

## Fishing Ground Use at the Commercial Fishing Area in the Malay Peninsula : The Case of Parit Jawa, Johor State

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## **Fishing Ground Use at the Commercial Fishing Area in the Malay Peninsula: The Case of Parit Jawa, Johor State**

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### **INTRODUCTION**

It is important for the geographers to study human adaptation to the natural environment and the human activity system. Especially, fisheries have offered excellent subjects to discuss these, because fishing activities take place in the natural environment, the sea.

I have tried to understand the fishing ground use from an ecological point of view. For example, the relation between tidal current and fishing activity has been made clear [TAWA 1981, 1983]. However, there is no denying that the researcher may have picked up arbitrarily such conditions as lunar phase, tidal stream, and wind as a part of the natural environment. Recently, some geographers questioned whether this attitude is appropriate as "the strategy to study for the researchers" [MATSUMOTO 1991: 194]. But it is indispensable to obtain much data on man-environment relationships based on the ecological perspective in order to discuss resource management, territoriality of fishing grounds, and the regulation or institution of fishing activity.

Furthermore, in the developing countries, much data on the system of fishing ground use or fishing activities in small scale fisheries need to be collected, because of no previous data, although many small-scale fishermen operate in such countries.

This paper deals with the fishing ground use in a small commercialised area in Johor State, Malay Peninsula.

### **1. RESEARCH AREA**

The Malay Peninsula (West Malaysia) is surrounded by the South China Sea, the Strait of Malacca and the Andaman Sea. The coastal area is divided into the East Coast and the West Coast. Each side has environments suitable as fishing ground [JOMO 1991: 9, Ooi 1990: 11-14].

In my fieldwork in 1991, my focus was on the study of fishing ground use in the tidal muddy area. After the general survey in the western and the southern part of the Malay Peninsula, Parit Jawa in Muar District, Johor State, was selected as the research area. Although the modernized seine nets and trawl nets

are predominant in the West Coast, traditional fishing methods like fishing stakes, drift nets and deep sea pots were seen in Parit Jawa.

Parit Jawa is located between Muar District and Batu Pahat District (Figure 1). It stands  $1^{\circ}56'N$ . and  $102^{\circ}35'E$ . It has a population of about 10,000. Plantations, such as oil palm, coconuts and tropical fruits, are predominant in this area. There is little natural tropical forest. Many drainages which have been dug to take out salty water from the cultivated land stretch around the plantations [TAKAYA and PONIMAN 1986: 272-274, KAIDA 1990: 206-207, FURUKAWA 1992: 43-

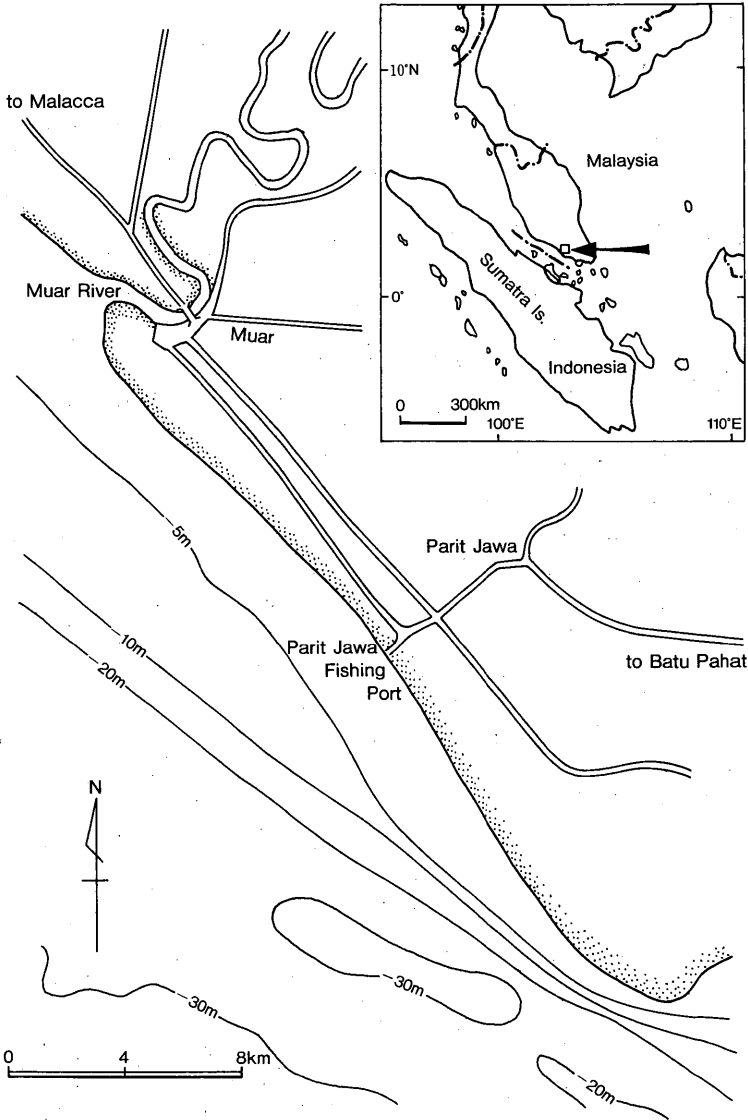


Figure 1. Location of Parit Jawa

56]. They are called "*parit*" in Malay. Parit Jawa was named for its drainage system.

