PAPUSSA

Production in Aquatic Peri-Urban Systems in Southeast Asia

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Participatory Community Appraisal in Suan Prix Thai Village, Muang District, Pathumthani Province, Thailand

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1. Acronyms and terms

AIT	Asian Institute of Technology, Bangkok
KU	Kasetsart University, Bangkok
klong	Thai name for canal
KVL	Kgl. Veterinær-og Landbohøjskole
NIHE	National Institute of Health and Epidemiology, Hanoi
PAPUSSA	Production in Aquatic Peri-Urban Systems in outheast Asia
PAFPS	Peri-urban aquatic food production systems
PCA	Participatory community assessment
PU	Peri-urban
PUAFPS	Peri-urban aquatic food production system
RIA1	Research Institute for Aquaculture No. 1, Hanoi
RUA	Royal University of Agriculture, Phnom Penh
SOS	State of the System
UAF	University of Agriculture and Forestry, Ho Chi Minh City
UD	University of Durham, UK
UOS	University of Stirling, UK
HHs	Households

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5. Introduction

A workshop on Participatory Community Appraisal (PCA) was held at Suan Prix Thai Village, Muang District, Pathumtani Province on November 2-7, 2003.

The community of Suan Prix Thai Village is indicative of peri-urban aquatic food production systems in Bangkok, producing largely catfish for domestic markets. The community was thus ideal in meeting the objective of PCA which was to study the aquatic production systems in peri-urban areas around Bangkok. To conduct this investigation a workshop was organized to learn about the community's livelihoods, history, special characteristics, activities, resources utilization, food consumption and seasonal variation, as well as to study impacts of the production systems on health and hygiene and to find possible solutions to any discovered problem.

Results of the workshop were later presented to the villagers for validation and comments before revising and submitting to the SOS meeting.

The report provides an overview of Suan Prix Thai Village with a focus on issues that are relevant to the project such as wastewater, environmental impacts and health problems. Since this village locates along the Chiang-Rak Noi canal which is the main source of water supply for fish culture. Utilization of a canal by growing an aquatic plant, water mimosa, is another important livelihood of these villagers. However, rapidly urbanization may unfortunately result in conversion of Suan Prix Thai Village into housing estates and factories in the nearby future.

6. Description of Suan Prix Thai Village

6.1 Location

Suan Prix Thai Village is located at Muang District, Pathumthani Province. The village is generally a wetland area, with Chiang-Rak Noi canal as the main source of water for growing mimosa and as the water supply for fish culture in this community. Close proximity to the canal has often made the village vulnerable to flooding in the rainy season.

