

**Production in Aquatic Peri-Urban Systems in Southeast Asia**

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## **Participatory Community Assessment in Muoy Village, Sras Choak Square, Daun Penh District (Beoung Kok Region), Phnom Penh**

Team :

Mr. Chhouk Borin  
Miss Chhim Rumuny  
Mr. Thak Kuntheang  
Mr. Srey SamAn  
Miss Sok Daream

**Royal University of Agriculture (RUA)**

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**COORDINATOR**

University of Stirling  
Institute of Aquaculture  
FK9 4LA Stirling  
Scotland

DR. David Little  
E-M : d.c.little@stir.ac.uk  
TEL : +44 01786 467923  
FAX : +44 01786 451462

**CONTRACTORS**

Royal Veterinary and Agricultural  
University  
Department of Veterinary Microbiology  
Bulowsvej 17  
1870 Frederiksberg C  
Denmark

DR. Anders Dalsgaard  
E-M : ad@kvl.dk  
TEL : +45 35282720  
FAX : +45 35282757

National Institute of Hygiene and  
Epidemiology  
1 Yersin Street  
4000 Hanoi  
Vietnam

PROF. Phung Dac Cam  
E-M : cam@ftp.vn  
TEL : +84 4 8219074  
FAX : +84 4 9719045

University of Durham  
Department of Geography  
South Road  
DH1 3LE Durham  
England

DR. Jonathan Rigg  
E-M : J.D.Rigg@durham.ac.uk  
TEL : +44 0191 374 7305  
FAX : +44 0191 3742456

Research Institute for Aquaculture No. 1  
Binh Bang  
Tu Son, Bac Ninh  
Vietnam

DR. Pham Anh Tuan  
E-M : patuan@fpt.vn  
TEL : +84 4 8781084  
FAX : +84 4 8785748

University of Agriculture and Forestry  
Faculty of Fisheries  
Thu Duc  
Ho Chi Minh City  
Vietnam

DR. Le Thanh Hung  
E-M : lthungts@hcm.vnn.vn  
TEL : +84 8 8963343  
FAX : +84 4 7220733

Royal University of Agriculture  
Faculty of Fisheries  
Chamcar Daung, Dangkor District  
PO Box 2696 Phnom Penh  
Kingdom of Cambodia

Chhouk Borin  
E-M : 012898095@mobitel.com.kh  
TEL : +855 12 898 095  
FAX : +855 23 219 690

Kasetsart University  
Department of Aquaculture, Faculty of  
Fisheries  
Bangkhen, Chatujak  
10900 Bangkok  
Thailand

DR. Ruangvit Yoonpundh  
E-M : ffrisrvy@ku.ac.th  
TEL : +662 579 2924  
FAX : +662 561 3984

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## **Abstract**

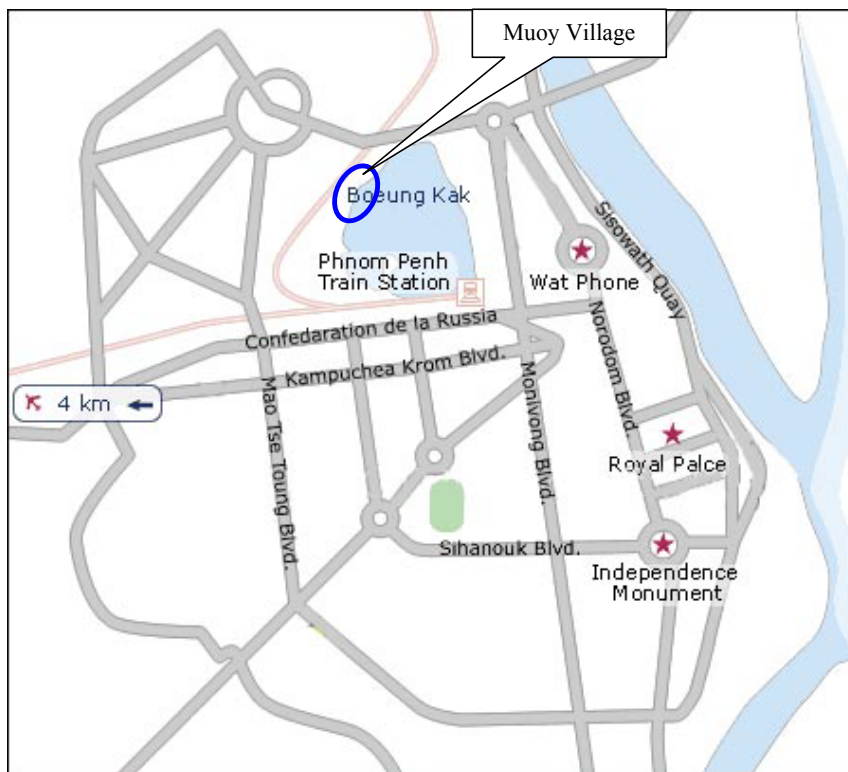
Participatory community assessment (PCA) plays an important part in Work Package 1 of the PAPUSSA project. Its major objective is to describe the livelihoods, character, history, resources and problems of specific communities to be chosen for succeeding work packages. The PCA in Muoy village, a peri-urban area of Phnom Penh, was conducted between 13 to 15<sup>th</sup> November 2003 and had 22 participants involving fishermen, fish farmers, fish traders, sellers and consumers.

10% of those people in the community belong to the rich category, 20% average, 50% poor, and 20 % of very poor people. The income of people in the community is generally very limited and the people feel that theft is their main problem when their implements, livestock and fish are stolen. Other problems faced by the community are boat tax, lack of investment, decrease in fish catch and health problems.

## 1. INTRODUCTION

Phum Muoy is located in the west about one km from the centre of Phnom Penh, which has 9 groups<sup>1</sup> and 186 families. The north of the village is close to Khan Reusey Keov, the south to Phum Pi, the east to Phum Mpey, and the west to the railway of Khan Toul Kok. The majority of the villagers earn their living as fish farmers, livestock farmers, motorbike taxis, vegetable pickers, etc. In general, fish culture has been conducted in the lake in netted fish pens or enclosures near or under their houses. The fish that are popularly chosen to farm are *Pangasius hypophthalmus* and *Pangasius lanaudiei* because these species are in demand in the current market. Other than fish farming, some villagers take advantage of the lake by cutting water hyacinth into strings, picking and harvesting Morning glory, water lily and Mimosa and by catching fish daily from the lake. “There are about only 1% of Vietnamese living in this village, according to the head of the village.