Malay settlements called *kampung* are located around the plantations. The town site is dominated by the Chinese. Most Chinese fishermen also live around the town.

Parit Jawa fishing port is located southwest of the town. This area was mangrove forest and swamp a hundred years ago and a few Malay people lived there. Later, the Chinese people who migrated as laborers or merchants from the southern part of China have cut the mangrove and constructed the fishing port [KAWASAKI 1991: 156].

The towns along the West Coast of the Malay Peninsula have been urbanized in response to the development of rubber plantations and tin mining from the 19th century to the early 20th century. As the demand for fish as animal protein for urban people was great, the Chinese invested in the fishery of the West Coast [YABUUCHI 1969: 142]. I think that the fishery system in Parit Jawa had been formed this way.

The seaside area around the Parit Jawa fishing port is called *pantai* in Malay. There is a concentration of landing spaces, engine repair shops, fishing gear shop, office of the fisheries association, shipyard, resting rooms for fishermen, tea rooms, seafood restaurants (Figure 2). When the fishermen go fishing, they come to *pantai* by motorcycle or bicycle.

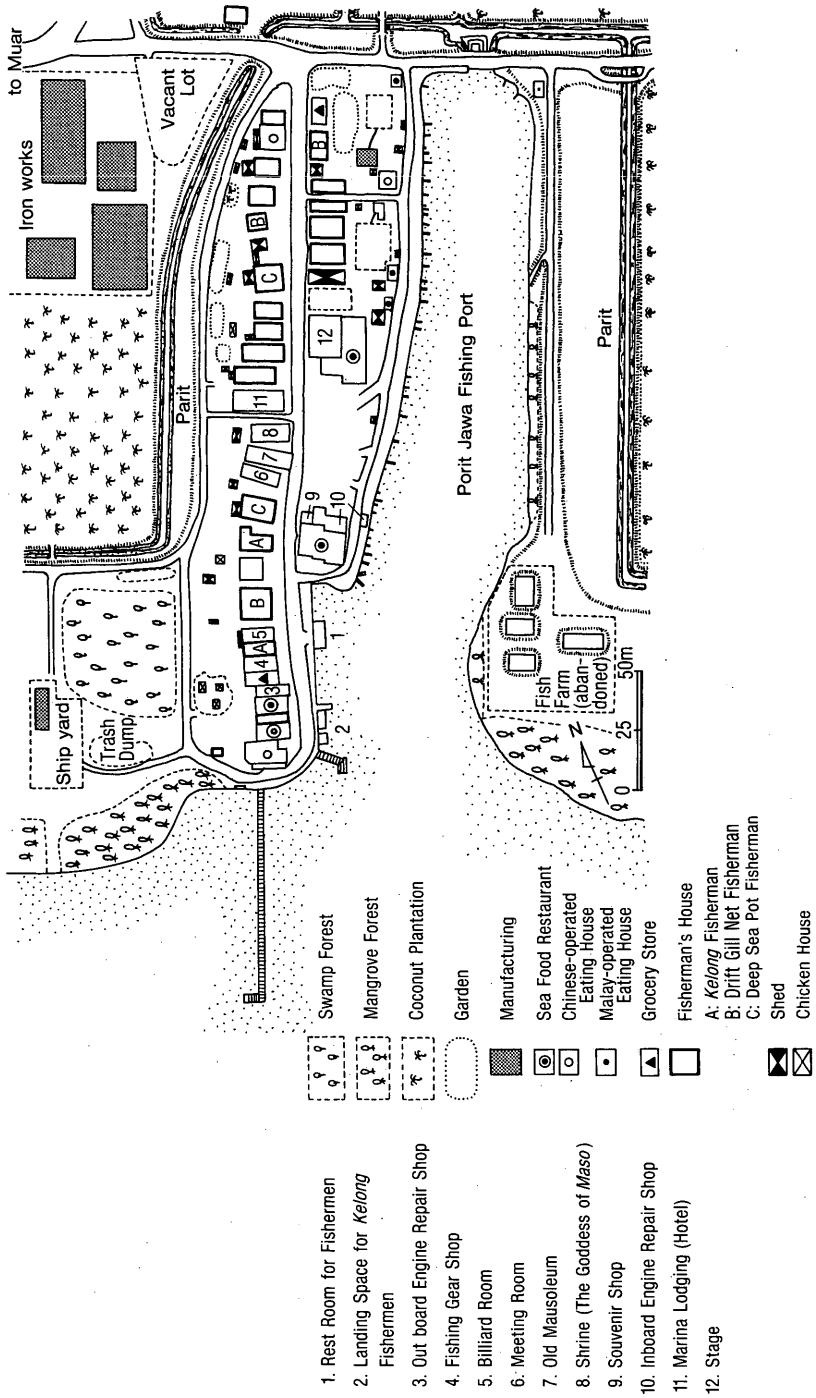
There were 276 fishermen in 1990, according to the official data from the fisheries office in Muar; 85 percent were Chinese and the rest were Malay. The number of fishing boats was 128. One hundred boats had inboard engines, 21 had outboard engines and 7 had no engine.

The main fishing methods were fish stakes (*kelong*), drift gill net (*jaring hanyut*) and deep sea pots (*bubu*). Catches were sold in public markets (*pasar*) through 4 Chinese middlemen. Total landed tonnage in 1990 is 189.3 tons.