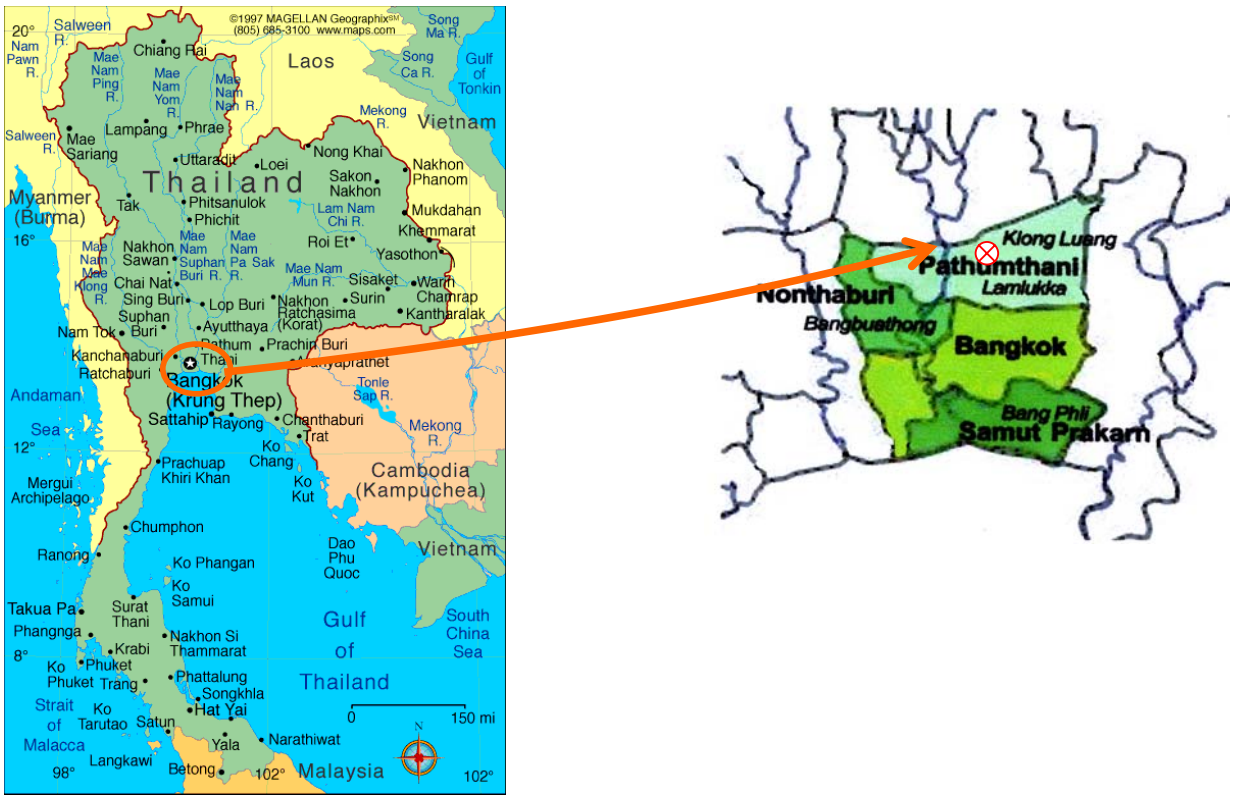

Figure 1 Map of Thailand showing the overview of peri-urban areas surrounding Bangkok with the location of the Suan Prix Thai Village in Pathumthani Province.

6.2 Population

The village accommodates a total of 94 households, with 413 individuals of relatively equal genders (212 males and 201 females). Growing water mimosa and integrated fish cultivation are the main occupations of the villagers. Other income generating activities in Suan Prix Thai village are shown in Figure 2 (Lumsai Tambon Executive Organizer).

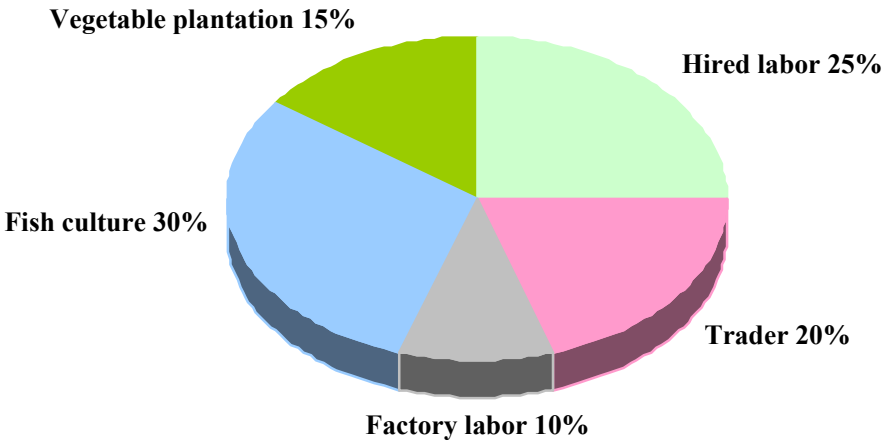

Figure 2 Occupations in Suan Prix Thai Village

6.3 Ethnic composition

Most residents at Suan Prix Thai Village were Muslims who had migrated from Southern Thailand since the reign of King Rama V. Water mimosa plantation in Chiang-Rak Noi Canal was identified as the preferred occupation of the Muslims, while Chinese descendants of the village were found to mostly operate integrated fish farms.

7. Social characteristics of the community

7.1 Socio-economic status

Socio-economic assessment of the villagers was conducted by consulting with the head of the local administration, the village headman and an officer from the local fisheries office. Results of the assessment are summarized in Figure 3. In this assessment the wealthy were identified as households with income exceeding their expenses. The moderately wealthy consisted of households with income relatively equal to their expenses, whilst the poor were those with a deficit in their earning. The moderately wealthy were found to make up 63.9% of the total population of Suan Prix Thai Village, while the poor accounted for 36.1 %.

