

**REPORT OF STUDY ON FISHERY INSTITUTIONS  
AT WEST KALIMANTAN PROVINCE,  
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Authors: Dr Sonny Koeshendrajana (CRIFI, Bogor) and Samuel (CRIFI, Palembang)

## **INTRODUCTION**

A law of the Republic of Indonesia No. 5/1990: "Conservation of natural resource and its ecosystem" mentioned that Indonesian natural resource and its ecosystem have an important role and need to be managed and used in the present and future in a harmonious and sustainable way. Furthermore, the development of natural resource and its ecosystem are an integral part of national development program, which is an application of The Five Principles of The Republic of Indonesia.

The natural resource and its ecosystem are depended each other; thus deterioration and distinction of one of it will damage the ecosystem. One point of the above law stated that existing national rules have not yet accommodated and ruled the conservation of natural resource and its ecosystem.

Referring to some points of the law No. 5/1990, it can be seen that natural resource conservation and open water fishery reserve have similar function and effect to the open water fishery resource.

The existence of fish reserve in open water is one of management methods for keeping the sustainability of fishery resource that still allows the utilization by fishers.

In collaborative project between Central Research Institute for Fisheries (CRIFI), Marine Resource Assessment Group (MRAG), and Provincial Fisheries Service, it has been proposed a guideline for tropical fishery reserve management in Indonesia, which was consisted of fish biology and environment monitoring, fishery socio-economic monitoring, and institutions monitoring. This report will emphasize on survey on institutions at 4 villages at West Kalimantan Province.

## **OBJECTIVES**

The first objective was to observe the implementation of existing regulations, including the effectiveness of the regulation in each location. In addition, this study was also aimed to suggest criteria that can affect the effectiveness of reserve management for certain environment. The last objective was to give recommendation of condition that is needed for establishing a reserve.

## **METHODOLOGY**

Four locations have been chosen, i.e. Tengkidap, Pulau Majang, Meliau and Sebulat. Each location has their own water body or reserve, i.e. Seliban lake, Seriang river, Balaiaram lake, and Batuk lake, respectively.

This study has been done for 2 weeks, from October 17 to October 31, 1999 by interviewing people who involved in open water management, i.e. Village headman, chief and deputy of fishers association, custom headman, stake holders, and staff of Provincial Fishery service.

The interview covered some points, which were as followed:

1. To find out whether the existing regulations were understood and applied by informants.
2. To find out the status of law enforcement; and the role of local institutions in solving the problem of fishery resource utilization.
3. To find out why the stakeholders wanted to and invested their money in the natural resource.
4. To characterize the size, homogeneity and structure of local institutions.

## **RESULTS**

Major point could be observed in this study was the perception of stakeholders to formal regulations, which were made by government, and informal regulation, which were made by locals.

The government regulation that mentioned about forbidden fishing techniques were fully understood and applied by stakeholders. Even if someone breaks those regulations, they will punish the breaker.

### **1. Tengkidap Village**

Information was collected from fishers' leader and 3 fishers.

#### **1.1 Community characteristic**

Tengkidap was a fishing location for people who live at Suhaid village. There were 30-40 families lived at Tengkidap and depended their life on fishing. Mostly they were from Malay tribe. At the interview time, there were only 20 families left and still fishing although it was not a fishing season. The fishing locations at Tengkidap village were Seliban lake, Tengkidap river, and Tawang river.

#### **1.2 Regulation**

Tengkidap fishers were allowed to fishing in any area but should obey the formal and informal regulations.

Fishing regulations made by locals in May 1, 1998, arranged several fishing gears, among others:

- a. Tidal trap (jermal). Tidal trap was not allowed to be installed along Seliban estuary to Seliban lake and Tengkidap river from 00.00 a.m. to dawn, except along Tawang river. This was because at that time fishes were migrating to Seliban lake.
- b. Portable fish-pot (Bubu). This gear was not allowed to be put along Seliban estuary to Seliban lake and Tengkidap river, except along Tawang river.
- c. Purse seine (pukat). Purse seine with mesh size of 25 inches were not allowed to be put at 00.00 am to dawn.