## 2. THE CONDITION OF FISHING GROUND

The offing of Parit Jawa, the Strait of Malacca, located between Sumatra Island in Indonesia and Malay Peninsula is very narrow and shallow. Some mangrove forests have been already cleared for coconut plantations. The shore forms a muddy tidal area. The tide is large and the maximum difference between high tide and low tide is over 2 meters. The width of the port grows over 50 meters during high tide but narrows to 10 meters during low tide.

On the West Coast, fishing operations are undertaken throughout the year as the fishing grounds are protected from both the northeast and the southwest monsoons by the Main Range and the Island of Sumatra, respectively [JOMO 1991: 30, OOI 1990: 14, IWAKIRI 1979: 122-123, YABUUCHI 1978: 528]. Fishing is practiced throughout the year in Parit Jawa. There are some 70 species of fish in commercial quantities in Parit Jawa waters (See Appendix 1).



**Figure 2.** Seaside Area (*Pantai*) of Parit Jawa

According to the Fisheries Licensing Policy of 1981, fishing from the shoreline to 5 miles (8 kilometers) offshore can only be carried out by fishermen using their own traditional gear. Trawling and purse seines are banned in this zone. The main fishing grounds of Parit Jawa fishermen is in this zone. But there is frequent illegal entry of trawling boats from the southern part of Johor State.

### 3. TIDAL CONDITION

The periodical fluctuation of sea level by tide is seen daily, and ebb tide and flood tide takes place twice a day in Parit Jawa. Ebb tide flows from the south to the north. Flood tide flows from the north to the south. Fishermen recognize the tidal phases using the lunar calendar. For the researcher who wants to analyse the time use patterns of fishing activity, it is necessary for him to obtain the tide table. As there is no data on tide in Parit Jawa, I had to make the original tide table by myself. Table 1 shows the tide table of Parit Jawa. It is made from the tide table of Pulau Pisang [KAIJO HOANCHO SUIROBU 1990: 104–106], the nearest observation point ( $1^{\circ}28'N$ ,  $103^{\circ}15'E$ ) to Parit Jawa. I could guess the time of the tidal turn, by observing *kelong* fishing, because the bag net driven in *kelong* is lifted before the tide turns. As a result, I could estimate the times of high and low tide on each day in Parit Jawa as 67 minutes earlier than those in Pulau Pisang. In the following, I will analyze the time use patterns of fishing activities using this original tide table.

### 4. MAIN FISHING METHOD

#### 1) *Kelong*

*Kelong* is a kind of fishing stake constructed in shallow waters near the shore [JABATAN PERIKANAN 1985: 101–105]. It may be of Chinese origin. The name has passed into the vernacular Malay. It sometimes appears to be used as a general term for the whole class of staked traps [SOPHER 1965: 220].

It is made with nibon (*Oncosperma* spp.) and bamboo poles, and consists of a gang-way-like platform and a V-shaped enclosure. Fish stray into the enclosure and enter the bag net set under the platform. The fishermen use various mesh size nets, from 0.6 inches to 3 inches. The main catch consist of white pomfret (*ikan bawal tambak*), Spanish mackerel (*ikan tenggiri*), ribbon fish (*ikan timah*), wolf-herring (*ikan parang-parang*), and many kinds of prawn.

There are 2 methods of setting the *kelong*. One is the type where the V-shaped enclosure is opened toward the south to receive the ebb tide. The other is where the enclosure is opened toward the north to receive the flood tide.

There are 15 owners with a total of 33 *kelongs*. The men each have only one type of *kelong*, either for ebb tide or for flood tide, as it is impossible to operate both types at the same time.

**Table 1.** Tide Table in Parit Jawa (July and August, 1991)

July			August					
Day (Lunar Calendar)	Flood	Ebb	Day (Lunar Calendar)	Flood	Ebb	Day (Lunar Calendar)	Flood	Ebb
16 (June 5)	0:22 12:57	7:45 19:38	1 (June 21)	0:11 12:29	7:22 19:32	16 (July 7)	1:09 13:14	7:41 20:23
17 (June 6)	1:05 13:31	8:14 20:16	2 (June 22)	0:46 13:08	7:39 20:10	17 (July 8)	1:46 13:58	7:58 21:07
18 (June 7)	1:47 14:09	8:39 20:58	3 (June 23)	1:26 13:58	8:01 21:02	18 (July 9)	2:28 14:59	8:25 22:19
19 (June 8)	2:33 14:58	9:03 21:53	4 (June 24)	2:17 15:04	8:36 22:14	19 (July 10)	3:42 16:38	9:13
20 (June 9)	3:31 16:02	9:37 23:19	5 (June 25)	3:28 16:32	9:36	20 (July 11)		1:54 11:01
21 (June 10)	5:04 17:28	10:35	6 (June 26)		0:04 5:32	21 (July 12)	6:46 18:33	11:01
22 (June 11)		1:23 6:59	7 (June 27)	18:07	1:53 7:21	22 (July 13)	8:04 19:40	12:59
23 (June 12)	18:50	2:45 8:09	8 (June 28)	19:22	3:07 8:26	23 (July 14)	8:41 20:24	3:29 14:08
24 (June 13)	19:49	3:37 8:53	9 (June 29)	20:20	4:04 9:15	24 (July 15)	9:10 20:58	3:56 15:00
25 (June 14)	20:34	4:16 9:28	10 (July 1)	21:10	4:51 9:58	25 (July 16)	9:35 21:28	4:21 15:46
26 (June 15)	21:11	4:48 9:59	11 (July 2)	21:57	5:32 10:37	26 (July 17)	10:00 21:56	4:46 16:29
27 (June 16)	21:44	5:17 10:28	12 (July 3)	22:40	6:09 11:11	27 (July 18)	10:21 22:23	5:13 17:09
28 (June 17)	22:14	6:35 10:54	13 (July 4)	23:21	18:06 6:41	28 (July 19)	10:39 22:49	5:41 17:46
29 (June 18)	22:43	17:15 6:12	14 (July 5)	11:39	18:44 7:07	29 (July 20)	10:57 23:16	6:07 18:19
30 (June 19)	11:17 23:11	17:52	15 (July 6)	23:58	12:07 19:17	30 (July 21)	10:57 23:16	6:31 18:51
31 (June 20)	11:37 23:40	18:26			0:33 7:27	31 (July 22)	11:22 23:46	18:51
		7:02 12:00			12:38 19:49			6:49 19:23
		18:59						7:02 19:58