Table 1 Ranking of wealth in Suan Prix Thai Village

Status	Number of households of family	%
Wealthy	26	42.6
Moderately wealthy	13	21.3
Poor	22	36.1
Total	61	100

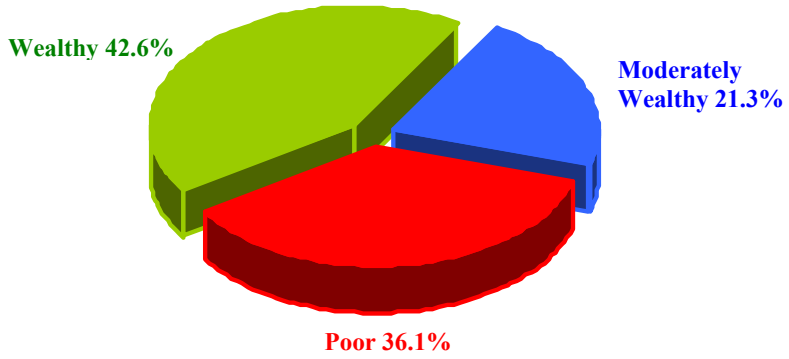

Figure 3 Wealth status of the villagers based on opinions of the representatives

7.2 Food consumption

Food consumption in the year round presented by participants from PCA workshop is summarized in Table 2. Pork, poultry and fish were found to be the main general sources of protein for the villagers except for a Muslim group which does not

eat pork with chicken being the major meat for their household consumption. These foods are often bought from nearby local fresh markets within their village or available from mobile merchants daily. The villagers also acquire fish from their own ponds and grow water mimosa in the canal for their household consumption as well as for sharing with their neighbours. Native household vegetables such as chilli and chinese water spinach are also grown in some households, while fruits such as papaya, guava, water melon, and mango are observed in some village orchards. Canned food is typically found in every household due to its long shelf life and ease for preparation.

Table 2 Food consumption throughout a year

Kind of Food	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Rice	→	→	→	→	→	→	→	→	→	→	→	→
Pork	→	→	→	→	→	→	→	→	→	→	→	→
Beef	→	→	→	→	→	→	→	→	→	→	→	→
Chicken	→	→	→	→	→	→	→	→	→	→	→	→
Fish	⇢	⇢	⇢	⇢	⇢	⇢	⇢	⇢	⇢	⇢	⇢	⇢
	→	→	→	→	→	→	→	→	→	→	→	→
General Vegetable	→	→	→	→	→	→	→	→	→	→	→	→
Water mimosa	⇢	⇢	⇢	⇢	⇢	⇢	⇢	⇢	⇢	⇢	⇢	⇢
	→	→	→	→	→	→	→	→	→	→	→	→
Fruit	→	→	→	→	→	→	→	→	→	→	→	→
Canned Food	→	→	→	→	→	→	→	→	→	→	→	→

Note: → Purchase ⇢ Self-Produced ⇢ Available in Nature

7.3 Activity profile

Daily activities of male and female villagers presented during PCA workshop are as shown in Figures 4 and 5.