### **1.3 Infraction and Sanction**

So far, there was no law infraction, but if there was infraction, the sanction will be given regarding to the level of infraction. If it was low/small infraction, then fisher's leader will only remind the breaker. If it was big infraction, such as stealing large number of fish and using forbidden gears, then the community will discuss what sanction should be given to the breaker.

The outsiders should get permission from fisher's leader before fishing at Tengkidap and should obey the regulations. If they broke it, they were not allowed to fishing at Tengkidap anymore.

### **1.4 Monitoring and Surveillance**

The community monitored and surveillance each other. Monitoring was succeed since the community were aware about the importance of the regulation.

### **1.5 Law enforcement**

Law enforcement was done by fisher's leaders and fishers, and rarely involved custom leader or village headman since fishing area were far from living area. But, if fishers could not solve the infraction, then it will be processed to the higher level.

### **1.6 Other things**

Authority for fishing in one area was determined by lots system. For narrow water area, the fee was Rp. 1.000,- and if they got the lot, they should pay another Rp. 2.500,-. In average, their income during dry season was about Rp.300.000,-

For wider water area (about 10 rivers), the lots were done at village and for those who win the lots should pay Rp.25.000,-/season. In average, their income in one fishing season was about Rp.2.000.000,-. The lots money became village deposit.

At this moment, the fishers still satisfy with the yield and some fishers stated that they will give support if Seliban lake would be made a reserve. For further information, Seliban lake is 50 ha in high tide and 10 ha in low tide.

At dry season, there were two deep stream at Seliban lake, i.e. penyerepang and besampai deep streams. In low tide, purse seine was abandoned and fishers obeyed this.

## **2. Pulau Majang Village**

Information were collected from village headman, custom leader, fisher's leader, fishers, and farmers at Dampaik village

### **2.1 Community Characteristic**

In 1999, there were 207 families (804 persons) live at Pulau Majang and 165 families (80%) were fishers. They were mostly Malay and 17 families were from Dayak tribe.

Pulau Majang society depended their life on fishing at Seriang river, which laid across Majang village and Majang lake.

## **2.2 Natural Resource Condition**

According to village headman, water area in high tide covered about 300 ha and the water was wavy when winds blow. In the low tide, it covered about 10 m in width and 4 km in length. Between high tide and low tide, water was fluctuated of 7-8 m.

## **2.3 Regulation**

All regulations were made through discussion between village headman, customs, elders, fisher's leader and fishers. In high tide, it was not allowed to put hard and soft tidal trap or two layers purse seine, because small fish including 'toman' (a local fish) could be entrapped by those gears. The size of 'toman' that was allowed to be caught should be more than 5 cm. Protests were raised by community because small fish were caught everyday and were only used for feeding 'toman' cultured at net cages. Village headman had persuaded fish farmers to change 'toman' with herbivorous species or other species that only consume small number of fish, but the fish farmers were neglecting it. The reason was because it was difficult to find the alternative species, besides, the price and demand of new species was still unknown.

Fishers obeyed an informal regulation that stated to not using worm as fish bait, since fishers without worm bait would not get any fish compared to fishers with worm bait.

## **2.4 Infraction and Sanction**

If fishers caught 'toman' less than 5 cm, their gears will be confiscated and they will be fined Rp.100.000,- If fishers put tidal trap at forbidden place, they will be fined Rp. 200.000,- without confiscated the gears. If they broke the rules for second time, they will be fined 2 x Rp.200.000,-. But this rarely happened.

In dry season, the robbery usually happened, but the community could never caught the robber. If community caught someone using electricity for fishing, then gears will be confiscated and the victim will be reported to police. If someone had been caught using double purse seine, the gear will be confiscated.

## **2.5 Monitoring and Surveillance**

Fishers monitored each other in term of fishing gears and fishing area. Besides, once a week or at least twice a month, the fisher's leader went around to monitor the lakes.

## **2.6 Law Enforcement**

Law enforcement was always applied based on discussion among fishers.

## **2.7 Other things**

Authorities for fishing area were determined through lots system. For small rivers, lots fee was Rp.5000,-person. For big rivers, lots fee was Rp.20.000,- if yield were 200-300

kg, Rp.50.000,- if the yield were 500 kg, and Rp.200.000,- if the yield were more than 1000 kg.

Fishers were worried that fishery resource would decrease due to the increasing resident population. Besides, people from Dayak tribe used tree's root as poison for fishing in the upstream.

