

# **Self-recruiting Species in Aquaculture: Their Role in Rural Livelihoods**

## **Case Study V5:**

### **Trai Group, Hoang Nguyen Village, Tri Thuy Commune, Phu Xuyen District**

#### **1. Introduction**

##### **1.1 Schedules and Persons Involved**

This study was carried out between June 2 and June 20-21, 2001. The RIA-AIT team first visited via the commune on June 2 and worked on the PRA process on June 20-21. After collating and translating information obtained at RIA1 in evening June 20, the team has a 'debriefing' with villagers in late afternoon of June 21. The RIA1 for the fieldwork consisted of:

1. Kim Van Van
2. Nguyen Chien Van
3. Nguyen Huu Hoa
4. Bui Ngoc Thanh

##### **1.2 District Commune Description**

Phu Xuyen district is the Southern district of Hanoi City. It lies some 60 km South of Hanoi city centre and surrounds river system. The total area of the district is 170.88 km<sup>2</sup> and the population 179,238 people. Despite its location, 91.74% of the households of the district are engaged in agriculture and the average per capita income of the district is a rather low VND2.659 million (US\$183.4). 4.94% of the households in the district are classified as poor.

The district was chosen as representative of the low land of the Red River delta. The district slopes from east to west. The eastern edge of the district in fact has Red river, rising to around 3 m above sea level. Six communes concentrated bid-rent large ponds, three communes are poor, six communes often have been over flooding in rainy season, Contrary six commune often get drought. It was decided to select three communes along a transect from east to west, Quang Lang in the draught area beside dyke of red river; Tri Thuy in the intermediate lowland areas and Van Tu in the lowest lying area of district. The characteristics of these communes are summarised in Table 1.

Table 1: Natural and Social-Economic Characteristics of Selected Communes

Variable	Quang Lang Commune	Tri Thuy Commune	Van Tu Commune
Topography	High land	Lowland	Lowest land
Total Area (km <sup>2</sup> )	6.5795	5.15	6.47
Land Area (ha)		328.4	427
Agricultural Area (ha)	327.52		391
Agricultural Households (%)	98.92	96.5	89.07
Population Density	797	1317 (1994)	683 (1995)
Poor Households (%)	5 new	10 new	5-6 new
Water Surface Area Used (ha)	54.6	15	43.2
Water Surface Area Unused (ha)	Red river	0	0
Aquaculture Systems	Extensive	Extensive	Extensive & semi-intensive
Species	Grass, silver, common and Indian carps	Grass, silver, common and Indian carps	Grass, silver, common and Indian carps
Wild fish	Wild fish from river	From field & river	From field

Source: Phu Xuyen Departments of Statistics and Agriculture and Rural Development; Selected Commune Offices.

### 1.3 Selection Process for the Village

Once the tentative commune sample framework had been established, the RIA1-AIT team began its work by making an appointment with Mr Le Xuan Thuy, the staff of Phu Xuyen district department of agriculture and rural development in Phu Xuyen district for the morning of June 2. He took up us to Quang Lang, Tri Thuy, Van Tu and other communes in the district. An introduction to Mr. Hoang Van Duong, Vice-Chairman of Tri Thuy commune, Phu Xuyen district for the morning of June 20, details of the constituent villages of the commune were obtained. The commune comprised 5 villages and one group as follows:

1. Tri Thuy 500 families
2. Vinh Linh 450 families
3. Nhan Son 260 families
4. Hoang Nguyen 390 families
5. Bai Do 420 families
6. Hong Thai 60 families

Hoang Nguyen village is poorest village. They have small land area, average land area for each person in the village is 170m<sup>2</sup> and often drought so that difficult for rice cultivation. This area used sugar cane cultivation, but now income from this activity is very low in the village. There are 11% poor households. Mr. Duong introduced to Mr. Lai Van Phuong, head of Hoang Nguyen village. The team immediately secured an appointment with village leaders in Hoang Nguyen including:

1. Lai Van Phuong, Head of village
2. Lai Van Quyet, Chairman of Ngoai Trai (out Trai) production
3. Chairman of Trong Lang (in village) production

Mr. Phuong said that the village includes Trong Lang and Ngoai Trai groups. Both Ngoai Trai and Trong Lang are the same about poor households. The size of the village was a constraint for PRA. Size of group was a suitable for PRA. One of these, Ngoai Trai group, was then chosen. On the basis of which an appointment was made to begin work that same noon. Ngoai Trai group has 90% of land area for rice cultivation and 10% for field crop, for knowledge in this area is very low. All village have 3-4 person finished high school, one finished colleague