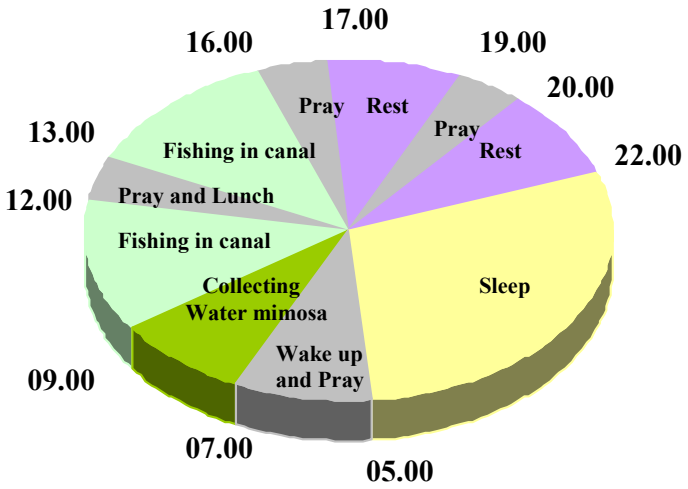

Figure 4 Daily activities of male residents

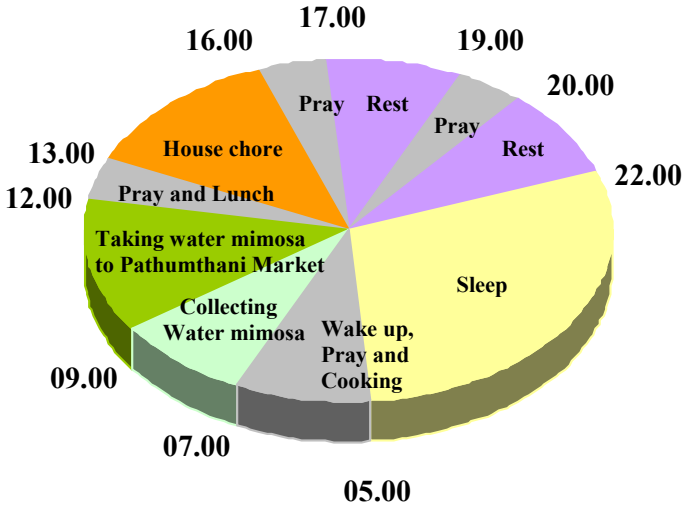

Figure 5 Daily activities of female residents

8. Characteristics and resources utilization of the community

8.1 Map of the community

A map of the community was drawn up by participations of represented villagers as shown in Figure 6.

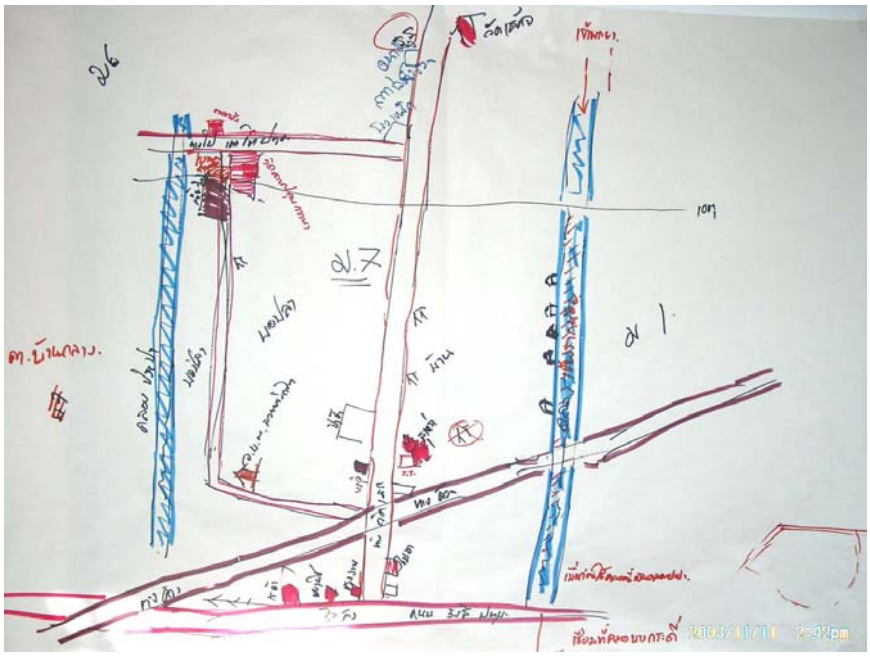

Figure 6 Map of the community in Suan Prix Thai Village

8.2 All year round activities

Activities that carried out all year round addressed by representative participants from PCA workshop are summarised by in Table 1. Integrated pig-fish farming, water mimosa plantation, trade and hired labour were identified as the main income generating activities of the villagers. The all year round activities are presented for 2 groups of villagers, wealthy and poor, as shown in Tables 3 and 4.

Table 3 All year round activities of rich villagers in Suan Prix Thai Village.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Weather	Winter	Late Winter	Summer		Early Rainy Season	Rainy Season					Early Winter	Winter
Economic activities Integrated Fish Culture (Pig+Fish)	Harvesting							Larval Fish Stocking				
Hybrid Catfish Culture	Harvesting	Larval Fish Stocking			Harvesting	Larval Fish Stocking			Harvesting	Larval Fish Stocking		
Field Crops Water mimosa	Planting	Harvesting		Planting	Harvesting		Planting	Harvesting		Planting	Harvesting	

Table 4 All year round activities of poor villagers in Suan Prix Thai Village.

