

**INCO: International Scientific Cooperation Projects (1998-2002)**  
**Contact number: ICA4-CT-2002-10020**

**Participatory Community Assessment in Tnout Chrum Village,  
Beung Tumpun Square, Mean Chey District, Phnom Penh City**

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Keywords: PCA, participatory community assessment, peri-urban aquatic food production, Southeast Asia, Phnom Penh, Cambodia

Project homepage: <http://www.ruaf.org/papussa>

**Contract number : ICA4-CT-2002-10020**

**TITLE : PRODUCTION IN AQUATIC PERI-URBAN SYSTEMS IN SOUTHEAST ASIA**

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## **Glossary**

### Acronyms and terms

EU	: European Union
INCO	: International Scientific Cooperation Projects
PAPUSSA	: Production in Aquatic Peri-urban Systems in Southeast Asia
PCA	: Participatory Community Assessment
RUA	: Royal University of Agriculture Phnom Penh
AIT	: Asian Institute of Technology
UD	: University of Durham (UK)
UoS	: University of Stirling (UK)

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## **Abstract**

Participatory community assessment (PCA) plays an important part in Work Package1 of the PAPUSSA project. Its major objective is to describe the livelihoods, character, history, resources and problems of specific communities to be chosen for succeeding work packages. The PCA in Tnout Chrum village, a peri-urban area of Phnom Penh where morning glory is common grown in the nearby lake was conducted between 13<sup>th</sup> - 17<sup>th</sup> October 2003 and had 22 participants involving aquatic plant producers, traders, government worker, and other villagers involving in various jobs.

Living standards in Tnout Chrum were divided according to key informants into 4 levels: rich (17%-19%), average (30%-40%), poor (27%-34%) and very poor (16%-17%). There is a noticeable rise of garment factories from 1993 resulting in problems with poor water quality. Now it is seen as more and more harmful to people's health and their agricultural and aquacultural productivity in the lake. From 1991 to 1999 there have been several NGOs which have come to help the villagers such as MARINOL and UNICEF. As heavy annual flooding occurs in the rainy season (July to October), villagers built their houses to be high off the ground above the flooding level. Some have to move their accommodation from the flooded area in Boeung Cheung Ek Lake to higher land.

Major problems in the village include: not being able to support their children to go to school, owing money/debt, lack of capital to do business, health problems, morning glory market is too small..

# 1. Introduction

## 1.1. Background

PAPUSSA is a 3 year EC funded project, which started in January 2003 working in 4 South East Asian cities: Hanoi and Ho Chi Minh City in Vietnam, Phnom Penh in Cambodia and Bangkok in Thailand. Its objectives are to better understand and describe the varied aquatic production systems and the communities relying or affected by them in peri-urban areas of these 4 cities. In order to get a better understanding of these particular communities Participatory Community Analyses (PCA) were carried out in 4 selected peri-urban communities in each city. This report describes the findings of the PCA carried out between 13<sup>th</sup> - 17<sup>th</sup> October 2003 in Tnout Chrum village, Phnom Penh

Tnout Chrum is located in Beoung Tumpun quarter, Mean Chey district, Phnom Penh city around 5 Km south of Phnom Penh with Beong Cheng Ek lake to the west and Speou lake to the south. The two lakes were designated as the fishing lot No.18 before year 2000 but now have been used by the communities around the lakes. There are 4,504 women among 8,747 inhabitants in the village which is divided into 18 groups<sup>1</sup> as below (*Boeng Tumpun quarter, 2003*)

Table 1.1 Number of Households by Group in Tnout Chrum Village

Group	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Households	85	51	91	76	112	103	66	100	32	59	56	73	112	102	58	74	94	60

Amongst these 18 groups, there are 3 groups in which a significant proportion of people (20% of villagers) depend on the lake for earning their livings.

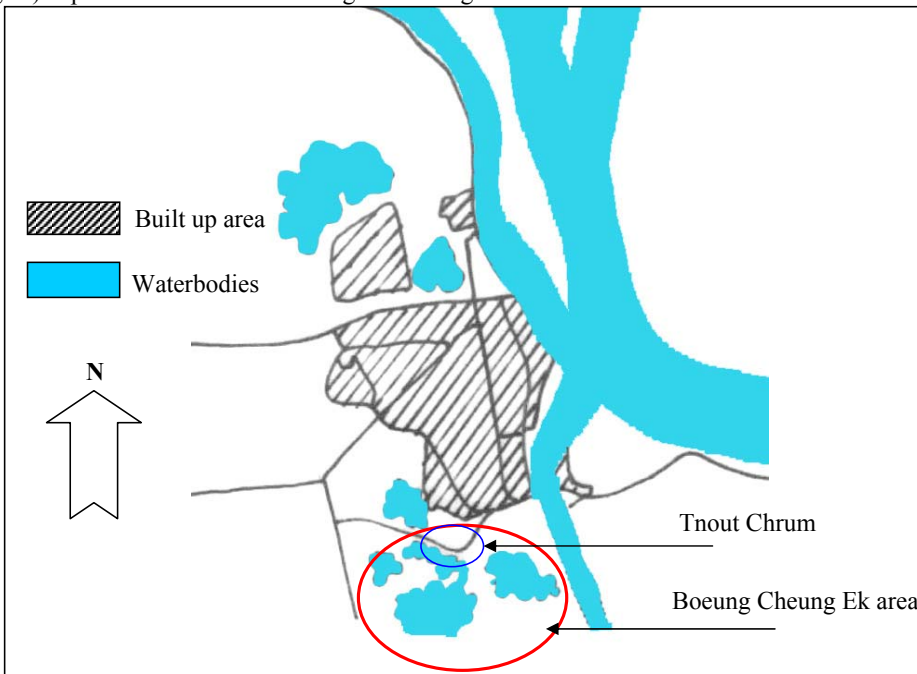


Figure 1.1 Map of Location of Tnout Chrum Village

<sup>1</sup> Group is an administrative level which is under village, considered as sub-village