## **2. Setting the Context**

### **2.1 Mapping the Current Resource Context**

Figure 2.1 presents the village resource map. This was drawn by Mr. Lai Van Quyet, Chairman of Ngoai Trai production in cultural house of Hoang Nguyen village, the meeting was taking place. Hoang Nguyen village sits on a ridge of Nhue river in West and surrounded concentrically by fields and paddy land in North and South. The road N<sup>o</sup> 75 sits in mid of the village. The church, high school, temple, cultural house, bus station and kindergarten are appeared in this. The main area of aquaculture ponds also appear to be in this part of the village.

### **2.2 Mapping the Development of the Village (Timeline)**

Figure 2.2 shows the timeline of key points in the village development. Information was supplied by Mr. Do Van Dong, a 71-year old man. They stressed political events. The village was established follow Buddhism. By 1767, most people in the village left Buddhism and followed Christians. At the time most of people in the village follow god. Hoang Nguyen church was built in 1803. The brick road was built in 1923, at the time dominated by French, the standard living of people in the village was very low. Until 1943, French left and dominated by Japanese. At the time most people had to damaged rice, maize to plant industry tree. Many starving people went to every where to earn for living. The war was reappeared in 1949 and a lot of things were damaged and many people were killed. The revolution required reducing tax in 1956. The sugar cane was planted for Van Diem sugar company until 1995. Purpose of using land was changed from sugar cane plant into rice cultivation, from that time standard living of people has been improved. In the following thirty years the village was badly affected by conflict.

## 2.3 Mapping the Social Context: Well-being Ranking and Criteria

### Well-Being Ranking Criteria

R a n k	Trial 1	Trial 2	Trial 3
	Head of Production Lai Van Quyet	Head of Village Lai Van Phuong	Lai Thi Tam Lai Thi Lan
1	Old people live alone, poor health or had many children, event 11 children. Some young households lack farm equipment, lack food for 3-6 months / year so that had to sell young rice. Wage labor.	Old people live a lone, illness, have many children & weak. Lack farm equipment & facilities	Old people live a lone or widow, illness, Have 3 <sup>rd</sup> children, lack of food had to wage labour, often borrow money to buy food, livestock get risks, no TV, radio & simple houses. Their children had to stop study early at grade 2-3
2	Concerned to children, a lot children, poor trading & economic, difficult to get a loan, low knowledge lack facilities, enough rice, but lack money for food.	Have a lot children, illness, enough rice, their children broke study.	Have labour, low knowledge, no TV, radio lack food from 3-5 moths / year. wage labour.
3	Economic was benefit from their parent, young households are very active, small trading, but not good result, adult children or younger Gr4, enough food, enough contributed, some time have to get a loan to product.	Some households have a lot children, hard work, trading. The health is poorer than GR4.	Still lack food a little, some households have black & white TV. They have to wage labour.

4	High income, manage brick kiln (1 household) trading beef & pig, most households are big trading. There are enough conditions to help their children study, but most of their children are young. Two households have many children, good furniture, house. Still have income from agriculture.	Main income from Agriculture, normal & small trading, large gardening, sub work, few children, have labour to wage. Enough farm equipment. Their children finish secondary school.	Trading to improve income, livestock get some luckiest, have labour to wage, no lack food, have Tv & radio.
5			Good knowledge, have investment to produce, good conditions to study. The house has flat roof, many livestock. Good furniture

- Social Structure of the Community: Community includes 5 villages and one group, each village has some groups. The positions in community: Chairman, vice chairman, accountant, chairman of party labour, vice chairman party labour, Young union, Women Union, Old People union & Army Union. The positions of persons in each village are the same, but at level of village.

## 2.4 Summary/ Key Points

- Hoang Nguyen village sits on a ridge of Nhue river surrounded concentrically by fields and paddy land.
- The village has been established for 1000 years & developing. Most people follow god.
- Well-Being Ranking criteria:
  - Poor Households:
    - + Often old people live a lone or many children or poor health, simple houses.
    - + Lack of: food about 3-5 months/year, facilities, furniture, farm equipment & investment. Get risks in livestock
    - + Their children stop learnt early.
  - Fairly Poor:
    - + Have a house & simple and cheap materials but still lack investment, low knowledge, poor trading.
    - + Lack food 1-3 months/year
    - + Wage labour.