Participatory community assessment (PCA) plays an important part in Work Package 1 of PAPUSSA. Its major objective is to describe the livelihoods, character, history, resources and problems of specific communities to be chosen for succeeding work packages.



**Map of location of Muoy Village**

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

## 2. METHODOLOGY

### 2.1. Process of Participatory Community Appraisal (PCA)

The process of Participatory Community Appraisal (PCA) of a suburban community in Phum Muoy, Sangkat Sras Chak, Khan Daun Penh,, Phnom Penh, was carried out between November 13<sup>th</sup> to 15<sup>th</sup> 2003. The participants were selected from 2 groups (group 7 and group 9) of 9 groups in the village where these two groups had many fish farmers. More than half of the villages are involved in taking advantage of the natural resources from the lake (Boeung Kok). There were 26 participants including the head and sub-head of the village, leaders, the older men, fish farmers, fishermen and other villagers.

Table 1.2: Number of the households in Phum Muoy

Group	1	2	3	4	5	6	7	8	9
Household	14	13	13	16	10	17	28	20	55

### 2.2. PCA Tools

The PCA for this village includes the following tools (Table 2.2)

Table 2.2: PCA tools

No	PCA tools	Objectives	Output
1.	Village mapping	To identify the village infrastructure and its conditions	Maps
2.	Seasonal calendar	To identify the environment, livelihood activities and status in different periods of time	Seasonal calendar
3.	Resource mapping	To identify the plotting information and distribution of the resources use	Maps
4.	Time lines	To identify the evolution and the dynamic process of change within the community.	Process of time lines
5.	wealth ranking	To classify the wealth rank among the very poor, poor, medium, and well off	Tables, pie charts and Social maps
6.	Activities Matrix	Identify the routine activities of men, women and children in the village	table of daily routine activities
7.	Problem ranking	To determine the prioritized problems / issues and how if they can be solved effectively	Ranking the prioritized issues

#### 1. Community Mapping:

Two groups of people, mens' and womens' groups, particularly the elders draw the simple village map separately. The map shows the features of the whole village indicating village boundaries, roads, houses, wells, ponds, markets, etc

#### 2. Seasonal Calendar

Seasonal calendars were used to provide a general picture of important environment, cultural and socioeconomic periods of the year. Seasonal calendars were done by mens and womens groups separately for which a flip chart was provided for highlighting the period, with a certain list of items such as weather, environment, social and culture, wedding, health, water quality, water tide, fish diseases and their different jobs and activities.

### **3. Resource mapping**

Resource maps were done separately by the men's and women's groups. Participants especially the elders were asked to put the simple indicated features on the flip chart then draw a very simple map which showed the village structures and the resources availability in their own village such as aquatic plants, fish, molluscs, livestock, etc.

### **4. Time lines**

The time line was developed through participation by the village leader and older people in the village. The mens' and womens' groups were asked to carry this out separately. Time lines showed local, regional, national and international events which were of importance to their history that had happened in their own villages.

### **5. Wealth ranking**

Wealth ranking and social mapping were carried out with mixed groups including men/women, the poorest, the poor, the medium, rice farmers, fisher folks/farmers. The ranks were adapted through discussion with the village leader and group leader in which the criteria for wealth ranking were proposed by them.

### **6. Activity Matrix**

The flip charts were given to 3 groups: - mens group, womens group, and childrens group separately. The participants wrote down their daily routine activities and livelihood activities through an average 24 hour day.

### **7. Problem ranking**

The situation analysis resulted in the identification of the problems in each of the selected villages. Also, the respective possible solutions raised and proposed by the villagers were listed and ranked according to the prioritized problems that needed an immediate solutions



### 3. RESULTS

#### 3.1. Physical Characteristics of the Community and Resource Systems

##### 3.1.1. Community Map

Two community maps were produced by two groups respectively (the mens group and womens group). The participants produced their impression of Boeung Kok in the map, eg fish cages and houses (Figures 3.1 & 3.2 Community Map).

