pest Management Division. Thai farmers as a collective are perceived as not in the situation of needed help in dealing with everyday problems in agriculture. Institutionalizing IPM at the community level has not been part of the programme. The focus is thus on running the FFS to change farmers' practices, improve their techniques while also enriching their knowledge so as to produce yields in a more sustainable manner. Realizing the variation between different planting seasons in the population of pests and diseases, the FFS is held in two planting seasons in a row, so as to familiarize farmers with the variation. Hence, different from those in Cambodia, the FFS in Thailand does not stop after one planting season. In Lad Bua Luang sub-district in Ayutthaya Province where I carried out my field work in 2004-05, the FFS was held under the support of Her Royal Highness Princess Sirithorn (Royal Project): The Chaipattana Foundation Project. The FFS was run for two seasons in a row followed by farmers' request and own initiative to have the third planting season with the assistance of the District agricultural officers. There was a room for modification here. The FFS was begun with five-days training in a place in another province (home-stay training). It is interesting to note that even though the extension workers and the coordinator came from the DOAE, they could make a difference in starting up the FFS. The first five-days training by inviting the participants to stay together in one place out of their village was their ideas. This was a novel one for the FFS method. It was not found in Indonesia and Cambodia either. What were the reasons and objectives?

Both the DOAE staff and the extension worker perceived the constraints of changing Thai farmers' mind, perspectives, and attitude if they start the FFS training straight away once in a week. By placing them together far away from home, it was expected that they could concentrate well on understanding the new basic concepts and ideas, and new ways of learning as a starting point for the long-season training. However, one significant reason mentioned by the facilitators was related to the characteristics of Thai farmers: i.e. their individuality, competitiveness between individual farmers, difficulty to reach consensus, and lack of working together in a group.⁸ These characteristics were conceived as a constraint for gaining the objectives of FFS. Hence, the home-stay training was considered as an appropriate means to start with the program that also had the aim of changing the Thai farmers' behaviour in reaching consensus and working in a group. This case is an example of how the agricultural officials themselves had such an understanding, and were able to utilize the opportunity they had to put their thought and ideas into action. They could use the Chaipattana Project's funds to do that, but not with the limited budget from the state.⁹ The two seasons of FFS were also provided as an opportunity for the IPM farmers to deepen their knowledge and strengthen their belief and confidence of the new learning.

Whether individually and seasonally they would practice the new teaching was another matter. A set of intelligible contextual factors affect their day to day decision. Unfortunately, when they faced hazards and problems post of FFS training, no follow-up activities were organized. It was good that one of the extension workers lived in their village, even though he was placed to work in another province. Individual consultation could still take place in the post-FFS training if necessary. In such a situation, the transmission of new knowledge through farmer-to-farmer network has also not widely spread.¹⁰

⁸ It is interesting to note here that the agricultural officials' remarks of Thai farmers' characteristics are in line with the Thai scholars' arguments about the Thai 'individual autonomy' vis-à-vis the 'social structure' from the time Embree introduced the concept of 'loosely social structure' in Thailand (see Embree 1950 and the discussion afterwards in Evers 1969).

⁹ From my observation of the FFS in 2005, also funded by the Chaipattana foundation in Lad Bua Luang district with the same extension worker and coordinator, no five-day home-stay training was held prior to the weekly training. Changes could happen within the same financial scheme and the same persons in preparing the 'school'.

¹⁰ I will discuss the issue of farmer-to-farmer knowledge transmission in my forthcoming paper entitled: "Examining Evolutionary Changes in a Comparative Perspective: The Cambodian and Thai cases of rice farming," prepared for the 10th SEASREP's anniversary conference in Chiang Mai, Thailand, 8—9 December 2005.