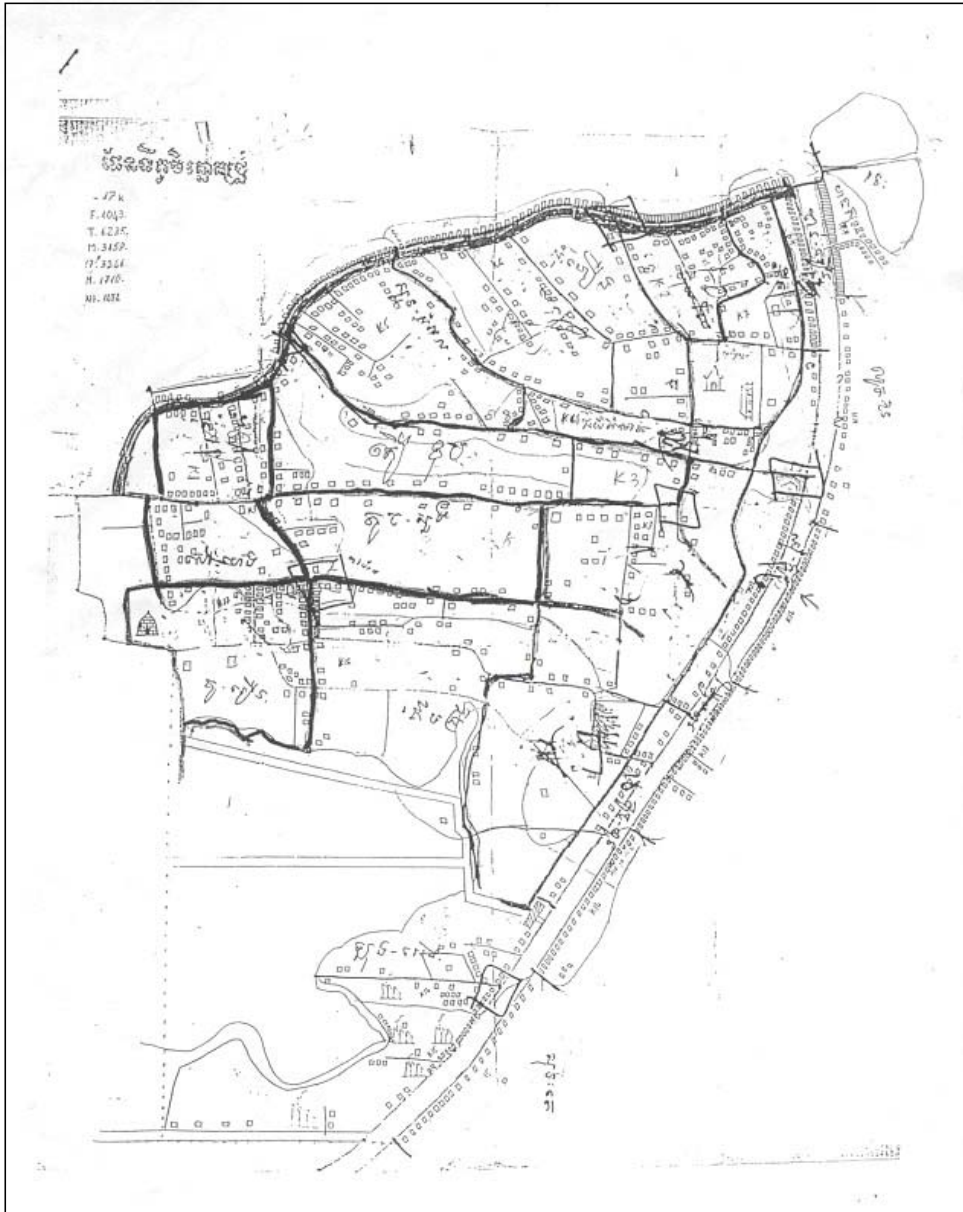


Figure 1.2 Administrative Map of Tnout Chrum village  
 Source: Tnout Chrum Village Administration office



## 1.2. Objectives of PCA

PCA is a method used to collect data from within the peri-urban community from all levels of people. The objective of using this method is:

- To identify well defined groups within each community and get an overall picture of their livelihoods, environment and socio-economic structure;
- To identify the problems and constraints these groups encounter in relation to their associated peri-urban aquatic systems and overall livelihoods
- To identify strategies or make recommendations for future improvements or possible solutions to these problems

## 1.3. PCA Structure

The first step of the PCA in Tnout Chrum on the 8th October 2003 was the process of visiting the community identifying and contacting Key Informants and the local authorities to get permission to carry out a PCA and general information. We discussed with the Key Informants about villagers who should attend the PCA, and got a list of the household names in the village in order to rank or divide them into groups by the wealth and incomes.

Finally we choose 3 groups of villagers whose livelihoods are related to the lake and who also live nearby the lake. The PCA activities were then carried out from 13<sup>th</sup> - 17<sup>th</sup> October with an appropriate venue and location defined at Tnout Chrum village leader's home.

The PCA activities carried out in 3 days were:

- Community Mapping
- Wealth Ranking
- Timeline
- Food Consumption
- Activities Matrix
- Seasonal Calendar
- Resource Mapping
- Problem Ranking

A schedule was organized for each of the above PCA activities. Then afterwards on the 16th October the RUA team went away and collated and analysed the findings and finally on the 17th October they returned to the village to feedback and present their findings to the participants – this was also used as a process for the villagers to validate the findings.

**Table 1.2: PCA Activities Schedule**

Day 1			
Time	Actors	Activities	Others
8:00-8:30	Team leader	-To introduce himself and members of the RUA team -To explain the project -To explain objectives and activities of the PCA	
8:30-11:30	Working team and participants	-Community mapping -Wealth/socio-economic ranking	
11:00-12:30	-	-Lunch	

13:00-15:00	-	-Seasonal calendar -Activities matrix	
15:00-16:30	Participants	-To present the findings of the above tools	
<b>Day 2</b>			
8:00-11:30	Working team and participants	-Timeline -Food consumption	
11:30-12:30	-	-Lunch	
13:00-15:00	-	-Resource mapping -Problems/contains ranking	
15:00-16:30	Participants	-To present the findings of the above tools	
<b>Day 3</b>			
8:30-12:00	Working team	-To analyze findings	
12:00-13:00	-	-Lunch	
13:00-16:00	-	-To analyze findings	
<b>Day 4</b>			
8:30-12:00	Working team	-To produce an overall summary of the findings	
12:00-13:00	-	-Lunch	
13:00-16:00	-	-To produce an overall summary of the findings	
<b>Day 5</b>			
8:00-11:30	Working team and participants	-To present to the participants the findings of the last, last 3 days. To validate this information. -General discussion -To celebrate and close the PCA	

## 2. Physical Characteristics of the Community and its Resources

### 2.1. Community Mapping

Community Mapping activities were divided into 2 groups, male and female groups. But the results from the female group lacked information on the village and was not completed. So it was decided to choose only the map from the male group to be in the report.

The mens map showed Tnout Chrum to be a flooded area with some parts covered by the lake seasonally (Beoung Cheng Ek lake). Many of the houses in the village are by the side of the lake or built actually above it. To the north of the lake is Ta Kmao city in Kandal province and to the east is Kok Ampil commune. There is a dam along the lake and also a pumping station for discharging waste water from the city and many factories along the dike wall.

### 2.2. Weather

The different seasons was described by villagers using the seasonal calendar. Both mens' and womens' groups provided the similar seasonal characteristics of the village. There were no marked differences between the seasonal calendars drawn by the two groups. From January to February, there is a dry wind, with the climate beginning to get hot in March the temperature increasing in April and May (Dry Season). There are strong winds with the start of the rainy season in June, and then developing into heavy rains and storms from July to October. In November and December the dry season begins and the weather is colder.

According to the information above, it means that there are 2 regular seasons in the village. The Dry season starts in December and goes on to May, with the rainy season from June to November.