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	July	Aug.	Sep.	Oct.	Nov.	Dec.
Weather	Winter	Late Winter	Summer		Early Rainy Season	Rainy Season			Late Rainy Season		Early Winter	Winter
Economic activities Hired Labor	All Year Round											
Field Crops Water Mimosa	Planting	Harvesting		Planting	Harvesting		Planting	Harvesting		Planting	Harvesting	
Corn Cultivation	All Year Round											
Fishing	All Year Round											
Native Chicken Culture	All Year Round											

It can be seen from Table 3 that rich villagers were found to earn their living from fish farming, water mimosa cultivation and pig farming. Of these fish farming and water mimosa cultivation were identified as the most common. Hybrid catfish and Pangasius were recorded as the preferred species for fish farming which is often carried out together with pig farming. They usually have pig farms located on/nearby to the fish ponds. Water mimosa plantations are mostly found in the Chiang Rak Noi Canal. Villagers can acquire seeds from either Tai market or their neighbours. Water mimosa can be harvested on a daily basis giving with the full-grown plants being replaced through regular planting.

Hired labor, farming native chickens and water mimosa cultivation were found to be all year round activities amongst the poorer participants (Table 4). Most of the poor, particularly the youths, were found working in factories however.

8.3 Water resource utilization

The findings from the water resource flow mapping activity allowed identification of activities and their input/ output as shown in Figure 7.

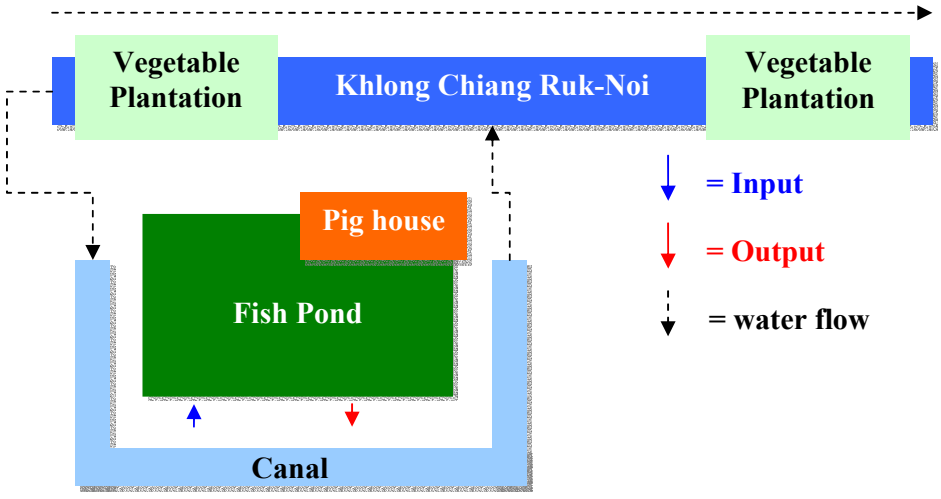

Figure 7 Water resource Flow in Suan Prix Thai Village

9. Historical timeline

Historical timeline of Suan Prix Thai Village is shown in Figure 8. According to the villagers the village was found during the reign of King Rama IV. The early settlers were rice farmers who later benefited from construction of Bang Kadee Water Gate in 1943. The name 'Suan Prix Thai" (pepper farms) derived from pepper seedlings provided to the locals by King Rama V for farming. Canals continued to be the main route for transportation until 1975 when P.M. Kuegrit Pramote decided to construct a road and a new irrigation canal. These projects resulted in some villagers selling off their lands which were partially bought up by ethnic Chinese for fish farming. The road was completed in 1977 while construction of the canals in Chiang Rak Noi was finalized later in 1980. With the canal the Muslims began to grow water mimosa. The cultivation was severely affected by major flooding in 1981 and 1983. Flooding has regularly occurred during rainy seasons ever since.

Water gates have been constructed in Chiang Rak Noi Canal to prevent flooding. Recently, water shortage became a problem in the dry season forcing villagers to buy water from outside. Wastewater effluents discharging from nearby factories and housing estates has contributed significantly to water pollution in the canal, most evidently in the month of October when a strong odor is emitted from the canal. High level of contamination during this month effectively makes the canal unusable for water mimosa cultivation or consumption.