- + Children stop to school early
- Medium:
  - + Enough food, but still not enough money. Have normal farm equipment and normal houses, wage labour.
  - + Their children often stop at secondary school.
- Fairly Rich:
  - + Know how to produce, spare some food & enough money, finish basic building, enough facilities, furniture.
  - + Their children often finish secondary school.
- Rich Households:
  - + Good knowledge.
  - + Enough materials, good houses. Good conditions for children study.
  - + Most of them get other income out of agriculture.

### **3. Activity Profile of the Village**

#### **3.1 Seasonal Calendar**

Figures 3.1 –3.4 present the annual calendar of activities for the different social groups in the village. There are small but not significant differences in the perception of the weather, with some groups emphasising temperature and others rainfall or wind. Light rain appears from February to April, at the time the temperature is cold. Hot, Sun and heavy rain with storm from May to August. Cool in September and October, light rain and cold some time dry in December and January. Nor are the differences in the social events mentioned events mentioned especially significant; it may be noted that there are church festivals in almost every month, some of them traditional, others promoted by the state. Especial the Noel is mentioned in all groups.

In relation to economic activities, the calendar for all groups shows double-crop rice cultivation being practised by all groups. Winter – spring rice is planted in February and harvested in May; summer-autumn rice follows immediately from July/August, with harvest in October and November. All groups are also engaged in field crop cultivation, maize, beans, are planted after rice harvesting in winter. For poor men group, a maize crop is planted in February and harvest in June.

All groups were also engaged in livestock cultivation, for rich groups have more animals than poor group. This was shown in harvest and stock. Fishing is mentioned in poor groups, suggesting the relatively between poor people and wild fish. Rich groups and poor men mentioned trading, but between them have the difference of trading activity depend on investment.

From this analysis, there are clear peaks in the labor demands and income flow from agriculture. Families are extremely busy in May, July and October-November, while the main income streams appear particularly concentrated in that time. Health problems is mentioned from most groups in early summer and the end of year specifically flu, cough in children at the change of seasons and tiredness. Wage labour only appears in free time of rich women.

#### **3.2 Group Activity Profile**

Some of these differences are reflected in the group activity profiles.

### Poor Women

<b>Activities</b> \ <b>Names</b>	<b>Nguyen Thi Xay</b>	<b>Nguyen Thi Can</b>	<b>Nguyen Thi Huu</b>	<b>Total</b>
Rice cultivation	5	10	6	<b>21</b>
Field crop	2	2	4	<b>8</b>
Livestock	2	4	2	<b>8</b>
Take care children	7	2	2	<b>11</b>
Trading & service	2		3	<b>5</b>
Fishing	2	2	3	<b>7</b>
<b>Total</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>60</b>

### Poor Men

<b>Activities</b> \ <b>Names</b>	<b>Nguyen Van Chen</b>	<b>Lai Van Y</b>	<b>Lai Van Cham</b>	<b>Dao Van Khai</b>	<b>Dao Van Cuu</b>	<b>Total</b>
Rice cultivation	6	4	5	5	4	<b>24</b>
Field crop	3	4	4	3	4	<b>18</b>
Livestock	3	5	3	4	4	<b>19</b>
Wage labor	4			2		<b>6</b>
Trading	2	3	4	3		<b>12</b>
Take care children	2	4	4	3	4	<b>17</b>
Fishing					4	<b>4</b>
<b>Total</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>100</b>

### Rich Women

<b>Names Activities</b>	<b>Le Thi Y</b>	<b>Nguyen Thi On</b>	<b>Nguyen Thi Tuyen</b>	<b>Lai Thi Xuyen</b>	<b>Lai Thi Lien</b>	<b>Total</b>
Rice cultivation	4	4	4	4	5	<b>21</b>
Field crop	4	4	4	2	2	<b>16</b>
Livestock	2	3	2	1	2	<b>10</b>
Trading	3	4	3	3	7	<b>20</b>
Wage labor	3	2	3	4		<b>12</b>
T. care children	4	4	4	7	4	<b>23</b>
<b>Total</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>100</b>

### **Rich Men**

<b>Names Activities</b>	<b>Nguyen Van Vinh</b>	<b>Nguyen Van Lan</b>	<b>Nguyen Van Thu</b>	<b>Lai Van Quy</b>	<b>Total</b>
Rice cultivation	4	3	4	4	<b>15</b>
Field crop	4	4	3	3	<b>14</b>
Livestock	4	3	6	4	<b>17</b>
Trading & service	4	6	4	5	<b>19</b>
Take care children	4	4	3	4	<b>15</b>
<b>Total</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>80</b>

These are summarised in Table 3.1. It will be noted that better-off women households rank take care children high on the list, but the better-off men rank trading, livestock highly. All groups haven't place importance on wage labour. For poor groups rank rice cultivation high on top the list. All groups mentioned trading because the land in this area is very small. But the between groups have the difference for trading. It depends investment, for poor people are only small trading, for rich people have different ways in trading.