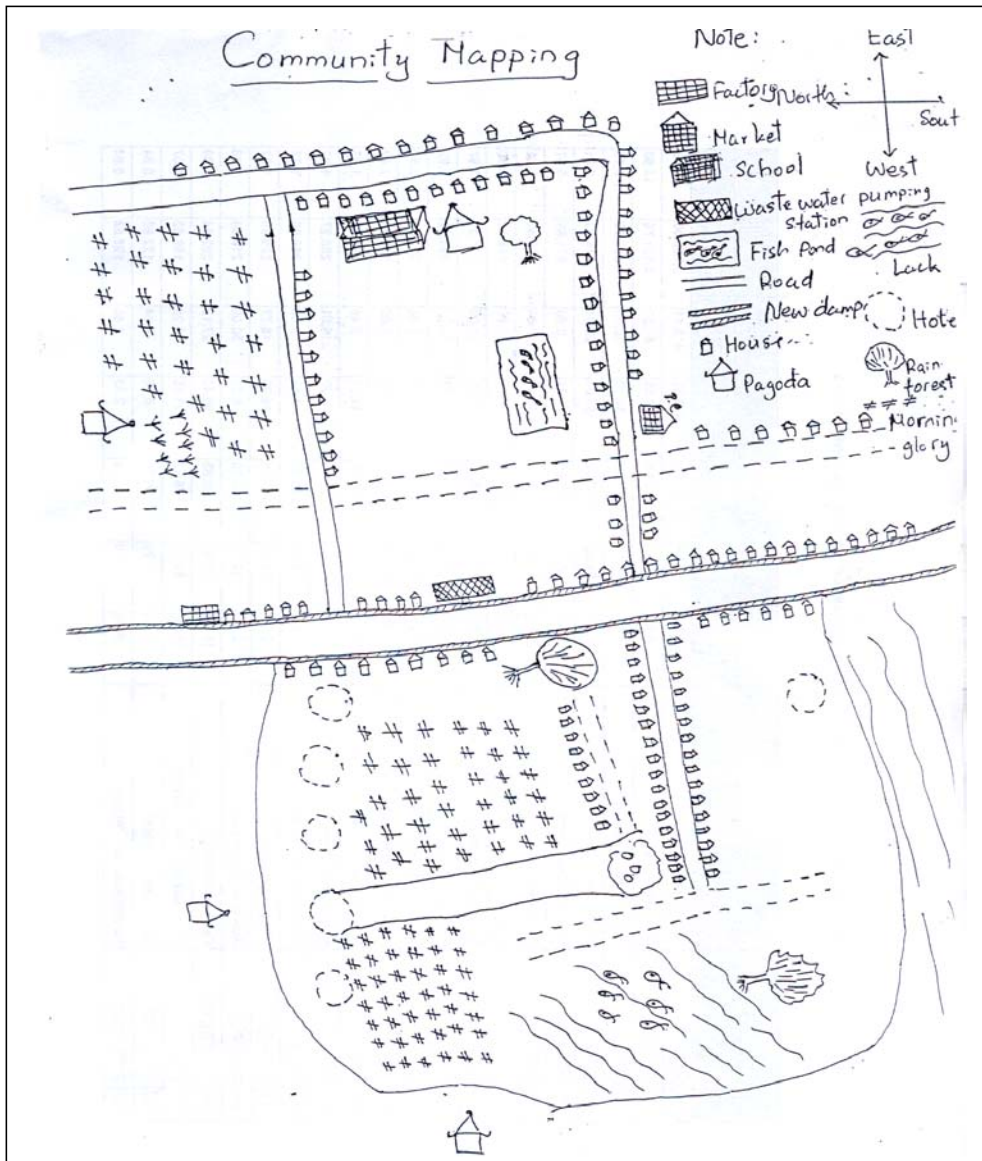


Figure 2.1 Community Map drawn by the Men's group

### 2.3. Resource Mapping

According to the time and situation, Resource Mapping was done on the same flip chart with Community Mapping. And it is separated from the Community Mapping by facilitators in the report. Inputs into the system include the waste water flowing into the lake such as: waste water/sewage pumped from Phnom Penh, industrial waste water from garments factories and natural water from the Prek Tnout stream.

Some farmers get the benefit from the lake by growing morning glory and mimosa, and fishing. In order to cultivate these plants and to do fishing they put many things in the lake like: morning glory seed, wooden poles for tying the morning glory into rows preventing damage from winds, chemicals, boats, nets, and fishing gear.

Their outputs they mentioned included: fish, snails, morning glory, and mimosa.

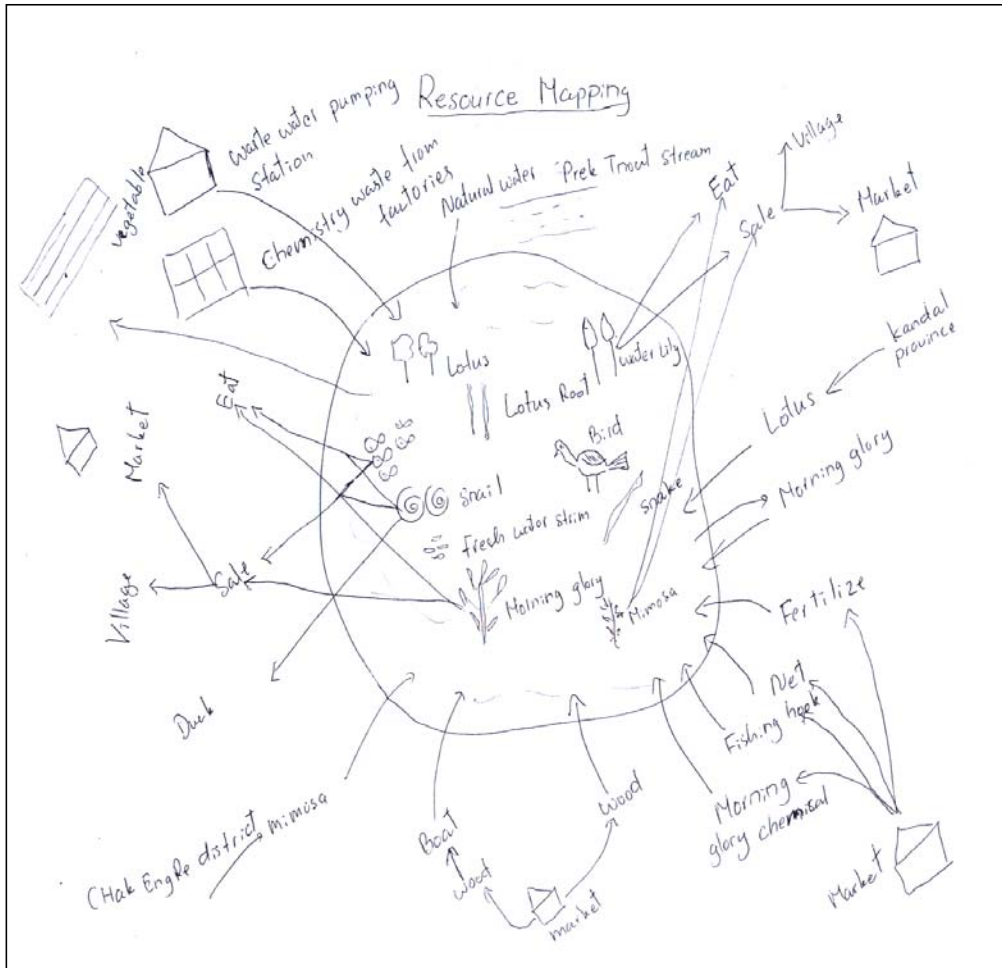


Figure 2.2 Resource Map drawn by the Men's and Womens' group

### 3. Timeline

The Timeline activity for the village was carried out by different mens' and womens' groups where elderly people were important to provide information as they have known the whole village since World War II (before 1940). There were also a village leader, sub-village leader and young adult involved. The results from the two groups were joined together. At that year, Japan brought their military troops to the dam to fight against the French military. That's why people named that place "Beoung Chopun (Japanese Lake)" and later this name was changed into "Beoung Tompun". Next to this village along the dam, there were many smaller lakes such as: Beoung Speou, Beoung Sorandet, Beoung Damrey, with plentiful wild/natural resources.

