



Status of Blue Swimmer Crab (*Portunus* spp.) Fishing in Chang Hoan and Kep Thmey Fisheries Community, Kampot Province

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Abstract Blue swimmer crab plays a significant role for the people living around the coastal zone which provides foods, income for livelihood. Unsustainable use of fishery resources and lack of food security by human activities and environment factors drove the degradation of these species. So, the study aimed to: identify the kind of fishing gears and the way of fishing blue swimmer crab, identify the average yield of blue swimmer crab, and show the blue swimmer crab market. The study selected 2 different Community Fisheries (CFi) from 2 communes and 14 fishermen from Keb Thmey Fisheries Community and 25 fishermen from Chang Hoan CFi, 10 middlemen, 2 chief communities from each Fisheries Communities were interviewed. The simple yields, moreover, were recorded in Chang Hoan CFi every morning and Keb Thmey CFi in the evening for 4 months. The results showed that crab trap and trawling have been used in both areas for catching blue swimmer crab, but trawling is not commonly used. In Keb Thmey CFi, the average yields per day of blue swimmer crabs were caught by crab trap: 15.77 kg/boat in March, 16.45 kg/boat in April, 13.93 kg/boat in May, and 8.09 kg/boat in June. On the other hand, trawling was used to collect blue swimmer crab in Chang Hoan CFi; in average were 1.01 kg/boat in March, 1.09 kg/boat in April, and 0.89 kg/boat in May. Whereas the yield from the crab traps were 6.72 kg/boat in March, 5.05 kg/boat in April, 5.05 kg/boat in May and 4.44 kg/boat in June. Usually, blue swimmer crabs were classified into 3 classes. The first and second classes were purchased by middlemen who delivered to the crab strip shop, retailer and Kampot and Vealrihn markets. The third class was sold to the crab peelers. In conclusion, crab trap is commonly used for catching crab all year round. The variation of total is according to time, weather, place and the number of fishing gears. The average catch in March and April is more than that in May and June.

Keywords blue swimmer crab, crab trap, trawling, fishery community.

INTRODUCTION

Cambodia's coastal zone is an ecological system which provides high potential of mangroves, aquatic plants, fishes, water birds, mollusks, mammals, reptiles and so on that support to economics such as tourism sector, industry sector, ports, navigation. Furthermore, this area has been providing the local livelihood through fishing. Blue swimmer crab is considered as a kind of zooplankton which lives in the marine water that is attractively fished nowadays as it is highly economic both in

local and international market. However, these species are decreasing both in size and in quantity with the modern fishing gears as well as technologies, which affects the livelihood of people in the area. So the study proposed to: (1) identify the kind of fishing gears and the way of fishing of blue swimmer crab; (2) identify the average yield of blue swimmer crab; and (3) show the blue swimmer crab market.

METHODOLOGY

Study site: Two community fisheries such as Chang Hoan and Keb Thmey CFi which are located in Prek Thnot and Teuk Chhou district, Kampot Province were selected to conduct the research, because it is the place where people fish blue swimmer crab and also the place for blue swimmer crab market process.

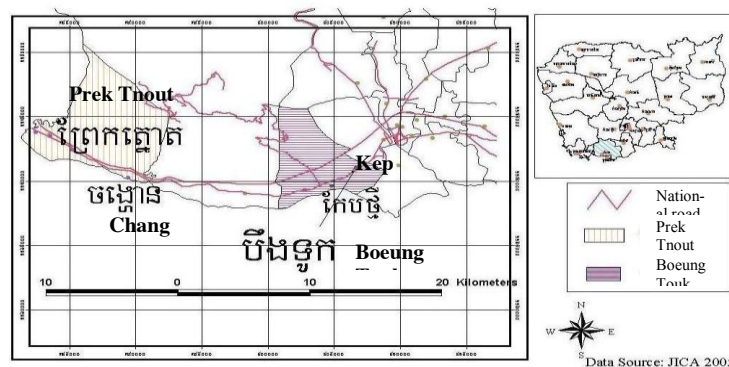


Fig. 1 Map of study area (JICA, 2005)

Sampling size and method: There were two different methods of data collection: conducting interview and yields recording. Also, 3 kinds of questionnaire had been created for household interview including 39 fishermen (14 and 25 fishermen from Kep Thmey and Chang Hoan CFi, respectively), 10 middlemen, and 2 community chiefs from each CFi. These questionnaires were used to compare on the concept and understanding of the fishermen and community chiefs as well as middlemen in the area.

