Assessing the Marketing of Fresh Fish of the Small-scale Fishermen: A Study in Songkhla Province, Thailand

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Abstract

This study aims to assess the marketing of fresh fish of the small-scale fishermen in Songkhla Province, Thailand. Data were collected from 160 small-scale fishermen, 13 local middlemen and 14 fish retailersin Chana and Thepha districts of the Province. Descriptive statistics and marketing margins were used to analyze the data. Pacific mackerel (Platu), Blue crab, Banana shrimpand cuttlefishare the main fish caught by the fishermen. Most of the fishermen (97%) selltheir fish in fresh form at the village fish port.The study revealed that the selling price of fishis determined mostlyby the buyers.It was also found that the market is dominated by the local middlemen, of whom about two thirds are contract lenders and likely to pay less than the other buyers. Besides this, the fishermen face some other problems in marketing their product including fluctuations in fish price; lack of transportation to deliver fish in the market; low leverage of the fishermen to negotiate prices; lack of options in going to another buyer; perishable nature of fish and lack of marketing management as group. Marketing margin varies in the range of 22% - 51% of retail price depends on fish species, size, season and the quantity to sell. It was found the cheapest fish Pacific mackerel (Platu) has the highest marketing margin (ranging from 29% to 51%). The findings of the study provide an insight about various factors of marketing of fresh fish of the small-scale fishermen that might assist in policy and decision making to improve marketing efficiency of fresh fish of the small-scale fishermen in Thailand.

Key words: Marketing, fresh fish, small-scale fisherman, Songkhla, Thailand

Introduction

Marine fishery is an important contributor to the Thai economy, particularly the southern economy due to high competency of the fishermen and geographical advantage. The marine fish contributes nearly 90% of the total fishery output in Thailand[1].It is especially important for the people in the coastal Provinces who fish to feed their families and supply in the food market.The marine fisheries can be classified into two groups: commercial fisheriesandsmall-scalefisheries. The commercial fisheries use inboard-powered boats of over 5 gross tonnages, generally deploy efficient fishing gears and have the capacity to fish offshore and spend several days at sea in one fishing trip. On the other hand, the small-scale fisheries use fishing boats of less than 5 gross tonnage that are either non-powered or have outboard or inboard engines. They conduct their fishing activities near the shore using traditional fishing gear. More than 2,500 fishing villages are located along the Gulf of Thailand and on the Thai shores of the Andaman Sea[2]. It was also reported that more than 80% of the marine fishermen are engaged in traditional or small-scale fisheries. Most of the small-scale fishermen live at or close to subsistence level. The fish products are an important source of both income and food for them and the neighbouring communities.

Thailand is a south-east Asian countrywhich is located in lower Indo-China peninsular with a coast line of 2,615 km, nearly 1,785 km along the gulf of Thailand and 740 km along the Coast of Andaman Sea[3]. The countryhas achieved significant economic development during the past several decades. The gross domestic product (GDP) of the country grew by more than 8% annually in 1990–1996 prior to the Asian financial crisis[4].In 2005, the GDP of the country was estimated at USD176,600million[5].The GDP of the

country wasincreased to USD272,538mmillion in 2008[2].The GDP per head was estimated at USD4,099 in 2008[2]. However, the Thai economy is heavily dependent on agriculture sector and natural resources, particularly the fisheries. It can be mentioned that agricultural and fisheries are the main occupations of 43% of the total population of the country. In 2008, the agriculture GDP and fishery GDP were estimated at USD31,554 million and USD3,121 million respectively[2].

Fishing has a long history in Thailand. It is one of the top fish-producing countries worldwide owing to its geographical advantage, with a continental coastline of 2,624 km and marine fishing ground of 316,000 km[2] in the Gulf of Thailand and in the Andaman Sea[2]. Inland waters cover approximately 3,750 km[2]. In addition, the country has nearly 1 million hectares coastal area which is suitable for coastal aquaculture. It is important to note that the Thai fishing industry is one of the ten largest in the world[6].The country experienced remarkable growth in fisheries production over the last three decades. In 2007, the total fisheries production was estimated at 3.9 million tonnes of which 58.2% came from marine fisheries, while coastal aquaculture, freshwater aquaculture and fresh fisheries contributed 22.9%, 13.1% and 5.8% respectively[2].In 2008,the fisheries production in the country was 3.2 million tonnes(worth USD4,310 million) comprised of marine fishing (51%), coastal aquaculture (25%), freshwater aquaculture (17%) and freshwater fishing (7%)[7].