Before 1953, the major part of village was forest with a few small cottages, corn farms, and vegetable fields.

**1970 (Lun Nol period):** The village was created which had 5-6 fishing families. The natural resources available in the village were: forests, wild animals (tigers, crows), and many species of fish. The villagers grew some morning glory and mimosa. But there were outsiders who worked in the rice fields by owning that land. Thousands of people migrated from other provinces to the village because of the wars in 1972-1973, and the population progressively grew. They logged the forests to sell for earning for their livings.

The weather was good, and the water was fresh and could be used, but unfortunately there was also flooding in the village sometimes.

Morning glory cropping was good in both quantity and quality; the chemicals were not useful at the time as they believe that was because of good water quality. The market was not yet built in the village. Producers brought their products to sell in Dem Kor, Kandal, and Chba Ampov markets in Phnom Penh.

Villagers had enough food to eat, so there was no hunger, and at this time there was also little theft. All the people strongly believed in Buddhism and there was also one pagoda with a few monks from Kampuchea Krom (part of Cambodia, located in lower Mekong river, close to the Vietnamese border). There was one small school with 2-3 rooms.

**Pol Pot regime (1975-1979):** The people in the village were evacuated to the countryside. The entire infrastructure of the village such as the school, pagoda etc were destroyed.

After the Pol Pot regime (1979), people came back to live in their village again, and they began again rice cultivation, fishing, and morning glory farming.

**In 1986,** a small market was created, and had a few sellers. Some products were brought to sell here, with larger amounts of products sent to sell in the city markets. Morning glory growers increased day-by-day, but land vegetable croppers became fewer. The availability of wood from the local forests and supplies of wild animals decreased by logging and hunting activities respectively, in order to get the land for accommodation and animals for food. There was some change of weather, but water quality was still good and useable. During this time the school was rebuilt to be larger with 5 rooms and named the "Dam-Bok-Kpos" school.

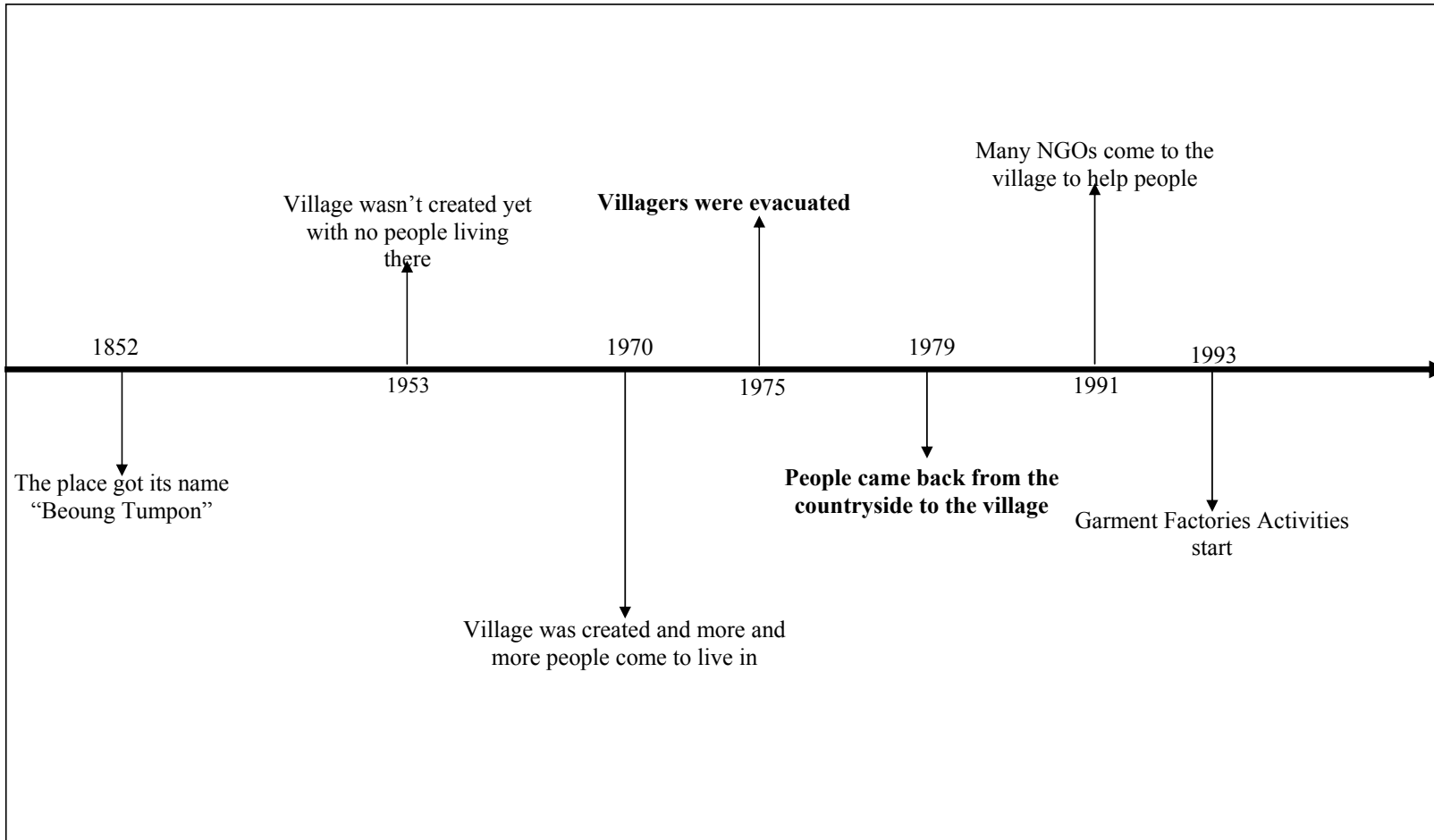
**In 1991,** the forests, stocks of wild animals and fish decreased, with the loss of many fish species. The rice that was supplied from the rice solidarity farmer group was not enough for supporting the families, so the rice unity group was cancelled, and the government land was divided up for the people. During the same year there were a few garment factories which were built on the edge of the lake which began to

discharge chemical waste into the lake, however at this time it didn't adversely affect the lake's water quality. With the continual inflow of these factories waste, waste water (sewage) from the city, and rubbish day by day, the water quality began to deteriorate, get polluted and have a bad smell. This began to affect many villagers health as well as their production of morning glory. In this year many organizations such as MARINOL, KARITAS, and UNICEF, etc came to help the village. They came to provide knowledge to the children, credit and for drilling water supply wells for the villagers.