On other hand, the data of blue swimmer crab yields were recording every day during four months with the all of the fishermen who fish blue swimmer crab. The data was recorded in the morning in Chang Hoan FCI from 7 fishermen by using trawling and 3 fishermen by using crab traps. Moreover, 15 fishermen from Kep Thmey CFi were selected to record the yields which hold in the evening. Both primary and secondary data had been collected and analysed by using MS Excel.

RESULTS AND DISCUSSION

Blue swimming crab fishing

In the Chang Hoan CFi, fishermen have been using crab trap and trawling to catch blue swimmer crabs and other fish species. However, fishermen in Kep Thmey CFi use only crab trap as a fishing gear to catch blue swimmer crabs. These fishing gears can be bought from the market or middlemen.

The technique of crab trap using

In the early morning about 4 or 5 a.m., the fishermen drive their boat to the fishing place. A boat owner is responsible for driving and other two crews are responsible for laying the traps into water until completed (in the crab traps they put bait to attract crabs). In order to avoid the traps damage

by other fishing boat, the fishing gave any signal (at the beginning of string and the end of the string). After laying the traps, fishermen park their board for relaxing 4 to 5 hours, then they start to collect their traps, tie the crab with the rubber band, keep it in net, and come back to landing side. After selling crabs to middlemen, fishermen prepared traps and facilities for fishing next day.



Fig. 2 Crab trap

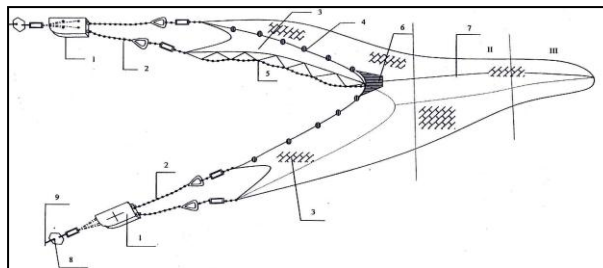


Fig. 3 Trawling

Technique of trawling using

At about 5 p.m., the fishermen go to their usual fishing place. They start to operate their task as they have been doing for catching fishes. First, the fishermen opened the stick and tie it. Second, they dropped the tail of trawling into water until finished. Next, the fishermen starts to drop wooden boards into the water and tie the rope with two sticks to open trawling surface and drove a bite faster than before. To continue, they untied the rope from the sticks and lie on the water and allowing the boat to operate faster. This task took about 3 hours, then the fishermen drive slowly to lift the trawling on the boat and come back to landing side. After selling crabs to the middlemen, fishermen prepared trawling and any facilities for fishing tomorrow.

Time and duration of fishing

The crab trap and trawling can be used all year round: night and day times. For the crab trap, mostly fishermen in the Kep Thmey CFi do their fishing activities a time per day. Generally, they go fishing early morning around 4 to 5 a.m. and come back around 4 to 5 p.m. Although, fishermen in Chang Hoan CFi operate crab catching twice times a day. In the morning, fishermen go to fish around 4 to 5 a.m. and come back around 8 to 9 a.m. About 1 or 2 p.m. fishermen go fishing again and come back about 5 to 6 p.m. in the evening. For trawling fishing gear, fishermen usually go fishing at night from 4 p.m. to 6 a.m.