**Table 3.1. Activities summary:**

<b>Poor Women</b>	<b>Poor Men</b>	<b>Rich Women</b>	<b>Poor Men</b>
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1. Rice cultivation	1. Rice cultivation	1. T. care children	1. Trading
2. T. care children	2. Livestock	2. Rice cultivation	2. Livestock
3. Field crop	3. Field crop	3. Trading	3. Rice cultivation
4. Livestock	4. T. care children	4. Field crop	4. T. care children
5. Fishing	5. Trading	5. Wage labor	5. Field crop
6. Small Trading	6. Wage labor	6. Livestock	
	7. Fishing		

Several other points are worth noting. These include:

- Fishing activity appears in poor groups and this activity don't show in rich groups.
- The land for every person in Hoang Nguyen village is very small area so that they have to find sub-work to earn money. Last time they did alcohol and sugar, but now it is not suitable.
- At the moment field crop activity is less important with all groups.

#### **4. Role of Aquatic Animals**

##### **4.1 Species Ranking**

Figures 4.1-4.4 present the ranking of the main aquatic animals according to their importance in livelihood by the different groups (poorer men, poorer women, better-off men; better-off women) in the village. On the basic aquatic animal species were supported by all groups. Six highest important aquatic animal species were chosen.

**Figure 4.1: Poor Women**

<b>Criteria</b> <b>Species</b>	Cheap	Delicious	High nutrient	Availability	Easy sell	Easy buy	<b>Total</b>
Crab	3	4	6	5	8	2	<b>28</b>
Snail	3	8	6	6	6	2	<b>31</b>
FW clams	3	7	3	6	6	2	<b>27</b>
<i>C. auratus</i>	2	3	3	4	10	2	<b>24</b>
Small wild fish	3	4	5	2	7	2	<b>23</b>
Shrimp	3	4	5	5	9	2	<b>28</b>

Silver carp	3	4	5	5	4	2	<b>23</b>
Grass carp		3	4	3	4	2	<b>16</b>
<b>Total</b>	<b>20</b>	<b>37</b>	<b>37</b>	<b>36</b>	<b>54</b>	<b>16</b>	<b>200</b>

**Figure 4.2: Poor Men**

<b>Species</b> \ <b>Criteria</b>	Cheap	Available	Easy catch	Delicious	Easy sell	Few bones	<b>Total</b>
Shrimp	2	3	3		4	4	<b>16</b>
Crab	4	4	4		3		<b>17</b>
Snake head				5	3	3	<b>11</b>
<i>Carissius auratus</i>	4	4	3	1	3		<b>15</b>
<i>Anabas tes.</i>	4	3	3	1	3		<b>14</b>
C. carp		4	1	4	4		<b>13</b>
In. carp	1	3	1	2	3		<b>9</b>
G. carp		1	1	3	5		<b>10</b>
Silver carp	5	3	2	1			<b>11</b>
Eel		1		3	3	2	<b>8</b>
<i>Mis. angui.</i>	1			2			<b>3</b>
Snail	2	2	2		3	3	<b>12</b>
<i>H. leucisculus</i>	2		2				<b>4</b>
Frog				5	4	2	<b>11</b>
Water snake					3		<b>3</b>
<i>S. caldwelli</i>				5	3	1	<b>9</b>
Small FW clam	3		2		4	4	<b>13</b>
Big FW clam	3					4	<b>7</b>
Clarias catfish				3	3	1	<b>7</b>
River catfish				4	2	1	<b>7</b>
<b>Total</b>	<b>31</b>	<b>28</b>	<b>24</b>	<b>39</b>	<b>53</b>	<b>25</b>	<b>200</b>

**Figure 4.3: Rich Women**

<b>Species</b> \ <b>Criteria</b>	Cheap	Delicious	Availability	Easy buy	<b>Total</b>
<i>Carissius auratus</i>	6	2	6	6	<b>20</b>
Small wild fish	7	2	4	6	<b>19</b>
Crab	4	4	5	5	<b>18</b>
Big FW clam	5	3	3	3	<b>14</b>
Small FW clam	3	3	2	4	<b>12</b>
Shrimp	2	6	6	5	<b>19</b>