**In 1993**, fishing for wild stocks in the lake increased more and more, but this fishery resource began to gradually deteriorate, providing decreasing catches for the fishers. For this reason illegal fishing using electro-fishing gear began to be used. Growing land vegetables diminished due to the land being unfertilized. By this time the local forest was almost completely gone due to logging. The people increasingly used all of the space available in the village to build houses.

To the present day the school is getting larger with 12 rooms, and the local market named Pé Sé (PC) is larger. The weather is now more irregular and water quality of the lake in the village is bad.

**Figure 3.1: Timeline of the Tnout Chrum Village**

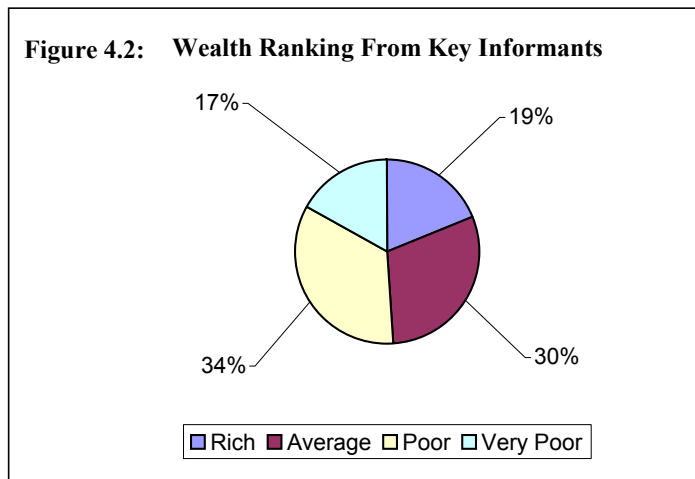
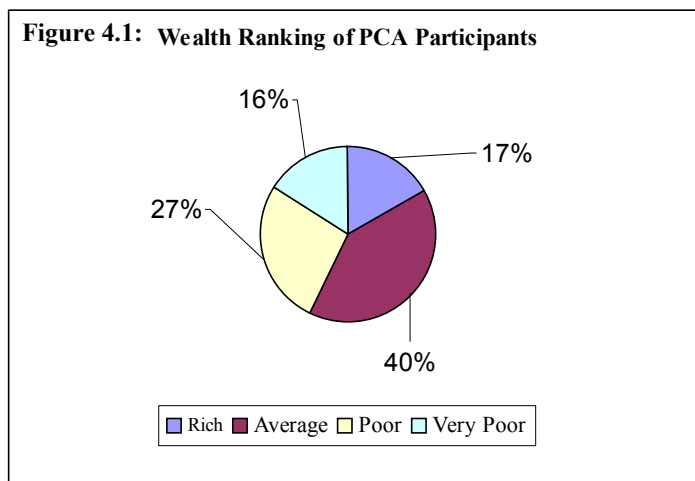


#### 4. Social Characteristics of the community

##### 4.1. Wealth Ranking

The RUA team went 2 days before starting PCA works to contact the village leader in order to get a list of the household names of the 18 groups in the village. Wealth Ranking was done by asking the village leader, sub-village leader and 2 group leaders (key informants) to assess and divide the well being/ living standard level of people in the community. After Wealth Ranking these key informants divided people into 4 levels: rich, average, poor and very poor, the criteria for deciding each level was also discussed.

In Figure 4.1 below the breakdown (%) wealth ranking of the chosen participants is shown:



The pie chart which illustrates information given by the participants shows that 17% are in the rich group, 40% in the average group, 27% in the poor group and 16% in the very poor group. Whereas information from key informants shows that 19% were thought to be in the rich group, 30% in the average group, 34% in the poor group and 17% in the very poor group. The pie charts show the wealth ranks from participants and key informants are similar.



**Table 4.1: Wealth Ranking Criteria**

<b>Criteria</b>	<b>Rich</b>	<b>Average</b>	<b>Poor</b>	<b>Very Poor</b>
<b>Occupation</b>	-Trader, craft owner -Government officer -Land Renter	-Fish seller -Morning glory grower -Animal raiser -Motor-taxi driver -Factory worker	-Morning glory grower (Not own money, borrow from Organization or richer in the village) -Fisher	-Labor hired -
<b>Agricultural Land</b>	Owning 1-2 hectares	Owning 0.5 hectare, sometime rent land from others	Rent land from others	Not able to rent land
<b>Capital</b>	Much money and can lend to the Average or Poor	Have a little bit of money and borrow from the NGOs or richer	Borrow from anyone	Are given a small amount loan (Less than 50,000 Riel)
<b>House</b>	Flat, villa, 2 floor flat (ground floor is made of block cement)	2 floor wooden house with zinc or brick roof and ground floor not brick	Small house, 1 floor wooden house with zinc or brick roof and wood poles.	Small house made of palm trees, some stay on the boat, some beg anybody's house to stay and some beg to stay on others land
<b>Transportation</b>	Car, modern motorbike (2-3 motorbikes), new bicycle	Cheap motorbike, old bicycle	Cheap and old motorbike (Borrowing money to buy), old bicycle, 1 big boat and 2-3 small boats	Haven't got motor, 1 small boat
<b>Assets</b>	New Color TV, modern watch, modern mobile/hand phone, washing machine, use TV cable service	Second hand TV or black-white TV, cheap watch, not so modern mobile phone	14 Inch TV or black-white TV	Have nothing
<b>Education</b>	-Be able to support their children to go to overseas university -Be able to support their children to finish university in Cambodia -Their children can study many foreign languages (English, French, Japanese...)	-Be able to support their children only in high school -The children can study some foreign languages	-Be able to support their children at grade 5 of high school -Lesser capacity to support their children to study foreign languages -Their children study with NGO	-Have no money to send their children to school -Majority of the poorest go to study with the NGO -Some don't go to study
<b>Income</b>	-Salary, income from renting land, business	Morning glory selling, garment factory work salary	Income is limited, and just enough for buying food	Not enough for buying food to eat

#### **4.2. Social Events**

Commonly people in the village get married throughout the year, but the most common time is from December to June because this is the duration of the dry season. People don't get married in July, because it's the month of Chul Vossa (Buddhist ceremony).

In February, people pray for Chinese New Year and they celebrate Khmer New Year in April. They celebrate Chul Vossa ceremony in July, Chegn Vossa ceremony in September, and Pchum Benh ceremony, Kak Then ceremony in October and the Water Festival in November.

For others, they celebrate other ceremonies like Bun Phka, Bun Pachay Bourn which can be celebrated in any month.

#### **4.3. Migration**

Annually some people move from August to October because of flooding problems in the village during this period. This problem comes from raining and natural water flowing from Prek Tnout stream. At this time for people who live nearby the lake they have to move to the land nearby the dam or the main street.

Some people move more permanently from the village to other areas by selling their house, because of owing money.

#### **4.4. Health**

Villagers commonly have colds in October and from December to February, from April to June they also have headaches because of the hot weather. Some children have blood fever from July to August. Morning glory growers and fishermen always have skin problems almost everyday especially in April and May when they go to their work in the lake, due to the polluted water in the lake.