The marketing system of fresh fish in Thailand is complex as there are many different types of markets and a very large number of traders of different types to transfer fish to consumers or end users[8]. Fish is sold fresh as well as in processed form. The domestic markets for fresh fish can be classified into three groups: primary markets, intermediate markets and terminal markets. The primary market is the place where fish marketing starts. It occurs either at the landing places of fish or at the farm gate. The intermediate market is the point where fish is redirected to the terminal market. The intermediate market is composed of the central assembly market and the wholesale market. The central assembly market, in turn, can be divided into the state assembly market and the private assembly market. State assembly markets are managed by a state-owned enterprise, the Fish Marketing Organization (FMO) under the Ministry of Agriculture and Cooperatives. The state assembly markets are located in central Bangkok, in the provinces of Samutsakorn and Samutprakarn[2]. The private assembly markets are run by private individuals, normally someone who owns land in a suitable location. During the last few years, many assembly markets under the private sector have been established at near the production centers as well as in Bangkok and surrounding provinces. On the other hand, the wholesale markets are mostly in large cities of the country; many also offer retail outlets. The terminal market is the market where fish is sold to consumers through retail outlets including supermarkets, restaurants and hotels. Retail markets are scattered in urban and peri-urban areas, generally with numerous stalls supplied with electricity and clean water on a concrete floor inside a traditional open hall.

Songkhla is one of the Provinces in the southeastern part of Thailand. Fishery is the main occupation of the people living in the coastal villages of the Province. It was estimated that more than 7,000 households are engaged in this sector[3]. Majority of the fishermen are involved in both freshwater aquaculture and marine fisheries while a few are employed in only marine fisheries. However, the small-scale fishermen in Songkhla Province face numerous problems in marketing fresh fish[9].Firstly, most of the small-scale fishermen lack the post-harvest storage facilities. In other words, they do not have cold storage to preserve the fish products and sell in the market later at a higher price. Therefore, majority of the fishermen sell their fish to the middlemen at the fishing port immediately after harvesting. Another reason is that they really need cash money to manage their family and other purposes. Moreover, in some cases, the fishermen are forced to sell fish to the middlemen to repay their debts that were previously collected from the middlemen. Secondly, the fishermen cannot sell their fish at the market price. While the market price of fish is seasonal due to demand and supply of fish, prices are usually determined by the middlemen or collectors. In that situation, the fishermen have no other choices without selling fish to the middlemen or collectors. Thirdly, the fishermen lack advance knowledge of marketing management. The fishermen

and their family members do not know how to manage marketing activities of their products. As a result, they are losing the opportunity to earn more from fish harvesting.The difficulties in marketing the fresh fish affect directly the income and livelihood of the small-scale fishermen and their families. If they can manage the fish marketing efficiently, their income would increase significantly. In order to improve marketing management and efficiency, it is quite important to get relevant information about marketing and other factors regarding the fresh water fish. However, there is very limited research in assessing the marketing management of fresh fish in Thailand.

This study aims to assessthe marketing of fresh fish of the small-scale fishermen in Songkhla Province, Thailand. The study is very important to know the various factors of marketing of fresh fish of the small-scale fishermen in Thailand.

Materials and Methods

Study Area

Songkhla is one of the provinces in Southern Thailand (figure 1). The Province is on the border of Malay Peninsula (Kedah and Perlis) and the Gulf of Thailand. In the north of the province is Songkhla Lake, the largest natural lake in Thailand[10]. The province has a population of nearly 1.4 million people, with a Gross Provincial Product (GPP) of 214,799 million Baht (IMT – GT, 2015). Buddhists make up about three-quarters of the population, most of whom are of native Thai or Thai Chinese descent[11]. About a quarter of the population are Muslim, most of them belong to a Thai-speaking Muslim group, called Sam-Sam. In the province, manufacturing is the leading sector (contributing 26.03% of the GPP), followed by agriculture, hunting and forestry (20.22%)[12]. Other important sectors include wholesale and retail, fisheries, and tourism. Due to adjacency with Malaysia to the south, border trade is also an important component of the provincial economy.

