Final Report

Farmer Organization and Food Security

By

Associate Professor Makasiri Chaowagul , PhD

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Farmer Organization and Food Security

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Abstract

There are still threats to the agricultural sector which could affect food security. These treats are higher cost of production from increases in input prices , the effects of the overuse of agricultural chemical substances on farmer's health and the unsustainable use of natural resources by the community. These treats have affected farmers in terms of food availability , food safety , food accessibility and food sustainability.

The objectives of this research were (1) to reveal the lessons learnt of farmer organization and community in trying to solve the food insecurity problems faced them (2) to synthesize knowledge from those lessons and related literature reviews (3) to determine the appropriate support to farmer organization and community in maintaining their food security. The lessons learnt were analyzed in 4 issues related to food security , 2 cases studied for each issue ; community forest , farmer school , green market and local fishery . The knowledge was analyzed based on the CIPP model ; Context , Inputs , Process and Product

The results of study showed that problem realization was the first key factor in mobilizing all food security issues above successfully. Data collection and analysis were necessary conditions in creating problem realization and it should be done through group or community participation. The capacity building of farmer group was the next step of problem mobilization. This process could be done through many activities such as opening forum for sharing experience , group discussion , field visiting and/or attending the relating training courses. The following step was that any decision from the discussion forum must be implemented and evaluated continuously through the forum of group participation. The facilitator was a key person determining the successful forum because the lessons learnt of mobilization would be extracted by the facilitator and this is the very important step of knowledge management. The forum of group discussion was the necessary condition to the development of capacity building of farmer organization and community. Unfortunately , the external organizations including governmental unit paid less attention on this activity. Their main supports were generally on physical activities rather than capacity building of farmer group.

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ยังมีอุปสรรคอีกมากต่อภาคเกษตรที่ส่งผลกระทบต่อความมั่นคงด้านอาหาร อุสรรคเหล่านี้คือ ต้นทุนที่สูงขึ้นจากราคาปัจจัยการผลิตที่สูงขึ้น ผลกระทบจากการใช้สารเคมีเกษตรที่มากเกินไปต่อสุขภาพ และความไม่ยั่งยืนของการทรัพยากรธรรมชาติ อุปสรรคเหล่านี้จึงส่งผลกระทบต่อเกษตรกรในรูปของความพอเพียงของอาหาร อาหารปลอดภัย ความสามารถในการเข้าถึงอาหารและความยั่งยืนของอาหาร

วัตถุประสงค์ของงานวิจัยนี้ คือ (1) เพื่อถอดบทเรียนขององค์กรเกษตรกรและชุมชนในการพยายามแก้ปัญหาความไม่มั่นคงด้านอาหารที่เผชิญอยู่ (2) เพื่อสังเคราะห์ความรู้จากบทเรียนเหล่านั้นและจากการทบทวนเอกสาร (3) เพื่อพิจารณาการสนับสนุนที่เหมาะสมสำหรับองค์กรเกษตรกรและชุมชนเพื่อที่จะคงไว้ซึ่งความมั่นคงด้านอาหารของเขาเหล่านั้น การวิเคราะห์บทเรียนกระทำใน 4 มิติของความมั่นคงด้านอาหาร 2 กรณีศึกษาในแต่ละมิติ ได้แก่ป่าชุมชน , โรงเรียนเกษตรกร , ตลาดสีเขียวและประมงพื้นบ้าน การวิเคราะห์ใช้แบบจำลอง CIPP นั่นคือ บริบท , ปัจจัยนำเข้า , กระบวนการ และผลผลิต

ผลการศึกษาแสดงให้เห็นว่า การตระหนักในปัญหาเป็นตัวแปรสำคัญตัวแรกในการขับเคลื่อนที่ประสพผลสำเร็จในทุกประเด็นของความมั่นคงด้านอาหาร การรวบรวมและการวิเคราะห์ข้อมูลเป็นเงื่อนไขจำเป็นของการสร้างความตระหนักในปัญหา และกระทำผ่านการมีส่วนร่วมของชุมชน การสร้างความเข้มแข็งของกลุ่มเป็นลำดับต่อไปของการขับเคลื่อนปัญหา กระบวนการนี้สามารถกระทำผ่านกิจกรรมหลายอย่าง เช่น การเปิดเวทีแลกเปลี่ยนเรียนรู้ การไปศึกษาดูงาน และการเข้าอบรมต่างๆ ขั้นตอนต่อมาคือ การลงมือปฏิบัติและการติดตามประเมินผลแบบมีส่วนร่วมต้องกระทำอย่างต่อเนื่อง วิทยากรกระบวนการคือปัจจัยสำคัญต่อความสำเร็จของกระบวนการแลกเปลี่ยนเรียนรู้นี้ ซึ่งเป็นขั้นตอนหนึ่งของการจัดการความรู้ และผลลัพท์ของกิจกรรมแลกเปลี่ยนเรียนรู้นี้ คือ ความรู้ แต่น่าเสียดายที่องค์กรภายนอกรวมถึงรัฐบาลให้ความสนใจน้อยมากต่อกิจกรรมการแลกเปลี่ยนเรียนรู้ เพราะเห็นผลในระยะยาว ดังนั้นการสนับสนุนที่เหมาะสม คือ การเพิ่มกิจกรรมนี้ในโครงการพัฒนาต่างๆของรัฐ โดยต้องเพิ่มวิทยากรกระบวนการระดับหมู่บ้าน และรัฐควรตั้งงบประมาณที่ชุมชนหรือองค์กรพัฒนาเอกชนสามารถเข้าถึงได้เพื่อนำมาทำกิจกรรมพัฒนาชุมชนของตนเองหรือดำเนินกิจกรรมพัฒนาที่รัฐไม่สามารถดำเนินการได้ เช่น การแลกเปลี่ยนเรียนรู้

Chapter I
Farmer Organization and Food Security of Thailand

1.1 Introduction

Even though it seems like Thailand is the main country producing agricultural products for food ; not only for domestic consumption , but also for the world consumption ; the problem of food security or at less food availability for domestic consumption should not be the question. Summary of the survey of UNDP on "the Security of Human at present and in the Future" reported that food security was one of the 6 dimensions of human security in which Thailand was facing. The report indicated that many parts of land producing food were converted to energy crops because of the energy crisis. This could be the conflict between these two groups of crops in the long run. In term of food accessibility, it was found that the prices of primary food such as rice has been continuously increasing within the past 10 years due to the effects of many crisis both internal and external crisis. It is also found that most of the farmers in the main production areas of rice such as the central and the lower northern regions of the country usually sell all their paddy but buy milled rice for their own consumption. For many provinces in the Northeastern region of the country, it is able to cultivate rice only one time per year. Farmers in that areas choose to cultivate Hom Mali rice which was the best alternative choices for them in term of revenue received but not in term of food accessibility and sustainability . However , it was discovered that revenue received from Hom Mali rice cultivation could not alleviate poverty because most of those farmers were small farmers (Nontiya , 2007) . For food safety , within the past 10 years , many studies including the report of UNDP indicated the serious impacts of agricultural chemical hazardous substance on health of farmers and quality of environment such as water and soil . The Institute of Public Health System Research , Ministry of Public Health reported that rate of illness per 100,000 population due to those agricultural chemical substances was 15.93 persons per 100,000 people in 2006 which was higher than the standard level (10 persons per 100,000 people) . The studies also reported that sources of illness mostly came from the unawareness of farmers to the impacts of those hazardous substances or farmers had less choice of substitutes or imperfect knowledge about substitutes. The UNDP report also indicated that the increases in population and economic activities have created chronic pressure on quality of natural resource especially forest ,soil , water and marine resources. Communities relying on those natural resources would be the ones being affected at high risk.

After the 'tum yum koong' crisis occurred in 1997, there have been a lot of efforts trying to strengthen communities through many projects both from the government organization (GO) and non government organization (NGO) such as the Social Investment Fund (SIF), Community Organization Development Institute (CODI) , Office of Health Promotion Fund or the Small Grant Project under Global Environment Facility implementing by UNDP (SGP/GEF/UNDP) . The main objective of these projects and organizations was to increase the quality of both environment and community to self reliance simultaneously. The participatory process in which it was lately called ' the civil society process ' or people participation was the key factor in mobilizing these projects. The success of these projects was the strengthen of the civil process reflected by the emerging of groups of people trying to solve their community problems and food security was the first priority. At present the dimension of the community mobilization has been expanded covered both area dimension and problem dimension such as environment , agriculture and food security. The expansion works through networking. Strengthening the civil society (Seree Pongpit , 2005) , community empowerment (National Health Foundation, 2006) and sustainable agriculture

(Vitoon Lianchamroon, 2004 ; Tassanee Verakan, 2004 ; Anusorn Unno, 2003) were a few expectation of the network mobilization. These networks became social movements formed to strengthen farmers' abilities to solve their own problems. They aimed to establish cooperation to uplift farmers' quality of life and to create relationships among farmers or community organizations. A farmers' 'movement' is formed to support one another on common issue (Supa Yaimuang, Sustainable Agriculture Foundation ,2006).Each network has its own ideology of working ; The Alternative Agriculture Network, for example, has an ideology on self reliance and freedom so that farmers have his/her own dignity as common theme while the concept on self sufficiency economy has tied people together who believe in this concept (Alternative Agriculture Network, 1999).

However, not all communities , farmer groups or networks have succeeded in mobilizing their own communities at least in the dimension of sustainability. The differences in context , inputs and/or process could be the main reasons for success or failure. Lessons learnt from food security mobilization of farmer organization or community are worth noting.

1.2 Objectives of study

The main objective of this study is to reveal the lesson learnt from the mobilization of farmer organization or community on food security . The specific objectives are

1. to analyze and syntheses factors determining the mobilization of farmer organization on food security
2. to recommend the appropriate supports for effective and sustainable mobilization of farmer organization in terms of food security.

1.3 Methodology

1.3.1 Analyzing Model

In analyzing the mobilization of farmer organization on food security , the CIPP model (C: Context , I : Input ; P : Process ; P : Product) would be utilized.

1.3.2 Selection of Food Security Issues Studied

The issues of food security relating to farmer organization or community that would be studied are as follows :

1. community forest and cultivated land in conservation area
2. farmer school and any change agent efforts
3. green market
4. local fishery

1.3.3. Samples and Data Collection

To understand the mobilization of the above issues , at least two samples of each farmer organization or community are selected as cases studied . The selection is based on their experiences , development and reputation of group in mobilizing their communities' food security problems. The specific criterion for samples selection are

1) the area where farmer group located should ever have food security problem in one or other dimensions of food security
2) development of group should base mainly on community itself
3) development of group should be continuous
4) community in general has got benefit from the mobilization on food security of the farmer group studied

5) the mobilization on food security of farmer group should base on the main product produced in the area
6) the local famous farmer organization is preferred

Samples of each issue studied are as follows :

1. Community forests
   - 1.1 Community forest of Wang Num Lad district , Amphor Phi Sa Li , Nakornsawan province
   - 1.2 Forest of Baan Dan Na Kham district , Amphor Muang , Utratit province
2. Local fishery
   - 2.1 Local fishery group of Chao Hlao bay , Chanthaburi province
   - 2.2 Network for collective coastal management , Trat province
3. Farmer school and any change agent efforts
   - 3.1 Farmer school of Nakornsawan province
   - 3.2 Chang Agent training course of Ruam Phattana Phichit Foundation , Phitchit province
4. Green market
   - 4.1 Free Toxic Vegetable farmer group of BuangPra district , Phitsanulok province
   - 4.2 Green market under the natural agriculture and free toxic food association of Phitchit province

Data collected is mainly qualitative data from focus group and in depth interview key informants of the groups. The analysis is based on the CIPP model. However , in making recommendation more generalized , lesson learnt from cases studied would be synthesized with those discovered from literature reviews.

1.3.4 Farmer Organization Defined

There are many types of group of people mobilizing their food security such as farmer group , community and farmer network . Therefore, the word ‘farmer organization’ in this study will be used as the representative of those group.

Chapter II
Community Forest and Mangrove
Food Availability ,Food Accessibility and Food Sustainability

2.1 Introduction

The forest concession of the government before 1989 had made not only the reduction in the forest area , but had also changed the way of thinking of communities in utilizing forest from " self utilization to benefit oriented utilization". That was, "from forest for lives supporting to forest for money" . These are some words of leaders of communities or conservation groups. "When government could get the benefit from forests for trading purpose , why villagers who lived with forest for a long time could not do the same thing" . (Mr. Udom Sornsri , header of Baan Rong Kok , Na Buo district , Amphor Nakornthai , Phitsanulok province , 2004) or " When government managed forest for commercial purpose. This made villagers thought that forest belonged to government . The government , therefore, must be the one looking after the forest and villagers sneaked in utilization unsustainably (Mr. Nhugain Janthasri , leader of the conservation group of the Sri Chom Poo district , Amphor Sri Chom Poo , Khon Khen province , 2005).

The other interesting opinion about the reduction in forest area was the increase in population had made the increases demand for farmland for economic crops.(Mr. Phut Buntem , committee of the Taam community forest conservation group of the Moon river , 2006). Not only that the subsidy program of the government such as the pledging project on the economic crop such as maize had made villagers both upland and lowland villagers increased their farmlands . It also made the upland villagers change the cultivation style from rotating plantation to permanent plantation. (Mr. Somrith Netthip , header of the Silalaeng district and leader of the famous community forest of this district , 2004). The effects of forest concession and the expansion of economic crops on the reduction of forest areas were agreed by Mr. Thanom Chauayngan and Mr. Thanom Mamomh , the two leaders of the conservation group of the famous community forest of Wang Nam Lad district , Amphor Phi Sa Li , Nakhonsawan province (2010). UNDP reported that one-tenth of people in the rural region was still under poverty and lack of farmland .Increase in population had created pressure on the quality of natural resources and environment (UNDP , 2009).

But whatever the causes were , the obvious results were the reduction in forest areas before 1999 from 91.294 million rais in the year 1987 or equal to 29.47 % of the total land of Thailand to 81.076 million rais in the year 1999 or equal 25.28% of the total land. The similar effect of the reduction in forest area was the drought . Pra Kroo Nunthakhun , priest of Keiwmuang temple , Dupong district , Amphor Santisuk , Nan province said that the forest at the origin of river was destroy because of the concession , the drought was the result.

The same situation occurred to the mangrove areas of the provinces locating beside the sea. The concession of mangrove for charcoal had reduced the mangrove area of Trat province before 1989. The development of shrimp cultivation for export in the same period had also accelerated the reduction of mangrove of this province. These affected the local people of Trat province since mangrove was the main place for fish , Samae crab and natural white shrimp cultivation. (Mr. Supakit HuangNum , leader of the conservation group of Baan Pred Nai , Huang Nam Khao district , Amphor Muang , Trat province , 2010) . The effect of economic shrimp cultivation on the mangrove area was confirmed by the community leaders of Aoa Baan Don , Surathani province (2010).

The concession was then resisted from the local people in many areas of the country. The situation was getting worse when the department of forestry increased the forest conservation area in 1989 which had reduced the cultivation area of people in those areas. This accelerated the flow of mobilization in needs of participation in forest management both

forest inland and mangrove. The word “community forest” was then used to separate the forest under the responsibility of the department of forestry and the forest under the community’s responsibility. When economic crisis took place in the year 1997 , communities all over the country proposed the community forest projects to the Social Investment Fund (SIF) for supporting . It was the first time that many communities of different regions had opportunities to share experiences and learned more from each other. It was also the starting point of being network in each region. The “ Community Forest Law” was then pushed later. The related issues such as the problem of people living in the forest conservation area , knowledge of managing community forest had also revealed as the results of the network. The community title deed is one of the latest result of this network. Whatever the efforts were , food availability , food accessibility and food sustainability of the communities were the end results. However , problems and threats are still existing and some are getting bigger. The external appropriate support is the question besides self reliance in problem solving of these communities.

2.2 Lessons Learnt of Food Availability, Food Accessibility and Food Sustainability : Community Forest , Restoration of Forest, and Mangrove

To understand the mobilization process of food availability ,food accessibility and food sustainability of communities and understand more about the existing problems and threats , lessons learnt from 4 communities are worth noting; 2 different forests : (1) Community forest of Baan Khao Din , Wang Num Lad district , Amphor Phi Sa Li , Nakornsawan province and (2) Forest of Baan Dan Na Kham district , Amphor Muang , Utratit province and 1 community mangrove : (3) Community mangrove of Baan Pred Nai , Huang Nam Khao district , Amphor Muang , Trat province and 1 fishery community : (4) Chao Hlao fishery community of Chantaburi procince. These lessons learnt were analyzed by using CIPP model.

2.2.1 Community Forest of Baan Khao Din , Wang Num Lad district , Amphor Phai Sa Li , Nakornsawan province : Case studied of Food Availability, Food Accessibility and Food Sustainability

1) Context (C)

Baan Khao Din or “Soil Hill village” is one of the nine villages of Wang Num Lad district of Amphor Phaisali , Nakornsawan province . This amphor is located on the most far east of the province connecting between the Central region and the North-Eastern region of Thailand where people of Baan Khao Din mainly migrated from the North-Eastern region in the year 1951. Baan Khao Din was named after the characteristic of the surrounding area which was full of many soil hills (figure 2.1).. Mr. Thanom Mamomp , the present leader of Baan Khao Din village and Baan Khao Din community forest , said that Baan Khao Din at that time was covered with forest. The reduction of forest was from 3 sources. The increase in the migration of people into the area . Trees were cut for housing . Some part of forest in the plain areas was converted into farmland . The second source of forest reduction was the extension of the railroad to the north and northern in the year 1973-1978 which needed a lot of sleepers. The forest concession was then occurred. Many villagers thought that if government could turn forest for commercial purpose , why did not them. . They then sneak cut trees in the forest for commercial charcoal production. Bamboo , wild vegetables and herbs were also collected unsustainably for money. However , the part of forest destroyed by villagers was not as much as the part destroyed by capitalists who were supported by the ex-local administrators. The last source was the

development of commercial agriculture had accelerated the invasion into the remaining forest area. The drought in the area was the unavoidable consequence. The production of rice which was the main crop for food and could produce only once a year was affected eventually. Not only the drought problem , flood was also the problem in many years.

Figure 2.1
Characteristic of Baan Khao Din : Soil Hill with Plain area for Farmland

In the year 1983 , the NGO named SAVE THE CHILDREN came to work with the people in the area of Amphor Phaisali. One of main reasons of choosing this area was the drought problem .The main concept of working of this organization was that ‘development starts at the development of people by making they realize their own problems by themselves. So, SAVE THE CHILDREN started working at this point with the leaders of Baan Khao Din by letting villagers collected data of their families and brought those data into public through people participation process. This process was one way of creation problem awareness to the villagers. The data showed not only the problems and the size of the problems , but also showed the origins and the impacts of the problems . In solving these problems , all villages’ leaders and the organization tried to solve problem by problem by starting at family. Various groups had been set up gradually. For example . the saving group was for creating saving habit to villagers and for debt solving eventually. The demonstrating market group was for reducing the middleman role and for villagers to learn about marketing. The community rice mill was for selves reliance on rice consumption . The paddy bank was for community borrowing to consume or being seed. This activity was for helping poor farmers. The community forest conservation group was also a result from working with this organization. In working , the organization tried to join with the provincial officers of the province especially the four main ministries ; ministry of interior , ministry of education , ministry of public health and ministry of agriculture. This was because after the organization ended the support and left the area, experiences in joining and working with these officers could help them to extend their works in the future.

2) Development of Baan Khao Din Community Forest :

2.1) Input (I) : Social Capital

Experiences of working with the SAVE THE CHILDREN organization , two things were emerged which could be bases for communities' works mobilization later. The first one was a connector and developer aggregately : Mr. Thanom Choenngan who later received the Green Globe Award ; person award type ; in the year 1999 (figure 2.2). The second thing was the civil working group of Amphor Phaisali started with 9 volunteers including Mr.Thanom Choenngam. and Mr. Thanom Mamomp called ' bared feet extension persons' whose roles were to support community activities in solving their own problems for community empowerment purpose. However , same culture and lineage ; north easterner ; had made grouping of those bared feet extensioners stronger. Most of them were the migrants from the north eastern. They had the same good experiences receiving from having forest both in terms of food and herb availability and accessibility. These bared feet volunteers became 'the community facilitators' later.

Figure 2.2 : Mr. Thanom Choenngan (left) Mr. Thanom Mamomp
Chairman of the Baan Khao Din Community Forest (right)

2.2) Process (P)

(1) Awareness to the Benefit of Baan Khao Din Community Forest

Between 1984-1993 , ten years after forest concession for railroad sleepers, the most of the forest of Amphor Phaisali was destroyed. And in this period , many villages in this area were extremely affected from both flood and drought problems. However , the tendency of forest conservation was started in that period after the HRM remark about the relation between forest and problems of flood and drought. Even though , the provincial organization had many projects of forest plantation. They were only occasional projects , not continuous activity. Until 1993-1995 , the drought was obvious and took place a longer period.