## 2) Drift Gill Net

Drift gill net is called *jaring hanyut* in Malay [JABATAN PERIKANAN 1985: 51-56]. There are 81 fishing boats. Every boat below 5 tonnage has an inboard

engine and a power-operated net hauler. There are 14 Malay owners and 67 Chinese owners.

Various mesh sizes of net are used according to the size of fish from 2 inches to 7 inches, and nets 3,000 meters to 5000 meters long are used in one operation. Spanish mackerel, Chinese pomfret, and some kinds of jacks (*sela*, *charu* and *matabesar*) are caught with this net.

### 3) Deep Sea Pot

Deep Sea Pots catch demersal fish, such as snappers (*ikan merah*, *kerapu merah*) and groupers (*ikan pinang*, *ikan kertang*). It is called *bubu* in Malay. There are 10 fishing boats in Parit Jawa, of which 8 are operated for only deep sea pot fishing and 2 for both pot and drift gill net fishing. The former is organized by 5 or 6 crew members and the latter is organized by 2 or 3 members.

It is said that this method was introduced here 20 years ago. Although the pots were originally made of bamboo, wire pots have been utilized since 1976 or 1977. It is box-shaped and about 180 centimeters in length, about 100 centimeters in width and 60 or 70 centimeters in height. The funneled entrance opens to one side. No bait is used and 10 or 20 pots, fastened by the main rope, are thrown into the sea at the fishing spots. Each fishing boat operator has secret fishing spots and sets 100 or 200 new pots per month. Total number of pots set by one boat is over a thousand.

After setting the pots, the fishermen do not use buoys so as not to show other fisherman their favorite spots. The pots are pulled up once a week or fortnight. When the fishermen pull up the pots, they must first search for the main rope on the sea bottom, using the big hook. A simple triangulation method (*pedoman* in Malay) is used on the sea to identify the exact locations of the pots. But recently, computerised systems such as echo sounders to search for schools of fish and Loran C (long range navigation system) have been introduced to some boats. Now 3 boats have both echo sounder and Loran C. Another 3 boats have only echo sounder. If the Loran C is on board the fishermen don't have to use the triangulation technique because they can check the latitude and longitude of the fishing spots by monitoring the Loran C.

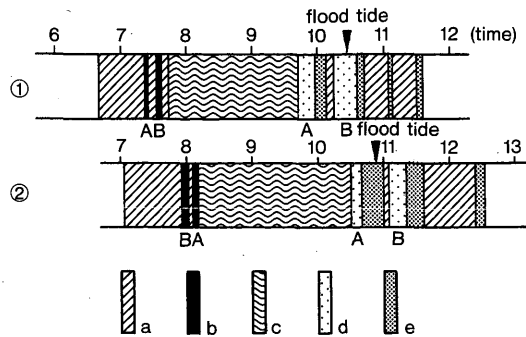
## 5. DAILY ACTIVITY SYSTEM

In this section I analyze the daily activity system and daily time use pattern of the main fishing methods by using the data from participant observation.

### 1) Kelong Fishing

The subject was a fisherman who owned 2 *kelongs* for flood tide, located along the coast of Tanjung Tohor. Figure 3 shows the time allocation of fishing activity on 27th and 28th July 1991. The two fishermen went fishing early in the morning. It took one hour from Parit Jawa port to their *kelongs*. After arriving





① July 27 (June 16 in Lunar Calendar), 1991

② July 28 (June 17 in Lunar Calendar), 1991

A and B denote Kelongs

a. Moving

b. Setting the Net

c. Waiting

d. Pulling up the Net

e. Selecting Fish and Cleaning the Boat

Figure 3. Kelong Fishing

at their *kelong*, they climbed up the platform and set the bag net. After this they had to wait on the *kelong* until fish entered into the net.

When they pulled the net, they used a wooden roller. They went on the boat and pulled at one end of the net. Fish was collected with a small scoop net into their boat. After this, they returned to the *kelong* and climbed up again to pull up the used net to the platform. Occasionally, the net needed repair. After this, they went back to the port.

Total time from departure for *kelong* to return to the port was 295 minutes on July 27 and 329 minutes on July 28. It took only 9 to 10 minutes (3% of total time) to set the nets for both *kelongs*. It took 38 minutes (13%) on July 27 and 26 minutes (8%) on July 28 to pull up the net and scoop up the fish. Waiting time was 118 minutes (40%) on July 27 and 139 minutes (42%) on July 28.