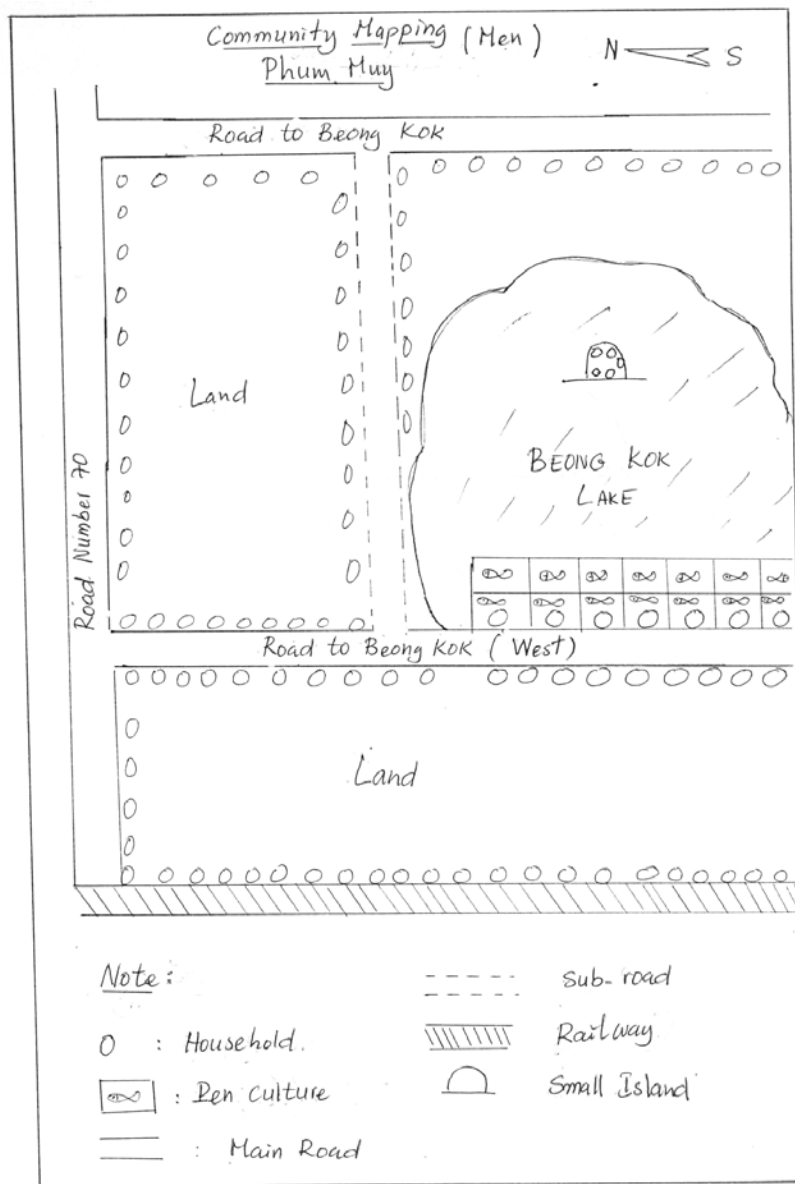


Figure 3.1: Community map of mens group

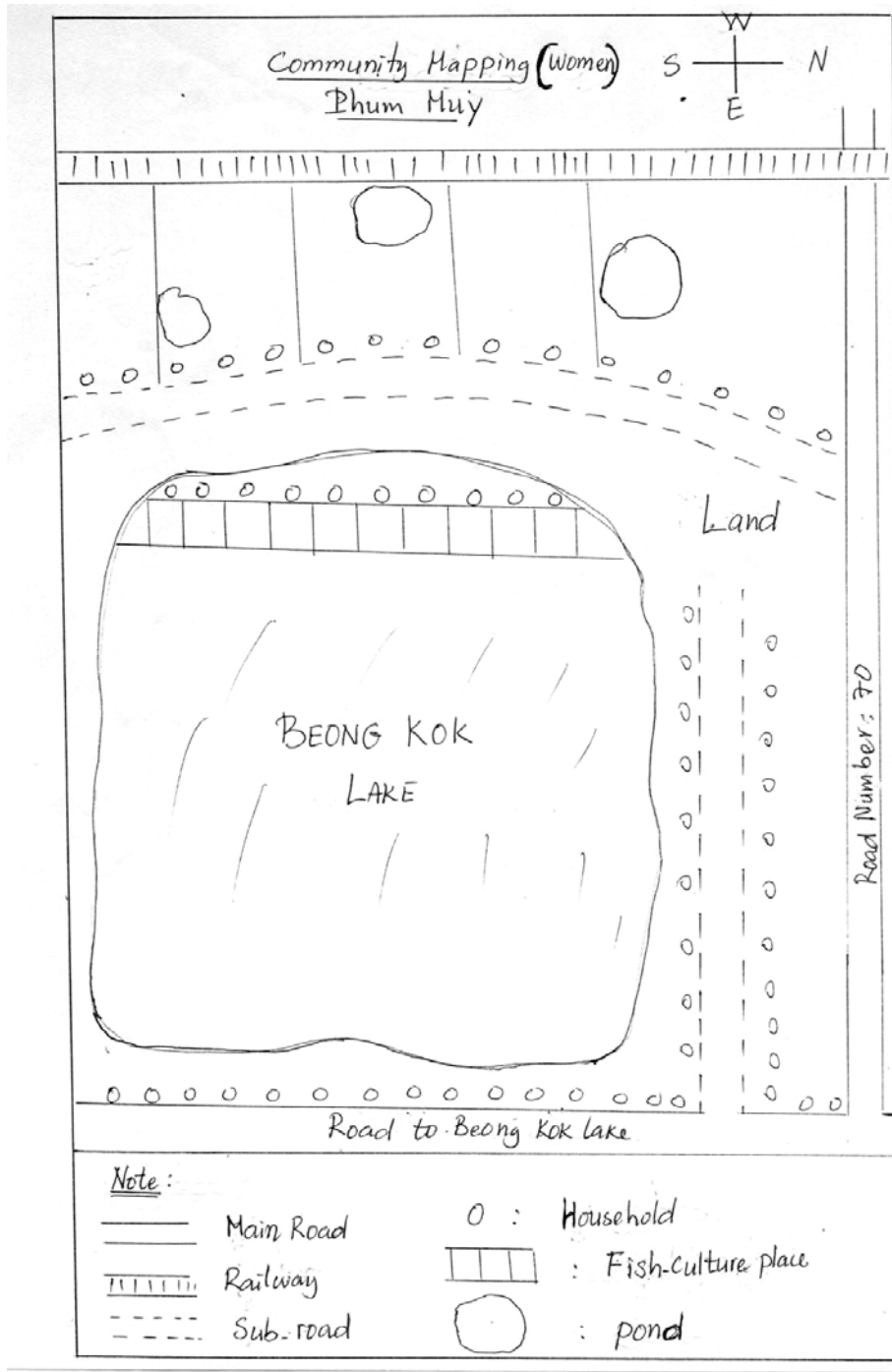


Figure 3.2: Community map of womens group

### **3.1.2. Seasons and Weather**

In the seasonal calendar the mens group indicated that the rain starts in June until August, and then the heavy rains start in September and October. There's then a south-wind (local word) between December and January. This kind of wind sometimes starts from November and finishes in February. Khmer people consider these months as the cold season. The hot weather starts in March, with April and May very hot. The womens group described hot weather between February and April with the rainy season lasting from July until October. Cold weather in November and December sometimes continues into January.

Both mens and womens groups mentioned, the village is flooded almost every year in September, sometimes in October, November, or December. It is the time of high water of the lake causing many households to spend more time on the water. (See Table 3.1 and Table 3.2)

### **3.1.3. Fish Diseases**

The mens group described fish diseases such as red spot, eye disease, and abdomen disease often occurring between August and December coinciding with the rainy season. The womens group said that fish diseases are most prevalent between October and December (See Tables 3.1 and 3.2)

### **3.1.4. Resource Mapping**

Nearly half of the people benefit from the Boeng Kok lake through fishing, growing vegetables, and fish pen culture. They construct their houses and fish pens on the fringes of the lake. Many kinds of fish feed are used e.g. rice bran, livestock and human waste, etc. Antibiotics are also mixed to the feed when their fish get diseases. The fishermen come to catch fish everyday from the lake. The other villagers come to find aquatic vegetables for the market or for the family use. In the past few years there was lotus-growing activity occurring in this lake. Nowadays this has declined because people couldn't earn enough benefit from it. The villagers also collect the wild, natural resources from the lake such as fish, crabs, eels, snails, and many kinds of wild aquatic vegetables on the surface of water in order to supplement their needs. But they also put back many kinds of waste into the lake. (Figures 3.3 & 3.4: Resource Mapping).