SAVE THE CHILDREN brought this problem into group discussion among community leaders including Mr. Thanom Mamomp. They addressed this problem by visiting and learning from the other communities where their community forest could be successfully managed such as the community forests of Mae Tha district , Lumpoon province and Na Khom district , Amphor Phaisali , district nearby. Learning and sharing experiences through open forum discussion could not only get knowledge of managing community

forest , but also increase confidence in problem solving to the team. However , bringing knowledge into action was important as much as technical knowledge. Lessons learnt from field trip were brought into discussion among the community leaders again facilitated by SAVE THE CHILDREN facilitators. Received knowledge was adjusted to get along with the context of the community. This process was very important because it would turn thoughts into actions. Mr. Thanom Mamomp suggested that the conservation area of forest should start at the area surrounding the temple of Baan Khao Din where it was not only the public forest, but it was also the merit area taking care by monks (figure 2.3). That was , no wild animal hunting was allowed and also no cutting trees. Their first community forest was approximately 200 rai. The community conservation group of Baan Khao Din was then officially set up in the year 1996. Actually, the real objective of this community forest was only to keep forest for their offspring. However , it was appearently that this community forest was full of mushroom and wild vegetables where villagers were allowed to collect them just for food. There was no action against from community. Using culture and religious in reserving community forest was an active workable strategy.

(2) Community Forest and Extension to Food Availability

Even though there was 200 rais community forest , villagers were still sneaking cut trees for commercial charcoal production from the remaining 800 rais forest in the area. This remaining forest of Baan Khao Din could have gone some day in the near future if no conservation took place. If people of Baan Khao Din could get more benefits not only in term of food , but also in term of revenue received from forest , they would not destroy and turn to reserve the forest. The conservation group would like to extend the community forest to cover the remaining forest of 800 rais.

Figure 2.3
The first Community Forest of Baan Khao Din

In the year 1998, the government borrowed money from World Bank to restore the economy from the financial crisis. This project was called the Social Investment Project or SIP and The Social Investment Fund or SIF was a project of SIP.The main objective of SIF was to empower communities in various dimensions and restoring natural resources and environment was one.

Community based and people participation were the ‘must’ process in implementing the project. Mobilization of the remaining 800 rais community forest of Baan Khao Din and Wang Nam Lad district was a project of SIF.

At this time the committee of community forest conservation group was 32 in which the leaders of the village and district were automatically committee including monks and teachers. They were all volunteers.

The objectives of this conservation group were also extend as follows :

(1) to keep the remaining forest for their offspring
(2) to return the fertility to the forest for purpose of food security
(3) to protect the intruder from steeling trees

Even though the rules of utilization of community forest were very much the same as the first 200 rais community forest : cutting tree and wild animal hunting was definitely not allowed or no charge for any bamboo and mushroom collected from forest even though those products could make money to the villagers. The main activity in looking after their community forest was the patrolling .The new 800 rai community forest created troubles to the conservation group. That was the obstruction from the villagers who lost benefits from charcoal production , firewood , and wild animal hunting ,for examples. Being patient and make understanding were the things the conservation group could do. After the first year of implementation , the fertility of forest gradually came back. more of bamboo shoot ,mushroom and other wild vegetables and herbs. The complain gradually reduced. After the second year, those products were not only enough for family consumption , but were also plenty for sell (figure 2.4 and figure 2.5). No complain was heard and more volunteers for reconnoitering the forest. Mr. Mamomp , the leaders of the conservation group then opened the training course for the new volunteers. This activity was supported by the Social Investment Fund (SIF) from the coordination of Mr. Thanom Chaoeyngan.

Figure 2.4
Various Kinds of Mushroom in the Rainy Season
of Baan Khao Din Community Forest

Figure 2.5
Saab or E-Noon Vegetable : One of the Wild Valued Vegetable in December – March of Baan Khao Din Community Forest

(3) Community Forest and Food Accessibility and Food Sustainability

Although the fertility of the community forest was back. Villagers could earn more revenue both in rainy season and off rainy season. However , if bamboo shoot or mushroom were collected unsustainably , those fertility could have gone some day. To maintain their community forest fertility , the conditions of community forest utilization were determined by the conservation group such as the period of opened and closed forest , the maximum amount of bamboo shoot collected per day , the right methodology of collecting conservatively mushroom or E-Noon vegetable or other wild vegetables. The breeding of some wild valued vegetable such as sweet vegetable , a favorite wild vegetable for people in the city recently , was also done successfully by a local wised man. Entering and Exiting the community forest of each villager was also monitored using entering card to get into the forest and returned it after exit the forest each day. this card was not only for entering the forest , but it was also for safety of the one who entered the forest. If he did not return the card to Mr. Mamomp at the end of the day , the conservation group would go and search for him in the forest.

Reconnoitering was the normal activity done daily by the members of the conservation group who were all volunteers. Wilder area of community forest needed more reconnoitering, not because of the villagers of Baan Khao Din but because of the attractive fertility of this community forest to the outsiders. This activity got expense , not the payment to volunteers , but only the payment for motorcycle fuel. In the periods of collecting wild vegetables, more volunteers were needed , especially in rainy season , the season for family's plantation. The unsatisfactory of the volunteers' families gradually increased. Many volunteers stepped down. Mr. Mamomp said that " if the conservation group was still shaking and self unreliable, the sustainability of our community forest was still in danger". This problem was brought into discussion of the conservation group committee. The fee charges were determined. These fee charges were determined under the concept of 'we help

forest , the forest should help us in return'. This concept had made the villagers being responsible for their own community forest.

They were the entering fee for outside villagers : 30 bahts at the beginning but 40 bahts at present , percentage fee for wild vegetables trating, both from the villagers and the external merchants : total 2 bahts per kilogram (figure 2.6) . However , no fee charge for Baan Khao Din villagers for produces for food only.

Figure 2.6
Trader from Lopburi province was collecting E-Noon vegetable
From Baan Khao Din Community Forest in February 2011

The fee charges were determined and adjusted many times based on the concepts of fairness , acceptable and satisfaction of the community as a whole. Since 2007 , the local administrative organization of Wang Nam Lad district set up 20,000 bahts budget per year to support the community forest activities .The collected fees and the supporting budget was approximately 30,000 bahts per year .This amount of money was separated into two parts. The first part was for fuel expense in reconnoitering while the second part was for being supporting fund for reconnoitering. Every reconnoiterer would get 100 bahts per day. Even though this payment was not much , it could at least be as encouragement to member of the conservation group. However, the passing community forest management was passive management. That was on the basis of problem solving. The conservation group and villagers of Baan Khao Din were working alone by themselves. There still existed many sensitive internal and external factors which could affect the community forest at anytime such as the poverty, disaster, or effects of economic crisis , for examples. Wang Nam Lad district needed to strengthening her community

2.4) Product (P) : From Food Security to Community Security

After SIF project in the year 2001 , development of Wang Nam Lad district was continuously supported by many organizations , both GO and NGO , and organizations at both provincial level and national level. However , the supports of the following 4 organizations were interesting because each project took place a rather longer period. The frame of works was rather wide but direction was clearly specified. The most important thing was that the implementation process was totally based on community mobilization itself right from the beginning of the project. Civil or people participation was the necessary condition and the main tool of mobilization. These organizations were the Office of Health Enhancement (OHE) (2001-2003 and 2009-2010), the Community Organization Development Institute (CODI) (2004-2006) , the Global Environment Facility (GEF) (2007-2009) and the Petroleum Authority of Thailand (PTT)(2008-2011) in which the development of community forest management was also included in every support.

OHE gave priority to strengthening community and community health activities such as safety agriculture , youth activity , activity against drug, empowering community and restoring environment including community forest. These activities were already in the leaders of Wang Nam Lad district interests. The participation of youth group in community development and community forest management started from here. Good experiences of community mobilization were passed on from the leaders of Wang Nam Lad district to the leaders of the youth group by letting them participate and responsible in every activity as a member of the committee. OHE also encouraged knowledge management . That was, data collection and analysis were a necessary condition in problems solving. The management of community forest of Baan Khao Din recently was based on knowledge management. The quantity of produces collected, revenue received or even changes in the biodiversity of the forest were recorded continuously. These data would be shown in the meeting of the community leaders or even in the village meeting as the base for problem solving.

For CODI , they emphasized at security of community in many dimensions such as saving fund for community welfare , fund for disaster restoring , housing for poor . They also supported the networking of many issues and community forest was the one. The community forest network of the whole Amphor Phaisali was the result of this support. So was the community forest network of the Lower North region. The registration of whole community forest of Baan Khao Din was the result of this support.

The support of GEF helped the community forest network of Amphor Phaisali (9 districts) create the master development plan of their community forests. The knowledge of Baan Khao Din community forest was inserted into the classes of Wang Nam Lad school as local curriculum. They also supported the construction of learning center of Baan Khao Din community forest.

For PTT project, Wang Nam Lad was being 1 in 84 districts chosen by PTT. The project emphasized at subsistence lifestyle activities using local wisdom. The examples of activities were such as family analysis using family account ,subsistence agriculture, substitute energy for community ,funds for community welfare and conserving natural resources and environment. Group of organic fertilizer and bio insecticide was an example of grouping under their supports.

The supports of those organizations has made the community forest management more systematically. They also helped people of Wang Nam Lad district gradually rely more on themselves. Mr. Thanom Mamomp chairman of Baan Khao Din community forest added that *" development of community forest management is a part of community development . They actually support each other because forest is a part of community lifestyle. The sustainability of community forest does not depend on the reconnoitering or the conservation group but it should depend on the ability of community in self reliance"*.

3) Characteristics of support bringing to the success of Baan Khoa Din community forest management

It is worthy to note about the characteristics of the above supports which brought to the success of Baan Khao Din community forest management.

(1) Confidence in community was the basis of every support. Confidence meant letting them responsible to their own decisions. Nevertheless, those confidences were created through the concept of 'develop people to develop community'. That was , both things must go along together in every activity.

(2) Problem awareness was the good starting point of people development. It could be created through data and knowledge management. Data collection and problem analysis should be done using people participation.

(3) Facilitator was the key factor of community mobilization process. The main role of these facilitators was to set up issues , questions and induce forum to discuss and find out the answers. Facilitator was also mentor or coordinator for implementing community activities. At the beginning , most of the workable facilitators of those supports above were NGO who were familiar with the community mobilization process such as SAVE THE CHILDREN organization. However, facilitating process was gradually passed on to community through opening forum discussion. This created a true learning process to community. At present , not only the leaders of community are efficient facilitators , but the second row generation of this community are also workable facilitators.

(4) Mobilization of community takes time. An appropriate support should give a longer time to community. Let them gradually learn how to rely more on themselves . Learning process is a main tool of community strengthening.

2.2.2 Restoration of Forest of Baan Dan Na Kham District , Amphor Muang , Utradit province

1) Context (C)

District of Baan Dan Na Kham composes of 2 types of land : (1) mountains and (2) plains. People living in the mountain area usually grows orchard (figure 2.7) while people living in the plain area grows rice and field crops. However , the problems usually facing people of this district recently are flood in the rainy season, land slide and drought in the dry season year after year. The disaster from the land slide in the year 2006 destroyed not only the villages, but also the orchards both on the mountain and the area nearby the villages (figure 2.8). This disaster has created problem awareness to both government and communities who received the effect. For the government , many types of warning instrument were installed in many districts of Utratit province. However, this attempt was at the end of the problem. The

community of Baan Dan Na Kham district especially in the mountain area has brought this disaster into the communities' open discussion forum. The conclusion from the forum to the main cause of flood and drought was that the forest on the mountain where it was the origin of the river was mostly destroyed especially Mae Rid canal or called Huai Mae Rid which was the main source of water for the communities (figure 2.9) . The conclusion to problems solving was that to protect their orchard and their villages the restoration of the forest especially at the origin of the river was the main mission. Unfortunately, those forest were under responsibility of the department of forestry. Moreover , some planting area of villagers of Baan Dan Na Kham district such as Baan Hi Ha ,for example , was also in this forest area. The conflict between villagers and the officers of the forestry was unavoidable. How could the communities participate in the forest restoration under this conflict systematically?

Figure 2.7
Durian Orchard growing on the sloping land in Baan Dan Na Kham District

Figure 2.8
Disaster from land slide in Utratit province in 2006

Figure 2.9
Huai Mae Rid and the forest on the mountain far behind

2) Inputs (I)

After the disaster in 2006 , the communities of Utratit province got many helps from both government and NGO. Helps from government were mostly infrastructure and installation of many warning instruments while helps from NGO were relating to the restoration of natural resources and empowerment of communities under civil mobilization. However, not every district or community needs to implement these. Baan Dan Na Kham was one of many districts of Utratit province wanted to participate in solving their own problems. The organization needed to be mentioned to was the **Community Organization Development Institute (CODI)** the public organization. The community plan of Baan Dan Na Kham district was determined in 2007 through people participation process under the support of CODI. Many projects for problem solving of each village were determined. One of those projects was the restoration of forest at the origin of the Huai Mae Rid.

Under the support of CODI , **the network of community forest of the lower north region** was also set up in 2006 under the agreement of the committee of all community forests of this region. And one activity continuously done of this network was sharing experiences to each other. The leaders of Baan Dan Na Kham district have received a lot of useful information of how to mobilize the problems under the conflict. However, they would like to integrate the problems especially the problems related to water and solve them systematically and sustainably.

The other organization needed to be mentioned to was the **Small Grant Programme** of the **Global Environmental Facility** under the management of the **United Nations Development Programme (SGP/GEF/UNDP)**. This organization has supported the community of Baan Dan Na Kham in implementing their project called ‘the Rehabilitaion and Sustainable Management of Natural Resources’ between 2008 to 2010 by the civil organization of Baan Dan Na Kham district named the **Huay Mae Rid Watershed Network** . This network consisted of leaders of villages both formal and informal leaders, GO and NGO.

3) Process (P) [1]

Activities for restoration the forest and the appropriate methodology of mobilization were of their concerns. Huay Mae Rid Watershed Network tried to create the participation among every part of the communities to construct the cooperation mechanism. The attempt of the Huay Mae Rid Watershed network in restoring the ecology system of the forest has created a very high level the cooperation between the network and the supporting organizations both internal and external organizations. They were local administration , students of 2 universities ; Naresuan university and Rajapat Utradit university , the foundation of sustainable development , Local Maintaining Institute of Kamphangphet , etc. This was not only to reduce gaps between the communities and the government organization such as the department of forestry, but also to create sense of belonging and duty responsibility to the communities. The mobilization process would be done through knowledge management using local wisdom as base.

Through the community participation, revision of community plan and learning from sharing experience forum of the community forest network of the lower north region and with the cooperation of many supporting units above, Huay Mae Rid Watershed Network has come up with many activities for implementation in 2008 to 2010. These main activities were :

1) Forest restoration under the project named ‘ forest restoration for father and water restoration for mother’
2) Set up local seedling for forest repairing
3) Construction of check dam for water conservation
4) Reserve some area as spiritual area
5) Develop sufficiency family

1) Forest Restoration for Father and Water Restoration for Mother Project

Since forest belongs to state, forest restoration by participation of people is an activity always allowed under the control of the department of forestry especially if that restoration is done on a special occasion such as project for king or queen commemoration.

Huay Mae Rid Watershed Network has then coordinate with the department of forestry not only for just seedling ,but also for showing the communities’attention in restoring and taking care of forest. The network received a very high cooperation from community and the department of forestry in doing this project (figures 2.10 and 2.11). The department of forestry gave them 3,000 seedling for restoring the forest 4 times.

1 Source : Report of SGP/GEF/UNDP : THA/SPD/OP4/CORE/08/01

Figure 2.10
The 2nd Forest Restoration for Father and Water Restoration for Mother project
(source : GEF/UNDP report , 2010)

Figure 2.11
The 4th Forest Restoration for Father and Water Restoration for Mother project
(source : GEF/UNDP report , 2010)

2) Bank of Seedling

To increase the diversity of trees and to maintain the same old ecology of the forest, the trees used in restoration the forest should be the same as before. The network then started collected local trees to expand cultivation. The bank of seedling was set up afterward for the purpose of forest repairing. The fire in the forest is always the problem every year and the fire-blocked path is needed to be constructed every year either. In constructing this fire-blocked path , it needed a lot of volunteers to do it. Types of tree such as Kra Dum Thong tree which is one kind of the ever-green trees and could resist fire for quite a long time was studied by the network. This kind of tree was planted as the fire-blocked path. Moreover ,

seeds of trees were collected from the forest for breeding and would turn back to the forest afterward.

3) Check Dam Construction for water conservation

One important activity in the forest restoration was the construction of 9 check dams. This activity would bring the moisture back to the forest and would help the forest restore itself. Not only the drought in the dry season would be solved in the near future , but the problem of fire in the forest would also be alleviated. A lot of people gave a very high cooperate in doing this activity as well (figure 2.12).

Figure 2.12
Construction of Check Dams for Water Conservation
(source : GEF/UNDP report , 2010)

4) Reserve the area at the origin of Huay Mae Rid as the spiritual area

Local wisdom such as culture and believe are always the effective mechanism in taking care of community forest. Area at the origin of Huay Mae Rid was then reserved as the spiritual area along with the construction of spirit house in the area to protect the forest (figure 2.13)

5) Increase Self Reliability in term of Sufficiency Family

To maintain the forest area more effectively, self reliability in term of food sufficiency could at least alleviate the reliability of community on forest. The sufficiency family was then the next project. The target villages were the ones near the forest at the origin of the river. Fishes and frogs were supported by the network. To rely more on local wisdom , basic knowledge of cultivation was transmitted through local wise men.

Figure 2.13
Spiritual Area and Spirit House at the origin of Huay Mae Rid
(source : GEF/UNDP report , 2010)

4) Products (P)

The valued products resulting from those activities above were many including what they really intended to solve. However , the most valued product was the ability of self reliance in problem solving. This ability was based on many factors :

1) Every mobilization was based on knowledge management especially local wisdom for the main purposes of maintaining and transmitting to the community and the next generation in self reliance.
2) Every mobilization was strengthen through truly community participation.
3) The construction of learning process to both the member of the network and community went along side by side with the mobilization of problem through many opened-discussion forums facilitated by the local facilitators who are the young generation of the community. The potential of facilitators and facilitating process could be created and increased through the sharing experience forum. Moreover, the local facilitator would be the connector between community and external supports.
4) Confidence in community potential in problem solving was the basis of every support.

The success in restoring the forest activities , in increasing in the awareness of people of Baan Dan Na Kham in maintaining forest and in reducing the conflict between communities and the department of forestry has made the network decide to move on to the new issue related to the forest and the utilization of cultivating land of villagers. With the new title deed policy of the government , the conclusion from the opened-discussion forum among the communities was that the communities of Baan Dan Na Kham would used the title deed as an instrument of maintaining the forest , not the instrument of land owning. Boundary between forest and cultivating lands was clarified under the co-survey between communities and the department of forestry. The civil contract of not to invade into and destroy the forest was signed among communities and the representatives of the government , province of Utratit and the department of forest (figure 2.14)

Figure 2.14
Land Stone representative of Community Title deed of Baan Dan Na Kham District

2.2.3 Community Mangrove of Baan Pred Nai , Huang Nam Khao District , Amphor Muang , Trat province

1) Context (C)

The west boundaries of Baan Pred Nai , Huang Nam Khao district connect to the Trat gulf which is a part of the Gulf of Thailand. One-third of the area of Huang Nam Khao district is mangrove. The area of this mangrove is 12,000 rai which is in the area of Baan Pred Nai. Coastal fishery and fishery in the mangrove are a tratitional lifestyle and additional source of income of the people of Baan Pred Nai. In the past , most of people of Baan Pred Nai grew rice and cultivated natural white shrimp from the sea. When it turned out that the revenue received from orchard was pretty much higher than rice's, some part of rice field was gradually changed to orchard. In 1980's , the developed shrimp cultivation came into Trat provinces , the remaining rice field and all the natural white shrimp cultivation were turned to this new technology shrimp cultivation. It turned out that revenue received from the new technology shrimp cultivation was good for only the first few years because the problem of shrimp's disease. Being in debt became the problem of the community. Unfortunately, turning to mangrove and coastal fishery were facing another problem : the mangrove concession (1983) . Some parts of concession were overlapped with the cultivating land of the villagers. Moreover, the concessee turned the destroyed concession area into the shrimp field and cut trees outside the concession area which were not in the condition of the concession. Moreover, the concessee constructed weir to block salt water came into the shrimp field . Not only blocked salt water , this weir also blocked the movement of salt water coming into the mangrove. Thus , trees and the ecology of the mangrove were destroyed in a wide area from the concession. Not only that , going into the mangrove of the villagers for fishery was also prohibited and was caught. Villagers could not utilize mangrove as used to, not in terms of food or trees for house uses. Moreover , villagers suspected that why the benefit from their mangrove had to go to the outsiders and the government. This question was the same as of the forest concession in many regions of Thailand at that time. The resistance to

the concession occurred from time to time actually before the coming of the developed shrimp cultivation . The violence of resistance was gradually increased. Demonstration of resistance occurred many times. Cancelling concession was proposed to the governor of the province and even to the relating ministers. Finally , The concession was cancelled in 1986.