## 2) Drift Gill Net Fishing

Figure 4 shows the fishing activity of a group of drift gill net fishermen. The number of crew members was three. This boat operated to the northwest off the coast of Parit Jawa. The fishing ground was 8 to 9 meters in depth. The bottom condition was sandy.

The net was about 3,500 meters long. Mesh size was 2.5 inches. After the net was set (38 minutes; 8% of total activity time), the fishermen stopped the engine and waited for 110 minutes (23%). The time spent in pulling up the net was 30% of total time.

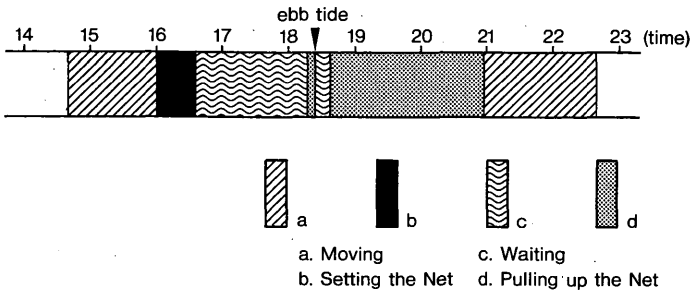


Figure 4. Drift Gill Net Fishing: July 30 (June 19 in lunar calendar), 1991

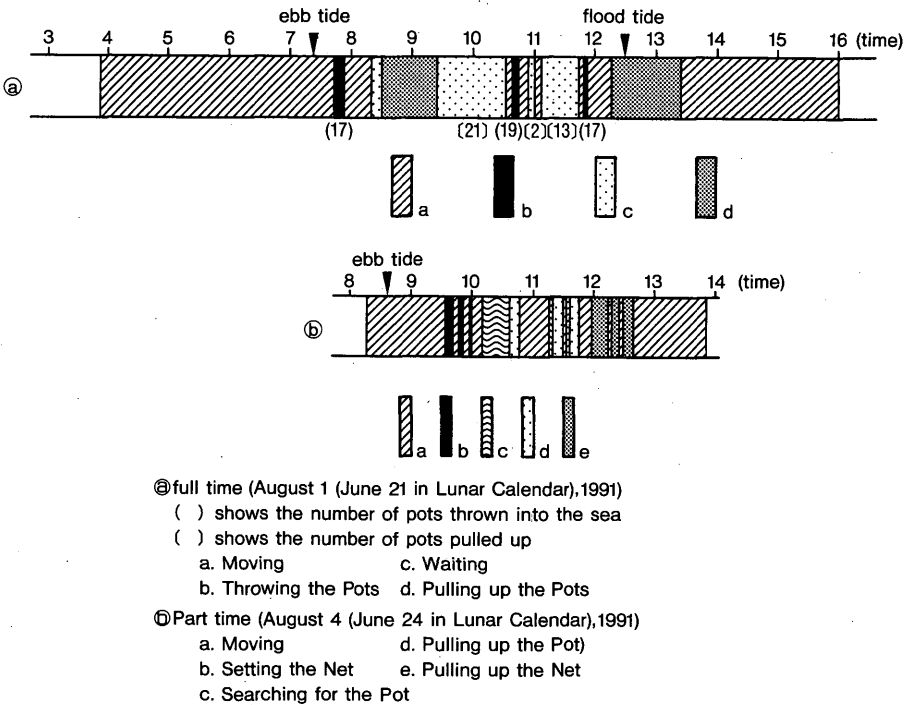


Figure 5. Deep Sea Pot Fishing

### 3) Deep Sea Pot Fishing

Figure 5 shows the fishing activity of two types of deep sea pot fishing boats. Figure 5-a shows a full-time type (boat A) and Fig. 5-b shows a part-time type (boat B).

Boat A (6 crew members) went fishing off the coast of Port Dickson in the Malacca Strait taking 17 new pots. It took 4 hours from Parit Jawa to the offing of Port Dickson. The fishermen first threw the 17 new pots into the new fishing

ground. After this they pulled up the pots in 3 fishing grounds and threw the used pots again into another 3 fishing grounds. Total number of recovered pots was 36 and that of set pots was 53. The search for the set pots was from 12:15 to 13:25. Although the fishermen searched for the pots with a long rope and hook, they couldn't find them. Trawl fishing boats may have hooked the pots and moved them away or the other fishermen had pulled them up.

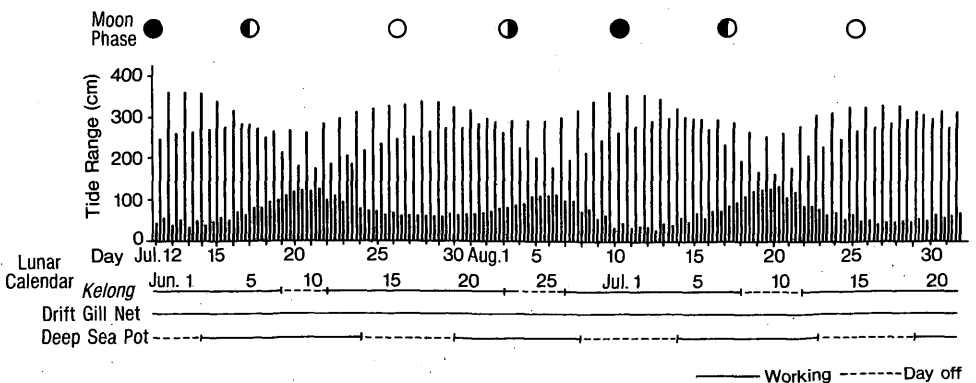
Figure 5-b shows the time allocation of the part-time boat. This boat operated drift gill nets while pot fishing. While the fishermen waited for fish in the set net, they went to the other fishing grounds where the pots had been set and pulled up the pot. They set only one pot in each fishing ground. It was difficult for them to find the location of the pot, so I had ample time to observe the activity of finding the pot.