Cambodia: One time Farmer Field School and IPM Club

Unlike Thailand, the Cambodia National IPM Programme decided to only run one season of FFS once in each place. There was no opportunity to run another FFS (of the same crop) at the same place for different participants due to the allocated funds by international donor agency, and the objective to have equal distribution of the same program. The curriculum of FFS was set up at the national level, though the provincial coordinator and district trainers had the opportunity to adjust to and incorporate local problems and needs. The question is to what extent the very diverse local ecological condition in Cambodia was accommodated in the curriculum and training method? Javier (1997), and Nesbitt and Phaloeun (1997) describe in detail the diverse nature of rice farming in Cambodia in relation to soil, level, water condition, and rice varieties. The IPM farmers in my field sites in the lowland region of Cambodia said that they indeed learned many new techniques from FFS, but they could not apply all in the disperse fields they had due to diverse conditions of soil, water, field's level, and accordingly, rice varieties (either early, medium, or late varieties). Why? Referring to the FFS methodology by having the field plots in a particular place it is likely that the district trainers had to select a field that was available and accessible for all participants. Hence, it is inevitable that the field chosen to be the place to learn represents a particular ecological condition only, e.g. the medium level field. Hence, farmers themselves had to figure out the applicability of the new practices they learned with the diverse field situations they have. Such a question does not challenge the Thai farmers in the Central Plain due to the more uniform ecological condition of their rice fields in terms of elevation, soil type, and water availability. However, they do experience seasonal variation (dry and wet season), and such a variation has been taken into account in having the two seasons FFS training.

In the early 2000s with the support from DANIDA, the follow-up activities were programmed by the Cambodian National IPM Programme, including Farmers Club, visits, meetings, and others as also drafted in the FAO-Community IPM in Asia (see Ngin Chhay 2002; Alida, personal communication 2003). In my field sites, the Farmers Club focused only on carrying out experiments of several themes, e.g. different number of seedling in transplanting, different treatment of fertilizers, and different rice varieties. The objective is on improving farmers' confidence and belief of the new techniques introduced earlier in FFS through carrying out different trials on a comparative basis. The national IPM staff understood that FFS is only a

starting point. "FFS is only level one. At this stage, farmers are not so strong. If they continue with the club, they will be stronger," said the staff responsible for organizing and developing the follow-up activities. Its emphasis is thus on changing farmers' skills and practices by improving their knowledge and learning ability through conducting experiments. At this early stage, the focus on conducting the experiments by having diverse treatments related to particular issues had the aims of strengthening farmers' confidence and belief and to facilitate IPM group's activities (see Polo and Samnang 2002). Where is the empowerment aspect of the Farmers Club, or other objectives of CIPM in knowledge generation and organization (see Pontius *et al.* 2002)?

The national IPM staff acknowledged that the implementation of that program has not been able to reach those objectives yet, and conducting experiments is the starting point to go to that direction. Some groups of farmers from other provinces did their initiative to continue working together, e.g. rented a field from other farmer, grew rice together without applying chemical substances, harvested and milled the rice and marketed them in the local market (Samnang, personal communication 2004). However, this is probably a peculiar case. In my field sites, soon after the activities of one season experiment was over, no more activities were carried out by farmers themselves until some initiatives emerged in response to the 2004 severe drought. Not all IPM farmers who joined the FFS decided to participate in the IPM Club's meeting and activities. In one village, only half of the IPM farmers joined the IPM Club. In another village, the IPM farmers even asked his/her daughter or son to join that program representing them. They perceived this program as similar to the FFS or the 'second school' but with more experiments, yet without drawings, and in a lesser number of meetings (only 6 times meeting in one planting season). It is thus a question whether a 'club' was strongly prepared by the facilitators in collaboration with the farmers to run in a longer term so as to assist farmers solving their problems together, or keep their learning activities as a group.

These are only some parts of the stories of how the 'people-centred' development paradigm was organized and managed by the state apparatus. All programs were defined from the 'top' at both the national and provincial level, including the curriculum and weekly sessions of the training. Since the planners and carriers of this program were the agricultural officials, it is understandable that changing farmers' agronomic knowledge and skills has been the main emphasis within the context of agricultural development in each country.

Examples of the new techniques and practices learned by farmers in a Farmer Field School are:

- improving seedbed preparation in Cambodia;
- reducing the amount of seeds in both countries, in particular in the broadcasting system in the Central Plain of Thailand;
- reducing the number of seedlings transplanted in one rice hill in Cambodia;
- applying more organic fertilizers, reducing the chemical ones, and improving the ways of applying fertilizers in Cambodia;
- changing the chemical fertilizers formula and applying organic fertilizers in Thailand;
- a judicious way of using chemical pesticides in both Cambodia and Thailand after observing field's condition;
- replacing the chemical substance with organic substance for pesticides in Thailand; and
- leaving the straw without burning them in the field in both Cambodia and Thailand.