Actually, the formal conservation group was not immediately set up after the concession ended . Nevertheless, the first mission of the community if Baan Pred Nai was restoration of the mangrove. Between 1987 to 1997 , not only restoration of the mangrove, but maintaining the existing mangrove was a parallel mission by patrolling the mangrove leading by Mr. Umporn Paatsart , head of Baan Pred Nai village at that time, Mr. Umnuey Chumanee , Mr. Supakit Huangnam (figure 2.15) and a lot of volunteers of Baan Pred Nai.

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Figure 2.15
Mr. Umporn Paatsart (left) and Mr. Supakit Huangnam (right)
The leaders of the conservation and development group of Baan Pred Nai
(Source : www.thaingo.org)

Additional plantation was another activity. In fact, any forest or mangrove could restore itself if it was not interfered by people explained by Mr. Supakit Huangnam (figure 2.16 and 2.17). However , additional plantation would make people participate and responsible for their mangrove both people of Baan Pred Nai and people elsewhere. Actually, mangrove plantation by outsiders would also be an effective people relation . Baan Pred Nai was partly protected by this activity, Mr. Supakit added.

Between this period , Baan Pred Nai mangrove was gradually better. The increases in fertility of the mangrove introduced intruders from outside the village especially from the districts nearby. This was the new and bigger problem of the community of Baan Pred Nai. Also, the commercial fishermen from other province sneaked into the mangrove and did fishing unsustainably. The patrolling needed to be done more often and wider which used a lot of budget and volunteer patrollers. Even though the fishermen of Baan Pred Nai also help look after the mangrove , but the area of mangrove was too wide to look after thoroughly . The conservation group brought this problem into the community discussion forum in 1997. Integrated problem solving systematically was the conclusion from the discussion forum. Also,

the conservation and development group of Baan Pred Nai was formally set up that year to support this mobilization.

Figure 2.16
Mr. Supakit Huangnam and site visiting Baan Pred Nai mangrove of the author in September 2010

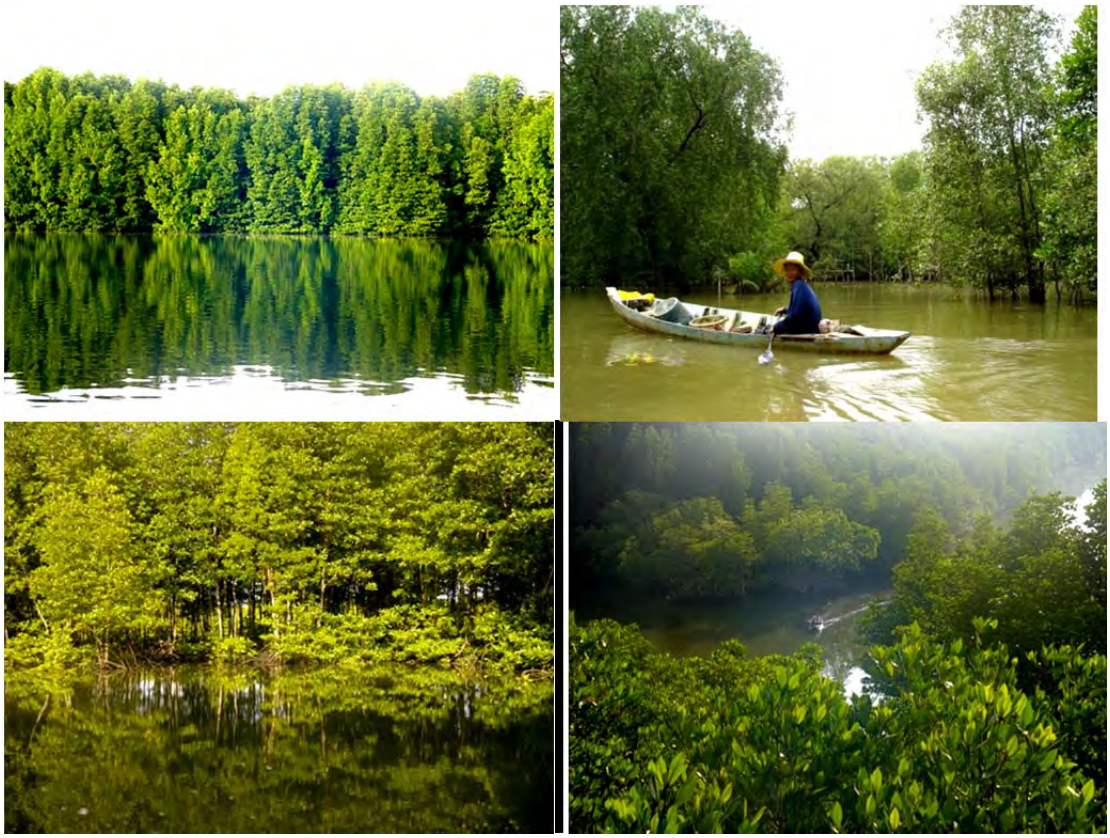

Figure 2.17
Pictures of Baan Pred Nai Mangrove in different angles

2) Inputs (I)

Two important groups which had significant effects on the mobilization of the integrated problem solving systematically and the existence of Baan Pred Nai mangrove needed to be mentioned to. **The first group** was the **conservation and development group of Baan Pred Nai mangrove .** The committee of this group were from the leaders of the village . Head of the village and assistant , member of local administrator of the village , teacher and monk . These committee were committees automatically. In addition, the committees were also from the representatives of the many groups of the village such as saving group , food processing group, the elder group and youth group etc. Approximately 85 % of villagers were members of the conservation group It could be said that the success of expelling the concessee was from these leaders and the cooperation of the villagers of Baan Pred Nai solely. Restoration of the mangrove right after that was still the internal activity of people of Baan Pred Nai . However, the increases in the external intruders had made the conservation group needed a lot of efforts and supports both in terms of budget and knowledge in maintaining the existence of the mangrove ecology. Mr. Umporn and Mr. Supakit added that the needed supports should come from the organizations who truly understood their problems and opened opportunity for any community to access to their supports. However ,community should be the main unit in mobilizing their problems right from the beginning , not just a part of the supporting project . Thus, **the second group** was those supporting organizations. Their supports had helped the conservation and development group of Baan Pred Nai worked more systematically on the basis of self reliance. Those following mentioned organizations were

1) The Social Investment Fund (SIF) (1998 – 2000)
2) Regional Community Forestry Training Center (RECOFTC) (1999 – 2001)
3) The Office of Health Enhancement (OHE) (2004-2005)
4) UNEP / GEF / SCS (2005 – 2007)
5) Community Organization Development Institute (CODI) (2006-2007)
6) The Small Grant Programme of the Global Environmental Facility under the management of the United Nations Development Programme (SGP/GEF/UNDP) (2008-2009)

3) Process (P)

Like the other communities or any kind of group who wanted to manage their own problems based mainly on people participation process as the main mobilizing tool , SIF was that kind of support they would like to access to. Under the support of SIF , the conservation and development group learned how to develop their self reliance community plan. By collecting and analyzing data of benefits and impacts gotten from Baan Pred Nai mangrove of every household through participatory forum of the whole community, they all realized that how much they lost from the reduction in mangrove's fertility and mangrove area and the problem was getting bigger. The first movement of the conservation and development group was using their studies to make understanding inside community. After that the management plan of Baan Pred Nai mangrove was set up. Mr. Supakit said that it took almost a year to finished this plan. It took such a long time because whenever there was a question or any doubt about the plan or any rule or regulation, the committee would clear and make more understanding about that question. Sometimes, some rule or regulation might be changed according to the questions. Mr. Supakit added that the plan would be useless

and unworkable unless it was really accepted by the community. It could be said that by this process the management plan for their mangrove was totally accepted by the whole community. Mr. Umporn added that *" working of conservation group used this management plan as the main tool in managing our mangrove. If Baan Pred Nai had no management plan, everything would have been failed because there was nothing to confirm to the outsiders what the community wanted. This would also be an opportunity of the external organization to dictate and did what they thought to our resources."* Data in the management plan would not only to make internal understanding, but also to make understanding to the external organizations. It also help direct working of the conservation and development group systematically.

The objectives of this management plan of Baan Pred Nai were as follows :

1) To maintain the sustainability of resource for community
2) To be source of living of community
3) To be source of living of fish and other aqua creatures.
4) To maintain mangrove for being learning source
5) To keep mangrove for being bequest

Working under the management plan had made mangrove of Baan Pred Nai gradually restored . Aqua creature such as Sa-mae crab obviously increased (figure 2.18) .This crab could be caught every month. Salted Sa-mae crab is the favorite ingredient in ' Som Tum', one of the favorite food consumed all over Thailand. Villager could make a lot of money from this crab every month. To make the catching of this crab more sustainable, according to the plan catching was not allowed in the period of their laying eggs. The community did cooperate very well by this regulation.

Figure 2.18
Sa-mae Crab of Huang Nam Khao Mangrove

Not only Sa-mae crab, community could made a lot of money from fish , many varieties of clam and honey . In fact , community could make money all year round. This incentive attracted outside fishermen, especially fishermen of the districts nearby. The conservation and development group solved this problem by increasing the reconnoitering and constructing the walking path into the mangrove. However, the problem was too big and it cost too much to survey thoroughly. This was another problem not contain in the management plan.

The supports of the Office of Health Enhancement (OHE) and Community Organization Development Institute (CODI) were on the expansion of knowledge of mangrove to outsiders. The walking path was longer and there were many learning points along this walking path (figure 2.19) . Hopefully that this walking path would be a tool in helping create realization of maintaining mangrove and environment to those visiting people especially the next generation. However , the intrusion of outside fishermen was still the problem.

Figure 2.19
The walking path and learning point of Baan Pred Nai Mangrove

Another big problem was coastal erosion of Trat bay. Fortunately, Regional Community Forestry Training Center (RECOFTC) came to do researches relating to this problem and worked with communities of Trat province. To protect Baan Pred Nai coasl from being eroded , RECOFTC and the community of Baan Pred Nai have constructed the coastal protectors made from car wheel called ‘ Tao Yang’ (figure 2.20) and placed them into the sea in front of the mangrove or within 3 kilometers from the shore. These ‘Tao Yang’ were not only the protectors of erosion of coast , but they also the houses for fishes. They also protected the commercial fishery ships to get close to the mangrove and shore where it was the source of varieties of clam. The working of RECOFTC had increased not only the knowledge of their mangroves and coast to communities of Trat provinces , but they had also made those communities know and work with each other. This was the base of being network later.

By the supports of UNEP GEF SCS , Community Organization Development Institute (CODI) and The Small Grant Programme of the Global Environmental Facility under the management of the United Nations Development Programme (SGP/GEF/UNDP) between 2005-2009 and the drive of the conservation group of Baan Pred Nai , the network of Trat bay became true and get stronger . This network consisted of 6 districts : Huang Nam Khao , Nam Cheao , Nong Sa Nho , Nong Sa Med , Nong Khun Songh, and Aoa Yai .

Figure 2.20
Erosion of Coast (left) and Tao Yang : the Coastal Protector from erosion (right)
(source : GEF/UNDP report , 2011)

The main objectives of this network were to develop the mechanism of cooperation in protecting the coastal resources of Trat province under the concept of people participation ,sufficiency economies and sustainability of resource utilization. In mobilizing the network , knowledge management was the basic tool. That was , each community needed to have data of their resources by surveying the existing resources and use these data in restoring their resources and in developing her own community plans. For examples, the restoration of 'Jark forest' of Nong Khun Songh district (figure 2.21) would give more of Jark leaves to be used as raw material for many products such as hat , leaved-roof , packaging of sweet etc. For Nam Cheao district , training of child guide and restoring the landscape of canal and houses were the main activities because the location of this district was suitable for tourism.(figure 2.22) . Or for Nong Sa Nho district , conservation of blue crab and local clam were the main activities. Nevertheless, conservation and restoration of mangrove were the main activities for every district. Mangrove area under the management of this network is more than 30,000 rai. The environment of 6 districts was getting better. So was the quality of life of people of these districts. Moreover, being network also helped reduce conflicts among communities in utilizing the benefit of Trat coast including mangrove. That was, each community tried to restore their own mangrove and coast and received benefit from what they have done. The intrusion into the neighbor's mangrove was then diminishing..

Figure 2.21
Surveying 'Jark forest' and collecting 'Jark fruit' for being seedling

Realization of the sustainability of environment was also passed on to the next generation. Not only the activities such as child guide training and youth camp, but also participated in activities such as mangrove surveying and learning about environment and benefit getting from mangrove (figure 2.22). Student participation was also one of the main strategies of each community.

Figure 2.22
Students participated in mangrove surveying (left) and
Learning about herbs collected from mangrove from local physician (right)
(source : GEF/UNDP report , 2010)

There was cost in managing mangrove. Budget from those supporting organization were used in doing activities both non regular activities such as surveying mangrove or student camp and regular activity such as reconnoitering mostly in the periods of supporting . However , the regular activity was needed to do consistently. The conservation and development group of Baan Pred Nai really realized this problem. From the saving concept of priest Subin Paneetho from Phai Lom temple of Trat province , the mangrove fund was set up in 1998. Mr.Umporn said that *the sustainability of Baan Pred Nai mangrove should base on self reliance.* By saving any money received from activities such as study visits of outsiders, eco-tourism developed and managed by the community, lecturer payment , money prize from the Green Global Award , and some from those supporting organizations above, the mangrove fund right now is approximately 300,000 bahts. At present , the reconnoitering is diminishing because of the networking of these 6 districts.

4) Products (P)

The products from the mobilization of Baan Pred Nai conservation and development group were plenty. The results of their mobilization were so obvious until they received the Green Global Award twice in 1999 and 2004. The valued products from their mobilization were both tangible and intangible products. Tangible products were such as the return of mangrove's fertility, the better quality of life of people of Baan Pred Nai and the network's and the reduction of conflicts among people of the network. Intangible products were such as the realization and cooperation of people in maintaining the environment in which it reflected in those tangible products.

Not surprisingly, the variables explaining the success of Baan Pred Nai were almost the same as the cases of Baan Dan Na Kham district and Baan Khao Din

above. That was , every mobilization was based on knowledge management and local wisdom was always important in maintaining self reliability. People participation was the base of mobilizing which learning process would be gradually developed. This learning process was the important tool for empowering any community. Last but not least , the appropriate supports were based on the confidence in community potential in solving their own problems.

Even though all parties agreed that maintaining and restoring mangrove were necessary, unfortunately, methodologies of managing Baan Pred Nai mangrove were rather different between methodology of the relating governmental organization and methodology used by community. The formal group managed under the concept of convenient of inspection . So, many old trees were cut down or got rid off before planting the new trees.. So, the new trees could be counted easily. Or the leaves at the lower part of the existing trees were cut off for the inspector could see through to the inner area of mangrove (figure 2.23 on the right). On the contrary, the conservation group believed in the potential of nature (figure 2.23 on the left). *There must be something good to the nature for keeping the leaves on , said Mr. Supakit. He added that getting rid of leaves could make trees grow bigger but community did not want bigger trees, they just wanted to keep forest for their livings.* This was one of the sources of conflict between the community and the relating units. This conflict has increased the unfaith of community to those organizations. And this was one of the reasons of having mangrove fund and try to accelerate to create realization of environment to the next generation.

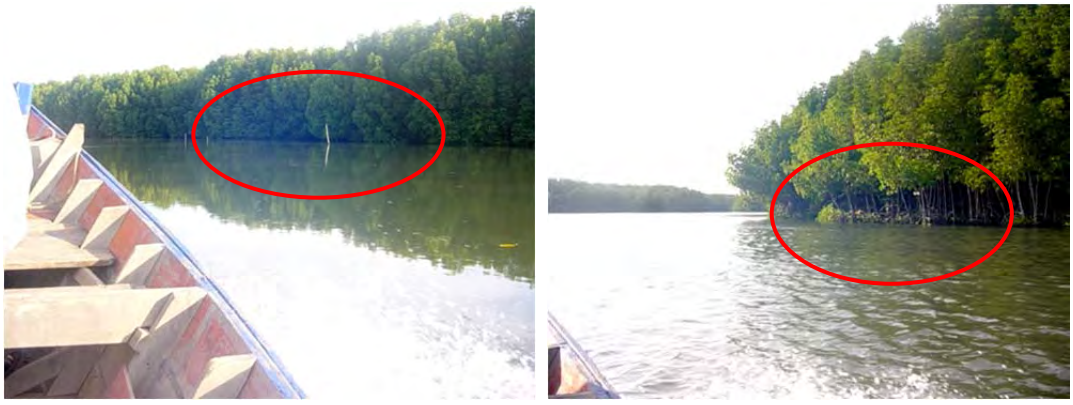

Figure 2.23
Differences in managing mangrove

2.2.4 Local Fishery group of Chao Hlao Beach , Klong Khud district , Amphor Tha Mai , Chantaburi province

1) Context (C)

Half of the households of Chao Hlao community depends on local fishery and the other half depends orchard. This community is located next to the Khong Ka Ben Bay development project which is one of the royal initiative project. The movement of outside people into the area has been increasing in the passed 10 years. The quality of surrounding environment was diminishing because of the increases in wastes and waste water , for instances. Moreover , the coastal resources such as fishes and marine crab were also diminishing. Since all of the fishermen of this community were local fishermen , fishing was able to do within only 5-8 kilometers off shore , the

diminishing in coastal resources directly affected them. In addition with the increase in fuel cost , those local fishermen were going in debt. To start solving this problem , the local fishery group of Chao Hlao was then set up in 2003 with 29 members. The main objective was to help each other mainly in their fishery. Each activity was developed according to the problems. For examples, construction houses for fishes called ‘ Sung Pla’ , using local wisdom in construction or conservation of marine crab called ‘crab house’ .These activities were gradually move among Chao Hlao fishermen. Increase in the coastal resources was also slowly. To really conserve the coastal resources for sustainable use , it was needed to implement those activities more systematically. That was, more of conservation activities, more of people participation , more of coordination and more of budget needed.

2) Inputs (I)

In conserving the coastal resources of 4 Amphors of Chantaburi provinced , two important groups of inputs were needed to be mentioned to. (1) **the local fishery group of Chao Hlao** leading by **Mr. Saman RungRueng** , ex sailor of the Royal Navy Army (figure 2.24). (2) the supporting organizations especially the one who supported this movement systematically between 2007 to 2009: The Small Grant Programme of the Global Environmental Facility under the management of the United Nations Development Programme (SGP/GEF/UNDP). The support was under the scopes of international water source and climate change . The activities would totally be implemented by the local fishery group.

Figure 2.24
Mr. Saman RungRueng : Leader of the Chao Hlao Local Fishery Group

The activities supported were :

1) conservation of blue swimming crab for sustainable use : house for laying baby crab
2) construction of fish house : Sung Pla and increase artificial coral
3) surveying coastal resource and monitoring changes
4) surveying the impacts of coastal erosion
5) campaign about environment preservation for tourism purpose
6) restoration of coastal resources continuously
7) support food processing activity
8) set up fuel fund
9) create realization in environmental reservation to students

10) create network among local fishery group of Chantaburi province
11) push forward the coastal resource management of Chantaburi province
12) publicize the activities
13) sharing experiences of managing the coastal resources with other groups

For this report , the analysis would concentrate on the activities related directly to food availability , food accessibility and food sustainability such as the conservation of blue crab for sustainable use and the fish house because they would directly relate to food security.

3) Process (P)

3.1) The conservation of blue crab for sustainable use

The conservation of blue crab started with the donation of the female crab with eggs outside shell to the local fishery group to let them lay baby crab in the crab house . This crab house was built based on the review from many studies and site visiting of the local fishery group (figure 2.25) . After the completion of laying baby crab , the female crabs would be given back to the owners or let them go back to the sea. It would take not more than 15 days in laying baby crab completely depending on the color of eggs . According to the study of the local fishery group it would take the female crab with orange , brown and black eggs for 15, 7 and 2 days in laying baby crab completely , respectively. After laying baby crabs completely , stomach would turn to strip of black and white (figure 2.26).

Figure 2.25
Mr. Saman RungRueng on the crab house (left) and blue crab with black eggs (right)

About a few months of implementing crab house project, according to the record of baby crab caught it showed that the number of baby crabs was significantly increased. The non member fishermen then gave female crabs with eggs for free to the group and they would be sold after the process of laying baby crab completed. Revenue from this activity was accumulated for being welfare of the group. However , the crabs were fed by fresh fish when they were in the crab house. This would keep the weight of crabs not reduced too much to affect the revenue received.