Data collection

The study was conducted in Chana and Thepha districts of Songkhla Province because a large number of small-scale fishermen are located in these two districts. The study population consisted of 1,636 small-scale fishermen households of which 836 resided in Chana District and 800 in Thepha District.To determine the required sample size from the population of the study, Taro Yamane formula was employed[13]. The formula is as follows:

$$n = \frac{N}{1 + Ne^2}$$

Where,

n = required sample size
N = size of the population (1,636 households)
e = allowable error (5%; the confidence level is 95%)

Therefore, the required sample size for the study was 160 of which 76 respondents were selected from Chana District and 84 from Thepha District. In addition, the study included local middlemen and local retailers into the survey to get relevant data about marketing, price and other information of fresh fish. Therefore, the samples for this study included three (3) groups of stakeholders who are involved directly in the marketing of fresh fish in the study area.The stakeholder groups were small-scale fishermen, local middlemen, and local retailers. It can be mentioned that there is no empirical evidence about the number of local middlemen and local retailers in the study area. However, by investigation the study found out a total of 22 local middlemen of which 13 people (60% of the population) participated in the study. On the other hand, the study identified a total of 14 local retailers who buy fish from the small-scale fishermen or local middleman (in case they can't gather directly from the fishermen) in Chana and ThepaDistricts. All of the local retailers participated in the study. The data were collected through interviewing the respondents from each group of stakeholders. Three different structured questionnaires were used to

interview three group of stakeholders. Each of the questionnaires was designed and pre-tested before going for final survey. After thatthe questionnaires were improved accordingly to beconsistentt with the objectives of the study.
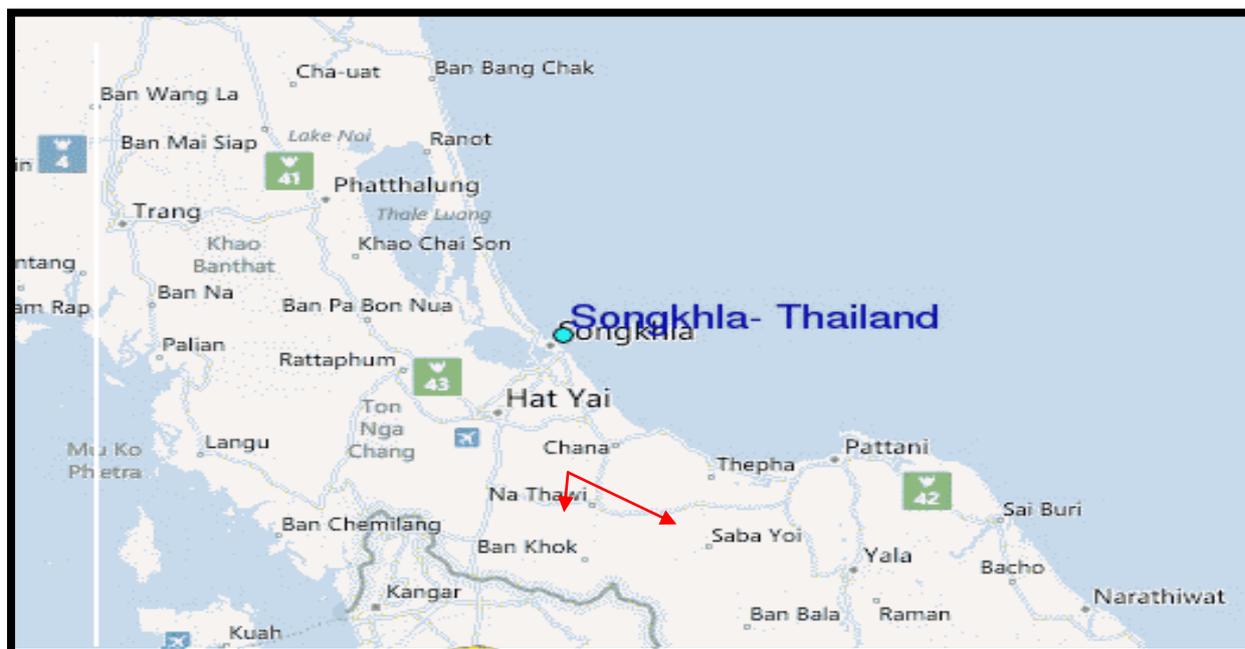

Figure 1: Map of the study area (Songkhla Province)

Data analysis

Descriptive statistics (e.g. frequency, mean, maximum value, minimum value, ratio, percentage etc.) have been applied to analyzethe general characteristics of the respondents, characteristics of the freshfisheries,marketing management of fresh fish, marketingchannel,marketing margins,problems and obstacles of marketing of fresh fish in the study area. The analysis of marketing channel was based on both the overall and the main individual fish caught. But theanalysis of marketing margins wascarriedout for only the main fish caught, including Pacific mackerel (Platu), Blue crab, Banana shrimp.