Table 1 The number of fishing days in the four months

Months	Number of fishing days by crab trap (Kep Thmey)	Number of fishing days by crab trap (Chang Hoan)	Number of fishing days by trawling (Chang Hoan)
March	15	16	18
April	15	16	17
May	20	18	17
June	13	25	-
Total	63	75	52
Mean	16	19	17

Fishermen did not go to fishing every day during conducted research. In Kep Thmey CFi, the highest number of fishing days was in May about 20 days while the lowest was 13 days. In contrast, the highest number of fishing days in Chang Hoan CFi by crab trap was 25 days June which the

trawling was about 18 days in March (there was no data in June) (Table.1). According to the survey, the two major factors that affect the number of fishing days were climate conditions and holidays (New Year, weddings and other ceremonies) as well as lack of baits (for crab trap activities).

Blue swimmer crab yield

The yield of blue swimmer crab by crab trap in Kep Thmey CFi: Fig.4 shows the average catches of blue swimmer crab from March, April and May were not different (15.77 kg/boat/day, 16.45 kg/boat/day, and 13.93 kg/boat/day, respectively), while the average catches in June was decreased (about 8.09 kg/boat/day). During data collection period, which during rainy season, the temperature and salinity were declined between May and June so most crabs move to the depth sea or other places. In March, the average catches of second and third classes of blue swimmer crabs were increased about 8 and 4 kg/boat/day while the first class was decreased about 2 kg/boat/day (fig.5). The average catches of crab size were changed in April, May and June. The variety of average catches by size is depending on life cycle and biology of blue swimmer crab.

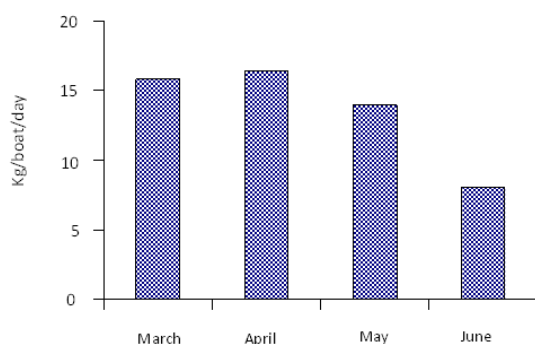


Fig. 4 The average yield of blue swimmer crab in 4 months

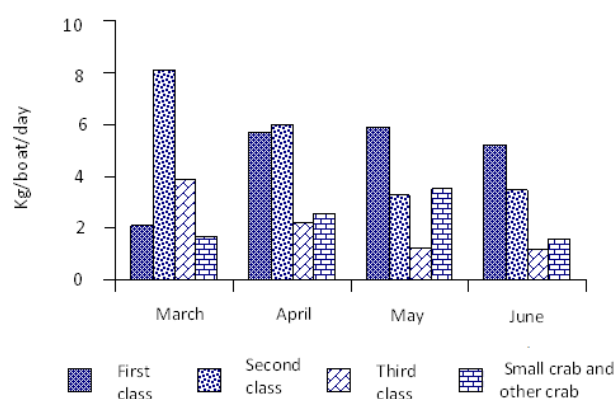


Fig. 5 The average yield of blue swimmer crab by size in average in 4 months

The yield of blue swimmer crab by crab trap in Chang Hoan CFi: Fig. 6 shows that the average catches of blue swimmer crab by crab traps in Chang Hoan CFi were increased in March and April around 7 kg/boat/day, but this yield was declined in May and June around 5 kg/boat/day. The third class of blue swimmer crab was highest amount of all classes because fishermen operated at the shallow water areas (Fig. 7).