#### **4.5. Income**

People get more income from January to April because this is dry season, so it's the best conditions for them to do their business, as well as aquatic producers (At this time the market price of the morning glory is higher than the other times of year). They have average incomes from June to October and low incomes from July to September, which in this period when very poor people have little money to buy food for their families.

**Table 4.2: Seasonal Calendar**

Activities	January	February	March	April	May	June	July	August	September	October	November	December
<b>Weather</b>	Wind?? ●●●		Hot ●●●	Hot ●●●●●		Rain ●●	Rain ●●●	Rain ●●●●●			Cold ●●●●●	
<b>Social</b>	Wedding ●●●●●	Chinese new year Wedding ●●●●●	Weddings ●●●●	Khmer New year Wedding ●●●●	Weddings ●●●●	Weddings ●●		Other Fiesta	Pchum Ben	Kak Thin	Water Festival	Weddings ●●●●●
<b>Economic status</b>												
<b>Morning glory Cultivation</b>	Throw old morning glory away and crop the new one	Make new rows using new younger plant stock ●●●●	Sell●●●●●			Make new rows using new younger plant stock ●●●●	Sell ●●●●●		Sell ●●●			
<b>Mimosa cultivation</b>	Sell ●●●					Sell ●●●●●						
<b>Fishing</b>	●●	●●	●	●	●	Prepare the boat and equipment	●●●	●●●●	●●●●●	●●●●●	●●●●●	●●●●●
<b>Selling</b>	●●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●	●●●	●●●	●●●●	●●●●	●●●●	●●●●
<b>Vegetable cropping</b>	Prepare land for cropping	Care for plants	Harvest	Continue to harvest			No cropping					Prepare seedlings
<b>Animal raising</b>	Market price ●●●●	Market price ●●●●	Market price ●●●●	Market price ●●●●● Disease problems	More animal raising							
<b>Garment factory</b>	●●●●●	●●●●● ●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●● ●	●●●●● ●	●●●●●	●●●●●	●●●●● ●	●●●●●

<b>workers</b>												
<b>Carpet made of piece cloth makers</b>	●●●●●	●●●●● ●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●● ●	●●●●● ●	●●●●●	●●●●●	●●●●● ●	●●●●●
<b>Daily hire of morning glory labour</b>	●●●●	●●●●	●●●●●	●●●●●	●●●●●	●●●●●	●●●●● ●	●●●●● ●	●●●	●●●	●●●	●●●
<b>Building worker</b>	●●●●	●●●●	●●●●●	●●●●●	●●●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●
<b>Motor-taxi and motor-cart driver</b>	●●●●●	●●●●● ●	●●●●●	●●●●●	●●●●	●●●	●●●	●●●	●●●	●●●	●●●	●●●
<b>Logging</b>				For very poor people ●●●●●								
<b>Income</b>	●●●●			●●●	●●●	●●			●●●	●●●	●●●	●●●
<b>Health</b>	☺	☺	☺	Headache, Diarrhea, Skin disease				☺	Cold		☺	☺
<b>Migration</b>					●●	●●	●●●● ●	●●●● ●	●●●●●			
<b>Water quality</b>	Water changes to black		Very bad smell			Not so bad				Pollution		
<b>Community environment</b>							Standing water in the village					
<b>Morning glory disease</b>	●●●	●●●	●●●●	●●●●●	●●●●●	●●●●	●●●	●●●	●●●	●●●	●●●	●●●

### 5. Food Consumption and Food Sources

Male and female groups consume many types of foods. Food consumption of these two groups was not noticeably different because they live and eat together in the same households.

There are generally 3 types of food used : 1. The main important food for Cambodian people is rice, 2. Meat, which they eat, is: pork, beef, chicken, duck, fish, and 3. Vegetables are: water lily, mimosa, morning glory and other Leafy and Land vegetables. Rice, pork and beef are generally bought from the market in the village or in the city. Chicken and duck are also bought, but during the prayer seasons (in April) they use their own which they raise around the house. People who don't grow morning glory and mimosa, usually buy it. And other leafy vegetables are always bought for whole year, because in the village there are only 1 or 2 people who grow leafy vegetables.

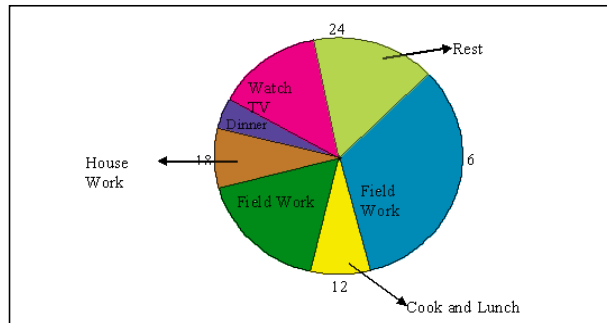
**Table 5.1: Food Consumption**

Food Kind	Note												
	Buy			Natural				Self Produce			Support		
	January	February	March	April	May	June	July	August	September	October	November	December	
Rice													
Pork													
Beef													
Chicken													
Duck													
Fish													
Morning glory													
Mimosa													
Other vegetables													
Canned fish													

### 6. Activities Matrix in the Community

#### 6.1. Female

Working time in the field for women is commonly from 3:00am to 11:00am and 13:00 to 17:00. They have rest and a few hours sleep time (about 4 hours)

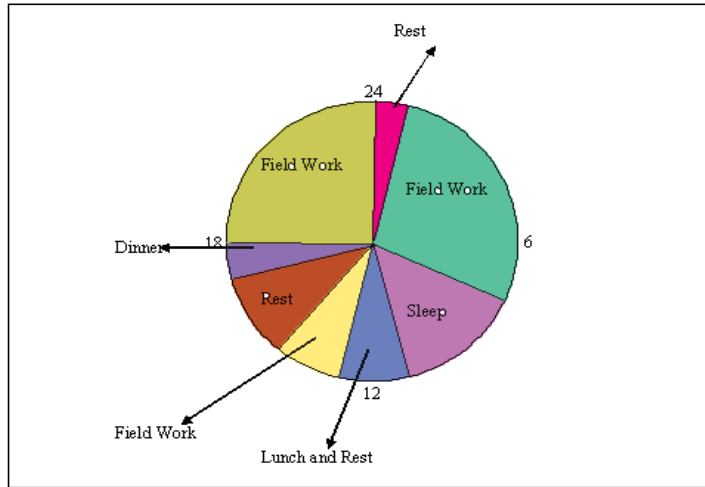


**Figure 6.1: Womens Activities Matrix**

**6.2 Male**

**6.2.1. Fishermen**

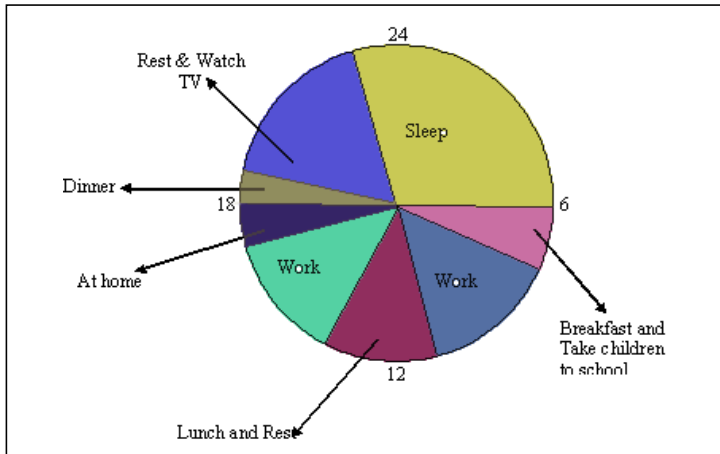
The working time in the field for fishermen is commonly from 18:00 to 00:00 and 1:00 to 8:00. They have rest a few hours and sleep time about 3-4 hours. They work at night and sleep and rest during the day except for some short work in the afternoons.