Marketing margins is the difference between the retail price that the consumer pays and the price that the small-scale fisherman receives. It can be shown in the following equation:

$$MM_i = P_{ri} - P_{fi}$$

Where,

MM_i= marketing margin
P_{ri}= retail price of a fresh fish that the consumer pays (Baht/kg)
P_{fi} = price of a fresh fish that the small-scale fisherman receives (Baht/kg)

Results and Discussion

Table 1 shows the general characteristics of fresh fish caught by the small-scale fishermen in study area. The findings revealed that the fish caught by majority of the fishermen was Pacific mackerel (Platu), (61%), followed by Blue crab (59%), and Banana shrimp (43%). On the other hand, Cuttlefish was the specie that was captured by a significantly lower portion of the fishermen (14%). It was found that almost all of the fishermen (94.4%) make grading of the fishes after harvesting. It was also found that all of the

respondents (100%) utilize the fish caught for two purposes- selling as well as household consumption. Majority of the surveyed fishermen (97%) sell fresh fish in the market while minority of them (3%) sell both fresh fish and processed fish product.

The study identified the causes of selling fresh fish by the fishermen immediately after harvesting. The analyses showed that almost half of the respondents (49%) get tired from fishing and need to rest. One-quarter of the respondents (25.8%) feel convenience to sell fresh fish in the market. A lower portion of the surveyed fishermen (16%) thought that selling price of fresh fish is higher than that of processed fish product, while 13% reported that fish caught cannot be processed. A significantly lower portion of the respondents (8%) need to get cash quickly by selling fresh fish in the market.In Malaysia, the study by Ng (2009) reported that the main specie of marine fishes in the country is the cockles. The study also reported that Malaysia is currently the largest producer of blood cockles in the world. Large tracts of mudflats especially on the west coast of Peninsular Malaysia are ideal for the extensive culture of cockles. The other major species of marine aquaculture in the country include Penaeid shrimp, Asian seabass, various types of snappers, and groupers. Almost similar findings were observed in the study by Tokrisna[6] in Thailand. The study conducted by FAO[14] also found similar results. The study reported that the major varieties of marine fisheries captured by small-scale fishermen in India, Malaysia and Thailand included Yellowfin tuna, Sardines, Mackerels, Croakers, Tilapia, Grouper and Seabass. The study also reported that fish is generally consumed in fresh form in the Thai domestic market.

Table 1: General characteristics of fresh fish caught by the small-scale fishermen in Songkhla Province

Items	Number of small-scale fishermen (n = 160)	Percentage (%)
The Main Fish Caught		
• Pacific mackerel (Platu)	97	60.7
• Blue crab	94	58.8
• Banana shrimp	69	43.1
• Cuttlefish	22	13.8
• E.g., Banana shrimp (Penaeus indicus), Mullet	36	22.6
Grading of Fresh Fish Caught		
• Available	151	94.4
• Unavailable	9	5.6
Utilization of Fish Caught		
• Sale and household consumption	160	100
Characteristics of Product Sold		
• Sold fresh fish in the market	155	96.9
• Sold fresh fish and processed fish product	5	3.1
Cause of Selling Fresh Fish Only[*]	(n = 155)	
• Tired from fishing and need to rest	76	49.0
• selling fresh fish is convenient	40	25.8
• selling price of fresh fish is higher than processed fish product	25	16.1
• Fish caught cannot be processed	20	12.9
• Get cash quickly	13	8.4

Note: [*]The respondents answered more than one choice in some cases.

Table 2 providesinformation about marketing of fresh fish of small-scale fishermen in Songkhla Province. The datashow that more than three-quarter of the surveyed fishermen (76%) do not have transportation to deliver their products while the rest (nearly 24%) use their own transportation to sendthe fish in the market. Analyses regarding the fishermen awareness towards market price of fish before selling show that majority of the respondents (61%) do not take into consideration the market price of fish before selling it. The respondents also reported various reasons about their unawareness towards market price of fish.It was found that half of the respondents unwillingly do not check the price in advance. Similarly, a greater portion of the fishermen (47%) do not care of the price as it is fixed by the buyers. A minority of the respondents (3%) are not interested in price as it fluctuates time to time.