## 6. LUNAR TIDE SYSTEM OF FISHING GROUND USE

Figure 6 shows the change in height of tide and the main fishing methods during researching period from July 12 to September 2, 1990. *Kelong* fishing is operated from 28th to 8th (10 days) and from 14th to 23rd (10 days) in the lunar (Chinese) calendar. The periods during neap tide, from 9th to 13th and from 24th to 27th, are days off, because the bag net can't be utilized in a weak tide.

Deep sea pot fishing, on the other hand, is limited from 4th to 13th and from 20th to 27th, during neap tide, because the spring tide is so strong that the fishermen can't pull the pots up. Drift gill net fishing is practiced at anytime.

In particular, *kelong* fishing is influenced by tidal condition. The *kelong* fishermen explain that a half month is one cycle of the fishing activity. That is, there are 10 working days and 5 off days. They operate 20 times in 10 days, as they utilize the ebb tide or flood tide twice a day. Figure 7 shows the fishing activity of *kelong* fishermen, whose *kelongs* were for flood tide, during a fortnight



**Figure 6.** Monthly Fishing Activity Rhythm and Fluctuation of the Tidal Range (July and August, 1991)

(from August 4 to 17, 1991). They took holidays from August 4 to 7. These 4 days corresponded to the neap tide. But the time was good for repairing or maintaining fishing gear. The fishermen repaired the *kelongs* on the 5th. They started fishing on the 8th and finished on the 16th. Although the operation was 10 days long, the number of fishing trips was 18. Evidently, daily work is adapted to the time of flood tide.

**7. ACTIVITY RHYTHM OF FISHING GROUND USE**

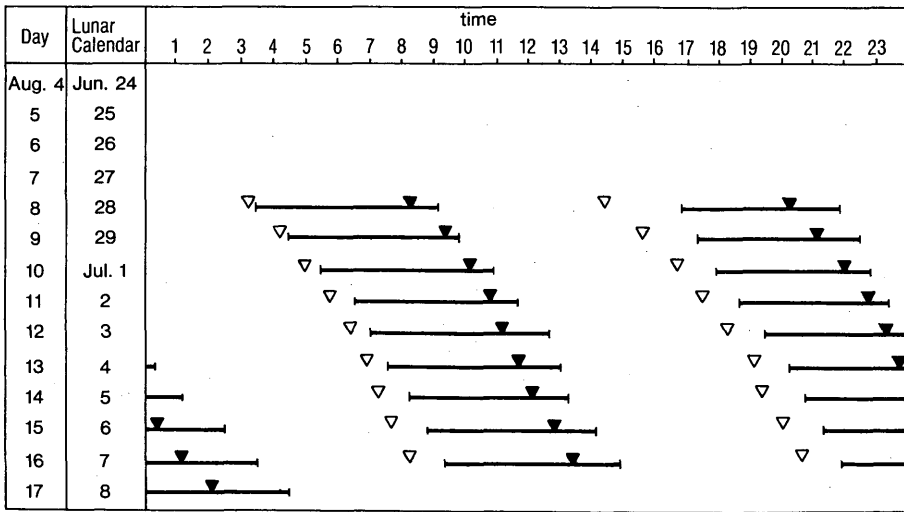
The fishing activity of individuals were discussed in prior sections. The time use patterns of whole fishing boats will be discussed in this section.

The research was done by the time-check method on August 15 (moon phase: before first quarter, tidal condition: middle tide), August 20 (after first quarter, neap tide), August 27 (full moon, spring tide) and August 30 (before last quarter, middle tide) 1991. I recorded the departure and arrival time of whole fishing boats from 4 a.m. to 8 p.m. (Figure 8).

**1) *Kelong***

No boat went fishing on August 20 because it was neap tide. Fishing was carried out usually twice a day in relation to tidal condition. Twelve boats went fishing twice on the 27th, but not on the 15th. It was neap tide and some fishermen attended the *Bon* Festival.

On August 27 and 30, 2 boats which utilized the ebb tide returned to the fishing port after setting the bag net at *kelongs*. As it took about 10 minutes by