<i>Anabas tes.</i>	4	4	5	5	<b>18</b>
Silver carp	5	4	5	4	<b>18</b>
C. carp	3	7	1	1	<b>12</b>
G. carp	2	8	1	1	<b>12</b>
C. catfish	2	8	1	1	<b>12</b>
Tilapia	2	4	1	1	<b>8</b>
Indian carp	2	4	1	1	<b>8</b>
Snake head	2	6	1	1	<b>10</b>
<b>Total</b>	<b>49</b>	<b>65</b>	<b>42</b>	<b>44</b>	<b>200</b>

**Figure 4.4: Rich Men**

<b>Species</b> \ <b>Criteria</b>	Few bones	Delicious	Easy catch	Easy buy	High value	<b>Total</b>
Shrimp	4	5	4	5	6	<b>24</b>
Crab	2	3	5	5	3	<b>18</b>
Snail	3	3	5	4	3	<b>18</b>
Eel	4	5			5	<b>14</b>
Water snake	4	3			4	<b>11</b>
<i>Spi. caldwelli</i>		3		4	4	<b>11</b>
In. carp		3		4	4	<b>11</b>
Silver carp		2		6	1	<b>9</b>
G. carp	1	4		3	8	<b>16</b>
C. carp	1	5		3	8	<b>17</b>
C. catfish	5	6			7	<b>18</b>
Snake head	5	6		1	8	<b>20</b>
<i>Anabas tes.</i>		4	3	4	2	<b>13</b>
<b>Total</b>	<b>29</b>	<b>52</b>	<b>17</b>	<b>39</b>	<b>63</b>	<b>200</b>

It will immediately be apparent that all groups mentioned wild fish due to cheap and available as clam, *Carissius auratus*, snail. Shrimp is a species the most important with all groups.

**Important Aquatic Animals - Summary:**

<b>Poor Women</b>	<b>Poor Men</b>	<b>Rich Women</b>	<b>Rich Men</b>
8 species	20 species	15 species	13 species

1. Snail	1. Crab	1. <i>Carissius</i>	1. Shrimp
2. Shrimp*	2. Shrimp	<i>auratus</i>	2. Snake head
2. Crab*	3. <i>Carissius</i>	2. Shrimp	3. Clarias catfish
4. FW clams	<i>auratus</i>	3. Small Wild Fish	4. Snail
5. <i>Carissius</i>	4. <i>Anabas tes.</i>	4. Silver carp	5. Crab
<i>auratus</i>	5. Common carp	5. <i>Anabas tes.</i>	6. Common carp
6. Small Wild Fish**	6. Small FW	6. Crab	
6. Silver carp**	clam		

\*, \*\*, the same level

The criteria as cheap, delicious, available and few bones were most people in the village liked. No criteria for fish culture were mentioned in here.

### Important Criteria - Summary

Reasons	Criteria	Poor		Rich	
		Women	Men	Women	Men
Consume	Delicious	37	39	65	52
	Available	36	28	42	
	Easy buy	16		44	
	Few bones		25		29
	Cheap	20	31	49	
	High nutrient	37			
	Easy catch		24		17
	High value				63
	Easy sell	54	53		39

### 5. Aquatic Animal Seasonality and Trends

From figure 5.1-5.4 shown that for all groups like wild fish due to cheap, available, easy buy, few bones & tasty. Poor groups have wild fish due to catch few in canal, in field and river in rainy season when fish were spawning. This point leads to reducing natural resource. For rich groups get wild fish due to buying, some from catch by children in river as small FW clam. General, this area is very few wild aquatic animal due to drought fields.

### 6. Aquatic Animal Trends

#### Poor Women

<b>Periods</b> <b>Species</b>	Before 1960	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 2000
Snail	In. Due to result of war was recovered, few people catch, large wild surface water area.				Stable Start exploited a lot, reduce water area	Dec. Pollute Env. a lot chemicals used in agr. & industry, too exploited			
Shrimp	As above								
Crab	As above								
FW clams	As above								
<i>Carissius auratus</i>	As above								
Small wild fish	As above								
Silver carp	In.				Stable	In. due to develop culture			