Table 2: Marketing of Fresh Fish of the small-scaleFishermen in Songkhla Province

Items	Numberofsmall-scalefishermen (n=160)	Percentage (%)
Availability of Transportation in Marketing of Fresh Fish		
• Unavailable	122	76.3
• Available	38	23.7
Awareness of the Fishermen about Market Price of Fish Before Selling		
• Unaware	98	61.3
• Aware	62	38.7
Reasons for Unawareness		
• Price is not checked in advance	49	50.0
• Price is fixed by buyers	46	46.9
• Price is fluctuated	03	3.1
Volume of Sale is (Fixed, Agreed, Determined) by		
• Middleman or Retailer	134	83.8
• Market Price	32	20.0
• Themselves	28	17.5
System of Fresh Fish Selling		
• Sale to general customers	40	25.0
• Sale to regular customers	50	30.0
• Sale to contracts customers	79	49.4
The Price that the Contract Customers Pay	(n = 79)	12.9
• Higher than market price	2	2.5
• Same as market price	10	12.7
• Lower than market price	67	84.8

Note: *The respondents answered more than one choice in some cases.

Majority of the fishermen (84%)reported that volume of sale of their product is determined by the local middleman or retailer. On the other hand, a lower portion of the respondents (20%) claimed that volume of sales depends on market price of the product while 18% of the fishermen make decision regarding sales volume of their product by themselves. The findings show that nearly half of the fishermen (49.4%) sell fresh fish to the contract customers while 30% of the respondents get regular customers to sell their product and 25% goes to general customer. A significantly higher portion (nearly 85%) of the fishermen reported that contract customers pay lower price than the market price of the fish. On the other hand, 13% of the respondents claim that contract customers purchase their products at the market price. An overwhelmingly lower portion (2.5%) of the fishermen receive higher price than the market price from the contract customers.FAO (2008) revealed that marketing channel of marine fisheries in Thailand

included fishers, fish agents, fish collectors, wholesalers and retailers. Fish agents receive fish from fishers and trade it by means of auction or negotiation. In remote areas, there are fish collectors, who buy from fishers or fish agents and sell to wholesalers in cities and also to retailers. Generally, fishers who land their catch at private fishing ports may have contracts with fish agents, who determine the price of fish. In Bangladesh, marine fishes move from fishermen to consumers via different market intermediaries such as fishermen, mohajon, bapari, aratdar, faria, wholesaler, paiker, and consumer[15].

Characteristics of small-scale fishermen, local middlemen and fish retailers
Majority of the small-scale fishermen (83%) are male and, on average, 47 years old. All of the small-scale fishermen (100%) are Muslim while most of them (93%) are found to be married. A significantly greater portion (79%) of the fishermen completed primary school.The other studies also found that majority of the small-scale fishermen obtained primary education at best[9,16,17]. The family size of the fishermen is, on overage, 4.84 members of which only 2 members participate in fishing activities. Fishing is considered as the main source of household income for majority of the small-scale fishermen (93%) while half of them (50%) have secondary job. The average household income of the fishermen was estimated to be 20,931 Baht/ month of which 12,100 Bath come from fishing activities. However, majority of those (73%) are in debt with the local fish middlemen. It is important to note that majority of the local fish middlemen are female, and on average, 51 years old. Most of them (92%) are Muslim. All of them are found to be married while 69% obtained primary education at best. The average household size of the middlemen is 5.15 persons of which 2.62 persons are involved in fish trading activities. Majority of the middlemen households (85%) treat fish trading as their main source of earning while more than half of them (54%) have secondary source of income. Most of the middlemen have, on average, 17 years of experience in fish trading. It indicates that fish trading is a profitable occupation for them. The average household income of the middlemen was found to be 87,923 Baht/ month. However, a greater portion of them (54%) borrow money mostly from Bank for Agriculture and Agricultural Cooperation (BAAC) and Islamic Bank to continue their business. Like the local fish middlemen, majority of the fish retailers (86%) are female and middle-aged (on average, 49 years old). All of them are Muslim and married. However, a overwhelming portion of them (93%) completed primary school at best. Average household size was 5.36 persons. Fish trading is the main source of income for all the retailers while a greater portion of them (64%) have no supplementary income. Most of the retailers have a long experience (on average, 18 years) of fish trading. They choose this profession because they can earn a good profit. Their average household income was estimated at 29,404 Bath/ month. However, two-third quarter (64%) of the fish retailers are in debt and most of them use loan from BAAC and Islamic Bank to carry on their business.