▽ Ebb Tide ▼ Flood Tide

**Figure 7. Monthly Fishing Activity of a *Kelong* Fisherman (August, 1991)**

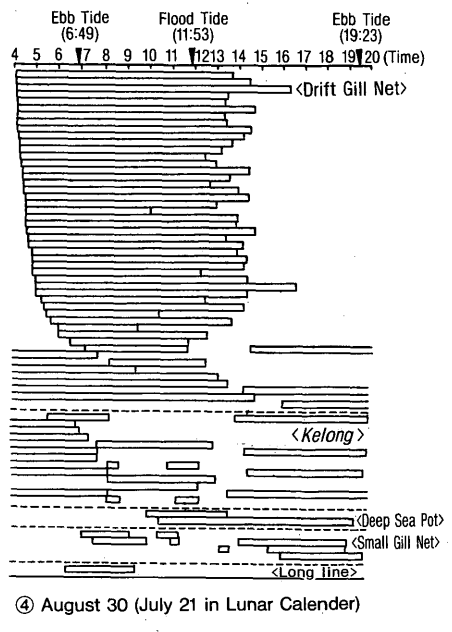
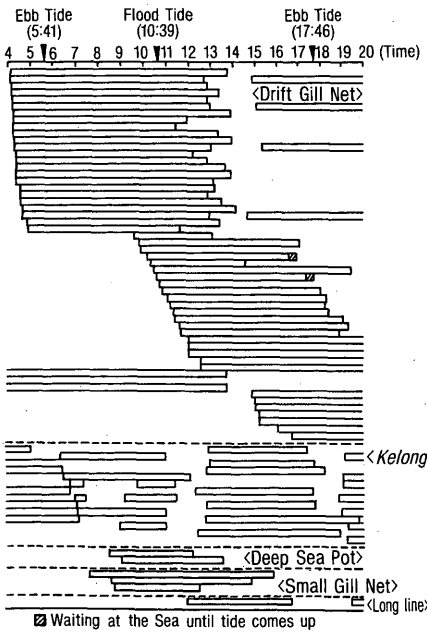
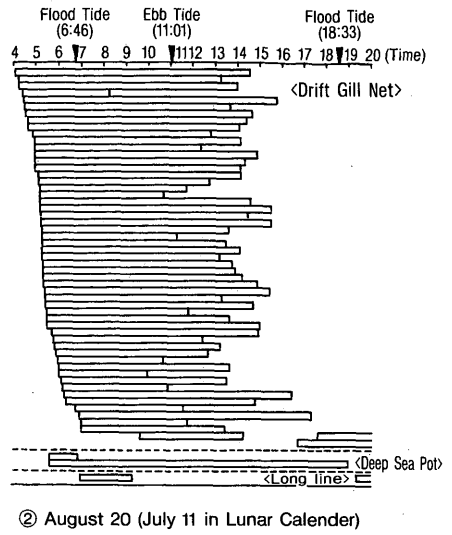
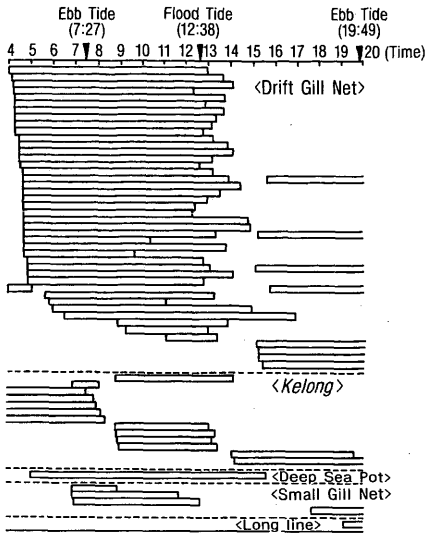


Figure 8. Time Use Pattern of Every Fishing Boat (August, 1991)

outboard engine boat from the port to their *kelongs*, they waited not on the *kelong* but on the land until the fish were caught. This time use pattern is made possible by the proximity of the port to the fishing ground. But I saw this pattern in only daytime fishing event.

## 2) Drift Gill Net

Most boats went fishing between 4 and 5 a.m. in the morning. The fishermen took into consideration not the tidal condition but the feeding time of the fish. Although the drift gill net is usually set once a day, some boats went fishing twice, for more catch. The fishermen rested on board. The waiting time after setting the net was devoted to resting.

I observed that 80% of total boats remained for 7 to 10.5 hours at sea.

During ebb tides of the spring tidal term, the boats could not leave or return freely because of the very shallow entrance to the port. Thus 25 boats went out 43 minutes before the ebb tide in the morning on August 27. Occasionally, boats waited at anchor outside the port until the tide came up.

## 3) Deep Sea Pot

The deep sea pot fishing is practiced during neap tide. I couldn't understand the time use pattern exactly as only a few boats went fishing during my research.

I observed 2 boats go fishing in the spring tide on August 27. It was possible to pull up the pots during the standing tide when the tide stream is very slow. The fishing time on the 27th was shorter than usual. That is, the fishermen selected the time of standing tide and pulled up the pots at only one fishing ground.

## 8. CONCLUSION

Tide and tidal flow are important factors for determining the fishing conditions. It is evident that "the tide system" has influenced the fishing ground use in Parit Jawa. But the fishermen do not have many terms for tidal conditions. They do not seem to hold a common recognition on tidal conditions from the historical point of view. Their predecessors came from southern parts of China just 100 years ago and not every man was a fisherman. Furthermore, the fishermen may not need to recognize the tidal conditions in detail in terms of the fishing methods in Parit Jawa.

Recently the problem of overfishing has arisen in Parit Jawa. The fishermen are eager to find new fishing grounds and to go offshore where the resources seem to be more abundant than inshore. For drift gill net fishing they go near the central area of the Strait of Malacca where the border between Malaysia and Indonesia is situated. Deep sea pot fishing has been practiced in the shallow waters near the shore before. But recently, it has been also extended to the deep waters near the Indonesian border. The offshore operation has been made possible by the introduction of the Loran C and echo sounder. They can identify

the location of the pots using the new technology, even if they cannot see any landmarks from their boats. The fishermen's sea knowledge and marine science in new fishing grounds are continually improved through firsthand experience [NIETSCHMANN 1988: 65].