Moreover , the local fishermen group did study about the traveling habit of this kind of crab to use that information in making a conservation plan . After laying baby crab completely, the group would let go crab into the sea. The crab would be marked by using rubber band wrapping loosely at it legs. It was found that the longest distance of traveling of crab was not more than 3 kilometers from shore. This information was then used to determine the boundary of 'the sufficiency fishery zone' in the focus group among the community , the local administration and the fishery department . This zone would be like the conservation zone of Chao Hlao fishery . it also the boundary of resistance from other provinces' fishermen to do fishing into this zone. At first , they would be asked for cooperation not to do fishing in this area. They also used public relation to inform those outside fishermen about this zone.

Figure 2.26
Different colors of eggs outside shell of blue crab
(Source : report of Chao Hlao local fishery group ; SGP/GEF , 2010)

3.2) The fish house : Sung Pla and Artificial Coral

Since the problem of global warming , the corals in Chao Hlao were bleaching or other word the sources of food and houses of fishes were diminishing (figure 2.27). Increase places of living for fishes were then necessary. The activities the local fishery group did according to this problems were fish house called 'Sung Pla' placing in Chao Hlao sea and Placing artificial coral along 20 miles of 4 Amphors of Chantaburi shore . These 'sung pla' were made based on

the local wisdom. Moreover, the point where the sung pla were placed would be used as markers of fisheries' boundary of Chao Hlao local fishery (figure 2.28).

Figure 2.27
Bleaching of Coral all over Chao Hlao shore

Figure 2.28
Mr. Saman RungRueng demonstrated how to build 'Sung Pla' to the volunteers (left) and Sung Pla was placed in the sea (right)

Not only the crab house and 'Sung Pla' fish house which were the activities directly related to food security for the community, there were many activities relating to the restoration of environment which indirectly related to food security done by the Chao Hlao local fishery group. Those activities were such as increasing mangrove plantation , surveying of and studying sea grass for sea cow , cleaning Chao Hlao bay and processing marine products .

4) Products (P)

It is worthy to note that implementation of those activities above were based not only on the community participation, but also on the participation of every relating stakeholder such as local administration , fishery department , school , provincial administration, and even tourist. This was mainly for reasons of creation of environmental awareness. Not only that , knowledge management was the main tool in driving each activity systematically.

It is so obvious that the benefit received from their mobilization were the sustainability of marine resources which community could be access to.

The community has also been the learning and studing visit place especially in marine resource conservation issue from many organizations including foreign organizations.

It should be noted that the success of their mobilization depended on the same variables as of the cases above. That is , knowledge management and truly people participation are the main tools in driving the problems. Knowledge sharing is one of the main tools in learning process to more self reliance. Also, the confidence in community potential in solving their own problems should be the base for any support.

However, there are still many external threats confronting local fishery communities. The problem of bleaching coral from global warming , commercial fishery and shore erosion are examples.

Chapter III
Change Agent Efforts and Farmer School
Food Availability ,Food Safety and Food Sustainability

3.1 Introduction

Before the Social Investment Fund (SIF) project ended in the year 2002 , SIF encouraged communities to make their master plan for selves reliance. Data in the plans showed that communities were all under debt. The main sources of debt were from their agriculture practices which mostly were mono chemical cropping. It could be said that those community plans for selves reliance were the started point of green agriculture mobilization of many communities and NGOs nowadays.

Phitchit province, for example, is one of the main area of rice production of the Lower Northern region of the country. Data from many community plans of this province from the support of SIF done in the year 2001 revealed that the average debt of the farmers of this province was 50,000 bahts per family and it was double in the year 2006. This was because of the rising cost of rice production and the rising costs of chemical fertilizer was one of the main factors explaining this. Not only debt problem , but health was also the problem. The Phitchit Co-Development Foundation reported in the "Free Toxic Agriculture for Better Life" seminar in the year 1998 that the illness of farmers of this province from agricultural chemical substances was ranked the 5th of the country. For the whole country, the Institute of Public Health System Research , Ministry of Public Health reported that rate of illness per 100,000 population due to those agricultural chemical substances was 15.93 per 100,000 people in 2006 higher than standard level (table 3.1). The studies also reported that sources of illness mostly came from malpractice of the farmers in using those hazardous substances . This malpractice was partly because of incorrect information that farmers got from merchants and partly was explained by the market structure of the agricultural chemical substance in which farmer had less choice of substitutes or imperfect knowledge about substitutes.

The increases in costs of production from the increases in prices of chemical fertilizer and agricultural chemical substances , the effect of agricultural chemical substance on farmers' health and the degradation of soil and water were the key factors in which most of the NGOs used as reasons in persuading farmers to reduce using those chemical substances and turn to environmental friendly agricultural practices including rice and vegetable farming.

Table 3.1 : rate of illness from agricultural chemical substances , 2006

Disease	Rate of illness (number of patient/100,000 population)
Organophosphate and carbamate insecticides	8.02
Herbicides and Fungicides	5.10
Other insecticides	1.42
Rodenticides	1.08
Other pesticides	0.31
total	15.93

Note : the standard rate of illness from agricultural chemical substance of WHO is 10 patients/100,000 population

Source : Division of disease control , Ministry of Public Health

Even though many organizations have agreed that organic farming or environmental friendly farming would be a better alternative farming for alleviate the problems of growing debt of farmer due to higher cost of conventional chemical farming ,degradation of farmers' health and environmental quality , there are still remaining big questions such as how to mobilize environmental friendly farming efficiently , how to change farmers' behavior from chemical farming to environmental friendly farming , would organic farming concern only technical know how or should social factors be included and etc.

Actually, the organic farming pilot projects were included in many province strategies in the period of 2004 to 2005 under the CEO integrated administration of the Tuksin Government. Most of activities included in those pilot projects were organic demonstrating fields and training of how to produce bio fertilizer . Crops under these pilot projects depended on provincial CEO . Vegetable was for upper northern while paddy was for lower northern and central regions, for instances. Before these CEO projects , mobilization of organic farming has been pushing by many NGOs. There are similarities and differences between mobilization processes implemented by government and NGOs. The similarities were

1. training of technical know-how of producing bio fertilizer and bio pesticide
2. having demonstrating field in the village

However , there were many differences in mobilization process. The main differences were the factors needed to be concerned , for examples

1. Government gave most weight to technical know-how. While the NGOs tried to balance between technical know-how and social factors affecting each community. For example , the NGOs mostly used local wise men as trainers and ,of course , no standard formulae for bio fertilizer depending on raw material available in the area. It was found that using local wise men had many benefits on trainees. It could increase confidence in using bio fertilizer and bio pesticide to the trainees. Firstly because most of those local wise men were those who had direct experiences in using bio fertilizer and bio pesticide . So, the questions relating to the effects of using organic matters such as lower yield in the first 2 years could be answered. Secondly, they had ever received impacts from using chemical substances just like the ones faced by the trainees . Thirdly, the question of how to reduce the remaining debt of the farmer could be answered.
2. Government set up the formal learning center , usually located at the office of district administration . In case of civil mobilization , learning center are the local wise man ' s house where farmers are able to visit anytime they have questions.

Nowadays, mobilization process in green practices by the NGOs are learning and sharing through many forums. Hence, it is widely adopted or adapted even by the government. Ones of the famous mobilization processes in green practice done by NGO's are through the training for the trainers project called "Change Agent to Self Reliance and Group Reliance" or in Thai is the " Civil WOR POR ORE" and the "Farmer School". To see these processes , the "Civil WOR POR ORE" of Phitchit province and the Farmer School of Nakornsawan province would be the cases study.

3.2 Literature Review

Since this section would be relating to the alternative agriculture or green agriculture, the literatures reviewed would then concentrate on those relating to the mobilization process of changing from chemical farming to environmental friendly farming. However , the literatures relating organization , group of farmers performing environmental friendly farming would also be reviewed.

1) Kyusei Natural Farming

'Kyusei' literally means 'saving' in Japanese and the strategic objective of Kyusei nature farming is to save the world and mankind through natural farming methods by producing high quality , environmental friendly , sustainable and enough food not only for spiritually benefit to the farmer , but also economically benefit to the consumer and market. The key factor in doing Kyusei natural farming is the utilization of 'Effective Microorganisms : EM' for improving soil quality, enhance plant growth and increase crop yield. Most Thai farmers come into contact with Kyusei through EM.

Kyusei nature farming was first introduced to Thailand, in 1968, at the Fang Agricultural Vocational School in Chiang Mai, by a Japanese missionary, Rev. Kazuo Wakugami. In 1993 EM was introduced to Thailand at the Kyusei nature farming school in Saraburi province. Kyusei nature farming and EM have had the greatest impact in Thailand in terms of the number of Thai farmers involved. This is explained by the fact that EM is proving effective in practice and this nature farming system is backed by a well-established infrastructure, which coordinates and promotes Kyusei nature farming in Thailand. This infrastructure comprises the Kyusei Nature Farming Center in Saraburi, the Kyusei Center in Bangkok. At present , Thai farmers whose practices are environmental friendly farming use EM as the major ingredient of bio fertilizer and pesticides productions.

2) Fukuoka natural farming

Mr. Fukuoka 's natural farming experience was written in *The One Straw Revolution: An Introduction to Natural Farming* ; 1978 ; printed by Bantam New Age Editions, London

Mr. Fukuoka was a microbiologist and soil scientist but believed in the power of nature . He started an experiment of natural farming in 1938 . The practice of his farming was based on the concept of minimal interference to nature with no chemical pesticides ,no chemical fertilizers and even no ploughing. He also believed in the concept of biodiversity . He then used 'seed ball' to create micro-ecosystem in his farm. His farming was not for commercial goal , but rather spiritual aspect . So, the main objective was to produce food for farmer family self reliance with no harm to the nature.

Fukuoka nature farming first arrived in Thailand in 1987 . After visiting the North-Eastern region of Thailand of Mr. Fukuoka twice in 1990 and 1991, 80 rice farmers in this region choose to experiment his practice organizing by the NGOs. But because of the poor condition of area such as compacted soil , poor water available ,the farmers faced many problems. By 1995, only 10 farmers still practiced with some adaptation nature farming techniques, using green manure, mulching and agro-forestry , for instances. When the price of organic produce increased. Another more 17 farmers from the original group of 80 turned back to Fukuoka's techniques .

The success of Fukuoka nature farming in Thailand was at philosophical level rather than practical level. However, through Fukuoka philosophy , awareness of

environment has inspired a number of the Thai NGOs to promote more of nature farming or environmental friendly farming nowadays.

3) Santi Asoke Natural Farming

Santi Asoke, a Bhuddist sect, was founded in Thailand 40 years ago by Phra Bodhiraksa. This sect did not become involved in agriculture until the farmers who were Santi Asoke members began to adopt Fukuoka's methods in order to enhance nature The Santi Asoke organization began nature farming on a large scale after in their own farm land. Santi Asoke has developed a system of farming based on organic farming and Fukuoka nature farming. Unlike organic farming however, For Santi Asoke farming EM are considered as an unnatural industrially produced input and there is on EM used in Santi Asoke farm. The main motivation to adopt this system is spiritual. Farmers who practice Santi Asoke farming do so in order to fulfill their Bhuddist beliefs. That is no killing, no industrial inputs and working to enhance and protect the farms natural ecosystem.

By 1996, Santi Asoke had 5 main centers of agricultural production each ranging from 50 to 100 rai in size. The 5 centers are based in Sisaket, Nakon Ratchasima, Nakon Pathom, Ubon Ratchani and Nakon Sawan provinces. The produce from these centers allows Santi Asoke to be completely self-sufficient in vegetables and rice; the surplus produce is sold in Santi Asoke's own natural food shops and vegetarian restaurants. The profits from the latter enterprises are used to fund Santi Asoke’s activities around Thailand. There has been no research to date to determine the number of farmers in Thailand who practice a Bhuddist farming philosophy.

4) Integrated agriculture and Aquaculture

Compared to the traditional system of integrated agriculture, modern integrated agriculture and aquaculture farming places more emphasis on the symbiosis of livestock, crops and fish and utilizes less agrochemicals. It is characterized as alternative agriculture because of the awareness and exploitation of this symbiosis. The first record of modern integrated farming in Thailand dates from 1957 (Wetchagarun 1980). This system was designed for small-scale farms and took advantage of the mutually reinforcing linkages between crops, fish and livestock. In order to increase the productivity and profitability of farms using this system, a balanced strategy of organic farming and off-farm inputs was recommended. Emphasis was placed on the full use of all materials produced or found on the farm. However , chemical fertilizers and pesticides using were allowed in this system but at minimal level and when necessary only.

When compared to the other nature farming , this system had a high degree of market orientation. Y.Shang (1983) listed a number of studies in Asia which showed that modern integrated agriculture and aquaculture generated greater profits than monoculture farm systems through improvements in the productivity of resources and reductions in the costs of production. The majority of farmers adopted this system because of the increased productivity, reduced input costs, increased profits and long run sustainability that could be gained. The promotion of the system of farming whereby each farms land should be divided into 30% rice, 30% orchard, 30% pond and 10% living quarters, as suggested by the Thai King, has helped to promote the concept of integrated farming in Thailand. Studies by the Department of Agriculture of Thailand found that a 6 rai integrated farm could generate an annual profit of 24,770 baht compared with 6,500 baht from rice growing mono crop (Wethchagarun

1980). Because of its income generating potential, the integrated agriculture and aquaculture farming system was introduced into Northeastern Thailand in the early 1980's as a solution to the failure of conventional agriculture. Moreover, the Department of Agricultural Extension (DOAE) has encouraged farmers countrywide to convert to an integrated farm system . The DOAE uses a variety of methods to extend the idea of integrated farming including arranging farm visits for farmers to model integrated farms; regional competitions such as the 'Best Integrated Farm in the Eastern Region'; and seminars for farmers to learn about, and discuss, the mechanics of integrated farming.

5) Organic Farming

The origins of modern organic farming was from the establishing of the 'organic' movement in Britain, in 1943, by Lady Eve Balfour (Lampkin 1994). This movement emphasized the need for healthy, fertile soils as a necessary pre-condition for the production of healthy crops which in turn would benefit human health.

In the last 40 years the reasons of organic farming development was based on three major factors: environmental concerns with the pollution and non sustainability of modern high input farming; human health concerns over agro-chemicals; and social concerns over the destruction of rural farming communities.

The main characteristics of organic farming include:

(1) maintaining soil fertility by protecting organic matter levels in the soil; - nitrogen self-sufficiency by using legumes to encourage nitrogen fixation;

(2) the recycling of on-farm organic materials, especially crop residues and livestock waste;

(3) controlling weeds, disease and pests using crop rotations, natural predators, organic manuring and resistant crop varieties;

(4) careful attention to the impact of the farm on the surrounding environment and the conservation of wildlife and natural habitats. (.Lampkin and Padel 1994)

In Western societies the number of farmers engaged in organic farming has grown in response to the increased demand from health concerned, environmentally friendly food product. In Asia , growth of organic agriculture has been stimulated both from the supply side, as many Asian farmers adopted this system as an alternative to the failure of conventional farming and from the demand side in response to the growing demand for organic produce. However, demand for organic produce in Asia was low and was confined mainly to the larger hotels and specialist shops catering to the relatively small, but growing, middle classes.

Of all the alternative agricultural systems , organic farming was the most diverse. Farmers practice organic farming for many different reasons ranging from the desire to make money from the increasing demand for organic produce to the desire to follow a more earth friendly, sustainable form of farming. There were only a small number of farmers engaged in organic farming in Thailand. It was estimated that in 1993 pesticide free vegetables were grown over an area of 5000 rai which was only 0.0031% of the total land used to produce vegetables in Thailand (Agriculture Extension and Cooperatives Department 1993). However , interest in organic agriculture was growing in Thailand and this interest has been stimulated by a pioneering organic rice project which began in 1990 in Kudchum district, Surin province. Here a cooperative of 600 farmers, together with Bangkok businessman, bought a rice mill to process pesticide free rice . In 1997, a similar project started in Roi Et province in Northeast of Thailand.

One obstacle to the growth of organic farming in Thailand was the lack of a recognized national certification scheme, this was not the case in Japan where in 1993 the Japan Association Standard, administered by the Ministry of Agriculture, forestry and Fisheries, was introduced to classify organic produce into six different categories. The size of the market in organic produce has increased significantly in Japan. It was estimated that 1 % of farm households in Japan practice organic agriculture, producing mainly rice and vegetables (Udagawa 1993. A survey of 1,459 organic farming households showed that in 1991 only 32% practiced chemical-free farming; the remaining 68% were classified as practicing 'reduced use of agro-chemicals' organic farming (MAFF 1993). The organic vegetable production in Japan in 1993 was 200,000 tons. This represented 1 % of the total vegetable production in the country that year (JETRO 1994).

The prices of organic vegetables were between 20- 50% above the price of non- organic vegetables. Because the demand for organic produce outstrips supply in Japan, large chain stores and consumer cooperatives have begun to import organic produce (no data exists yet on the quantities involved) (JETRO 1994). In 1993 the Ministry of Agriculture, Forestry and Fisheries issued guidelines for the labeling of organic produce. These guidelines classified agricultural produce into several categories based upon the amount of pesticides and chemical fertilizers used in the production process. Examples of the categories include: 'organic agricultural produce'; 'agricultural produce grown without pesticides' ; and 'agricultural produce grown with reduced amounts of pesticide'. These guidelines have been incorporated into the Japan Agricultural Standard (JAS) legislation which guarantees the quality of agricultural and fishery products.

6) Promoting Production and Trading Opportunities for Organic Agricultural Products in Thailand ; UNITED NATIONS PUBLICATION , 2008

Thai organic agriculture of Thailand had its roots in traditional farming. Such practices have been developed and enriched through farmers' knowledge of local agro-ecology and environmentally sustainable ways of farming. As organic farming was a rather new phenomenon in Thailand, there was no well-developed organic extension methodology available. The Government's training and extension utilized a conventional training module emphasizing classroom lecturing. Also, most of the public agencies' training programs did not have a clear objective of bringing farmers into certified organic production. Trainees might adopt some specific organic farming practices, such as bio-fertilizers, but not necessarily adopt all organic principles and convert the whole farm. The organic conversion programs developed by local NGOs were more successful, with a combination of participatory learning and market incentives.

In the early 1980s, the Alternative Agriculture Network was founded to promote organic and sustainable agriculture in Thailand. Certified organic farming has taken place since the early 1990s, driven by a combination of efforts by the private sector and NGOs. In the mid 1990s, a domestic certification body was established by the private sector. There are almost 14,000 hectares under organic management, representing less than 0.1 per cent of the total agricultural land and 2,500 farms are certified. Rice was the dominant crop, followed by fruits and vegetables. Most organic produce, especially rice, was exported, mainly to Europe. Most of the vegetables are sold locally. In 2004, many organic brands were available in small shops and in mainstream supermarkets, particularly in Bangkok, where there was a wide range available, both domestically produced and imported. The domestic market for certified

organic products was estimated to be just below US$ 1 million and the non-certified and health food market is estimated to be US$ 75 million. Apart from the initial private sector certification body, the Department of Agriculture also offered free certification through an agency. Half of the producers were certified by foreign certification bodies. There was a voluntary government standard for organic production and a governmental program for accreditation of certification bodies. The central Government has adopted a program for organic development, including massive investments in the production of bio fertilizer. The royal family has promoted self-sufficient sustainable agriculture and the Royal Project has recently started organic production. One province has embarked on a large-scale organic project. The sector has a number of organizations but not one uniting body. Collaboration between the sector and the Government is still weak

3.3 The Civil WOR POR ORE : Mobilization Process to Self and Group Reliance

The Civil WOR POR ORE is originated in the north-eastern region at the "KUM KUN" center at the Ubonrattana Amphor of Khon Khan province. It is the training course for any ordinary farmer who wants to reduce debt from mono cropping or chemical agriculture and who is looking for an alternative way of doing agriculture . Moreover, he or she should be willing to learn about how to rely more on himself or herself.. The main purpose of this training course is not only to solve the problems of growing debt and poverty, but it is also the process of changing the way of thinking of farmer's livelihood from chemical farming to green farming. The expected outcome of this training course is the increase in number of farmers who would be able to rely more on themselves by changing their chemical agriculture practices to environmental friendly agriculture and would be good examples to the other farmers in their own communities. This training course was developed by the group of physicians of the Ubonrattana hospital of Khon Khan province , leading by Dr. Apisit Thumrongwarangkun , with the participation of NGOs and the group of the north-eastern region local wise men such as Mr. Phy Soysaklang , Mr. Khumdueng Pasee , local wise men of Burirum province (figure 3.1), Mr. Theng Thaidee, local wise man of Surin province and Mr. Boonthem Chaila , local wise man of Nakhonrajasrima province. The target of this project is 1,000,000 farmer families free from debt within 20 years from 1996. The concepts of sufficient economy and is the base of this training course. Techniques of green agriculture such as producing bio fertilizer and bio pesticide are examples of subjects in this training course. The distinguished point of this course is based upon the local wisdom from the local social capitals such as local intelligence and wise men . The participants of this course would get not only the technical know how of green agriculture ,but could also learn more about local wise men's lifestyle. That is , local wise man's house is a local learning center naturally. They could get advice more convenient from these local wise men because these local wise men places are usually nearby. Until present , this course is still provided and continuously developed. It is also adopted as the guideline for many training courses of the NGOs or even the government. Since 2009 , the ministry of agriculture and cooperative has got the training course based on the concept of civil WOR POR ORE training course and using local wise men's places of each province as training centers. Nowadays, these local wise men of the north-eastern region and other regions are very famous at the national level.