In both Cambodia and Thailand, questions such as how the IPM farmers could transmit their new knowledge to other farmers so as to change the 'culture' of growing rice, be innovative and creative in generating new knowledge, or be able to solve problems through working together as a group, have not been addressed thoroughly by the IPM planners. Or, if yes, it is still being questioned among themselves of how to improve those capabilities. However, I often found their answers that the non-IPM farmers would observe the evidence from the IPM farmers' practices in their fields so as to gain confidence and would follow accordingly. That it is not as easy and as straightforward as that is beyond their capability to deal with. Within such a 'top-down' planning, however, the IPM farmers in both places did express the advantages and benefits of being the FFS participants.

Cambodia and Thailand: Learning from Farmer Field School

Despite differences in agricultural development and history in each country and the degree of exposure to outside technological intervention, farmers in Cambodia and Thailand experienced changes in their state of knowledge. In my earlier writing (Winarto 2004b:249) I argue that despite a variation in the detailed local ecological knowledge the farmers have and the degree of farmers' acquaintance with the Green Revolution technology (prior to the introduction of CIPM), knowledge of farmers in Indonesia, Cambodia and Vietnam was not significantly different from one another. Example of this was their ignorance of the role and function of natural enemies in

their rice habitat as "farmers' friends or helpers that kill farmers' and plants' enemies". I did find such ignorance among the Thai farmers as well. It was also the case with the Cambodian and Thai farmers' ignorance of the detailed chemical substance, composition, and implication of pesticides and fertilizers on plants and fields condition. However, the Thai farmers have encountered more numerous technological introductions through various means (television, extension meeting, companies' invitation for travel and visits etc.) than the Cambodian farmers. For example, some Thai farmers already got the idea of producing liquid organic fertilizers/pesticides to replace the chemical ones before joining FFS or learning from the IPM farmers. The Cambodian, on the other hand, describe their previous practices as only doing the works, directly participating in the works by following or imitating their parents' and others' cultivation activities (see Winarto 2004b), and seldom got some training or extension services about new agricultural techniques. Hence, learning in FFS was significantly improved their knowledge of the 'better' or 'correct' ways of rice farming from preparing seeds up to harvesting stage and the various factors need to be considered upon. What makes such a difference?

I argue that the methodology of Farmer Field School itself as designed by the FAO Inter-Country Programme for Integrated Pest Control in Rice in South and Southeast Asia provided significant room and opportunity for farmers to directly observe, learn, and analyze the agro-ecological conditions of the field plots, and make decisions on the basis of their own analysis and arguments (see Pontius *et al.* 2002; Gallagher 2003). Experiential discovery learning by the participants themselves in combination with verbal/narrative explanation by the facilitators, and group's discussion proved to be beneficial in enriching farmers' knowledge and understanding. Not only that, farmers could exercise their talents in drawing, analyzing and discussion; as well as being able to freely speak up, ask questions, raise comments and arguments. This is the most enjoyable part of the learning as experienced and expressed by the participants. Some IPM farmers in Cambodia differentiate the training method they experienced in FFS from the other agricultural trainings as provided more flexibility for them to decide according to local condition.