General fishing characteristics of the small-scale fishermen
Most of the small-scale fishermen have a long experience (on average, 23 years) in fishing. However, most of them has only 1 fishing boat. They go for fishing at average distance of 12 km. They spend, on average, 1 day for each fishing. They go for fishing, on average, 22 days in a month and collectively 9 months in a year. On average, 2 members from each household participate in fishing activities. More than one-third quarter (38%) of the fishermen use hired labor as well. For each fishing, the fishermen spend approximately 780 Baht to meet up variable expenses (excluding labor cost). A greater portion of the variable expenses goes on fuel (67%), followed by food (25%), and ice (8%). However, this cost varies with a greater range (from 40 – 1140 Baht) depending upon the distance the fishermen go for fishing. It can be noted that the fishermen use the particular type of fishing gear to catch the specific species of fish mainly Platu, blue crab, Banana shrimp etc. Overall, if considering the proportion of the quantity of fish caught by the small-scale fishermen, marketing channel can be summarized in Figure 2. Most of pacific mackerel, blue crab and banana shrimp (67%, 75% and 79%) marketed to the local middlemen. The rest went to the retailers (20%, 7% and 15%) and consumers (13%, 18% and 6%), respectively.

Most of pacific mackerel from the local middlemen (72%) sold to the middlemen outside the study area. There are only 3% went to fish retailers and 25% sold to the consumers. As for blue crab and banana shrimp, most of the quantity (78% and 94%) traded to the middlemen outside the study area especially at the provincial and national level.
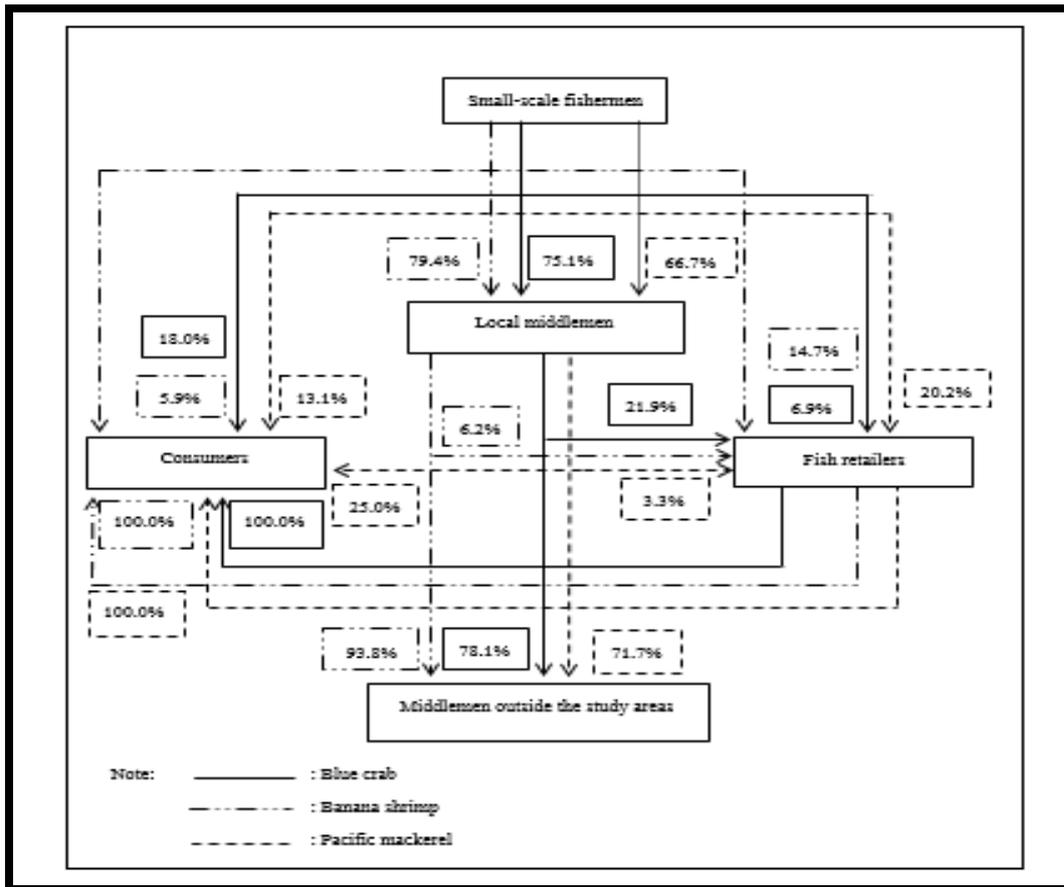
Figure2: Marketing channel of major marine fishfrom the small-scale fishermen