Village headman agreed if some location at Pulau Majang would be selected as reserve, but he mentioned that it should be discussed with fishers.

### **3. Meliau Village**

Information was collected from village headman, custom leader, fisher's leader, and 2 fishers.

#### **3.1 Community characteristic**

Meliau village was the furthest village in Sentarum Lake area. Almost 100% of residents were from Dayak tribe. About 30 families still lived at a traditional house called 'long house'. Their main occupation was agriculturist and second occupation was fishers. According to village headman, time being consumed for agriculture and fishing were in balance. The residents got 50% income from agriculture and 50% from fishing.

In daily life, residents were obeyed the elders and customs, and appreciated the fishery resource.

#### **3.2 Natural Resource Condition**

Natural resource of Meliau village was still in a good condition. Lebuyan river was empties into Balaiaram lake. Other lakes in Meliau village were Lukuk lake, Kemati lake, and Tujuh lake. Tujuh lake was rarely visited since there was a lot of crocodile lived there.

#### **3.3 Regulation**

According to village headman, some fishing gears were abandoned in high tide or low tide season, i.e. purse seine, 'pengilar' and tidal trap. "Pengilar" and portable fish pot were allowed at Lukuk lake. There was a regulation stated that it was forbidden to catch and sell 'toman' fries to outside the village. The limit of culturing 'toman' was 1,000 fries per person. "Toman" fries that still attached to the broodstock were not allowed to be caught.

Portable fish-pot was abandoned along Lukuk river to Balaiaram lake.

#### **3.4 Infraction and Sanction**

Regulation infraction and fish robbery were never found at Meliau village. This was possibly due that residents obeyed the regulations. According to village headman, outsiders were not allowed to fishing at Meliau village because Meliau people were experienced that the outsiders broke the regulations. In contrary, fisher's leader stated

that outsiders could do fishing at Meliau village only if they got license from fisher's leader and should obey the existing regulations.

Destruction of fishing resource was found at Meliau village, caused by crocodiles and human.

### **3.5 Monitoring and Surveillance**

Monitoring and surveillance were done by all residents. They were well aware about the importance of fishery and forestry resource for their life.

### **3.6 Law enforcement**

The law enforcement has always been done based on discussion between all residents.

### **3.7 Other things**

At Meliau village, they were no lottery system for deciding who will get authority for fishing in one area. The mutual cooperation was very strong existed in the life of Meliau villagers. They also agreed if some water area in Meliau village would be selected as a reserve. Their crops from agriculture were solely for their consumption. Their incomes came from selling yield from fishing.

## **4. Sekulat Village**

Information was collected from fisher's leader and fisher's deputy, custom leader, and 3 fishers.

### **4.1 Community characteristic**

Sekulat village was one of the biggest village in Sentarum Lake area. In 1999, there were 176 families lived there. Their occupation was fishers. Ninety-five percents of residents were from Malay tribe and others were migratory. When fishing season was over, the residents shifted their activity to collect tree's skin.

### **4.2 Natural resource condition**

Belitung river flew across the village. This river was never dried even in long dry season. Batuk lake was a reserve, while others were fishing ground, i.e. Sekulat lake, Genali lake, Belida lake, and Semangit lake. The latest four lakes sometimes dried on long dry season.

### **4.3 Regulation**

There were a lot of regulations on fishing in this area. All were collected and written down by Valentinus Hari in 1996. The regulations among others were: 'Toman' with the size smaller than 3 cm were not allowed to be caught, it was forbidden to catch exotic fish with certain gears. Tidal trap and purse seine were not allowed in certain circumstances.

#### **4.4 Infraction and Sanction**

In general, all residents obeyed the regulations that had been made through discussion between them. So far, there was no report on regulation infraction in this area.

#### **4.5 Monitoring and Surveillance**

Monitoring and surveillance were done by all residents. They were aware about the importance of natural resource.

#### **4.6 Law enforcement**

Law enforcement has always been conducted based on discussion among residents, which was led by fisher's leader and approved by village headman and custom leader.

#### **4.7 Other things**

Authority for fishing area was determined through lots system. Conflicts between fishers were never happened. The informants said that they have no rejection if water area in their village would be selected as reserve, but it should be discussed with other fishers.