There were some prominent marks of the whole learning method, e.g. carrying out comparison of the different treatments of the field plots with a more systematic observation as the scientists/agronomists usually do; and the question type that differentiates it significantly from the 'conventional extension system', i.e. "What is this" question. As far as possible, the facilitator should avoid providing direct explanation to farmers' questions. By raising the question of "What is this", farmers are stimulated to find the answers by themselves. Other related questions of what to do, how, and why would also supplement 'What is this' question, so as to improve farmers' critical analysis. Would such questions be followed consistently by the facilitators? My observation suggests that it is not at all easy in transferring new ideas and techniques to the farmers by using such a method of learning and interaction. From observing several weekly trainings of FFS in Cambodia and Thailand I found that farmers were indeed being facilitated to participate in the weekly agro-ecosystem observation and analysis, in the additional experiments and practices prepared by the facilitators, as well as in presenting the group's findings and asking questions. Nevertheless, it was inevitable that the trainers, the kru (teacher in Cambodia) or anchan (professor in Thailand), were the resource persons for any questions and any new ideas and techniques. The new techniques and practices had been prepared in advance by the trainers, prior to the weekly training. I also seldom found that the trainers provided the opportunity for farmers themselves to think and to say in the first place, or only summed up what the farmers had analyzed and discussed. Direct guidance, verbal answers and explanations, supplemented by specimen or drawing by the facilitators was what I often found. In such a setting of transferring various kinds of new ideas, concepts, knowledge, techniques, it is unavoidable that listening to the explanation of the 'kru' or 'anchan' is part of the farmers' learning. Both the Cambodian and Thai IPM farmers called the facilitators as 'teacher' or kru (in Cambodia), and professor (a highly respected teacher) or 'anchan' (in Thailand), and not a facilitator or 'pemandu' as was more familiar among the Indonesian IPM farmers [See Picture 1 and 2 of the interaction between the facilitator and the farmers in a FFS school in Cambodia; and picture 3 and 4 in a FFS school in Thailand]

Transferring knowledge in Farmer Field School



Within such a 'top-down' approach, I could say that both Cambodian and Thai programs are still at the early stage of implementing the 'people-centred' paradigm in the context of agricultural development in their country. Farmers are still the 'subjects' of the introduced program to change their agronomic knowledge and practices. Accordingly, it is inevitable that a heavyemphasis on the technological-agronomic aspects of the program rather than empowering farmers is still underlining the learning process. Nevertheless, the strong point of FFS methodology in the adult discovery learning process and farmers' participation with the aims of making them experts of their own fields significantly support the state apparatus in implementing the program. In such a condition, is there a 'room' for farmers' own participation, as well as the non-government organizations' roles in both designing and implementing the program?

Room for participation?

The 'Agro-Ecosystem Analysis' (AESA) is the core activity in FFS where farmers learn to sharpen their skills in observation and decision-making, and by doing that help developing their powers of critical thinking (Gallagher 2003:6). The field plots for carrying out observation in a FFS usually consists of at least two plots receiving different treatments: the farmers' own practices, and the 'IPM techniques' or those as recommended by the national IPM planners. In both Cambodia and Thailand, the government's recommended techniques as planned at the national level to 'correct' the existing farmers' practices were designed to be practiced in the 'IPM field plot'. In contrast to that, the other field plot was supposed to be cultivated according to farmers' habitual farming strategy. Into this latter plot did the FFS facilitators provide room for farmers' decision on how to grow crops according to their own cultivation techniques. On the other hand, the facilitators usually had the already planned strategy of how to grow crops in the 'IPM field plot'. The introduced techniques were transferred to the farmers by asking them to cultivate the 'IPM field plot' on the basis of those new techniques. By doing that, it is expected that farmers could have direct observation of the differences in the growth of plants in the two different treated plots. In Cambodia, there were some additional plots for special experiments, e.g. diverse fertilizer application. In Thailand, the experimental plots were divided into several different treatments, e.g. the farmers' practices in fertilizer use (chemical fertilizers), the IPM practices (the organic fertilizers), and the mixed fertilizer use (chemical and organic fertilizers). The agro-ecosystem analysis process was then followed through farmers' observation, discussion, drawing, and analysis of those IPM and non-IPM plots. At this stage then the adult learning process through discovery experiential learning was intended to happen. On the basis of this and my observation of some events of FFS in Cambodia (on watermelon, rice-fish-vegetables) and in Thailand (on rice), I could say that through FFS the state transfers new technology to the farmers by using the adult learning process or 'FFS method' as expressed by the DOAE staff [see Picture 5 and 6 on farmers' practices in preparing green manure and seedbeds in a FFS on watermelon in Cambodia: Picture 7 and 8 on agro-ecosystem analysis and identifying pests and natural enemies in FFS in Thailand].