**Table 3.1: Seasonal Calendar (Mens group)**

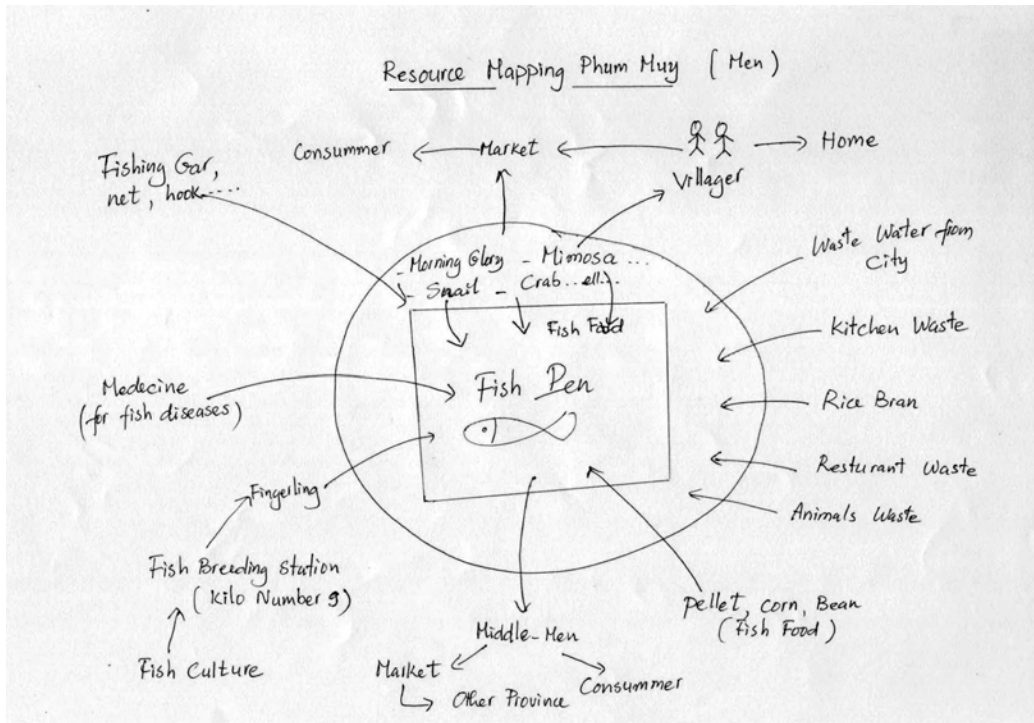
Activities	July	August	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June
<b>Weather</b>	Rain ••		Heavy rain •••••		Rain •	Wind •••••		Wind ••	Hot •	Very hot •••••		Rain ••
<b>Environment</b>			Village was flooded ••									
<b>Social &amp; Culture</b>			Pchum Ben ••	King Birth Day ••	water festival •••••	Human Right •	Dependence ceremony •		Women Right •	Khmer New Year •••••	Plowing Ceremony •	Queen Birth Day ••
<b>Weddings</b>	••	•	•				•••••	•••••	•••••	••	•••	
<b>Health</b>	Blood fever ☹		Cold ☹	☺	Cold ☹		☺	☺	Cool ☹	Fever ☹		Blood fever ☹
<b>Water quality (lake)</b>	Clear water •••		Clear water •••••			Muddy water •	Muddy water ••		Muddy water (Blue water) •••••			Clear water ••
<b>Water tide (Lake)</b>	High tide ••	High tide •••••		Low tide •••	Low tide •••••							High tide •
<b>Fish diseases</b>		Red Disease •••		Red Disease •••	Eyes Disease ••	belly Disease •••						
<b>Fish culture</b>	Prepare	Stock species •••	Stock species •••••	Fish feeding (Restaurants waste) •••••			Fish feeding (Rice bran) •••				Sale •••	Sale •••••
<b>Animals raising</b>		Sale •••••	Sale •••	Sale •••••	Sale ••		Stock species •••••			Stock species •••		
<b>Tailor</b>	•••	•••••		•••	•••	••	••	•••	•••••		••	••
<b>Motor taxi</b>	••	•	•	•	••	•••	•••	•••	•••	•••	•••	•••
<b>Income</b>	•	•	••	••	•••	•••	••	•••	•••	•••••	•••••	•••••

Note: Number of Dots (●) indicates the burden of activities from lowest to highest

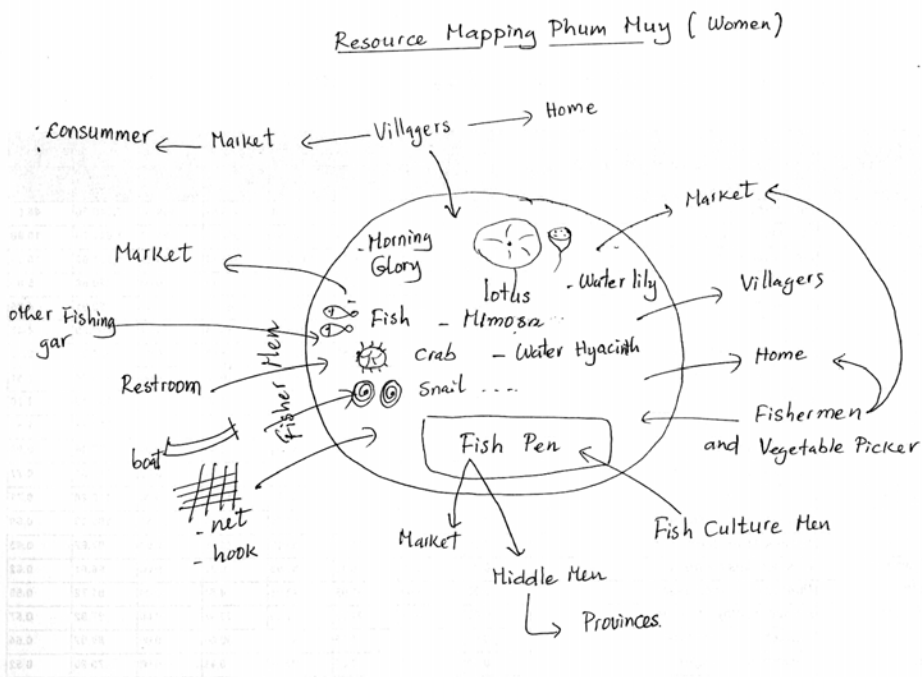
**Table 3.2: Seasonal Calendar (Womens group)**