**Figure 6.2: Fishermen's Activities**

**6.2.2. Other men's Activities Matrix**

Working time in the field for men beside fishermen in the village is commonly at 8:00am to 11:00am and 2:00 to 17:00. They have rest for a few hours and sleep time of about 7 hours.



**Figure 6.3: Other Men's Activities Matrix**

### 6.3. Children

The children who study in the morning, they have to go to school at 7:00 to 11:00, and if they study in the afternoon then they have to go to school at 13:00 to 17:00. For the children who are working, they go to the field when they don't go to school. They usually sleep 8 hours.

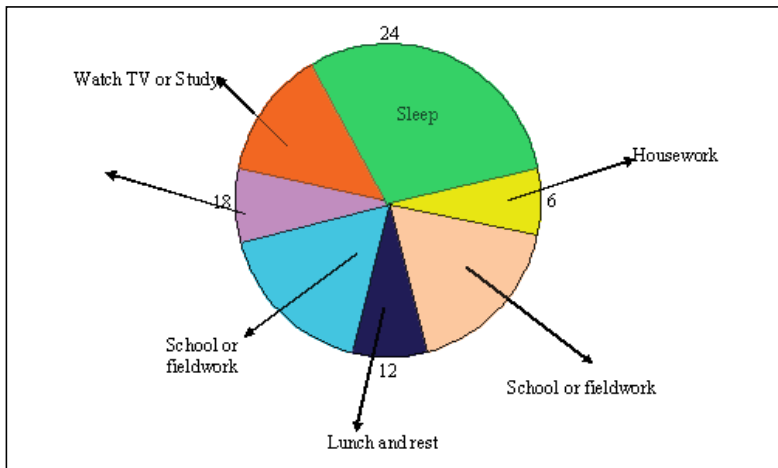


Figure 6.4: Children Activities Matrix

By comparing the pie charts it shows that fishermen have different sleep time from the other people, but they have lunch and dinner at a similar time. Fishermen don't have much time to sleep, but they also work longer hours than the other people in the village, 10 hours more than people who does business, work for government, sellers etc. For the children, they have enough time to sleep (8 hours) after field work or study.

### 7. Product Status

There are a number of food production systems in the village such as vegetable cropping, fishing, lotus, mimosa, and morning glory cultivation. Of these the most important with the largest agricultural area are, in order of production, morning glory and mimosa cultivation.

Because of water pollution in the lake from industrial/ chemical waste from garment factories on the edge of the lake and waste water/sewerage from the city which is pumped in large volumes into the lake, the morning glory plants get a disease called "KRACY", (cambodian disease name) which make morning glory leaf become yellow and then decay. This disease is particularly serious in the dry season, especially between April and May. In order to prevent this disease the growers spray the plants with many types of chemicals (Producers go to buy mixtures of chemicals from the market, which they didn't know the name of). They then spray the plants 7 days before harvesting. .

### 8. Problem Ranking

This Problem Ranking tool was done together by, both the male and female groups. Beans were used for ranking each problem. 19 problems were described by the groups, and 38 beans were given to the participants to score the relative importance of each problem.

From this activity it was found that the 5 main problems in the village were:

- Unable to support the children for going to school: Because living standards of 50% of the villagers is low. And if they send their children to school, they need to give money to their children for the teacher everyday, so the children have no opportunity to study in the government school. As a result some children in the village go to study with one of the NGOs – MARINOL or CARITAS
- Lack of capital and owing people money: People in the village haven't enough money to do business, so they have to borrow money from the richer in the village or NGOs by paying interest. So it's difficult for them to support every day living costs plus repaying the interest they owe.
- Health problems: The people often have problems with their health especially skin problems which come from the activities of growing morning glory.
- The Morning glory market is small: People can't sell enough morning glory per day, and sometime their production is less. So they get small income and sometime they actually lose money.

**Table 7.1: Problem Ranking**

N°	Problem	Female	Male	Total	Rank
1	<b>Lack of Capital</b>	27	29	56	3
2	<b>Health Problem</b>	21	34	55	4
3	Natural Disaster (Storm...)	14	8	22	17
4	Less Fish	12	11	23	16
5	Lack of Transportation	18	32	50	7
6	Thief (Steal net, boat...)	25	26	51	6
7	<b>Owing somebody's money</b>	26	34	60	2
8	Water Quality (Affect health and Product)	20	23	43	9
9	Insecurity (Using drug boy)	21	15	36	12
10	<b>Not be able to support the children's study</b>	25	50	75	1
11	No fresh water source	22	14	36	12
12	Far from electricity supply place	27	19	46	8
13	<b>No market for morning glory</b>	19	34	53	5
14	Lack of health center	18	23	41	10
15	Lack of hygiene knowledge	21	13	34	14
16	Lack of toilet	23	14	37	11
17	Lack Sewage pipes	13	13	26	15
18	Difficult roads	19	16	35	13
19	Rainforest logging	10	6	16	18



## 8. Conclusions

We received a warm welcome from the villagers who were happy to share their ideas and participate in all the tools of the PCA. Although we don't get a large presence from the richer group in the village, we were able to get enough data applying to what we need. And those ranchers' job in the village doesn't involve working with aquatic products in the lake, instead they are businessmen/women, government staff, handicap shop owners etc.

After the PCA was carried out on peri-urban aquatic food production systems, we get more experience in collecting information from groups of different people. The information on the living standard of people in urban areas was gathered, especially the information about villagers whose jobs are relevant to the ecology of the lake. It can be concluded that people who worked in the lake, mostly had their health affected from contact with waste water in the lake. It didn't only harm people's health, but also aquaculture product quality eg morning glory, because of polluted water in the lake primarily from sewage wastewater from the city, chemical waste water discharged from garment factories on the lakeside and other rubbish, which is thrown by people into the lake.

Through PCA their living standard status and divided it into 4 categories: rich (17%), average (30%-40%), poor (27%-34%) and very poor (18%). With poor and very poor status in village, this brought NGOs such as UNICEF (drilling wells), MARINOL and CARITAS. Some area (group number 18) of the village is located in the lake and was flooded during the rainy season for about 3 months and the water would flow out from the village in dry season. The duration of the working day of villagers is normally 8-10 hours, except aquatic producers and fishermen who often work more than 12 hours per day, with only 3-5 hours for rest and sleeping.