### Poor Men

<b>Periods</b> <b>Species</b>	Before 1960	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 - 90	90 - 95	95 - 2000
Crab	Don't know		In. No Pollute	Stable: Normal develop, few people catch, normal env.		Dec.: Pesticide, a lot people catch, pollute env.			
Shrimp	Similar crab								
<i>Carissius auratus</i>	Similar crab								
<i>Anabas tes.</i>	Similar crab								
Common carp	Similar crab								
Small FW clam	Similar crab								

### Rich Women

<b>Periods</b> <b>Species</b>	<b>Before</b> <b>1960</b>	<b>60 -</b> <b>65</b>	<b>65 -</b> <b>70</b>	<b>70 -</b> <b>75</b>	<b>75 -</b> <b>80</b>	<b>80 - 85</b>	<b>85 - 90</b>	<b>90 -</b> <b>95</b>	<b>95 -</b> <b>2000</b>
<i>Carissius auratus</i>	Increasing Few people catch, not used pesticide					Decreasing: A lot people catch, used a lot chemicals, electric shock, net with small size			
Shrimp	Increasing: Not effected by exploited methods					Dec. As above			
Small wild fish	Increasing As above					Dec. As above			
Silver carp	Stable: Few people catch					In. A lot people culture			
<i>Anabas tes.</i>	In. Few people catch					Dec. Similar <i>Carissius auratus</i>			
Crab	In. As above					Dec. Similar <i>Carissius auratus</i>			

### Rich Men

<b>Periods</b> <b>Species</b>	<b>Before</b> <b>1960</b>	<b>60 -</b> <b>65</b>	<b>65 -</b> <b>70</b>	<b>70 - 75</b>	<b>75 -</b> <b>80</b>	<b>80 -</b> <b>85</b>	<b>85 -</b> <b>90</b>	<b>90 - 95</b>	<b>95 -</b> <b>2000</b>
Shrimp	In.: No chemicals, low population			Dec.: Used chemical, eat more			Reduce due to chemicals, catch a lot by modal equipment, pollute env.		
Snake head	As above								
Catfish	As above								
Snail	In.			Dec. not so much due to spawning a lot					
Crab	Similar with Shrimp								
Common carp	In.						Dec. Increasing population, pond area become smaller.		

All groups in the village like wild fish, but recently most of wild fish were decreasing due to chemicals, pesticides used in agriculture, drought, damaged equipment as electric shock. Only fish culture are increasing due to develop seed & technique. Most people like crab and shrimp. For men groups like common carp at moment it is reducing in nature but increasing in culture, for shrimp is decreasing. For women groups liked silver carp and small wild fish due to cheap and available.

### 7. Cross checking

## **7.1 Transect Walk**

Head of village and two chairmen of production taken us to around the village with the map and shown church, fields, ponds, people living, which river, canals have wild fish & where water resource run to and where they could catch wild fish.

## **7.2 Farmer meeting**

- Shown the map of their village which some people had drawn yesterday and required them shown some places and asked them which parts were not correct, please drawn up. After that summary their activities and which aquatic animal they like & some questions were talked out:

- For poor groups, fishing and wage labour are put after other activities, but for individual household could income higher than other activities.

- People in this village have small land (170m<sup>2</sup>/each), but they put that activity on the top of list activities? Their answer is not, most income are field crop, industry tree and trading. But rice cultivation is general activity for every people in this village has so that it still is main activity. For poor women, catch snail and crab when they are free and field crop is in winter season.

- For aquatic animal: most people liked wild fish and silver and common carp due to cheap, available. Most wild fish was brought from other places. Field in this area has only crab and snail due to high land and draught

- Most wild fish are decreasing due to drought, pesticide, chemicals used in agriculture and human exploited too much both small size and spawning season with damaged equipment as electric shock.

## **8. Summary/ Key Points**

- Most of groups have same ideas about weather as temperature, rain, sun, wind and storm, about social events as open church, church festival, Noel day and Tet.
- There are high number of children stop school early at grade 3-4 (not finish primary school)
- Most groups have two rice crops: Transplant in month 1 and 6 and harvesting in month 4-5 and month 8-9. For most people in the village, the rice cultivation is still an important in this area. For rich men, trading is the most important.
- Rice cultivation is the most important activity for poor groups and rich women, but for rich men, trading brings more income than other economic activities.
- Every people in this village has small land so that all groups have trading activity, but trading in between groups is difference and depend on investment. Fishing activity is only appeared in poor groups

- Most people like wild fish due to cheap, tasty and available. The criteria about aquatic animals are cheap, available, easy buy, tasty, few bones & high nutrient.
- Most wild fish are decreasing and some culture fish are increasing. Wild fish is not much in this area.