Activities	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
<b>Small business</b>	•••	•••••	•••	•••••	•••	••	•	•	••	•••	•••	••
<b>Fish culture</b>	Fish feeding (rice bran and restaurant waste)				Sale		Prepare	Stocking fish	Feeding	Disease infection		
<b>Water hyacinth cutting</b>	•••••	•••••	•••••	•••••	•••••	•••	••	•	•	••	••	••
<b>Tailor</b>	••	•••	••	•••••	••	•	•	••	•••••	•••••	••	••
<b>Factory worker</b>	Daily activity through the year to get salary											
<b>Fruit seller</b>	•••	•••••	•••	•••••	Whole activity in the year							
<b>Fishing</b>	••	••	•••	•	•	•	•••••	•••••	•••••	••	•	•
<b>Healthy</b>	Cold ☹️		Itchy skin disease ☹️			☺️	☺️	☺️	☹️	Blood fever ☹️	Cold ☹️	
<b>Village environment</b>									Flooded			
<b>Weather</b>		Very hot					Rain			Cold		
<b>Social</b>	7 January day		Women day	Khmer New Year	Ploughing Ceremony				Pchum Ben	King birth day	Boat Racing	
<b>Income</b>	••	••	•••	•••	•	•	•	••	••	•••	••	••

Note: Number of Dots (•) indicates the burden of activities from lowest to highest



**Figure 3.3: Resource Map of Phum Muoy (Mens group)**



**Figure 3.4: Resource Map of Phum Muoy (womens group)**

## **3.2. Historical Profile of the Community**

### **3.2.1. Time lines**

#### ***Mens group***

The information was given by Mr. Pov Chean, village leader and the other participants in the community (Figure 3.5).

- **In 1975** the current village was a military camp named Phum Tik La-ork. There were much fewer houses at that time. People lived on fishing and vegetable gardening by using simple equipment while they could catch 4-5 kg of fish per day.

- **In 1979** the village was named Phum Muoy. People earned their living by cyclo taxi (a bicycle rickshaw), fishing, and vegetable gardening. At this time there were many natural resources in Beoung Kok Lake such as many kinds of fish, crab, eel, and snail etc, and many kinds of natural wild growing aquatic vegetables, morning glory, mimosa, water lily. Fisherman could catch 5-10 kg of fish per day.

- **In 1986** the Ministry of Culture, Phnom Penh established a resort named Beoung Kok Resort. At this time local people living standards were good as they sold food and drinking water to the people, who came to visit Bounng Kok resort. However there were many problems affecting the fishermen people who based their livelihoods on the lake, especially the natural resources and local environment because they used chemicals to destroy all the aquatic vegetables or grasses which grow on the surface of water. By 1989-90 Beoung Kok resort was closed.

- **In 1993** fish culture and the raising of pigs began on the fringes of the lake. There were 3 households who cultured fish. The number of households involved has steadily increased whilst the natural/wild resources available from the lake has decreased.

- **By 1995-96** the number of households involved in fish culture rose to 8-10. During these years the villagers first received a private electricity supply.

- **Between 1997-99**, people began to landfill in their village in order to avoid problems from flooding. They also constructed the village road. The numbers of households involved in fish culture increased to 10-15. In 1999, a private service provided clean water supply to the villagers.

- **By 2000-03** the village had a good main road and many new houses were built. Villagers have now got access to public water supplied from autonomous-state agency for use, but the electricity supply is still provided by the private agency as before. To the present day there are now over 20 households actively involved in fish farming.

#### ***Womens group***

The information from the womens group was given by Auntie Chea Sarim, and the other participants in the community (Figure 3.6).

- **In 1979** there were a few huts or dwellings. People earned their living comfortably by fishing and aquatic vegetable gardening. There were many kinds of wild fish, crabs eels, birds and wild vegetables both on the land and on the surface of the water.

- **Between 1980-85** the numbers of households were increasing. People used water from Beoung Kok Lake for many functions such as drinking, washing etc. Some people grew water lotus to feed their families.

- **By 1987** the people were still getting a large amount of benefit from collecting wild fish, animals and plants from the lake. The number of fishermen and the lotus growing activities increased.

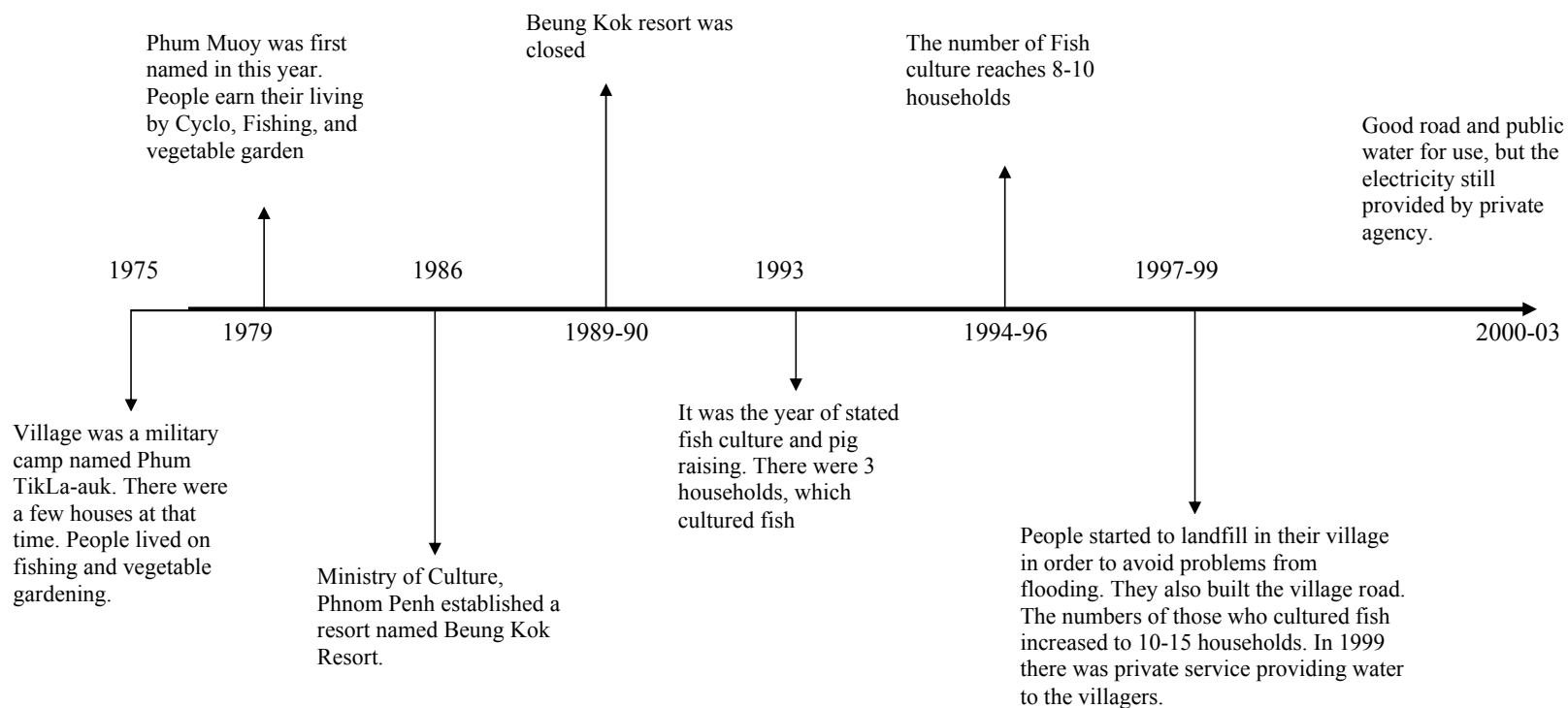
- **Between 1987 – 89**, an electricity supply was connected to the village by a private agency. The lake water was only used for washing.