Farmers' activities in Farmer Field School

Picture 5: Preparing green manure



Cambodia

Picture 6: Making seed beds for watermelon

<u>Thailand</u>



Picture 7: Agro-ecosystem analysis





Picture 8: Identifying pests and natural enemies

I still need to have further observation of how actively farmers could participate in the rest of the training that support the development of their critical thinking and the growth of the 'empowerment seeds'. It is also important to note that the appointment of Farmer Trainers as facilitators was a very significant step for the Cambodian farmers as they themselves could also be a 'teacher' (*kru*) to other fellow farmers. Not only through direct facilitation that they could participate in the whole program, but also through their evaluation, comments and suggestions in the Refreshment Training Course for Farmer Trainers as part of DANIDA IPM Training Project.

As mentioned by Gallagher (2003:5), the FFS could strengthen the existing groups, may lead to the formation of new groups, or may also discontinue their group's activities after the study period in FFS. It is reported by Samnang and Polo (2002) that some farmers did action research and a meeting (congress) with the other NGO's support following their study in FFS, but in general there were no continuation in the absence of any plan from the state, and any financial support from either the state or donor agencies/NGOs. The FFS has not been designed as only

part of the ongoing program in what Pontius *et al.* (2002) say as the empowerment, knowledge generation, or organization capability dimension of the Community IPM Programme. Only after visiting Indonesia in 2001 and Bangladesh in 2002 with the support from DANIDA and learned about the ideas and farmers' activities in Farmers' Club, did the national IPM staff in Cambodia began to implement the follow-up activities. One among them is the Farmers' Club. As assessed by an IPM consultant on Impact Assessment of DANIDA IPM Training Project, the Farmers' Club was set up from outside, not on the basis of farmers' own motivation (Duuren 2003). Farmers were again invited to join that program as the way they were recruited to be the FFS participants. While describing the constraints of developing farmers' collective activity, the IPM consultant refers it to the 'individuality' character of the Cambodian people without any 'middle level agency' in between the peasants and the government and any kinds of association/union neither (Duuren 2993; also see Ebihara 1971 for the discussion on individualism and the community in Cambodia that resembles what Embree [1950] called a 'loosely structured social system' in speaking of the Thai).

Recently, the club's activities were held after the FFS training was over. At the end of the training session, the Cambodian national staff asked the facilitators to provide an opportunity for farmers to voice their interests of what they want to know in further study. It is in this occasion that farmers could say something of what they want to learn and know more. How about the Thai farmers' participation? The Thai farmers are able to join more than one planting season of FFS training. This could provide room for farmers' saying of what they want to learn in the next planting season. In the case of the *Chaipattana* Project in Lad Bua Luang, farmers themselves initiated to continue the training in the third season and expressed their needs to learn what they had not mastered so far. During my stay, the FFS already finished, and no further activities carried out by the group of IPM farmers. Carrying out further experiments in the same land—owned by the Princess—where they did the experimental plots in FFS, was not possible. One IPM farmer rented that land. The *Chaipattana* Foundation is now still in the process of planning the follow-up program in Lad Bua Luang. How they learn from the previous FFS programmes there as a basis of facilitating farmers remains a question.¹¹ To what extent do they seriously

¹¹ When I returned to the field in August 2005, I found that another FFS supported by the *Chaipattana* Foundation under the coordination of the DOAE staff was held in another village in the same sub-district (Lad Bua Luang) with new farmer participants from several neighboring sub-districts. This FFS was supposed to be a follow-up program to

facilitate and empower farmers to improve their own knowledge and select the most beneficial technology for them or in contrary, transferring new techniques, remains to be seen. On the other hand, some farmers have been the members of the Thai Rice Farmers' Association, a formal national group for Thai rice farmers, even before they joined the FFS. At the same time, a number of farmers led by the village leader/sub-district leader are now preparing to form a company producing organic fertilizers. Whether they would be able to manage that company by themselves is also a clue to discover further.