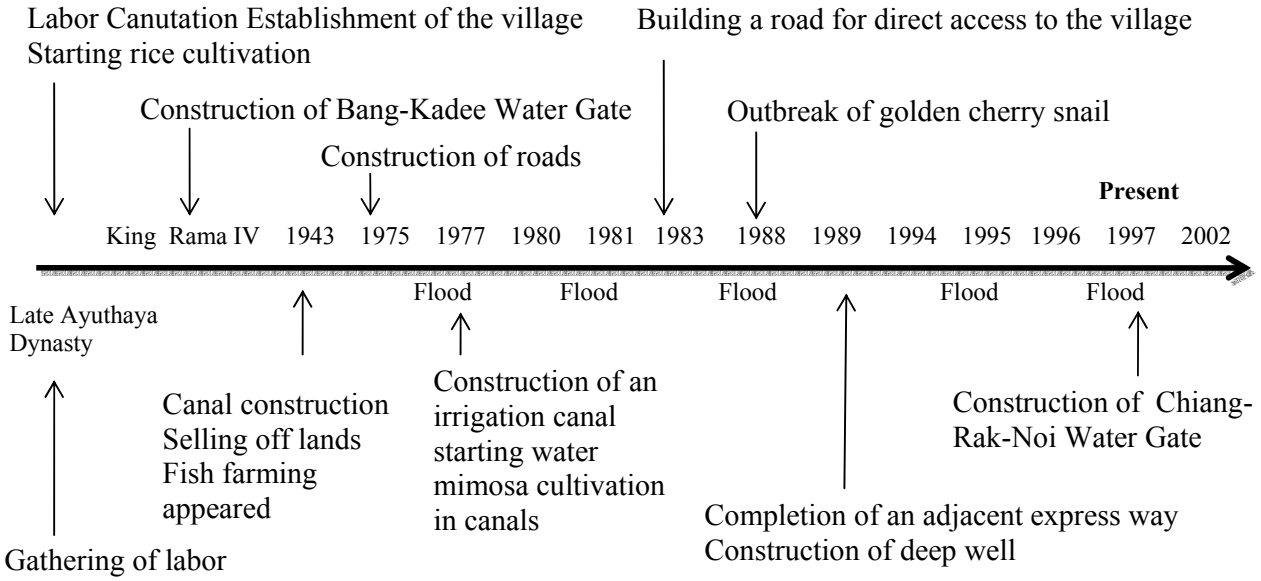

Figure 8 Historical timeline of Suan Prix Thai Village

10. Priority problems

Each representatives villager participated PCA workshop was received twenty black bean seed before scoring to freely vote on the proposed lists of serious problems facing their village. Men and women gave a score separately. One seed means one mark of voting. Ranking problems were considered based on the results of both men and women. These priority problems are summarized below in Table 5.

Table 5 Priority problems of Suan Prix Thai Village

Issues	Male	Ranking	Female	Ranking	Total	Ranking
Flooding	6	**2**	30	**1**	**36**	**1**
Low commodity price	8	**1**	19	**3**	**27**	**3**
A spread of Golden cherry snail	1	4	12	6	13	6
No market	0		14	4	14	4
Waste water	1	4	27	**2**	**28**	**2**
High price of fish feed	5	**3**	4	8	9	7
Disease	0		8	7	8	8
Water hyacinth	0		14	4	14	4
No money	1	4	0		1	9

Annual flooding, low commodity price and wastewater are similarly serious problems given by male and female villagers. Annual flooding occurs during the months of November and December causing serious damage to fish ponds and effectively wiping out their stocks. This has forced farmers to harvest before the rainy season. Low return for agricultural products was identified by the villagers as a result of their dependency on middlemen in getting their products to market. The villagers further identify establishment of co-operatives for specific products as a possible remedy for this problem. Wastewater mostly occurred during dry season (April) due to the lowest water level in canals. Golden cherry snail was documented at the workshop as the main threat for water mimosa cultivation. The villagers explicitly expressed their wish for effective solutions to this and other problems as soon as possible.

In summary, there was found that aquatic food production had a very significant role on the community's livelihoods of Suan Prix Thai Village. Chiang Rak Noi Canal was the very important water resource used for the aquatic food production for the village. However the rapid urbanization is expected to be a crucial impact on the community's livelihoods and aquatic food production systems in the future.

Appendix

Preparation of activity introduced by the head of project to participants

Participants were Brainstorming during in workshop