- **In 1989** the villagers began to construct the sub-road (small) in the village whilst some also began to culture fish.

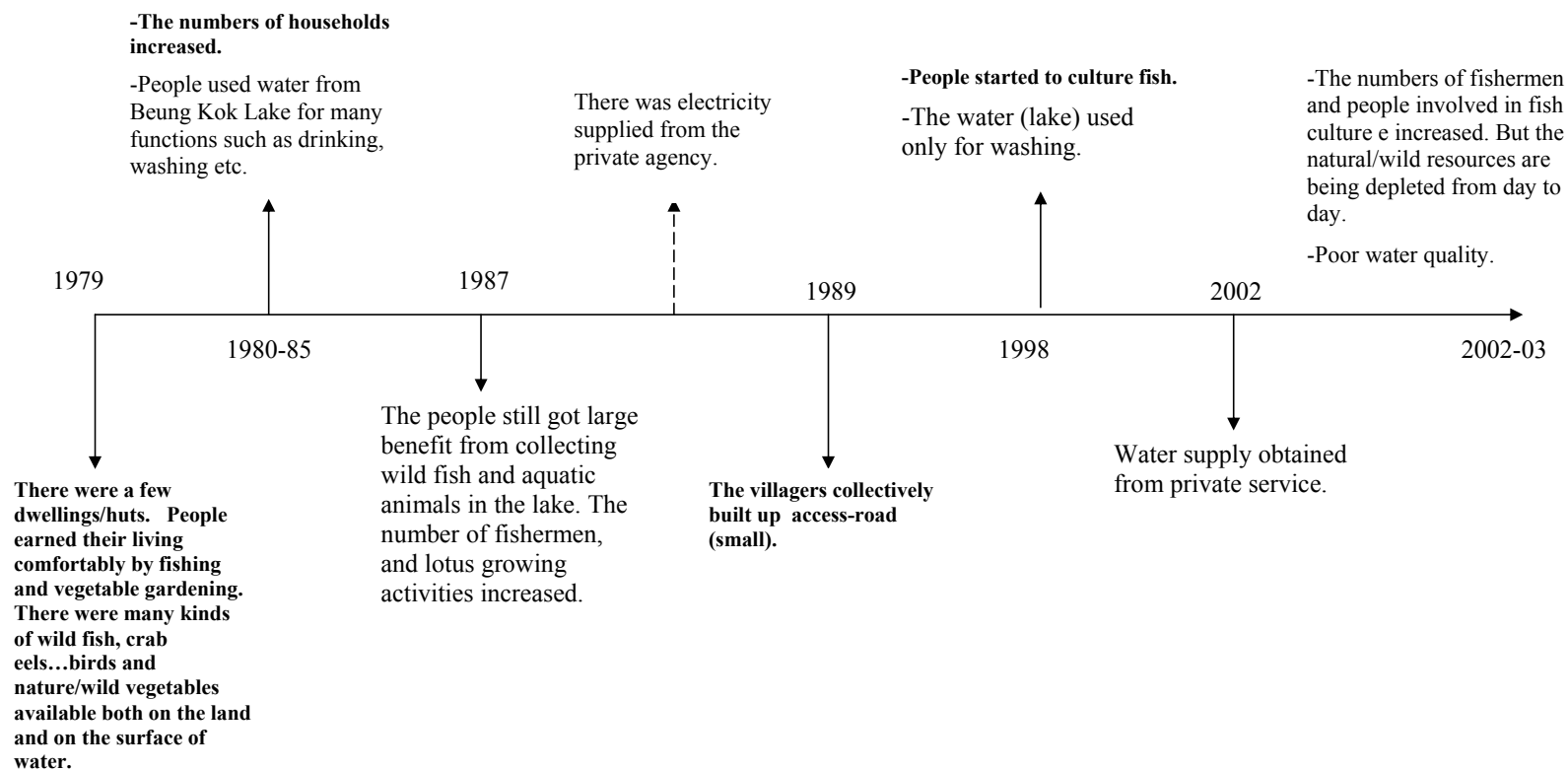
- **Between 2000-03**, Phum Muoy got a water supply from a private provider. The numbers of fishermen and those involved in fish culture also increased. It was the womens view that the natural/wild resources of the lake are decreasing from day to day. They also commented that the water in Beong Kok lake has markedly decreased in its quality in recent years.