In comparison to a group of IPM farmers in Central Lampung in Indonesia among whom I did my field work in 1998-99, as well as the IPM farmers association in Indonesia which already has a network from the village level (kelompok basis) up to the national one (see Winarto 2002, 2005), it has not been the case in Cambodia and Thailand that the IPM farmers themselves have the initiatives and activities to govern their own program. At the village level in Central Lampung, Indonesia, a group of IPM farmers were able to consolidate themselves and to gradually form an organization to assist their collective action, in particular, in disseminating the new paradigm in their local community through a continuous conduct of FFS season to season, followed by various other activities. It is important to note that in this case, the role of a local NGO followed by an international bilateral agency (World Education) in facilitating farmers from the early stage of forming the self-help organization was prominent. The organization they formed then become part of the wider network at the district, regional, and national level under the formal association named as Indonesian IPM Farmers Alliance (Ikatan Petani Pengendalian Hama Terpadu Indonesia, IPPHTI). Hidayat and Adinata (1999), the two representatives of that association say that their main missions are: 1) strengthening farmer organization at the group level; 2) promoting education; and 3) doing advocacy. This association was formed at the time the World Bank and FAO terminated their support to the National Indonesian IPM Programme organized through the Ministry of Agriculture. It was that time that they formed the organization. However, it was far in advance, after the first batch of FFS in several provinces in Indonesia in early 1990s that farmers in several places formed their own self-financed FFS (Sekolah Lapang Pengendalian Hama Terpadu Swadaya, or SLPHT Swadaya). Such farmers' own movement has

be held in the same place of the previous FFS with the aims of facilitating the IPM farmers to run a rice-milled factory as the outcome of the FFS. Hence, there was a discrepancy between the objectives of the foundation and the implementation on the ground. It is likely that there was a problem in the hierarchical order from the DOAE down to the district agricultural office and the extension worker.

not been part of the Cambodian and Thai IPM farmers' activities yet. Or in other words, they were still at the early stage of building up the capability to self-organize their collective action.¹²

Throughout all these process, I observed that NGOs (Non-Government Organizations) have played a significant role in supporting funds, ideas, and programs. Since the beginning of IPM in Cambodia and Thailand, international multilateral and bilateral agencies like FAO, Canada, European Union, DANIDA, World Education and even the international financial institutions like the World Bank contributed significantly in the planning and implementation stage. The Cambodian National IPM Programme even split up their provinces in terms of which provinces received support and programs under which institution (i.e. DANIDA and the World Bank) (Ngin Chhay 2002). By observing the DANIDA IPM Training Project, I found that DANIDA has been involved in defining the direction, plan, program, and implementation of FFS and follow-up activities (DANIDA Executive Summary n.d.; Alida, personal communication 2003). Ngin Chhay (2002) also reports that various international, national and local governmental organizations have supported the IPM activities in Cambodia. One local NGO: Srer Khmer Organization was established in December 2001 when the FAO support to the Cambodian government ceased. The FAO CIPM transferred its support to this local NGO to complement the government and NGO initiatives in improving the community based IPM FFS and to further build and facilitate on the work of FAO in the areas of farmer-led activities. In line with its vision and mission, Srer Khmer Organization has its goal that farmers would have increased control of their lives based on a mastery of agro-ecology, social knowledge and skills. Its goal is pretty much in line with what the CIPM programme would achieve. It is also indifferent from the objectives of various NGOs found in Indonesia in the recent democratization era (see Eldridge 1995). Its activities are also facilitating FFS and Action Research in various aspects of crops farming in Cambodia, including the conserving of diverse crops' varieties (Srer Khmer

¹² Towards the end of my observation in January 2005, several IPM farmers in three villages in Kampong Chhnang, Cambodia, had the initiatives to organize activities together, e.g. forming a Seeds' Club to produce and multiply seeds with the profits allocated for the benefits of the club; initiating the follow-up activities of planting watermelon by the IPM farmers attending the FFS on watermelon in 2004; and activating the IPM Club through training and producing mush-room. These activities were not initiated by the agricultural officials/district trainers, but originally based on farmers' own thought and ideas. Farmers' initiatives to form an organic fertilizer in Lad Bua Luang, Thailand have not been in operation yet, but in August 2005, the local leader invited some farmers to join the training and making of organic fertilizer, by also trying the new substances released by the agricultural office. At this stage I still need to discover further the follow-up actions of all those collective activities in both Cambodia and Thailand.