### Appendix 1. The List of Fish Caught in Parit Jawa

Chinese Name	Malay Name	English Common Name	Scientific Name
鯊魚	ikan yu pasir	Shark	Order LAMNIFORMES
蜘蛛沙	yu bodoh	Cat Shark	<i>Galeus eastmani</i>
笨沙	yu kamajang	Shark Ray	<i>Rhinobatos schlegelii</i>
黑魚燕	pali hitam	Eagle Ray	Family MYLIOBATIDAE
蛤魚	pali	Stingrays	Order RAJIFORMES
市克	terubok	Gizzard Shad	<i>Hilsa macura</i>
西刀魚	ikan parang (large) ikan cabok (small)	Wolf-Herring	<i>Chirocentrus dorab</i>
目力	pupu	Shads	Family CLUPEIDAE
丹萬	tamban	Sardine	<i>Amblygaster leiogaster</i>
來膏	butoh kering	Lizardfish	<i>Saurida elongata</i>
沙棘	sama	Sea Catfish	<i>Plotosus lineatus</i>
馬榮	ikan duri	Sea Catfish	<i>Arius maculatus</i>
成魚	mayong	Sea Catfish	Family SILURIDAE
麻魚	ikan malong	Pike Conger	<i>Muraenesox cinereus</i>
鱸魚	ikan malong	Pike Conger	Family MURANESOCIDAE
竹龍松	?	Needlefish	Family BELONIDAE
水章魚	ikan tolak	Halfbeak	Family HEMIRAMPHIDAE
土虱	ikan sembilang	Brotula	<i>Brotula multibarata</i>
黑魚	ikan belanak	Mullet	<i>Mugil cephalus cephalus</i>
沙軍	ikan alualu	Barracuda	Family SPHYRAENIDAE
帶魚	ikan timah	Ribbonfish	<i>Trichiurus lepturus</i>
冬姑	ikan tonkoi	Bonito	Family SCOMBRIDAE
甘文	kabong	Mackerel	Family SCOMBRIDAE
甘望	kembong	Mackerel	<i>Rastrelliger kanagurta</i>
紅仙姑	ang sienkoh	Pompano	<i>Trachinotus blochii</i>
大目	matabesar	Jack	Family CARANGIDAE
硬尾	caru	Trevally	<i>Caranx leptolepis</i>
照明魚	ikan rambai	Jack	<i>Carangoides hedlandensis</i>
色拉	sela	Jack	Family CARANGIDAE
鏡魚	capin	Jack	<i>Pseudocaranx dentex</i>
斧頭魚	ikan kapal	Moonfish	<i>Mene maculata</i>
馬交魚	ikan tenggiri papan	Spanish Mackerel	<i>Scomberomorus niphonius</i>
巴冬	batang	Spanish Mackerel	<i>Scomberomorus commerson</i>
三板魚	ikan talang	Leatherskin	<i>Scomberoides lysan</i>
格格	kekek	Pony Fish	<i>Leiognathus nuchalis</i>
白昌魚	ikau awal tambak	White Pomfret	<i>Pampus argenteus</i>

黑昌魚	ikan bawal hitam	Black Pomfret	<i>Parastromateus niger</i>
石斑	ikan pinang	Grouper	Family SERRANIDAE
黑石甲	siakap hitam	Tripletail	<i>Lobotes surinamensis</i>
紅𩚑	kerapu merah	Snapper	Family LUTJANIDAE
紅鸡	ikan merah	Snapper	<i>Lutjanus argentimaculatus</i>
記魚	ikan merah	Snapper	<i>Lutjanus monostigma</i>
加龍子	?	Tigerfish	<i>Terapon jarbua</i>
卢魚	ikan siliku	Sweet Lip	<i>Pomadasys hasta</i>
加只	kaci	Sweet Lip	<i>Plectorhynchus cinctus</i>
白書	kasemadu	Glassy Perchlet	<i>Ambassis urotaenia</i>
牛那媽	ikan gelama papan	Drum	<i>Argyrosomus argentatus</i>
南馬	gelama	Drum	Family SCIAENIDAE
金剛魚	king kong	?	<i>Oplegnathus punctatus</i>
金目廬	siakap	Barramundi	<i>Lates calcarifer</i>
鷹高魚	engkohher	Wrasse	Family LABRIDAE
午魚	ikan senangin	Threadfin	<i>Polydactylus plebejus</i>
草扇	bawahkipas	Batfish	<i>Platax teira</i>
?	daunbaharu	Sicklefish	<i>Histiopertus typus</i>
七彩神仙	ikan kambing	Angelfish	Family POMACANTHIDAE
白肚魚	?	Rabbitfish	<i>Siganus fuscescens</i>
孫福	soonhock	Sleeper	<i>Eleotris oxycephala</i>
龍舌	ikan lidah pasir	Sole	Family CYNOGLOSSIDAE
嬌肉魚	ikan ayam	Filefish	Family MONACANTHIDAE
中江魚	tongkang	?	?
?	samgai	?	?
鳳尾	buruayang	?	?
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蝦	udang	Prawn	*
苏東	sotong	Squid	*
水母	ampaiampai	Jellyfish	*
蚌蛤	kerang	Clam	*

?: not clear \* : omission

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