**Figure 3.5: Time Line of Phum Muoy (Men group)**



**Figure 3.6: Time Line of Phum Muoy (womens group)**



### 3.3. Social Characteristics of the Community

#### 3.3.1. Wealth Ranking

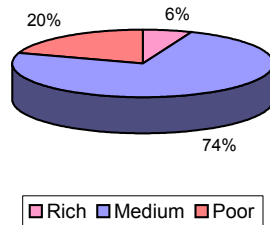
Table 3.3: Wealth Ranking

Criteria	Rich	Medium	Poor
<b>Job</b>	-Sell infrastructure equipment -Drinking seller -Own Restaurant -Sell rice	-Fish culture -Civil worker, - Teacher - Raising livestock -Tailor	-Laundry -Fisherman, Fish selling -Motor taxi -Tailor labor -Food seller (small scale)
<b>House</b>	-Flat, has 2-3 floor -Big wooded house	-Flat, has 1 floor -Wooded house, zinc roof	Small wooden house with Zinc roof and palm leaf roof
<b>Properties</b>	-Car, Motor - large color TV -High price mobile phone	-Motor, Bicycle -Small color TV -Mobile phone	-Motor (low price), bicycle -TV color (low price)
<b>Capital</b>	Enough capital to do business	-Borrow from World Vision (NGO) and ACLEDA bank. -Borrow from neighbor	-Lack of capital -Borrow from World Vision and ACLEDA bank
<b>Fish Pen size</b>		Size: 5m*10m	Perhaps they don't have any fish pens
<b>Childrens education</b>	-Completed High School -University -Study abroad	Completed High School	Completed class 8-9-10
<b>Income</b>	Many sources of income	From 10 000-20 000 Riels per day	From 5 000-10 000 Riels per day
<b>Family members</b>	3-5 members	5-6 members	Over 6

We contacted the village leader and asked for the family list in his community 2 or 3 days before we practiced the PCA. The Wealth Ranking activity was done by combining together both men and women's groups. Facilitators introduced and described to the participant about the Wealth Ranking process and its meaning. We asked all the participants, especially the village leader and the sub-village leader to provide us with certain criteria related to Wealth Ranking which allowed us to differentiate between a Rich group, Medium group, and Poor group. All this information is basically on the whole community.

The results show that: there were three classes, Rich, Medium, and Poor in Phum Muoy. This is based on many criteria such as Job, House, and type of Properties, Capital, Fish pen culture size, childrens education, income, and household size (see Table 3.3 above). It was provided by the village leader and the participants, related to the real situation in the whole community.

Figure 3.7:-Wealth Ranking of Phum Muy community



### 3.3.2. Social Events

The Mens and Womens group were not different talking about annual festival events in their community: People have a long holiday only special days such as Khmer New Year, Pchum Ben (offering food to ancestors' spirit), or water festival. Many people such as fish farmers, motor taxi drivers, vegetable sellers, and fishermen said that even though it is long holiday they still go on with their work. They can't stop to enjoy it so long like the government staff do since they have to earn money for their livelihoods. Talking about their short holiday like Dependence Day, Womens Rights Day, and Ploughing Ceremony, they don't care to get relaxation, rather still being involved with their daily activities to support their whole families. (Table 3.1 & 3.2: seasonal calendar).

### 3.3.3. Health

Health is very important to everyone in the community. The villagers said that if they got sick, how they could work to support their life and their children for school. The Mens group said that they often get fever or cold in the hot season and sometimes in rainy season. Women get cold in January, February, November and December. they sometime face with skin itchininess, especially the women who get in regular contact with the lake water during activities such as morning glory growing, hyacinth cutting and fishing. Children sometime get dengue fever in October, June, July, and August (Tables 3.1 & 3.2)

### 3.3.4. Income

The mens group can earn the most money in February, March, April, May and June; but the maximum income described by the womens group was in March, April, and October. Women earn less than men do (Tables 3.1 & 3.2).

### 3.3.5. Food Consumption

In general, the mens group said that their rice comes from the market because in their village they could not do rice farming. Source of meats such as pork, beef, chicken, duck and fish almost all come from the market. From February to April of the New Year period, a few families (3%) could afford to buy their own chicken. About 3% households could consume their own duck. The fishermen consume fish that they caught from the natural lake for the whole year. However, some families also bought fish from the market as well. A small amount of fish farmers use their own cultured fish, but some of them prefer to buy fish in the market. Most vegetables are bought from the market, as they don't have space for growing. About 5% utilize processed fish which were made

by themselves. Information of Food consumption was not markedly different between the mens and womens groups.

### **3.3.6. Activities Matrix**

The men's important daily activities in the village are motor driving, fishing, feeding (fish farmer), gathering the leftovers from the restaurants for fish food. On the other hand, the women's activities are going to the market, cooking, sewing, feeding, fishing, cutting water hyacinth, selling fish in the market. The women work longer hours than the men, that is, the women do housework whilst also doing other work to earn money to support their families. In addition, the children's activities also include: going to school, sharing the housework, selling with their parents, studying part time, learning foreign languages, etc.

**Table 3.4: Food Consumption (Mens Group)**

Kind of Foods	Jan	Feb	March	April	May	June	July	August	Sep	Oct	Nov	Dec
Rice												→
Pork												→
Beef												→
Chicken			3% →									→
Duck							3%					→
Fish							3-4	→				→
Potato, carrot												→
Leaf vegetables												→





**Table 3.5: Food Consumption (Womens Group)**

<b>Kind of Food</b>	<b>Jan</b>	<b>Feb</b>	<b>March</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>Aug</b>	<b>Sept</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>
<b>Rice</b>												→
<b>Pork</b>												→
<b>Beef</b>												→
<b>Chicken</b>												→
<b>Duck meat</b>												→
<b>Fish meat</b>												→
<b>Potato, Carrot...</b>												→
<b>Leaf vegetable</b>												→
<b>Fruit vegetable</b>												→
<b>Corn</b>												→
<b>Beans</b>												→
<b>Canned food</b>												→

**Table 3.6: Activities Matrix of Men**

Activities	Morning (AM)												Evening (PM)											
	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				x	x	x																		
Breakfast							x	x																
Tailor						x	x	x	x	x			x	x	x	x	x		x	x	x	x	x	
Collected waste from restaurants for fish food																x	x	x						
Give food to fish																		Rice bran	Restaurants-waste					
Motor taxi				x	x	x	x	x	x	x			x	x	x	x								
Lunch											x	x												
Fishing		x	x	x	x	x																		
Fish Selling						x	x	x	x	x														
Bring children to school						x	x					x	x											
Share housework with his wife							x	x										x	x	x				
Clothes washing				x				x	x							x	x							
Relaxation												x	x	x										
Dinner																		x	x	x				
Watching TV																			x	x	x	x		
Sleep	x	x	x																	x	x	x	x	x