Organization 2002; also see Ngin Chhay 2002). It is interesting to discover further to what extent their facilitation program have similarities and differences with those facilitated by the agricultural officials under the National IPM Programme.

In Thailand, the UNDP/FAO, IRRI and German Technical Aid Agency (GTZ) were among the first assisting the IPM programmes through the Ministry of Agriculture (Rumakom et al. 1992). After the King's policy in adopting FFS in 1998, the government itself has financially supported the FFS through DOAE. In some cases like the Chaipattana Foundation Project, the Princess through the foundation supports the FFS and other projects in some places in Central Thailand. In the case of FFS in Lad Bua Luang sub-district, the same agricultural officials could develop different programs on the basis of the financial support they had (see the home-stay training at the beginning stage of FFS in that area). Another story also reveals how financial support played a significant role in affecting the program. The supposed long-season training of trainers for the FFS facilitators as designed by the FAO CIPM for the complete cycle of rice/crops cultivation was shortened up to five-days training only due to limited budget the government could provide, or was modified into 5-3-5 training program by having 5 days training followed by three days back to the office and facilitating farmers and then another five days training (Menakenit, personal communication 2005).¹³ Unfortunately, I have not had the chance to observe directly the role and activities of other NGOs in assisting such a program among farmers in other places in Thailand.

Even though there is a room for farmers' participation in such a 'top-down' program, a further detailed observation is necessary to find out whether more room and flexibility are provided for farmers' own initiatives to grow, and to what extent the national/local NGOs in Cambodia and Thailand could play a more prominent role in assisting the state to empower farmers more.

¹³ The previous IPM Coordinator who is now assisting DANIDA Vegetable IPM Programme said that DANIDA also designed a similar training design, but with the formula of 5-5-3 and then 5-5-3-5-3 for the intermittent between training and facilitating farmers in the 'school'.

Empowering Farmers or Improving Techniques? A Conclusion

What lessons-learned could we gain from the Cambodian and Thai case in implementing the 'people-centred' paradigm within the existing power relations in agricultural development? The Integrated Pest Management programs in the two countries are interesting examples of how the states tried to reconcile two different objectives: firstly, of improving or changing farmers' knowledge and strategies through technology-transfer on the one hand, and secondly, of involving farmer to learn on the basis of a 'discovery learning experience' on the other hand. The government officials in both countries have indeed followed the rule of conduct of organizing the FFS on the basis of participatory adult learning process as developed by the FAO-CIPM Programme. However, my observation leads me to conclude that improving farmers' knowledge and skills through technique-transfer is still prominent. The facilitators in the programs are the 'trainers', the knowledge transfer agents. Moreover, designing the program according to the available budget in Thailand, and donor's policy and funds in Cambodia have also been part of the state's main considerations in both countries. Within such a perspective of 'technique transfer' and 'budget driven', it is still a question to what extent the program towards empowering farmers as intended by the FAO-CIPM Programme could be strongly developed in the future.

Learning from the Indonesian case I discovered that following the new experience—as expressed in farmers' own words: "Open our mind," ... "Make us clever."—farmers themselves were quite responsive and creative to move forward, not only at an individual base, but also in collective form. The example of initiating the self-financed Farmer Field School in several places in Java reveals their eagerness to bring their fellow farmers to follow their steps. They would find ways to get financial support either from their own or local resources to run their own FFS and followup activities. The development of 'Farmers Science' on the basis of various trial, experiments, and studies is another example of farmers' own creativity. On the other hand, local-national-and even international NGOs are ready to facilitate them. It is like a synergy of the government's efforts, the non-government organization's support, and the farmers' own responses that create the result of farmers' activities and movements. In this respect, the non-agronomic dimension of farmers' life, i.e. the culture and social dimensions play a significant role. I assume tentatively that there is a different nature of these dimensions along with the history of state-people's relationship in Cambodia and Thailand that produces a different result of the interplay between the state, the international/national non-government agencies, and the people. This needs to be examined further. A further study is also necessary to follow whether an interplay between those actors would produce significant changes in rice farming culture in the future by empowering farmers, the leading actors, and by placing the state as the 'facilitators', not the 'rulers'. Would it be possible in the existing constellation of power relations in those two countries and other developing countries in the world?

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