Table 3 provides information on marketing channel of fresh fish of small-scale fishermen in Songkhla Province. It was found thatthe marketing channel consists of three stakeholders, namely middlemen, retailers and consumers. Majority of the fishermen (76%) sell all types of fresh fish (pacific mackerel, blue crab and banana shrimp) to the middlemen while 17% of them goes to retailers. Similarly, a lower portion of the respondents (17%) sell all types of fresh fish directly to the consumers. The study found that there are three types of middlemen active in the market- contracted middlemen, regular middlemen and general middlemen. A greater portion of the small-scale fishermen (63%) sell all types of fresh fish to the contracted middlemen. On the other hand, the proportion of fishermen who sell their product to the regular middlemen and general middlemen is found to be considerably low(32% and 12% respectively). The study also revealed that three types of retailers participate in the market, namely contracted retailer, regular retailer and general retailer. Analyses show that 44% of the 27 fishermen sell all types of fresh fish to the general retailer. Similarly, the proportion of fishermen who sell their product to the regular retailer is considerably higher (41%). On the other hand, a lower portion of the fishermen (15%) deliver their product to the contracted retailer. It was also found that all of the 27 fishermen (100%) sell all types of fresh fish directly to the general consumers. The analyses regarding the marketing channel for a particular fish item (i.e. pacific mackerel, blue crab or banana shrimp) revealed almost similar findings. However, the findings indicate that the market of fresh fish of the small-scale fishermen in Songkhla Province is dominated by the contracted middlemen. In Oman, Al-Jufaili and Opara[18] investigated the postharvest handling practices and marketing system for fresh fish in the country. The study found that the business of fresh fish in Oman is mostly family oriented, but often requiring hired labour to assist with hauling during peak season. The study also revealed that fresh fish harvested by the small-scale fishermen undergoes multiple handlings starting at the fishing ground until the product reaches the consumers. However, the small-scale fishermen and traders dominate the Omani fresh fish sector. Middlemen (often called truckers) also play an important role in fish marketing across regions and within districts in the same region. Almost similar marketing channel for marine fisheries is observed in Malaysia[14].

Table 3: Marketing Channel of Fresh Fish of the Small-scale Fishermen in Songkhla Province

Items	All fish item		Pacific mackerel (Platu)		Blue crab		Banana shrimp	
	n = 160	%	n = 97	%	n = 94	%	n = 69	%
Marketing Channel*								
• middlemen	122	76.3	64	66.0	72	76.6	54	78.3
• retailer	27	16.9	19	19.6	7	7.4	11	15.9
• consumers	27	16.9	14	14.4	18	19.1	4	5.8
Middlemen*	(n=122)		(n=64)		(n = 72)		(n= 54)	
• contracted Middlemen	77	63.1	34	53.1	44	61.1	29	53.7
• regular Middlemen	39	32.0	27	42.2	24	33.3	23	42.6
• general Middlemen	15	12.3	8	12.5	10	19.9	6	11.1
Retailer*	(n=27)		(n=19)		(n = 7)		(n= 11)	
• general Retailer	12	44.4	10	52.6	6	85.7	2	18.2
• regular Retailer	11	40.7	6	31.6	2	28.6	7	63.6
• contracted Retailer	4	14.9	4	21.1	1	14.3	2	18.2
Consumers	(n=27)		(n=14)		(n = 18)		(n = 4)	
• general consumers	27	100.0	14	100.0	18	100.0	4	100.0

Note: *The respondents answered more than one choice in some cases.