Table 3.7: Activities Matrix of Women

Activities	Morning (AM)												Evening (PM)											
	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				x	x	x	x																	
Do exercise				x	x																			
Clean up the house					x	x	x																	
Tailor				x	x	x	x		x	x	x		x	x	x	x	x		x	x				
Give food to fish							x	x									x	x						
Fish selling								x	x	x														
Grocery selling						x	x	x	x	x	x		x	x	x	x	x	x						
Food buying								x	x	x														
Cooking and meal time					x	x					x	x						x	x					
Help children to school						x						x												
Housework							x	x	x	x	x		x	x	x	x	x	x	x	x	x			
Water hyacinth cutting							x	x	x															
Banana leaf cutting														x	x	x	x							
Fishing			x	x	x											x	x	x	x					
Entertainment and reading								x	x	x	x		x							x	x	x		
Relaxation											x	x								x	x	x		
Sleep	x	x	x	x	x	x													x	x	x	x	x	x

**Table 3.8: Activities Matrix of Children (Mens Group)**

Activities	Morning												Evening											
	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				x	x																			
Prepare for school					x																			
Breakfast					x	x																		
Go to school						x	x	x	x	x	x		x	x	x	x	x							
Lunch											x	x												
Relaxation												x	x											
Playing							x	x	x					x	x	x	x							
Reading					x														x					
Share housework										x	x							x	x					
Watching TV											x							x	x	x				
Part time study						x	x				x	x						x	x					
Study English full time							x	x	x					x	x	x	x							
Dinner																		x	x	x				
Sleep	x	x	x	x	x														x	x	x	x	x	x

**Table 3.9: Activities Matrix of Children (Womens Group)**

Activities	Morning												Evening											
	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					x	x																		
Breakfast						x	x																	
Go to school						x	x	x	x	x	x		x	x	x	x	x							
Help in business								x	x	x	x				x	x	x	x						
Look after their brother or sister											x	x	x			x	x	x	x					
Lunch											x	x	x											
Playing								x	x	x					x	x	x							
Dinner																		x	x					
Revise lessons from school						x													x	x	x			
Watching TV																	x	x	x	x				
Sleep	x	x	x	x	x														x	x	x	x	x	x

### 3.4. Resource Problems

#### 3.4.1. Problem Ranking

The main problems were found by giving bean score as below:

1-**High price of electricity**: There is no public electricity provider in the village. People pay high prices for the electricity served by the private service provider

2-**The roads in the village are small and flooded**: Since the village is nearby the Boeng Kok Lake, it is so dangerous for children and young people and flooding causes stagnancy of their business processes.

3- **Lack of money to support children for school**: Many people cannot support the costs of their children for studying, especially in higher classes because of their limited earnings. They drop school because of beginning to work in their family's business or doing housework. Most people want to support their children to study, but they give up this attempt because of lack of funds..

**Table 3.10: Problem Ranking**

<b>Problems</b>	<b>Women</b>	<b>Men</b>	<b>Total</b>	<b>Rank</b>
High price of electricity	85	106	191	<b>①</b>
The roads in the village were flooded and small	29	30	59	<b>②</b>
Itchy skin disease caused by lake water	5	0	5	<b>14</b>
Lack of capital to do business	14	30	44	<b>⑤</b>
Sanitation	2	0	2	<b>15</b>
Lower living standards	10	5	15	<b>10</b>
Lack of money to support children to attend school	10	49	59	<b>②</b>
Lack of transportation	0	0	0	<b>16</b>
Lack of land to build house	12	0	12	<b>11</b>
Drugs	3	30	33	<b>6</b>
Insecurity	10	7	17	<b>8</b>
Unclean environment	7	0	7	<b>13</b>
Family violence	29	0	29	<b>7</b>
Fish disease	10	0	10	<b>12</b>
No job, beside the current job	14	2	16	<b>9</b>
Poor water pipes	27	29	56	<b>④</b>

#### **4. CONCLUSION**

Both the team working and participants themselves absorbed a great deal of knowledge and experience out of the community evaluation. Although the villagers were busy in earning their livings, they were willing to take part and to closely cooperate with our work group. Furthermore, the participants were all literate; therefore, it was one reason which eased the process of the appraisal. The facilitators encouraged both the Mens and Women groups to compete with each other in the PCA process. Certain information that was not available in the community was the area of the village and of the lake, also the total number of the villagers living there. In the community the villagers usually paid less attention to the polluted water—Boeung Kok, in contrast they were more likely to pay attention to their families' standard of living. In addition they also focused on their health and hygiene because they had an idea in mind that if they were ill, who will make money in order to look after their families?

In general they worry about the decreasing natural resources of the lake such as fish, edible aquatic animals and plants etc, however they see no way of halting or slowing down these decreasing resources.

## APPENDIX

Team involved in planning and carrying out PCA from Faculty of Aquaculture, Royal University of Agriculture, Phnom Penh:

Mr. Chhouk Borin

Mr. Thak KaunTheang

Mr. Srey SamAn

Miss. Chhim Rumuny

Miss. Sok Daream

### List of participants

N°	Name	Sex	Faction
1	Poav Chean	M	Village Leader
2	Ros Rom	M	Sub-village leader
3	Hun Trey	M	Group leader N°7
4	Ly Saon	M	Group leader N°9
5	Long Sareth	M	Pen culture fisherman
6	Huy Peng	M	Villager
7	Ly Tong Meng	M	Pen culture fisherman
8	Heng Peak	M	Pen culture fisherman
9	Bak Hong	M	Villager
10	Peong Try	M	Pen culture fisherman
11	Som Chheng Mey	M	Pen culture fisherman
12	Chem Chean	M	Villager
13	Hong LiHav	M	Pen culture fisherman
14	Bun Heang	M	Pen culture fisherman
15	Seth Thear	M	Villager
16	Srey Mom	F	Villager
17	Bich Leng Hey	F	Villager
18	Srun Thaen	F	Pen culture fisherman
19	Chea Sarim	F	Villager
20	Chhum Leang	F	Villager
21	Hun SokRa	F	Pen culture fisherman
22	Ros SokLaeng	F	Villager
23	Tev Teang	F	Pen culture fisherman
24	Laek SoKaun	F	Villager
25	Hin Sor	F	Villager
26	Cheam Bopha	F	Villager