Figure 3.1
Two Local Wise Men of North-Eastern Region
Mr. Phy Soysaklang (left) and Mr. Khumdueng Pasee(right)
source : www.mapculture.org

3.3.1 Mobilization of Green Technologies and Practices of Phitchit Province

1) Context (C)

Phitchit province is a province of the lower north region where 95% of the area is for rice production (figure 3.2). In the year 1998 , the problem from the impact of chemical farming was raised in the seminar provided by the Phitchit Co-development Foundation joining with the offices of public health and agriculture of Phitchit province . That was, the illness of farmers of this province from agricultural chemical substances was ranked the 5th of the country. The **Natural Agriculture and Toxic Free Food** group was set up as the result of this seminar. This group is the informal formation of people from agricultural sector , public health ,governmental agents and consumers who are interested in organic farming.

Not only the problem of health from the impacts of chemical agricultural substances , debt was also the serious problem of farmers of this province from their chemical agriculture practices. Data from many community plans of this province from the support of SIF done in the year 2001 revealed that the average debt of the farmers of this province was 50,000 baht per family. The debt went up twice in the year 2006 because the rising costs of chemical fertilizer and other inputs. Poverty and health problem of the farmers were two main problems challenging the working of NGO : Phichit Co-development Foundation.

2) Inputs (I)

After the financial crisis in the year 1998 , the civil mobilization to empower community was very active mostly leading by NGOs. In mobilizing community, facilitator or change agent was the key factor in which the Local Development Institute or LDI was the main NGO initiated the training for the trainers project to create change agents. The main role of these change agents were to create realization in problems faced by communities both from factors inside and outside communities such as rising cost of production from the energy crisis, degradation of environmental quality , the effect of chemical agriculture , etc and stimulate them to solve those problems starting from turning to selves reliance.

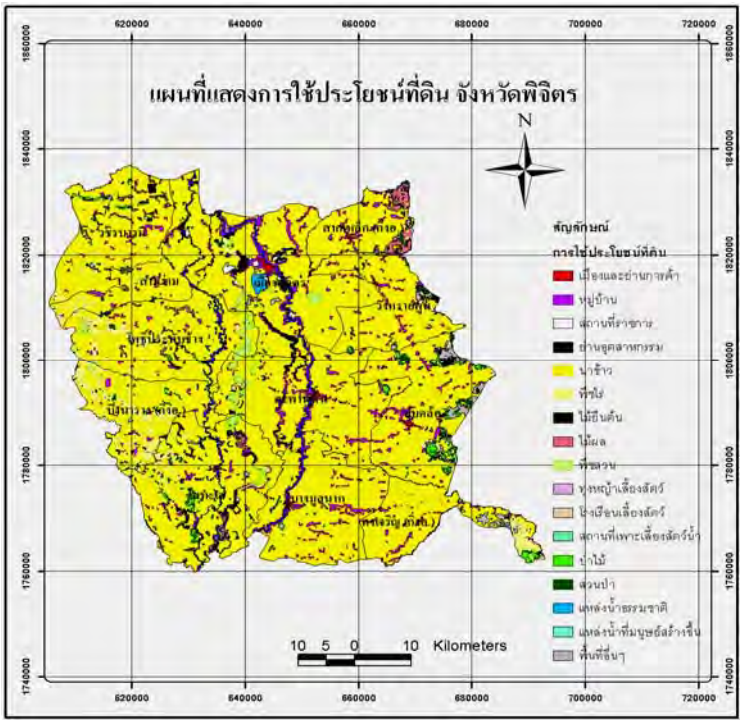

Figure 3.2
Map of Phichit province. Yellow is area of rice cultivation

In case of Phichit province , Mr. Suradej Dejkhumwong , the personal of Public Health office of Phitchit province and the secretary of the Phitchit Co-Development foundation and the personal of Phitchit public health organization (figure 3.3) faced the problem of farmers' health from chemical agriculture especially pesticide. In solving this problem , those farmers needed to be realized such impacts by themselves. Moreover, they needed to have alternatives of doing agriculture which was not chemical agriculture. Mr.Suradej Dejkhumwong together with colleagues from district health stations of Phitchit province and the group of the leaders of the Natural Agriculture and Toxic Free Food group then visited the Civil WOR POR ORE of the north-eastern region in 1999 and learned more about the mobilization process of green agriculture and poverty alleviation through self reliance dimension. Inspiration from this trip led to the civil mobilization of green technologies and practices in agriculture of Phitchit province. The training of the trainer WOR POR ORE course has been adapted since the area context of Phitchit province was quite different from those of the north-eastern. Phitchit province is one of the main paddy production in the lower northern region of Thailand where 95% of agricultural land is under paddy production. About 2/3 of the agricultural area produces paddy at least twice per year in which paddy production is full of chemical substance. To convince these farmers to reduce or quit using chemical substance in agriculture, the process of convincing was developed and it's become the civil WOR POR ORE training project of Phitchit later.

Figure 3.3
Mr. Suradej Dejkhumwong
Secretary of the Phitchit Co-Development foundation

3) Process (P)

Mobilization of civil WOR POR ORE of Phitchit province could be separated into 3 periods of time : Development period , Implementation period and Extension period

(1) Development period :

Since the concept of civil WOR POR ORE training course was based on the local wisdom , the development process was then **started at searching for the local wise men** who were once suffered from debt from doing chemical mono agriculture but those debts were all gone or were continuously reduced after they turn to organic farming. They were also willing to be instructors and learning bases of organic farming , debt-free and self reliance lifestyle for community . Fortunately, many members of the Natural Agriculture and Toxic Free Food group of Phitchit province such as Mr. Narong Chalaemwong , chairman of this group and many wise men of Phitchit province (figure 3.4) would be willing and able to be instructors of this course.

The **second step** was that the lessons learnt of those wise men were explored and the vision of the free toxic agriculture of Phitchit province was determined through the participation of members of the Natural Agriculture and Toxic Free Food group of Phitchit province (figure 3.5). That was, **debt reduce, agricultural chemical substance reduce , good health , more self reliance, increase human being dignity, self sufficiency and warm family.**

To be free toxic agriculture , 5 compositions were needed. They were social capital , alternatives and knowledge of green agriculture , learning process , marketing of free toxic agricultural products and management. In each composition needed many activities. For social capital , components of this part were local wise men , local wisdom , network between green producers and consumers, community of green practice (COP) etc (figure 3.5). Alternatives and knowledge of green agriculture consisted of any knowledge extracted from local wise men's experiences in green farming such as bio fertilizer , good agriculture practice(GAP) , organic farming , seedling, etc. Activities of learning process included training of the trainers (WOR POR ORE) project , sharing forum , learning center , knowledge management , lesson learnt from local wise men

,etc.About marketing , this part would complete green agriculture cycle. It would also raise green agriculture to business such as community rice mill, green market, etc. The last component was management. It related to team working , networking , multi organization working, coaching , etc.

Figure 3.4 :
Mr. Narong Chalaemwong (left above)
Mr. In Songkharm , wise man in organic vegetable (right above)
Mr. Juan Phonkerd , wise man in small scale integrated farming (left bottom)
Mr.Suradej Dejkhumwong and the forum of Phitchit wise men

The third step was developing curriculum of organic farming using local wise men ‘s experiences and local intelligence as lessons. The outputs from this step were the knowledge of green agricultural mostly based on local wisdom.

The **fourth step** was designing the pattern of training. **Self revision and creation of impact awareness from chemical agriculture** were the first must do things. **Learning by doing was the main tool** in this training course. The instructors were all local wise men. Visiting local wise men’s farm or places was another activity interested by all participants. Participants would have more confidence in changing from chemical agriculture to green agriculture. Moreover, they would have chance to stay overnight at those local wise men’s places so they would have chance to discuss more about their worries in green agriculture. The Civil WOR POR ORE course was set up for 4 day 3 night course.

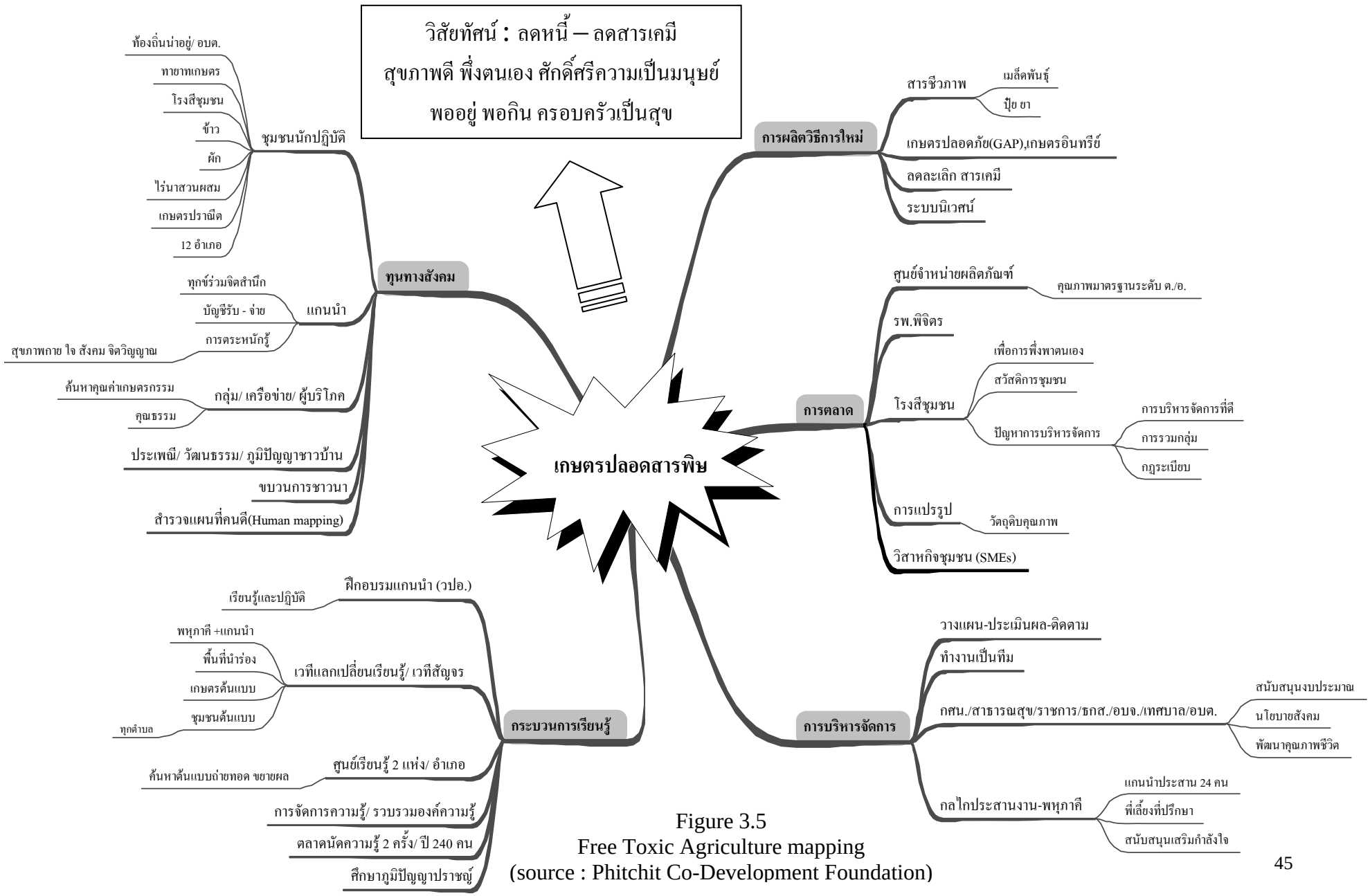

Figure 3.5
Free Toxic Agriculture mapping
(source : Phitchit Co-Development Foundation)

(2) Implementation Period

Participants of the WOR POR ORE training course were any farmers who suffered from chemical agriculture and wished to find alternatives for solving their problems. However, the new alternatives were based on selves reliance. Therefore , farmers must be willing to learn more about these alternatives

The first day of this training course consisted of the process of self revision and creation of impact awareness from chemical agricultural toxic substance . Participants were asked to reveal their suffers and sources of those suffers. (figure 3.6)The results were not surprised at all. That was, debt was the first rank of their suffers, followed by health and broken home. That was , members of the family needed to go to the city for being hired labors. Also , the chemical agriculture was indicated as the main source of their debt. To make the result more clear for the participants , the facilitators of this session used many techniques such as asking participants to show the data of cost of production , discussed about the sources of milled rice they consumed (farmers of Phitchit grew paddy but bought milled rice for their own consumption), or even by using blood test for toxic substance remaining in the body (figure 3.6).

Not only the expression of suffering , the participants were asked to express their hope for their futures and communities. Not surprise again, no debt, cost reduction and income increasing were the firstly order of hopes. This activity was facilitated by trained facilitators usually the NGOs and the colleagues from the Public Health office of Phitchit province.

Figure 3.6
Participants were expressing their suffers from their agriculture practices (left)
Participants were being examined the toxin remaining in the blood (right)

The second and the third day of this training course were the days of visiting the local wise men places and farms . The participants would have chance to learn about green agriculture knowledge and technologies (figure 3.7). They would also have chance to practice some techniques such as producing Effective Microorganisms : EM, bio fertilizer (figure 3.8). Many information of green technologies was also provided.

Figure 3.7
Participants were learning about rice seedling and natural pest control in rice field

Figure 3.8
Participants were practicing EM production (left) and
a wise man was showing the ingredients of bio-fertilizer (right)

Figure 3.9
Information of ingredients of EM and hormone production was also provided

For these 2 days, participants would get not only necessary green agriculture techniques, but they would also have chance to learn more about green agriculture lifestyle of those wise men including the philosophy of living. Lifestyle of those wise men were like the best practices for the participants. This could increase confidence to the participants in changing from the present chemical agriculture to green agriculture in the future.

The last day would be the day of lesson learnt extraction for making agricultural plan of each participant. How would each participant start their green agriculture? Usually ,more than 50% of participants would start from reducing chemical substance usage such as chemical fertilizer and pesticide by increase using bio-fertilizer ,hormone and bio-pesticide.

The civil WOR POR ORE training course of Phichit province started in the year 2000 under the support of Australia Embassy. It offered twice a year. The Civil WOR POR ORE was quickly and widely accepted from the farmers of Phitchit. The main reason was that the training methodology got along well with the behavior of the farmers . Knowledge received from those wise men could answer all the farmers' questions especially the alternatives of cost reduction. More important , these knowledge could be easily access to.

Figure 3.10
The tenth WOR POR ORE in 2004

(3) Extension Period : Process and Product of the WOR POR ORE (P)

To run this training course more efficiently , the training course and the role of the Natural Agriculture and Toxic Free Food group of Phitchit province was evaluated every year to develop the next year plan through the participation process of stakeholders ; **the forums of learning and sharing**. These forums were very important activities in learning process. **The main objectives of this activity was not only the extension of knowledge , but also the extension of network of green agriculture .**

Up to 2008, this curriculum has produced more than 1,000 farmers who would be change agents for green farming in their villages. It was evaluated that more than 100,000 rais used less agricultural chemical substance. However , only 10-15% was completely organic farming.

In running this course continuously, the Phitchit Co-Development foundation was supported by many organizations. They were the Australia Embassy , the office of Health Strengthening , the Thailand Research Fund (TRF) , the Knowledge Management Institute for Society and the Global Environmental Facility (GEF) under the United Nations Development Programme (UNDP).

Under the support of the Office of Health Enhancement (OHE) , the Thailand Research Fund (TRF) and the Knowledge Management Institute for Society from the year 2004 to 2008, there were many lessons learnt from the civil WOR POR ORE project and the green agriculture mobilization. Since 2005 , the

green agriculture of Phitchit province has been mobilized strategically both problem based and area based strategies. The 7 problem based strategies were established in the year 2005. They were cleaned rice , free toxic substance vegetable , small size integrated agriculture or neat agriculture, large size integrated agriculture , community rice mill , agricultural heiress and local administration for community strategies. The main objective of each strategy was to mobilize each issue more efficiently and push it into large scale. **Knowledge management was the key device in mobilization** each strategy. Another strategy of mobilizing green agriculture was the community of practices (COP) of 12 amphors under the area based strategy. Wise men farms of each amphor would be the main learning centers where farmers could be able to access to knowledge easier and more convenient(figure 3.11).

Figure 3.11
Mr. Narong Chalaemwong and his large scale integrated farm (above)
Mr. Padung Kruarbubpha was showing the production of rice seed in pot (bottom)

The concept of the WOR POR ORE training course especially the use of wise man as the instructor of green agriculture and self reliance practice in agriculture was accepted from the Ministry of Agriculture and Cooperatives. Since 2009 , the Ministry of Agriculture and Cooperatives have had the similar training courses using wise men as instructors of this training course and use his place as classroom. However,this training course was mainly offering the technical know how of free toxic agriculture practices . Most of the wise men of the Natural Agriculture and Toxic Free Food group of Phitchit province were invited to be the instructors of this project.The Phitchit Co-Development foundation then decided to lower her role in offering the WOR POR ORE training course since then. However , the mobilization of green agriculture is still going on such as pushing green market for Phitchit province and offering training course

and learning process of the special topic such as rice seed production and doing more knowledge management for farmers.

For example , the cleaned rice group offered the rice seed production training course because rice seed was becoming important in term of the rising cost and the quality of rice produced. The cleaned rice group consisted of 5 wise men who were the experts in different things ; seed production , soil improvement , water management , organic fertilizer and biological hormone production and usage. Their expertise came from learning through experiment, observing , recording data , analyzing output and revising again and again. These wise men were all the instructors of the civil WOR POR ORE . Knowledge management through **forums for learning and sharing** was one of the main device that could turn tacit knowledge into explicit knowledge . Knowledge management was not only for the farmer themselves , but also for the expansion of knowledge. **Forum of learning and sharing is the necessary process in strengthening farmers and community** . The cleaned rice group is growing slowly but steadily, step by step.

Figure 3.12
The Demonstrating Field of Rice Seed Production :
A lesson of the civil WOR POR ORE and the cleaned rice group

3.4 Farmer School

The mobilization of agricultural alternatives of the famous NGOs such as the WOR POR ORE project of the north eastern region or of the Phichit province , the Institute of Sustainable Agriculture Community (ISAC) of Chiangmai province or the Khao Kwan Foundation , the most famous farmer school of Suphanburi province or even the training courses of the governmental organization such as the Department of Agricultural Extension are mostly in form of training courses of green agriculture. The expected output are that the farmers who participated in those training courses would change their behavior in doing agriculture from chemical agriculture to the more environmental friendly agriculture and hopefully that they could rely more on themselves. It would be better if they could be change agent of green agriculture for

their neighbor. The extension of green agriculture after finishing the training courses was mainly up to the farmers. The outcome was then hardly to estimated. The supporting after training is therefore very important especially the mentor system. The most famous NGOs such as the Khum Kun center of the north eastern region , the Phitchit co-development foundation and ISAC of Chiangmai province are usually aware of and provide this post training supporting system. Activities under the post training support are usually learning process such as knowledge management , group empowerment , establishing learning center or even pushing green agriculture to be province strategy. These activities need a lot of supports and working with many organizations in form of multiparty. Farmer school of Nakorn Sawan province is one of the good examples of the multiparty working in mobilizing green agriculture especially rice.

3.4.1 Farmer Field School in Thailand (Suwanna Praneetvatakul , 2007)

In fact, the establishment of farmer field school (FFS) of Thailand stemmed from the pesticide policy of the Department of Agriculture (DOA) which came along with the introduction of the green revolution in agriculture sector. For rice, the green revolution was introduced since 1970s. The new varieties of rice were photosensitive. This green revolution affected not only the cropping systems from multiple cropping systems to monocropping , but also affected the agro-ecosystem's balance of pests. In 1972 and 1977 two major outbreaks of the tungro virus caused significant yield losses. Control measures at that time relied heavily on agricultural chemical substances. However , the control method was of limited success. Besides, the pesticide use in had severe side effects on the beneficial organism in the rice ecosystem which reduced the capacity of the natural control. The misuse and overuse of the pesticides of the farmers had made new pests like the brown plant hopper , *Nilaparvata lugens* , developed themselves . Farmers therefore relied more on chemical pesticides (Suwanna Praneetvatakul , 2007).