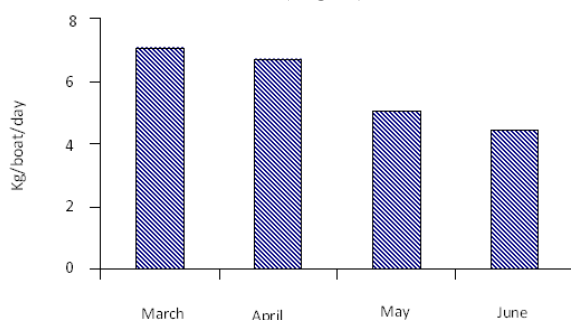


Fig. 6 The average yield of blue swimmer crab in 4 months

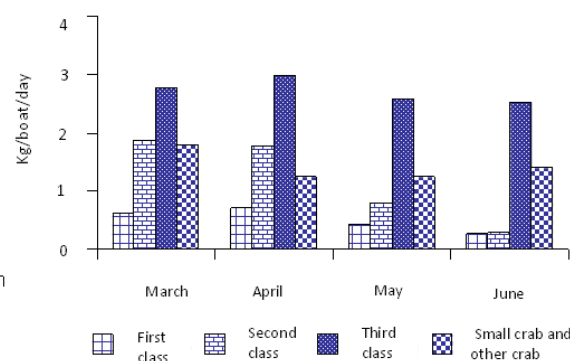


Fig. 7 The average yield of blue swimmer crab by size in average in 4 months

The yield of blue swimmer crab by trawling in Chang Hoan CFi: By using trawling, the average catches of blue swimmer crab in Chang Hoan CFi were not different in three months about 1 kg/boat/day (Fig.8). According to climate conditions, fishermen did not go fishing in June. In addition, most yields were first class (Fig.9). The total catches of blue swimmer crab by trawl gear was

not high compared with crab trap, because the purpose of trawl activities does not catch only crabs but also shrimp, squid, and other fish species.

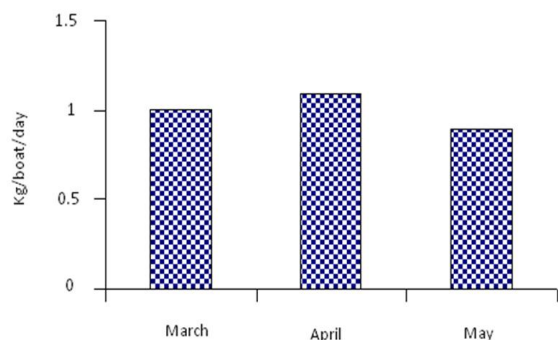


Fig. 8 The average yield of blue swimmer crab in 4 months

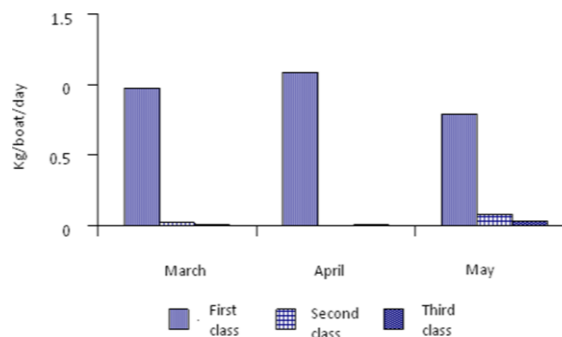


Fig. 9 The average yield of blue swimmer crab by size in average in 3 months

Blue swimmer crab market

Blue swimmer crab market framework (Fig. 10) is related to fishermen, middlemen, crab strip shop owner, consumers, and exportation middlemen.