There are many problems occurring in village such as: They are unable to send their children to school, because of little income, so they don't have money to pay for daily fees paid to the school (Public school), skin disease problem for aquatic producers which is caused from contact with waste water in the lake.

The problems of the villagers which were expressed showed that because they work daily in close contact with the lakes water there are associated effects on the morning glory production, wild stocks such as wild fish, birds, turtles, snakes etc. and people's health (particularly skin diseases) now and in the future. These problems are relevant and applicable to the project's objectives and with the people's good will to join and help us, next year the project can continue to work in more detail with a household baseline and monitoring survey questionnaire.

**Appendix A: Tables**

**Wealth ranking result from the participants**

<b>Rich</b>	<b>Average</b>	<b>Poor</b>	<b>Very Poor</b>
17%	40%	27%	16%

**Wealth Ranking result from key informants**

<b>Rich</b>	<b>Average</b>	<b>Poor</b>	<b>Very Poor</b>
19%	30%	34%	17%

**Activities Matrix of Women**

Time Activities	Time																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Get up	✓	✓	✓	✓		✓																		
Go to Morning glory field			✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓								
Hammock maker			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓											
Cook, lunch, dinner											✓	✓	✓				✓	✓	✓					
Prepare morning glory for sale																✓	✓							
Fish selling						✓	✓	✓	✓	✓	✓	✓	✓		✓	✓								
Selling						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
Laundry							✓	✓				✓	✓				✓	✓	✓					
House work					✓	✓																		
Discuss																				✓	✓			
Watching TV																				✓	✓	✓		
Go to Buy food						✓	✓	✓			✓					✓	✓							
Look after the children						✓	✓																	
To feed animal						✓	✓		✓	✓						✓	✓							
Rest																				✓	✓	✓	✓	✓

### Activities Matrix of Men

Activities \ Time	Time																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Get up	✓	✓	✓	✓	✓	✓																		
Breakfast						✓	✓	✓																
Fishing	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓						
Morning glory harvest						✓	✓	✓	✓	✓	✓		✓	✓	✓	✓								
Snail fishing	✓	✓	✓	✓	✓													✓	✓	✓	✓	✓	✓	✓
Animal feeding						✓	✓									✓	✓	✓						
Take the children to school						✓	✓					✓												
Prepare selling place					✓	✓	✓																	
Lunch											✓	✓												
Rest												✓	✓											
Set up the net												✓	✓	✓	✓					✓	✓			
Take an eye on net	✓	✓	✓	✓	✓											✓	✓	✓	✓	✓	✓	✓	✓	✓
Collect the fish to sale	✓	✓	✓	✓	✓	✓	✓	✓	✓															
Motor-taxi driver					✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓							
Carpet made of piece of cloth maker						✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓						
Cook sweet		✓	✓	✓	✓	✓						✓												
Have bath					✓	✓						✓	✓					✓	✓					
Play sport					✓	✓	✓											✓	✓					
Dinner																		✓	✓	✓				
Watch TV																			✓	✓	✓			
Rest																			✓	✓	✓	✓	✓	✓
Vegetable cropping				✓	✓	✓									✓	✓	✓							

### Activities Matrix of Children

Activities \ Time	Time																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Get up					✓	✓																		
Do washing						✓						✓							✓	✓				
Go to school							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
Harvest morning glory							✓	✓	✓	✓	✓		✓	✓	✓	✓	✓							
Laundry							✓	✓		✓	✓							✓	✓	✓				
Cook, Lunch, Dinner					✓					✓		✓						✓	✓	✓				
Rest												✓	✓											
House work												✓	✓											
Have a walk							✓	✓						✓	✓	✓								
Sale							✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓		
Prepare bed																				✓				
Language study																			✓	✓				
Carpet made of piece of cloth maker							✓	✓	✓	✓				✓	✓	✓	✓							
Watch TV																				✓	✓	✓	✓	✓
Rest																			✓	✓	✓	✓	✓	✓

## PCA Team Work

PCA Team Workers In Tnout Chrum :

1. Mr. Chhouk Borin            Researcher RUA
2. Mr. Chin Da                 DoF Staff
3. Miss Chhim Rummuny       Team member RUA
4. Miss Sok Daream           Team member RUA
5. Mr. Thak Kuntheang        Team member RUA
6. Mr. Srey Saman             Team member RUA

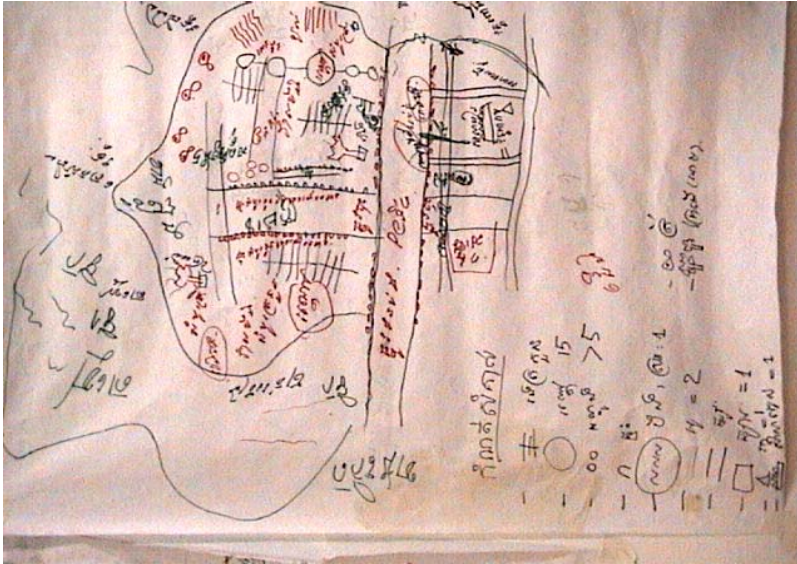
## PCA Participants

The participants who attended the first PCA in Tnout Chrum village are shown in Table 1.2 below:

**Table 1.2: Participants List**

No	Name	Sex	Occupation
1	Khim Van	M	Village Leader
2	Ouk Sareoun	M	Sub-Village Leader
3	Kao Kimseng	M	Priest
4	Kong Sreytouch	F	Government Worker
5	Phoung Sokun	M	Fisher
6	Kev Yin	M	-
7	Sren Sath	M	Motor Taxi Driver
8	Yun San	M	Snail collector
9	Yem Chean	M	Morning glory grower
10	Peng Cheang	M	Morning glory grower
11	Van Saman	M	Fishermen
12	Pen Sun	F	Morning glory grower
13	So Run	F	Carpet maker
14	Peng Sokkheng	F	Organization Worker
15	Cheang Sokkheang	F	Morning glory grower
16	Ny Seoun	F	Morning glory grower
17	Morm Eoun	F	Morning glory grower
18	Pen Eng	F	Morning glory grower
19	Surs Sothy	M	Sweet Seller
20	Nu Khim	F	Carpet maker
21	Pov Touch	F	Trader
22	Ouk Makara	M	Morning glory grower

Appendix B: Snap Shot



Village Mapping



All Participants Photo Taken



Community Mapping Activities of Women



Community Mapping Activities of Men