Government established the programme of pest surveillance in 1982 with the technical support of the government of Germany until 1989. The main objective of this programme was to strengthen the government's role to put in place an effective monitoring system for improving the government's capacity for pest control decision making. Or other words, under this programme , pest control was under responsibility of the government not the farmers. However , the concept of this programme was counteractive to the FAO Integrated Pest Management (IPM) in rice in Asia. The IPM programme was used in the Farmer Field School (FFS) initiated in Indonesia in early 1980s in which Thai government initially rejected. But with the collaboration study of Thailand Development and Research Institute (TDRI) , the University of Hannover in Germany and the department of Agriculture (DOA) to the pest control policy of Thailand, the recommendation was to reduce the pesticide outbreak budget on the short term and reallocate budget for farmer training in IPM in the long run.In 1992 , FAO then supported the government of Thailand to started Farmer Field School in rice in 4 provinces ; Chachoengsao , Chainat , Suphanburi and Khon Kaen using FAO FFS manual as guideline. The implementation of this programme was slow and no up scaling of the programme took place during these years because of the lacking of serious support from the Thai government especially the Department of Agriculture Extension (DOAE). FAO then closed down its support for this programme in 1998. The FFS was automatically ended.

Fortunately, the concept of FFS came into attention and was strongly recommended for implementation throughout the country by His Royal Highness

Majesty the king of Thailand as the strategy of empowerment of the rural population. The budget of 30 million baths per year of DOAE was then reallocated for FFS training. Also , the pest control policy was gradually changed. An institute of Biological and Farmer Field School were established within DOAE in 1999 and expand to 800 FFS in rice and vegetable located across the country within 2006. However, the FFS programme was declined because the pest control policy of DOAE was reversed towards a pesticide-based crop protection again after that. Now a day , the budget allocated to the FFS programme was minimal. This implied that farmers would no longer be recognized by agricultural officials as empowered partners with an ability to conduct own collective pest control actions at public sector interference. The remaining active FFS is mostly under the support of the Chaipattana Foundation and NGO (Suwanna Praneetvatakul , 2007).

There were many key factors explaining the inactive FFS of DOAE. *Firstly*, FFS ran by DOAE was just the training course of IPM , participants who were actual farmers were needed to attended the course full time. The opportunity costs of time of these farmers were high. However , the schedule of the training course was normally fixed , not flexible. Many participants dropped out from the training course. *Secondly*, there were no other support such as facilitators after finishing the training course. When pest problems occurred , the farmers then turned unavoidably to chemical pesticides again. *Thirdly*, the pest control policy of DOAE was reversed towards a pesticide-based crop protection.

According to the 8th National Economic and Social Development Plan between 1996-2001, the sustainable agriculture was one of the Plan's goal. 20 % of the agricultural land or approximately 25 million rais was needed to turn to sustainable agriculture. Four forms of sustainable agriculture were recommended : *integrated agriculture , integrated forest-based agriculture , organic agriculture and natural agriculture.* However, the mobilization of sustainable agriculture in this plan from the government side was negligible. Fortunately, the occurrence of the financial crisis in 1997 and the Social Investment Fund (SIF) had made the NGOs' role in empowering the communities so obvious . Green agriculture based mainly on the local wisdom was then restored and gradually developed.

Before the 8th National Economic and Social Development Plan , there were many attempts in transmitting an appropriate technology in agriculture to farmers such as the extension of integrated agriculture in north eastern region by the Appropriate Technology Association (ATA) in 1984. The main purposes of this mobilization was to search for alternatives in doing agriculture without chemical agricultural substance with the participation of farmers. The person who realized to the negative impact of green revolution in which farmers needed to rely more on external factors of production including technology was Mr. Decha SiriPattra (figure 3.13), the formal personal of DOA. After joining the ATA in 1984 to 1989 , he then established the new organization named the Technology for Rural and Ecological Enrichment (TREE) in 1989 and registered as the Khao Kwan foundation in 1998 with the office and the operation area in Suphanburi province, one of the main areas of rice plantation of Thailand. The main objectives of this foundation are to :

1. to develop alternative agricultural technology with the participation of local farmers which consisted of the improvement and development of rice seed and local plant , soil improvement , insect controlling herb and chemical substitute science.

2. To promote and publicize the concept and techniques of alternative agriculture including to present the proven alternative agriculture system to interested farmers to learn independently
3. To be able to create own knowledge and technology by combining existing knowledge with the new ones. The optimum goal is the ability of farmers to rely more on themselves in the long run
4. To provide training to farmers and agricultural extension persomals
5. To campaign and publicize the operating outcomes and information for making change in the governmental policy level to turn to support alternative agriculture , preservation of natural resource and environment , biodiversity of rice and crop inheritance by cooperating with various organizations both international and domestic organizations

Figure 3.13
Mr. Decha Siripattra , the founder of the Khao Kwan foundation

This organization is one of the most famous organization in alternative agriculture specializimg in rice. It could be said that most of the farmer schools in Thailand especially organized by NGOs must have been trained from this organization in which 3 courses farmers needed to be learned about (www.khaokwan.org). They are

1. Pest management by bio methodology
2. Soil improvement by not using chemical substances
3. Rice seed development which appropriate to sustainable agriculture

However, knowledge receiving from this organization directly benefits farmers who attended the course. The expansion of knowledge to other farmers not attending the course is another story, especially pushing the farmer school to be a strategy of the province . It needs management in mobilizing process.

3.4.2 Farmer School of Nakorn Sawan Province

1) Context

Nakorn Sawan is one of the important area of rice plantation in the Lower North region of Thailand. The total agricultural land of Nakorn Sawan Province in the year 2011 was 4.017 million rais of which 61.9% was rice field (figure 3.14). The total number of farmer family was 73 thousand households. Normally, rice plantation of Nakorn Sawan are twice a year or 5 times in 2 years. The wet season and dry season planted area in the crop year 2011 were 2.487 and 1.063 million rais , respectively , with the total quantity of rice produced 1.76 million tons. The problems faced by farmers of Nakorn Sawan were similar as those faced by farmers in the other areas. That was , the growing debt caused by the higher cost of

production. Even though the government tried to increase the price received for paddy through the pledging project , debt was still the main problem because the prices of other factors of rice production were still increasing. These factors of production were such as chemical fertilizer and pesticide, fuel and seed.

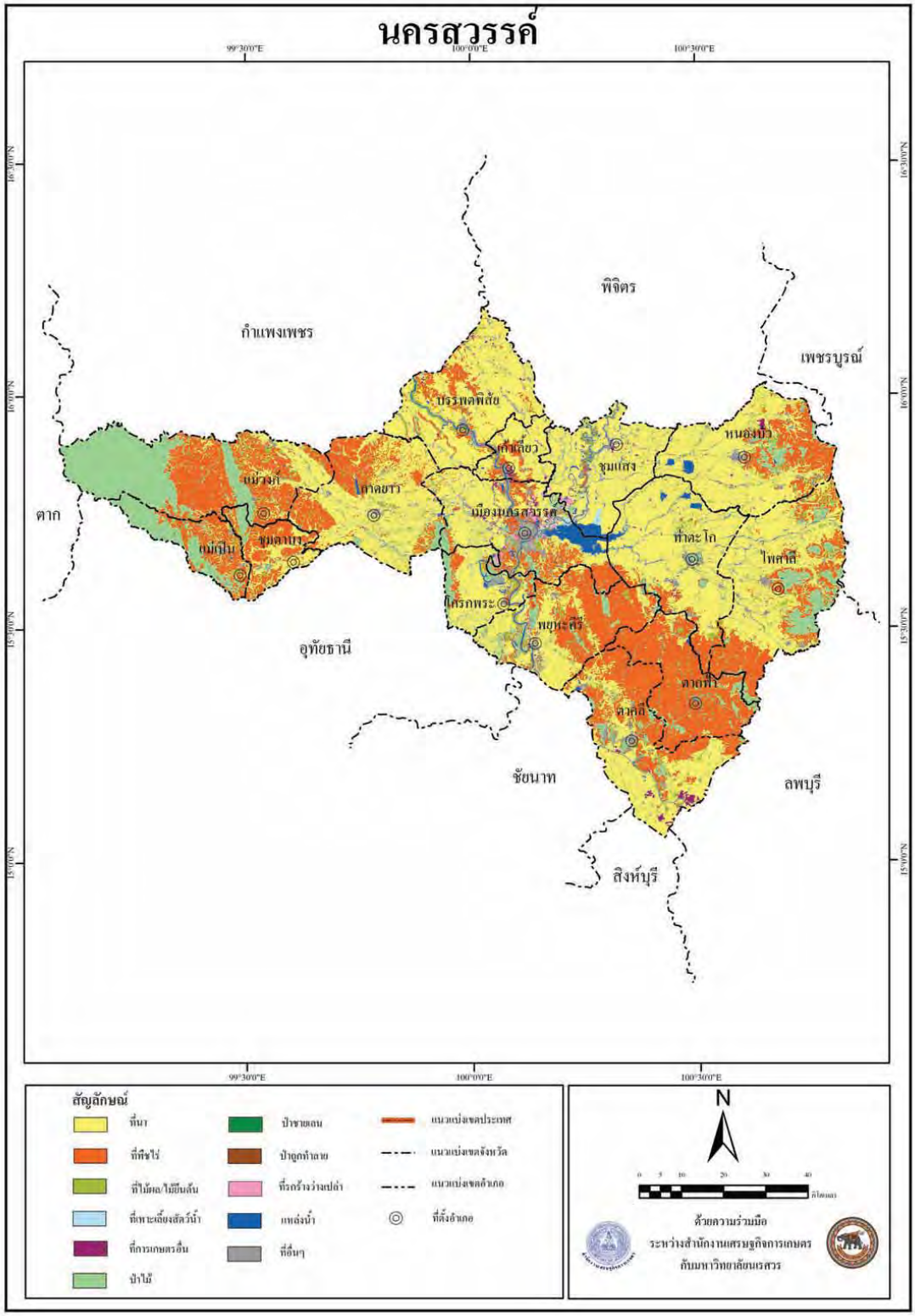

Figure 3.14
Land uses of Nakorn Sawan province ; yellow area was rice field

This problem was raised by the Nakorn Sawan Forum in the year 2004 , the NGO of this province whose role was to stimulate the people of Nakorn Sawan to realize and mobilize the public problems to make Nakorn Sawan being the livable city. The Nakorn Sawan Forum consists of approximately 20 members from multiparty such as physician , public health personal , teacher , business man ,farmer etc. To solve the problems efficiently , the problems were needed to be well defined. Nakorn Sawan Forum with the support of the Social Management College opened the forum to explore the lesson learnt of rice plantation in 12 districts of 7 amphors from 12 amphors of Nakorn Sawan. Not only the problem searching , but the sources of problems were also explored. It was found that the quality of rice seed used by the farmers was very much lower than standard. This was the main reason why the quantity of rice seed used by the farmers was approximately 30 kilogram per rai which was twice as high as the official recommended level ; 15 kilogram per rai. The consequences was that the quantities of chemical fertilizer used was automatically high. The rice stem was not strong enough to disease and pest. The quantities of chemical pesticide and herbicide used were then high followed by the low yield of paddy received. Many lesson learnt could be summarized as follows : (Foundation of Knowledge management and Farmer Network Nakorn Sawan province ; 2009)

1) The production under chemical agriculture was one of the main sources leading to the debt problem of the farmers.
2) The rice seed sold in the market was generally low quality. However , the behavior of farmers in using variety of seed was also a cause of seed mixed.
3) The quality of soil of rice field was deteriorated from using too much chemical substances. Moreover , farmers in general lacked of an appropriate knowledge in refreshing the quality of soil.
4) Farmers' health were deteriorated from chemical agriculture.
5) In general, farmers learned how to do agriculture and factor of production using from neighbor or even merchant . There was no place for Nakorn Sawan farmers to develop themselves to be a good farmer.

After problems were well defined, the first activity that the Nakorn Sawan Forum usually uses before start mobilizing problem is opening discussion forum with the expert. With the main objective of more degree of self reliance of the farmers and with the reputation the Khao Kwan foundation , the Nakorn Sawan Forum then decided to discuss with and learn from Mr. Decha Siripattra. Not surprisingly , knowledge received from Khao Kwan foundation especially 3 main courses provided above were all the answers for Nakorn Sawan farmers' problems.The mobilization process was then started and it was the starting point of farmer school of Nakorn Sawan province.

2) Inputs

At first , the Nakorn Sawan Forum was the original organization responsible for mobilizing the problems under the project called " Network of Farmer School of Nakorn Sawan". Even though this organization consisted of approximately 20 persons , a few leaders of this organization needed to be mentioned to.They were Doctor Sompong Yungthong ; the doctor of medicine , Mr. Adisak Jantharavichanuvong ; businessman , Mr. Phaisan Jiansirijinda ; the leader of Saebsaksinh-Phandin Sikwae and the personal of public health office , Dr. Phanapathara Jaiuay ; lecturer of Rajaphat Nakorn Sawan University and two more facilitators Mr. Noppadohl Muntsak and Miss Phattarith KemKhang whose main roles were coordinating and monitoring.(figure 3.15-3.16).

Figure 3.15
Doctor Sompong Yungthong , Mr. Adisak Jantharavichanuvong ,
Mr. Phaisan Jiansirijinda (from left to right)

Figure 3.16
Dr. Phanapathara Jaiuay , Mr. Noppadohl Muntsak , Miss Phattarith KemKhang
(from left to right)

The clearly role of Nakorn Sawan Forum in mobilizing the public problems began after the financial crisis in 1997 by joining with the Social Investment Fund or SIF in 1998 with Mr. Adisak Jantharavichanuvong as chairman of Nakorn Sawan SIF. With the support of SIF, more than 100 community groups were continuously developed and Nakorn Sawan Forum helped creating the network of these communities called SIF NET which was the cooperative network of Nakorn Sawan communities. After SIF , Nakorn Sawan Forum was still continuously working with many parties to empower communities of Nakorn Sawan such as Local Development Institute (LDI) , the Asian Public Health Development Institute of Mahidohl university , Health Promotion office , Social Management college under Community Organization Development Institute (CODI) , Knowledge Management Institute for Social (KMI) and etc.

With various dimensions and more degree of complexity of the problems , working with the internal organizations of Nakorn Sawan was important as well as working with those external organizations. Especially if the problems were needed to be of concern at the provincial level.

3) Process

Mobilization process of farmer school of Nakorn Sawan could be divided into 3 phases : *problem realization and learning for the alternative of problem solving, strategy determination and development of farmer school of Nakorn Sawan , expansion of farmer school.*

Phase 1 : Problem Realization and Learning for the alternative of problem solving

In the year 2004 , Nakorn Sawan Forum has had a good opportunity to discuss and share knowledge of farmers' problem with Mr. Decha Siripattra from Khao Kwan foundation. The knowledge received from this discussion were the alternatives of problem solving of farmers. They were soil improvement by bio fertilizer , the integrated pest management (IPM) and production of high quality of rice seed by seed selection. The Nakorn Sawan forum then sent 5 farmers to train more of these 3 things at the Khao Kwan foundation.

To get more understanding in problems , the Nakorn Sawan forum and the College of Social Management were doing research in extracting the farmers' lesson learnt of 12 districts of 7 Amphors. Not only collecting data of chemical farming of general farmers , but the Nakorn Sawan forum was also extracting lesson learnt of green farming of farmer network in 4 districts of Nakorn Sawan.

Phase 2 : Mobilization process of farmer school of Nakorn Sawan actually started at the beginning of the year 2005. There was an activity called the forum of the National Health Assembly Resolution under the topic " Rice and Health Life-Style of farmers" at Nakorn Sawan. Not only the farmers' problems collected previously was presented, but the problem of rice seed used by the farmers was also discovered. From 281 samples of rice seed of the farmers who participated in that forum , it was found that only 3 samples were the good quality of rice seed. The quality of the rest was under standard. This was the answer of the question why farmers used a lot of seed per rai in their production. And it created the chain of problems to the farmers. That was, the quantities of fertilizer , pesticide used need to be increased. The stem of rice was not strong and the quality of rice produced would not be good. These caused in the increasing of production cost. These problems were presented to the provincial governor of Nakorn Sawan at that time , Mr. Peeraphol Trithosavith (figure 3.17) for pushing them to be the sustainable agricultural development strategy of the province.

Fortunately, under the CEO administration , there was the poverty problem solving strategy at the provincial level. It was all agreed from every party that "network of farmer school" concept should be the concept of poverty reduction of Nakorn Sawan . this was because it would be the integrated learning process for farmers in reducing cost of production, increasing yield , developing good quality of seed , learning about post harvesting and marketing in terms of group and network. Hopefully that this concept of farmer school as the learning process would be an appropriate option for the farmers who had intention to learn how to rely more on themselves. This farmer school was the prior project of the CEO integrating management.

The expectation of Nakorn Sawan farmer school were to see the gathering of farmers at village level to learn continuously as learning organization by using own skill and knowledge including the connection to knowledge from other organizations to increase the degree of self reliance.

Multiparty was the base for mobilization in which the Rajapat Nakorn Sawan university was assigned to be the coordinator of this project by integrated working with many parties consisting of official sectors such as provincial agricultural office , private sectors such as Rice mill association of Nakorn Sawan and civil society including the Nakorn Sawan Forum.

Figure 3.17
Mr. Peeraphol Trithosavith
Governor of Nakorn Sawan province
(source : nsru.ac.th/farmer/)

Knowledge management (KM) was the key device in mobilization. Activities for farmers who first participated in the farmer school such as blood testing for remaining toxic substance, examination of the quality of rice seed used ,examination of the quality of soil of rice field s and exploration of production cost of rice plantation were basic activities for creating awareness of the impacts of chemical agriculture . This would lead to farmers' acceptance and willing to learn more about an alternative sustainable agriculture such as rice seed examination and production , integrated pest management (IPM) in rice field and soil improvement . Of course, organic agriculture was also included. In 2005 , the participants of farmer school of Nakorn Sawan were sent to learn these knowledge from Khao Kwan foundation. Some of them have become trainers and facilitators for their neighbor in their areas or other areas.

With the support of Knowledge Management Institute of Social (KMI) , knowledge management was one of the main parallel device in every activity. Lesson learnt from each activity must be concluded by facilitator from the Nakorn Sawan Forum. New knowledge would be created by this activity.

Learning by doing was the process of learning in the farmer school of Nakorn Sawan. Farmer school of Nakorn Sawan province was the area-based concept. There was no actual place for classroom. It could be informal places such as temple or formal place such as learning center of the village or school. They needed to practice at least 3 activities when they joined the farmer school in their districts : rice seed selection and cultivation , IPM in the rice field , and producing EM for being the main ingredient in producing bio fertilizer and/or pesticide (figure 3.18 – 3.19). However , they needed to setup farmer school in their own districts after they finished training courses. So, the farmer school could be in the form of farmer group or community business group or the learning center. Setting up farmer school in the area of rice production would open the chance for farmers to easily access to knowledge . Moreover , it would be convenient to the local administrator in supporting the activities of farmer schools in their areas.

Figure 3.18 : rice seed selection and cultivation
(source : nsru.ac.th/farmer/)

Figure 3.19 : IPM (left) and EM (right)
(source : nsru.ac.th/farmer/)

However, with the limitation of man power of Nakorn Sawan forum , the extension of farmer school needed a lot of facilitators. Fortunately , with the support of KMI , **local facilitators were developed by using farmers who ever participated in the farmer school and/or local wise men as facilitators**. Result was that the knowledge from local wisdom and knowledge from farmer school were sharing through learning process. This new knowledge would be an appropriate knowledge of that area.

Knowledge from each farmer school was shared and extended every year through many channels such as sharing knowledge festival.

At the end of the year 2005, 30 farmer schools at district level of 12 Amphors were established.

Phase 3 : Expansion of farmer school activities

At the of end the year 2005, Nakorn Sawan forum with the leaders of 30 farmer schools had the network meeting to review the mobilization of the farmer school. The main conclusion from this meeting was that the mobilization of farmer school should expand activities such as trading good quality of rice seed produced and develop the manufacture of bio fertilizer and pesticide to community level. The “development of good quality of rice production” strategy was then proposed to the provincial administrator of Nakorn Sawan in which 2 sorting machines of rice seed, 8 machines for peeling paddy skin and 2 transplanting machine for rice seed production were supported by the provincial administrator. These machine would help in increasing the production of good quality of rice seed for the member of the farmer schools. Increasing of the good quality of rice seed would be the starting point of moving to the business dimension of some farmer schools in the next couple years. Together with the development of bio fertilizer and pesticide manufacturing

,within the next 3-4 years, the production of good quality of rice of farmer school would be able to being community business.

In the year 2007 , the good quality of rice seed produced from these farmer schools was 49.5 metric tons which was enough for the member of the farmer schools. The farmer schools were then ready for rice seed trading (figure 3.20).