Table 4 shows the marketing margin that the middlemen or retailers achieve from buying and selling of fresh fish in Songkhla Province. The study took into consideration the marketing margin for three periods- regular, peak, low period. The findings show that the big size pacific mackerel (Platu) fish provides the highest marketing margin (37%) at regular period and the lowest (29%) at low period. On the other hand, the highest marketing margin (43%) for the middle size pacific mackerel (Platu) fish is gained at peak period and the lowest (36%) at regular period. Similarly, the middlemen and retailers make the highest marketing margin (51%) from the small size pacific mackerel (Platu) fish at peak period and the lowest (44%) at regular period. The findings indicate that the marketing margin for the small size pacific mackerel (Platu) fish is comparatively higher at all the three periods. The study revealed more or less the similar results regarding marketing margin for other two main species of fresh fish (i.e. Blue crab and Banana shrimp) at all the three periods. However, the overall findings suggest that pacific mackerel (Platu) is the most profitable among the three main species of fresh fish in Songkhla Province. In Madagascar, Barnes-Mautheet al.[19] conducted a study to assess post-landing trends, fishing revenue, total market value, costs and net income, profitability, employment and dependence of small-scale fisheries in a remote rural region (Velondriake) of the country. The study revealed that small-scale fisheries sector employed 87% of the adult population, generated an average of 82% of all household income, and provided the sole protein source in 99% of all household meals with protein. The study reported that the fishermen in Velondriake target to harvest average priced and cheap fish species (such as sardines, squirrelfish, and mullets) on a daily basis while target expensive fish species (such as mackerel, tuna, and bonitos) only occasionally. The study also found that profitability varied little across all types of fishermen, averaging 0.87.

Table 4: Marketing margin of fresh fish of the small-scale fishermen in Songkhla Province

Items	size of fresh fish: Big (Baht/kg.)			size of fresh fish: Middle (Baht/kg.)			size of fresh fish: Small (Baht/kg.)		
	P_{fi}	P_{ri}	MM_i	P_{fi}	P_{ri}	MM_i	P_{fi}	P_{ri}	MM_i
Pacific mackerel (Platu)									
• regular period	76	120	44 (37%)	51	80	29 (36%)	34	60	26 (44%)
• peak period	59	93	34 (36%)	40	70	30 (43%)	27	56	29 (51%)
• low period	79	111	32 (29%)	57	94	37 (39%)	39	71	32 (45%)
• average			(34%)			(39%)			(47%)
Blue crab									
• regular period	176	224	48 (22%)	123	182	59 (32%)	86	155	69 (41%)
• peak period	171	265	94 (35%)	120	215	95 (44%)	92	175	83 (48%)
• low period	207	300	93 (31%)	155	255	100 (39%)	122	215	93 (43%)
• average			(29%)			(38%)			(44%)
Banana shrimp									
• regular period	316	397	101 (24%)	233	307	74 (24%)	168	250	82 (33%)
• peak period	289	380	91 (24%)	239	350	111 (32%)	179	320	141 (44%)
• low period	361	500	139 (28%)	289	430	141 (33%)	242	350	108 (31%)
• average			(25%)			(30%)			(36%)

MM_i = marketing margin

P_{ri} = retail price of a fresh fish that the consumer pays (Baht/kg)

P_{fi} = price of a fresh fish that the small-scale fisherman receives (Baht/kg)

Note: *The respondents answered more than one choice in some cases.

Conclusion

Thepresent studyassessesthe marketing of fresh fish of the small-scale fishermen in Songkhla Province, Thailand. The main species of the fresh fish caught by the fishermen are Pacific mackerel (Platu), Blue crab, Cuttlefish and Banana shrimp. The study revealed that majority of the surveyed fishermen (97%) sell their fish immediately after harvesting due to several reasons. The reasons include fishermen get tired from fishing and need to rest; feel convenience to sell fresh fish in the market; need to get cash quickly and so on. It was found that more than three-quarter of the respondents (76%) do not have own transportation to deliver their products in the market. Majority of the fishermen (61%) do not take into consideration the market price of fish before selling it as the price is fixed by the buyers (i.e. local middlemen and retailers) and price fluctuates overtime. Most of the fishermen (nearly 85%) receives lower price than the market price of the fish. The study also found that the contracted middlemen mainly dominate the market of fresh fish of the small-scale fishermen in Songkhla Province. The findings of the study provide an insight about various factors of marketing of fresh fish of the small-scale fishermen that might assist in policy and decision making to improve marketing efficiency of fresh fish of the small-scale fishermen in Thailand. Because small-scale fisheries play an important role in nutrition, food security, sustainable livelihoods, and poverty alleviation. It also provides employment for a large group of peoplemainly the poor.

Acknowledgement

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