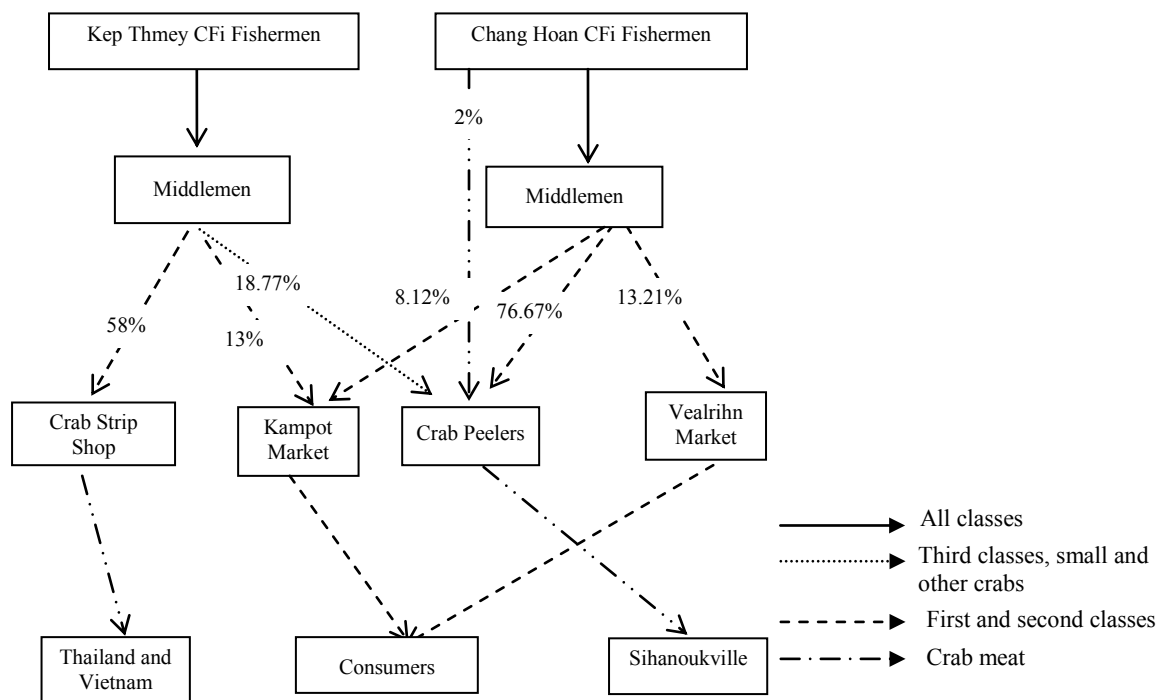


Fig. 10 Blue swimmer crab framework

Blue swimmer crab price

Crabs were priced by the middlemen and it was rarely changed because most fishermen received loans or fishery gears from them. Thus, the crabs should be sold out to the loaners who were the middlemen.

Yet, other fishermen who did not get any loans also sold their crabs to the same person easier than selling it by themselves or selling to others. The prices were different between the fishermen who got loans and did not get loans. The middlemen sold to Kampot and Vealrign market in higher price. However, the price was not too different between buying from fishermen and selling to the crab strip shop. Generally, the market price for the consumers and crabmeat selling are highest (Table 2).

Table 2 Price change of blue swimmer crab

Market \ Price	First Class (riel/kg)	Second Class (riel/kg)	Third Class (riel/kg)	Small Crab (riel/kg)
Bought from fishermen (loan)	15,000	8,500	4,500	500
Bought from fishermen (no loan)	17,000	9,000	4,500	500
Sold to retailers at Kampot market	1,900	10,000	-	-
Sold to retailers at Vealrign market	1,900	10,000	-	-
Sold to crab strip shop	15,300	8,800	-	-
Sold to crab strip shop (no loan)	17,500	9,500	-	-
Sold to consumers	30,000	15,000	-	-
Crabmeat selling	32,000	25,000	20,000	10,000

CONCLUSION

Crab trap is a fishing gear that fishermen in the Kampot Province prefer to use in order to catch blue swimmer crabs. Although, the purpose if trawling is to catch shrimps and squids, but some crabs can be caught by this gear too. The variation of total yield is according to time, weather, place and the number of fishing gears. Moreover, these gears can be use all year round depending on time, place and climate conditions. According to local people surveyed, shows that the cause of blue swimmer crab yields have declined because of fishermen using the small size of crab trap mesh (2a = 4 cm) and the number of crab traps has been increasing in the last few years. Likewise, the use of beach seine is a major cause of destroying the habitats and foods for crab and other aquatic plants and animals. Blue swimmer crabs are clarified into three classes. The first and second classes are counted into high price to sell in markets and the crab strip shop by middlemen and third class are sold to crab peelers. Middlemen play an important role in market finding to fishermen and loan.

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