Figure 3.20
The governor of Nakorn Sawan provincial administration and the representative of rice trading company of Nakorn Sawan received good quality of rice seed produced by the member of farmer school

Mobilization activities of farmer school in the year 2008-2010 were concentrated at

1) Establishment of center of good quality of rice seed production at district level. This activity was to support the increase in demand for good quality rice seed, not only from the member of farmer school , but from the farmer nearby.
2) Development of good quality of rice seed trading system
3) Establishment of saving group of each farmer school. The saving group would support the implementation of the activity 2)
4) Produce more facilitators or knowledge manager at district level. The number of member of Nakorn Sawan forum was limited. The more number of farmer school increased , the more facilitators were needed. The local facilitators would not only be the coordinator of the farmer school of their own areas with the Nakorn Sawan forum , but those farmer schools could develop faster by coordinating with their local administration.
5) Extend the knowledge of free toxic rice production to student in district school.
6) Providing knowledge and learning market of farmer school network each year

4) Product

Since 2004 to 2009 , 65 farmer schools of Nakorn Sawan were established distributed all over the province (figure 3.21). Each farmer school could rely more on themselves on rice seed. Many of them could expand their rice seed production to community business level. Many of them could extend producing good quality of rice using their own good quality of rice seed to business level.

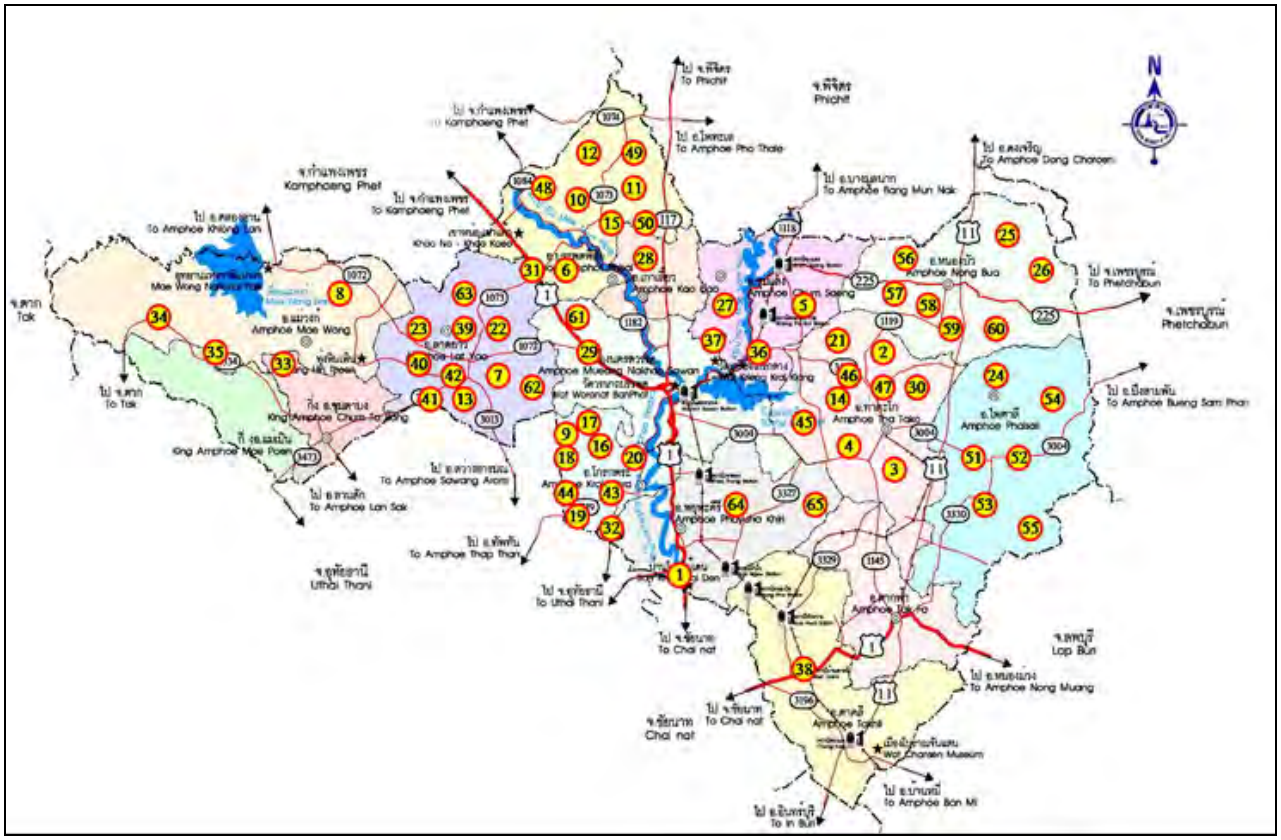

Figure 3.21
Farmer school Network of Nakorn Sawan province
(source : nsru.ac.th/farmer/)

3.5 Factors determining the success of mobilization of The Civil WOR POR ORE of Phitchit province and the Farmer School of Nakorn Sawan province

The mobilization under the WOR POR ORE process of Phitchit province or the farmer school of Nakorn Sawan province were in general accepted from the farmers of the 2 provinces because these mobilization processes could not only help farmers in solving their problems , but the mobilization process also help increase the degree of self reliance. The similarity of these 2 processes was at the learning process . That was

1) The creation process of problem realization faced by the farmers started at the real knowledge of problems faced by the farmers such as the cumulative debt. Sources of problems must be clearly explained. The connection between problems and sources of problems must be showed to the owner of the problems. The problems were then accepted by the farmers and this was the starting point of searching for alternative for problems solving at the origin of the problems.

Techniques of the realization creation were mixture of many tactics. For examples , in the economic dimension , the data of debt , cost of production and efficiency of input utilization were collected and analyzed. In agricultural dimension , the quality of rice seed was examined. In health dimension , the remaining of toxic in farmers' blood were also examined. In social dimension, this reflected from the situation of some member of the family needed to work somewhere else.

2) Searching for and learning about alternatives based on local wisdom, for example , that farmers could easily access and learn.

3) Learning by doing could make farmers gradually accept the new knowledge and technique. This activity would be the starting point for changing farmers' behavior.

4) Participatory extracting lesson learnt and sharing experiences were the two activities that these two mobilization process done continuously. These two activities were part of learning process that could create and extend new knowledge suitable for the context of the area.

Product from this mobilization process was intangible product which would gradually benefit farmers in the long run . It was the thing that farmers needed for being selves reliance in the long run. Unfortunately , this learning process was ignored in most of the government training projects.

The key factor in this learning process was the efficient facilitators , the Phitchit Co-Development foundation and the Nakorn Sawan forum , for examples.

Chapter IV
Green Market and Food Safety

4.1 Introduction

For the issues of food availability , food accessibility and food sustainability of community or farmer group , the mobilization would pay attention mostly on the supply side by keeping the resource bases for sustainably uses. The activities needed would then be the adjustment of production behavior and the beneficial uses of the farmers and communities. The benefits of the behavior adjustment go directly to those farmer groups and the by product goes to the consumer in general. The benefits are mostly in form of food availability and food sustainability. But for the issue of food safety , the mobilization was not only on production issues , but it was also on the marketing issues ; managing the alternative market , standardization and the accept of the consumers ,for examples. Thus , for the food safety and farmer organization in this paper would give high attention to marketing management. The agricultural product studied would be toxic free vegetable. The groups of farmers under study were the farmer group of Phai Rob sub district , Amphor Phopratabchang , Phichit province and the network of farmers growing toxic free vegetable of Bungpra sub district , Muang district , Phitsanulok province.

4.2 The Patterns of Toxic Free Vegetable Marketing in Thailand relating to the Mobilization of Farmer Grouping

This research would not try to define the differences among the organic, toxic free or safety vegetables. However , those vegetables would at least be certified one way or another by the outside organization in which it could be whether formal or informal certification. For convenience in writing this paper, those kinds of vegetables would be called in general toxic free vegetables. The market of these vegetables would also be called toxic free market or green market where no need to define it ,either. Things that would give more attention would be the physical output and outcome of the mobilization of those markets.

From literature reviews and the mobilization of many supporting organization mainly NGOs , the patterns of toxic free vegetable marketing of Thailand which were related to the mobilization of farmer grouping could be summarized as follows :

1. Local market was the very good start for toxic free vegetable of any farmer group. The quality of vegetables would be informal examined and certified by the community because they were neighbor. Farmers normally sell their products by themselves. Moreover , farmers could determine prices of their products. But the selling prices were not too much different from those chemical vegetables' prices. However , the farmers were willing to accept those prices because there was no marketing cost from the middlemen. Moreover , they received cash from their selling.

It could be said that buyers who bought toxic free vegetables from this market actually bought 'trust' from the producers. This type of marketing of toxic free vegetables was very succeed for the farmer group at village level because the farmer group of toxic free vegetable was normally a small group of farmers.

It could be said that this type of marketing was called 'production led market demand' because the kinds of vegetable depended on farmers' decision mostly produced seasonally. Since the farmer group of any village was a small group , the duplication of the kinds of vegetables produced would then be no problem. This type of marketing was usually

recommended to the farmer group of toxic free vegetable by the facilitators after they have succeeded in producing toxic free vegetable. Selling toxic free vegetable in the local market would make the circle of toxic free vegetable production process complete and real for farmers.

2. Market for only toxic free agricultural products. This type of market was a higher level of marketing. That was , when the number of farmer groups producing toxic free vegetable increased, the gathering of farmer groups for separating market of toxic free vegetables from those chemical vegetables would be another level of development. This would also separate the consumers. Making marketing this way , it could not only increase market channel for the farmers, but it could also automatically create the flow of 'green market' to the society which would have impact on the sustainability of the toxic free agriculture in the long run. However, making such a green market needed a lot of supports continuously. This was because such the products began to go away from the planting area. The consumers' trust in the quality of the products was then the important issue. Any information relating to production process and farmer groups would be necessary. Therefore , the activities such as campaign of any toxic free agriculture or even having the toxic free agriculture fair were needed to do continuously and expand extensively.

The success market for toxic free agricultural product are such as the im-boon market of Chiangmai province which has 17 markets distributing all over the province . The main organization continuously supporting of this market is the Institute of Sustainable Agriculture Community (ISAC). The market for toxic free agriculture products in front of the provincial administration organization of Surin Province every Saturday is another success market. The main organization continuously supporting is the Sustainable Agriculture foundation (Thailand). The other success market is the market of toxic free agriculture of Phichit province open every Friday and the main supporting organization is the Co-Development Phichit foundation. However , there are supports joining from many organization such as school and provincial administrator. The support depends solely on the vision of those administrators about the empowerment of the farmer in self reliance or the quality of environment and the farmer's health.

The Quality of vegetable sold in both types of market above mostly certified informal by 'trusting system' of the consumers to the farmer groups themselves.

3. Some toxic free vegetable markets need the formal certification for the product sold such as the toxic free agriculture products for the hospital kitchen. The certification could do in many style. For examples , the administration of the hospital would go visit the plant of the farmers such as the case of the network of farmers growing toxic free vegetable of Bungpra sub district , Muang district , Phitsanulok province or the certification system would be developed such as the Standard of Organic Agriculture of the Northern region or any acceptable certification system for agricultural product such as GAP(Good Agriculture Practice). This kind of market needs a lot of supports from the production process to the consumer's hand, not only the supports of technical know-how of producing toxic free products , but also the support of social side such as empowerment of farmer group. Therefore , it is a hard working and needs a continuous working.

4.3 Green Market of Phichit province :

4.3.1 Context

It could be said that the success of the Civil WOR POR ORE of Phichit province was mainly at the household level and it was more on the reduction in using agricultural chemical substances than quit using them. Pushing farmers after the training course to form a group to produce toxic-free agricultural products for market was a very difficult task.. This was because farmers faced many new and big questions including group management .The question got harder if the product was diversified such as vegetable. Just only the questions of what to produce , who was going to produce it , how much to produce and when to produce , the answers were not easy to find out . The situation got worse if the farmers must find these answers themselves.

Fortunately, there has been farmers who finished from the Civil WOR POR ORE training course could be able to form group and produce toxic-free vegetable. This good example is the toxic-free vegetable group of farmers of Phai Rob sub district . Amphor Phopratubchang , Phichit province.

The area of Phai Rob sub district is one of the main areas of producing vegetable normally using chemical substances. The middlemen would collect vegetable from farmers but farmers would get paid the next time of vegetable collection. For the price received , farmers would never know what price they would get at the time the middlemen collected their vegetables. They would know the price received only when they get paid. They had no bargaining power at all for their own products. However , farmers of this sub district had to sell their vegetables to the middlemen because they could not rely on themselves on marketing. Moreover, the production of each farmer was independent to each other . Therefore the kinds of vegetable produced and also the quantity produced were often problems. This was the main excuse of the middlemen for the low price paid. Even though , there was some farmers trying to produce toxic-free vegetable , but the prices received for their products were the same as the chemical vegetable prices. There was also trying for grouping to bargain for higher price with the middlemen but not succeeded because there were still a lot of farmers who were willing to received the price given by the middlemen. Hence , there was no incentive for farmers to grow toxic-free vegetable anymore.

Grouping for price bargaining turned to be the starting point of being the farmer group producing toxic-free vegetable later., Ms. Phairum Saerivong from the sub district public health station has induced this group into the training course of producing bio ferment hormone . This hormone was then tested to their families' vegetable garden and the result was very good. The leaders of the group have been also invited into many seminars and training programs of toxic-free vegetable of the local government and the province and have learned more about it ; not only the know-how of producing bio fertilizer and hormone , but also the benefits of producing toxic-free vegetable such as health. They also learned about cost of production and marketing. The toxic-free vegetable producing group was then established in July 15 , 2003 with Mr. Chompoo Phothisarnwaraporn as the chairman of the group , Mr. Visarn Thongtaomog as vice chairman and Mr. Term Raengaen as the treasurer. The member of the group was 31 persons on the day of establishment with 150 bahts of capital share per member.

For testing the market, they all agreed that each member must give 1/4 of their vegetable land for growing toxic-free vegetable hoping that the prices of their products would be higher than those conventional vegetables. Unfortunately , the middlemen still treat the toxic-free vegetables as the chemical vegetables. They did not separate the toxic-free vegetables from the chemical ones when they collected them from the farmers. The toxic-free vegetable group was then faced the same old problem ; unfair prices due to no bargaining

power. Even though unfair price problem was still exist , all members realized the lower cost of producing toxic-free vegetable.

Ms. Phairum Saerivong was invited to sell their toxic-free vegetable in many fairs organized by the province. The response from the market was not much because buyers did not trust the vegetable they bought whether it was the real toxic-free vegetable or not. This was because they had no idea about the group reputation and the product had no certification . Moreover , the travel cost of going to the fair was rather high resulted in the very low net profit. The number of farmers who still produced toxic-free vegetable was then reducing to 12 .

4.3.2 Input and Process : Marketing Development of Toxic-Free Vegetable of the group

The leaders of the group and some members have also joined the Civil WOR POR ORE training course of the Phichit Co-Development Foundation in 2004 which was the 8th class of this training course and sent more members to join this training course the next classes. The consequences of joining these courses was that the Phichit Co-Development foundation has opened the Natural Way Market in front of the foundation and invited all members of the natural agriculture and toxic-free food organization including farmer groups of toxic-free vegetable of Phai Rob sub district selling their products by themselves every Friday from noon to 7.00 p.m. The farmer group of Phai Rob sub district is the regular group selling toxic-free vegetable every week. (figure 4.1) . Some market problems have been alleviated. Farmers were satisfied with the prices received even though the selling prices were only 5-10% higher than the market vegetables. This was because they could determine the prices of their products. The consumers were also satisfied with the products because they believed in the reputation of the Phichit Co-Development Foundation in the role of sustainable agriculture mobilization.

Figure 4.1
The Natural Way Market in front of the Phichit Co-Development Foundation

Besides the market in front of the foundation , this group has sold their vegetable in the market opened in the sub district every Tuesday and Saturday because the reputation of this group in producing toxic-free vegetable were all well known in the area. This kind of market is called ‘ in sight market’ where everybody knows each other and farmers usually overlook it (figure 4.2). Moreover, the vegetable was sold to local merchants for selling in the area nearby for 2 more days. Therefore , members can collect vegetable for sell 5 days per week. The collection of vegetable from members starts at 7 to 10 a.m. (figure 4.3) . After that , the vegetable is ready to go to the market .

Figure 4.2
The ‘ in sight market’ at Phai Rob sub district for selling toxic-free vegetable of the group

Since there is 12 members, the problems of over supply and/or under supply and/or lacking of some kinds of vegetables occurred at the beginning of grouping. The decision what , when and how much to produce was independent among members. Normally, each member would determine from the market prices of vegetable they received and this caused those above problems. The consequence was the unstable of prices received . Moreover , the unsold vegetable was turned back to the members. The sign of insecurity of group was emerged.

Figure 4.3
The collection of each member ‘s vegetable

Until today , many market problems have been solved . Mr. Term Raenguen ,the treasurer of the group, who was responsible in collecting and selling vegetable knew that what kind of vegetable the market wanted and when they wanted . He could even evaluate the demand situation for each vegetable. He then brought the idea of “ managing each member production through the control of seed distributed to member ” into group discussion All members need to make agreement together of what , who , when and how much of vegetable to produce every month. The problems of over and under supply of some vegetables were

very much reduced . This method of management has also increased the diversification of vegetables and it has made consumers more satisfied (figure 4.4).

Figure 4.4
One of the member showed her yard-long bean and angled gourd garden

However , the prices received by the members were fluctuated sometime brought to the members' dissatisfaction . Thus, some members refused to produce some vegetables as agreement. The income stability was brought into group discussion. In solving the fluctuation in prices received , Mr. Term proposed that if members wanted to get stable revenue , the price must be rather stable for a long period of time. This meant that the prices received should be closed to the average price. This concept of price is "the guaranty price". All members agreed with this idea. And with the direct experiences in marketing , Mr. Term proposed next that he would be the one who would take the whole responsibility for the market. The member would get the guaranty prices which rather constant all year round for their products . They all agreed that if member would be survived , collector should be survived too , equally.

Besides joining with the activities organized by the Phichit Co-Development foundation , the leaders and member of the group have done activities with many organizations such as the Global Environment Facility (GEF) . The organic fertilizer group has been set up to service the members' production. The new coming activity is producing toxic-free rice. Because of the reputation of this group in green practicing, equipment and activities such as site visiting of this group are now supported by the local administration of Phai rob sub district.

4.3.3 Product : Development of Green Market of Phichit Province

From the mobilization of the Co-Development foundation on the issue of sustainable agriculture continuously through many activities including the WOR POR ORE training project , the number of farmers who convert their agriculture to more environmental friendly agriculture increases gradually including farmers growing toxic free vegetables which distributed in many sub districts of Phichit province. To empower those farmers , the foundation then provides the knowledge sharing forum from time to time for farmers to not only share their knowledge , but also the problems. The problems would then be solved together among farmers of different groups and the facilitators. This kind of activity is one

way of knowledge management which could increase the empowerment of the farmer group gradually. The key factor in this activity is the facilitator who stimulates the farmers in the forum to analyze the problems and how to manage those problems together. The persons of the Co-Development foundation and the network of the officers of the public health office of Phichit province are the facilitators in this case.

Green market mobilization of Phichit province started with the small market in front of the foundation every Friday. When the number of farmers growing toxic free vegetable increased , the green market then moved forward to open in the hospital area and could go into the menu of the hospital kitchen such as Thapanhinh hospital. When the number of farmer groups of toxic free agriculture products increases , the foundation took this opportunity to open the green market of Phichit province officially at the area nearby the foundation by inviting the provincial governor to open it (figure 4.5and 4.6) . The provincial governor then invited the foundation to open the other green market in the area of the city hall of the province.

Figure 4.5
The atmosphere of the green market of Phichit province
(source : Phitchit Co-Development Foundation)

Figure 4.6
The remaining toxic in the body examination service (left)and
the campaign for non foam using (right)
(source : Phitchit Co-Development Foundation)

4.3.4 Analyses of Factors Determining the Success of the Toxic-Free Vegetable Farmer Group of Phai Rob Sub district and the Green Market of Phichit Province

Until the year 2011 , the toxic-free vegetable farmer group of the Phai Rob sub district has produced and marketed their products continuously for almost 8 years. The success of this group could be explained by many factors as follows :

1) Give more attention to the local market nearby

   The local market or "the insight market " is the market where everybody is familiar to each other. The taste of the consumer is known. The quality of product produced can be observed. The information of demand and supply flows quite well . This kind of market is the controllable market . There is no need to advertise their product. The cost of marketing is low.

   Selling the toxic free vegetable in this market

2) Development for being the pro in managing the group

   Grouping was the only starting point of doing community business but not the success of group. Even though the target was business target , the management of this farmer group was not only based on business way of thinking , but also based on benefit sharing equally.

3) Self reliance for market is the main priority by learning about market , consumer behavior and market situation. Whenever there was a problem relating to market , the decision was based on the group discussion.

4) Network with the Co-Development Phichit foundation helped raise the ability of group in managing both production and marketing.

5) Knowledge management is the necessary tool in empowering farmer group . Facilitator is also the key factor in knowledge management. Both things need a continuously support otherwise the sustainability of grouping would be question.

4.4 The Network of Farmers Growing Toxic free Vegetable of Buengpra Sub district , Amphor Muang , Phitsanulok Province

Joining of farmers growing toxic free vegetable as network for joint benefit is an interesting example because this joining was mainly by farmer themselves. The joining was for both collecting products and supporting each other on factors of production such as organic fertilizer.

4.4.1 Context : Background of toxic free vegetable production in Phitsanulok province

There has been supporting of growing toxic free vegetable of Phitsanulok province before 1997 in the areas of 2 amphors. That was , the area of Matoom sub district of Amphor Promphiram and Buengpra sub district of Muang district where the area of Buengpra sub district was the biggest of vegetable of Phitsanulok province. This support was from the office of agriculture of the province. The support at first phase was only the technical training of producing toxic free vegetable such as soil preparation and producing organic fertilizer and pest management. After training , the farmer groups of toxic free vegetable were set up in each area. The beginning number of members was approximately 20-30 farmers. However, farmers had to produce organic fertilizer themselves. At the beginning of growing toxic free vegetable, farmers produced organic fertilizer together which was a very heavy burden to the farmers. This was because the quantity of organic fertilizer was not enough for all members since growing toxic free vegetable used more organic fertilizer than chemical fertilizer. Many farmers the turned to chemical fertilizer as usual. An important problem was the price received for their toxic free vegetables was indifferent to those chemical vegetables because

the merchants did not separate the toxic free vegetable from the chemical ones. Sometimes, the prices received for toxic free vegetables were lower than the prices of chemical vegetables because there were signs of insects biting. Farmers did not receive any incremental benefits of growing toxic free vegetable. The number of member were gradually decreasing. The farmer group of Buengpra sub district eventually stopped growing toxic free vegetable after 5 years of operation as a group. For farmer group of Matoom sub district , even though facing the same types of problems , they have tried to solve the problem of marketing by selling their products themselves. They brought their products to the market in Phitsanulok where it was 30 kilometers away from their plants to sell directly to the consumers. This way of marketing solved the price received effectively. With the remaining 5 members and with the increase in oil price , they had to quit this activity. However, they still sell their products in the local market nearby. With the reputation of the group, the consumers accept their product quiet well. They can determine their own prices. Normally , it is 5-10% higher than the same chemical vegetable.

Since 1998 , the flow of community empowerment has been increased starting from the supports of the Social Investment Fund project (SIF). One menu of project supported by SIF was the environmental project in which a lot of communities proposed the projects relating integrated agriculture and natural agriculture to SIF to get supports. These have brought the issue of sustainable agriculture back to public interests. But this time , NGO joining with communities tried to find the way to empower communities for the main purpose of selves reliance .After SIF project ended in 2003 , there have been the organizations having the same way of supports as SIF such as the office of Health Enhancement (OHE) , the Community Organization Development Institute (CODI) and the international organization such as Global Environment Facility (GEF) including the organization in which their supports were basically based on knowledge management such as Thailand Research Fund (TRF) and the office of Knowledge Management for Social (KMS) . The supports of these organization pay high attention on the participation of community starting from the beginning. However , the supports come with many conditions such as participatory evaluation with the community , knowledge management and extracting lessons learnt. These conditions have created many knowledge relating to community mobilizations which could be extended to the other areas. However , in doing these activities including managing the projects needed be well organized and systematically. It needed organization or at least group of people to do it. The main factor running those activities were facilitators whose roles were to link community to the external organizations. Their roles were as mentor or advisor for the community.

For Phitsanulok province, the consequences of these supports have increased a lot of farmers doing sustainable agriculture. For examples, the farmer groups growing toxic free vegetables in many sub districts of Amphor Naenmaprang , Phi kho don sub district of Muang district, Phun Sao sub district of Amphor Bangrakhum and in many sub districts of Amphor Nakornthai (figure 4.7 and 4.8) where the main markets are local markets.

4.4.2 Input and Process : Development of the Network of Farmers Growing Toxic free Vegetable of Buengpra Sub district , Amphor Muang , Phitsanulok Province

Before the year 2007, farmer named Angkavipa Adisakwattana who grew vegetables using solely chemical agricultural substances in the area of Buengpra sub district received the serious effects from those chemical agricultural substances using between 2000 – 2006 (figure 4.9). She tried to find substitutes for her vegetable production. After visiting the agricultural fair organized by Naresuan University , she has got the knowledge of biological substances for her vegetables. After testing those biological compounds with her vegetables , the results were very good. She then continued using those biological compounds in her plants. However

, these compounds needed to be ordered from Bangkok. She then turned to get advice from the center of pest management of Phitsanulok province. She got not only more of knowledge of insect control, but also the support of the biological compounds for her vegetable production later.

Figure 4.7
Farmer Group Growing Toxic free Vegetables of Amphor Naenmaprang

Figure 4.8
Farmer Group Growing Toxic free Vegetables of Phi kho don sub district of Muang district

Figure 4.9
Conventional Chemical Vegetable Growing in Buengpra Sub district, Phitsanulok Province

Unfortunately , the prices received for her toxic free vegetable were not different from those chemical vegetables. She then used the strategy of separating toxic free vegetables from those chemical ones by selling her products directly to the consumers. By choosing the consumers who concerned more on health, she chose to sell her products directly to the officers of the general hospital of Phitsanulok province. Moreover , she invited those officers to visit her plant. With the coordination of the officer of the agriculture of Phitsanulok province and the more of confidence in the quality of the toxic free vegetable , the administrator of the hospital then opened the toxic free agricultural products in the area of the hospital on every Friday and increase to 3 days per week ; Monday , Wednesday and Friday (figure 4.10). The products of Mrs. Angkavipa were then qualified for selling in this market after selling directly for almost 1 year.

Figure 4.10
Toxic Free Product Market in the Area of the Hospital of Phitsanulok Province

Also , with the advice of the officer of the agriculture of Phitsanulok province in forming community business group to receive help more convenient from the province , the group of farmers growing toxic free vegetables of Buengpra sub district was then formed with 17 members. The first help getting from the office of agriculture was the development of group to get GAP certification for their products(Good Agriculture Practice). And with the coordination of the officer of the agriculture of Phitsanulok province again , the products of group can sell in the private hospital in Phitsanulok for 2 more days.

The consequence of selling toxic free vegetables in the province's hospital was the opportunity to know the other farmers growing toxic free vegetables of the other areas of Phitsanulok. When the administrator of the Phitsanulok hospital got the policy to bring toxic free vegetable into the menu of the hospital 's kitchen , Mrs. Angkavipa then coordinated the other farmers growing toxic free vegetables. Some were from knowing in the market of the hospital , the other were from the advice of the officer of the agriculture of Phitsanulok province. Mrs. Angkavipa then visited the plants of each farmer group to observe and evaluate their potential of producing toxic free vegetables before proposing the project of supplying toxic free vegetables to the hospital.

However , the order of the hospital was uncertain at first period because the hospital still ordered some chemical vegetable from the external supplier which group could not supply. Mrs. Angkavipa then rearranged the production of the group especially the production of the 'market' vegetable which hospital needed. By asking for the menu of food of the hospital in advance 1 month, the production of each member of the network was then planned.

The hospital then got vegetables in both quantity and time they needed. With the information of price received , paying cash is the main strategy used when the member bring his /her products to the collecting point at Mrs. Angkavipa's place. Even though , the prices received sometimes equal the market price , all member still satisfied because of the paying cash strategy. Usually the prices are a little higher than the market prices. Mrs.Angkavipa still propose local vegetables into the list of the vegetables because local vegetables are the ones freed of toxic naturally. Moreover , those local vegetable are usually from the small farmers who done integrated agriculture (figure 4.11).

Figure 4.11
The Integrated Agricultural Plant with many local Vegetable of The Network 's Member

The strength point of this network is the diversification of the kinds of product. For vegetables, there are both 'market vegetable' such as swamp cabbage , lettuce and Chinese parsley and local vegetables mostly from natural sources. They also have toxic free fruits and rice (figure 4.12 - 13).

Figure 4.12
Lemon and banana from the plants of members

Figure 4.13
Mrs. Angkhavipha with Mangoes and Pomelo from the plants of members

Not only the diversification of vegetables and fruits , but also the factors of production. Some of the members are producers of organic fertilizer and biological insecticide. This is another advantage of this network. So , members are able to reduce the cost of production by buying these inputs at the members' prices (figure 4.14).

Figure 4.14
Mr. Mongkhon Khochanin and Mr. Mongkhon Mahachoo
the leaders of the Organic Fertilizer group of Makhamsung sub district , Muang district

With the reputation of this network in producing toxic free vegetables and the collection point of vegetables is not far from the city and with the convenient of transportation , there is then the new pattern of marketing called vegetable delivery. That is, there are persons collecting vegetables from this network and delivery directly to the houses of consumers (figure 4.15). This group of consumers are mostly the middle class consumers who have not much time to go to the market but want to consume the good quality of products. This kind of marketing is extending in Phitsanulok province. Moreover , the products of this network are now going to the shelve of the TOP super market , Phitsanulok province branch.

Figure 4.15
Collector of Vegetable for Delivery Marketing

The quantity of vegetables of this network going into the hospital's kitchen was approximately 500-600 kilograms per day purchasing from members by cash everyday , averaging not less than 8,000 bahts per day. However, hospital would pay for vegetables every 2 weeks. The leader of this network needed to pay in advance not less than 100,000 bahts per 2 weeks. This problem was reduced when each member shared

4.4.3 Product

The outcome of the operation of this group is not only the ability in selling their products continuously, but the more even important outcome is the ability of small scaled farmers to rely more on themselves and the important by products are the farmers' health and the environment. This mobilization could increase the confidence that sustainable agriculture could be a good alternative for farmers of Phitsanulok province. Moreover, this network of farmers growing toxic free vegetables has made the strategy of safe-agriculture of Phitsanulok became true.

4.5 Analyses of Factors Determining Success of Farmer Group

Factors determining success of this network of farmers could be summarized as follows :

1. Potential of group leader in solving problems

   Various types of problems could be solved mainly by the leader of this network ; starting from the potential of finding alternatives for own problems : from effects of producing chemical vegetable received to toxic free vegetable producing , from purchasing problem of the middlemen in not separating toxic free vegetables from the chemical ones , and for group's problems : from the duplication problem of vegetables of each member produced to production management of group, price determination with cash received and from the problem of paying attention only on the market vegetables in the hospital's menu to the increase an important of local vegetables in their menu.
2. The success of this networks depended also on the coordination potential of the leader and the supports of those organizations such as the officers of agriculture of the province , hospital and the local administrator of Buengpra sub district. These supports have increased the potential of both production and marketing.

3. The diversification of members' qualification in producing toxic free vegetables and factors of production such as organic fertilizer and biological substances could help marketing management more easier. Supporting each other is also the result of this characteristic.

Chapter V
Conclusions and Recommendations

The problem of food security of Thailand seemed more clear when determined to the level of small scaled farmers and community in all dimensions of food security : food availability , food accessibility , food safety and food sustainability. The sources of food insecurity were from both internal factors which was the farmers' behavior or communities in utilizing resources unsustainable and external factors which increased more pressure on the insecurity situation. These external factors were the oil crisis , the energy crop policy of the government and the price policy which induced environmental problem from increasing in chemical agriculture. Fortunately, there were many farmer groups and communities still tried to maintain resource bases for being sources of food for their communities mainly by themselves in which the problems of food security were alleviated. The extraction of lessons learnt from their mobilization were then be the main objective of this research for being the good practices for other communities including recommendation of appropriate supports. Communities and farmer groups selected as cases studied would cover every dimension of food security. Each case study would cover more than one dimension. Communities and farmer groups for each dimension of food security of this study were as follows :

I. Food Availability ,Food Accessibility and Food Sustainability : Communities being cases studied included :

1. Community forests
   - 1.1 Community forest of Wang Num Lad sub district , Phi Sa Li District, Nakornsawan province
   - 1.2 Forest of Baan Dan Na Kham sub district , Muang District, Utratit province
2. Local fishery
   - 2.1 Local fishery group of Chao Hlao bay , Chanthaburi province
   - 2.2 Network for collective coastal management , Trat province

II. Food Availability ,Food Safety and Food Sustainability : Communities being cases studied included :

3. Farmer school and any change agent efforts
   - 3.1 Farmer school of Nakornsawan province
   - 3.2 Chang Agent training course of Phichit Co-Development Foundation , Phitchit province

III. Food Safety and Food accessibility : Communities being cases studied included :

4. Green market
   - 4.1 Free Toxic Vegetable farmer group of BuengPra sub district , Phitsanulok province
   - 4.2 Green market under the natural agriculture and free toxic food association of Phitchit province

And to increase the results of study more acceptable in general, more of literature reviews were also done in each case. This could give more weight on the conclusions of the study and hopefully that the recommendations would be acceptable in general. The extraction of lesson learnt was done under the CIPP model(Context , Inputs , Process , Proudcts). The conclusions of the study were as follows :

1. Context

Food insecurity for communities came from many sources :

1) For cases of community forests and mangrove , the forest concession of the government was the origin of effects received by the communities. That was , people who ever got the benefits including food from the forest utilization was affected by these concessions. In case of mangrove , the concession had destroyed resource bases for marine fish, shrimp and crab. The conflict between communities and the government on the utilization right whether who owned the forest or mangrove . The question of why only government got the benefit from these resources and this was an answer of invasion into the forest and mangrove of the communities. The following effects because of the reduction in forest areas due to both concession and communities' invasion were flood and drought in the area nearby. Many communities then turned to reserve and maintain the remaining forests and mangroves near their communities for the main objective of food security.
2) For cases of farmer school , the project of creating change agents or WOR POR ORE project and green market , it was found that the problem of being in debt of farmers became the serious problem. The origin of this problem came from mono cropping in which farmers relied heavily on external factors of production starting from seed and chemical agricultural substances including market. These factors were uncontrollable factors by farmers. Debts were growing because of the oil crisis. Moreover , many key factors such as chemical fertilizer and insecticide were imported products. It was also found that farmers' health were affected from those inputs' utilization in which the rate of illness per 100,000 population due to those agricultural chemical substances was 15.93 per 100,000 people in 2006 higher than standard level.

2. Inputs

It was found that the important factors in mobilizing those problems above successfully were :

1) Social Capital

Key social capital was the group of people mobilizing the problems. The combination of this group was various. However , the main part of the group was the community itself in term of the gathering of communities' leaders who realized the same problem such as the cases of community forest , mangrove and local fishery. Many communities worked with the NGO who worked in the area such as the cases of farmer school and farmer groups growing free-toxic vegetables.

Another important social capital was local wisdom which came with local wised men. These social capitals were determined for being alternatives for farmers in solving their problems. Farmers were familiar with these alternatives but their roles were reduced when the role of chemical agriculture came into effect in the agricultural sector.

2) Supporting

It was found that the succeeded mobilization and problems could be solved sustainably , the appropriate supports were the main factor. In all cases studied , it was found that the characteristics of supports paid most important on " the increasing in the ability in self reliance of community or farmer group in the long run" starting from the believe that " problems belonged to community , problem solving must start at community". Those organizations whose supports were such that were SAVE THE CHILDREN organization, the Social Investment Fund (SIF) , the Global Environmental Facility (GEF) under the United Nations Development Programme

(UNDP), the Office of Health Enhancement (OHE) , the Community Organization Development Institute (CODI), Thailand Research Fund (TRF) and the Knowledge Management Institute for Society (KMIS).

3) In cases of green market and farmer school , or the determination of fishing area for local fishery of Chantaburi province , " visions of the administrators of the relating organization" such as the provincial administrator , the administrator of the hospital or school were the inverting points of successfully mobilization. These visions stepped over the traditional culture of organization in the old system. These visions help raise the mobilization level of community from group level into community level as a whole.

3. Process

The mobilization process was as important as inputs. It was found that the effective mobilization paid most important on these following issues :

1) Mobilizing problems under the participation of community and mobilized with data and knowledge. Starting from the creation of problem realization to the farmer group and extended to the community , community needed to search for the sources of problems , collected and analyzed data by themselves and used these knowledge to be the bases for solving the problems at the origin of the problems. Debt problem of farmers , the effects of forest and mangrove deterioration , the reduction of blue crab for local fishery and the effects of chemical agriculture on cost of production , farmers' health and the quality of soil and water were all from the process of participatory mobilizations.

2) The problems were solved under the implementing learning process , both learning when joining the training project and learning by implementing in their farms after training finished. That was, the supports covered not only training, but covered to the implementing period. The monitoring and self evaluation activities were then necessary especially the sharing knowledge activity. These activities would not only increase knowledge , but would also create and extend new knowledge. These knowledge are the real knowledge because they were all proved by implementation. These activities were part of learning process.

These activities would be effective instruments for group empowerment if they are implementing continuously. Main factors in learning activities needed efficient **facilitators** to stimulate and to encourage farmers or community to share experiences in doing agriculture among each other. Facilitators could be NGOs such as the Phitchit Co- Development foundation and the Nakorn Sawan forum or leaders of farmer group or communities such as the cases of communities' forest of Nakorn Sawan province and Uttradit province , mangrove of Trat province , local fishery of Chantaburi province. However , those leaders must be acceptable of the communities in general.

The other roles of facilitators were coordinating between communities and the external organization including those supporting organization above. Even though the results of these learning processes were effective in the long run , learning process to stimulate and encourage communities must do continuously because problems of farmer groups or communities were various. Unfortunately , most of the government supports were short run projects such as training project for a very short period of time in which the evaluated result was the number of farmer participating in the project not the ability to solve the real problems of the farmers . The learning process was then

ignored automatically. It might be that the government agents were not trained to do the facilitating role.

3) Giving importance to alternative agriculture based on local wisdom and true knowledge from implementation as problem solving instrument.

The agriculture based on local wisdom and environmental friendly was alternatives which farmers were convenient to access easily . Content , implementing technique and able to do it by themselves were all characteristics of these alternatives. Moreover , these alternatives were passing on to the farmers by the local wise-men. Therefore , they were acceptable easily by the farmers and were able to be implemented immediately. These alternatives usually use raw materials in the area.

Unfortunately , there are not too many institutes offering these alternative agriculture mostly implemented by NGOs. Recently , many alternative agricultures and instruments to empower community such as community plan were accepted by many governmental organizations such as the Office of Agricultural Extension (OAE) ,Bank of Agriculture and Cooperatives and the Division of Community Development. However , only technical know-how was passed on to farmers. The learning process was not supported. Therefore , monitoring and self evaluation were missing. After , the training project ended , change was then minimal. This was to say that the government interested only the forms of alternative agriculture , but not the whole concept of the process. Therefore , the results were then indifferent to the same old projects done by the government.

4) Networking

The more complex problems faced by the farmers , the more integration of organizations as network was needed to mobilize them. The main objective of this networking were not only to solve problems more efficiently , but to push the recommendation up to policy implication such as community forest law. The mobilization of fishing boundary for local fishery was the necessary issue for small scaled local fishery to protect themselves from those commercial fishery. The mobilization of alternative agriculture being one of the main strategy of the country was necessary for small scaled farmers. Or the mobilization of safety food for patient in the hospital in the case of green market.

4. Product

Products resulting from the mobilization process and inputs above were as follows :

1) The problems of food security in all dimensions were manageable in all cases above. In many cases such as mangrove , local fishery and farmer groups growing free-toxic vegetables , the revenue of farmers were also secured. In case of farmer school, not only the problem of the low quality of rice seed was solved , but it was developed to the community commercial level.

2) Resource bases of food for communities in all cases were all restored and sustainable managed.

3) The learning of alternative agriculture increased alternatives in solving problems for farmers especially small scaled farmers. These alternatives were for production side : inputs and techniques , and market.

4) Farmers and communities could be able to rely more on themselves from the learning process, through farmer network and networking with the other supporting organization.

4.5 The obvious by products were the better health of both farmers and consumers and the quality of environment.

5. Obstacles of Alternative Agriculture Mobilization

Even though the problem of food security of farmers and communities were obviously alleviated , there were still many obstacles to the mobilization of alternative agriculture.

1) The subsidized price policy of the main crops such as rice and maize

The very high subsidized price for many crops at present as the sole policy for agriculture sector would be the concrete incentive for the farmers in general to increase using chemical agricultural substances. This policy destroys not only the market mechanism , but also destroy the self reliance system of the farmer. It could be that the old problems of debt , health and environment might turn back to the farmers again.

2) The expansion of para rubber production area has made the reduction in forest area.

3) The uncertainty of food security strategy of the government and not seriously supporting the alternative agriculture are weakening the ability of farmers to rely on themselves.

6. Obstacles of Community Forest , Mangrove and Local Fishery Mobilization

1) Poverty of community has made community forests are still at risk for unsustainable utilization
2) There is still not an appropriate support from the government or the local administrator in maintaining resource bases such as local fishery and mangrove

7. Recommendations

To secure food for community based on self reliance strategy , the recommendation are :

1) The support of alternative agriculture to be one of the main strategies of the agricultural sector of the country must be done immediately. This could be done by setting the project that any community or farmer organization could be access more conveniently and manageable by the community or farmer organization.

2) Learning process must be the necessary condition in the proposed project.

3) Increasing the number of facilitators especially local facilitators is necessary

4) The maintaining of natural resource such as community forest , mangrove and alternative agriculture should be one of the main legal codes of every local administration.

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