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Marketing channels of marine fish in Banjarmasin fishing port, Indonesia

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Abstract
The field survey was carried out to scrutinize the marketing channels, marketing cost and marketing margin of marine fishes at different intermediaries in Banjarmasin fishing port, Indonesia. About 5-20 tons per vessel per day of marine fishes are being landed in this area. The fish price falls between IDR 3,600 and IDR 57,000 per kg corresponding to the types of fish sold. The net profit per trip received by the fish carrier vessel owners (IDR 25,300,000) was considerably higher than the pickup truck owners (IDR 2,800,000). The wholesalers make a significant amount of profit 2-6 times higher than local traders or retailers. All transactions of marketing channels are organized by the agent who got 20% fee of total catch sold. The net profit per trip received by the agent was comparatively higher than other intermediaries. The retailers received the lowest amount of profit (IDR 200,000 - 250,000 per trip) because they had only about 25 kg per trip. The marketing margin at the retailers and fishermen level falls between IDR 10,000 and 30,000. The marketing margin of fish sold outside fishing port was higher than inside fishing port due to handling and transportation fee. The strategies for marine fish market development are further discussed.

Keywords: Banjamasin fishing port, fish distributor agent, fish price, fish market, marketing channel

1. Introduction
South Kalimantan Province is one of the biggest fish producer areas in Indonesia, with sea area of 23,029.19 km^2 and coastal length of 1,293.34 km. The fishery production reached 247,730.47 tons sourced from marine capture fishery, aquaculture and inland fishery. It implies that capture fishery sector beneficially supports to fish processing industry, local and foreign markets. Undoubted that consuming fish is very good for health as fish provides essential amino acid, calcium, phosphorus, vitamin A and D (Kohinoor *et al*., 1991; Brigette *et al*., 1994) [9, 18], as well as rich in iron and copper that support haemoglobin synthesis (Sarma *et al*., 2010) [30]. Moreover, perception of consumer preferences for consuming fish is highly appreciated (Alhassan *et al*., 2012) [5]. Marine fish marketing is a crucial moment to success for producers and traders to earn the profit since fish being a highly perishable commodity needs immediately processed or sold after harvest. It spoils soon after death due to microbial actions, which result in disagreeable taste, smell and texture thereby reducing consumer acceptability (Garrow and James, 1994) [12]. Meanwhile the fish price fluctuates much depend on the season, the quantity and quality of fish, the type and size of fish, supply and demand, market distance, and also long-short of marketing channels. In other word, marine fish marketing is characterized by uncertainties in supply, assembling of fish from too many fish landing areas, different types of fish commodities and demand patterns, large number of marketing channels and intermediaries and price fluctuations (Alhassan *et al*., 2012; Aswathy and Abdu Samad, 2013; Begum *et al*., 2014) [5, 7, 8]. While the fish price depends on market structure, species, and freshness, supply-demand and size of fishes (Hossain *et al*., 2015) [14]. Nowadays, business transaction can be done through fish market, retail market, fishing port or even over the sea, as well as via internet order.

Fishing port is specifically designed as fish landing area and fish auction place. Its function is enlarged to serve for fish marketing business center, loading and discharging, as well as logistic supply (e.g. ice, fuel, water) for fishing boats and fish carrier fishing vessels. Numerous studies on the overview of marine and freshwater fish marketing have been devoted to describe the relevant subject such as economic analysis of fresh fish marketing (Ali *et al*., 2008), the pattern and trend of marketing (Abila, 1998) [1], marketing system (Alam *et al*., 2010; Flowra *et al*., 2012; Aktar *et al*., 2013; Jamali, 2013) [3, 4, 11, 17], marketing channels (Madugu and Edward, 2011; Alhassan *et al*., 2012; Rabby *et al*., 2015) [5, 20, 24], marketing management (Sathiadhas, 1997; Sathiadhas and Kanagam, 2000) [27, 28], market intermediaries and marketing margins (Hussain *et al*., 2003) [16], typical transportation system used (Rokeya *et al*., 1997) [26], and marketing strategy (Ahmed and Hossain, 2012; Mutambuki, 2014) [2, 21]. In the present, we focused on the marketing channels of fish landed in Banjarmasin Fishing Port by describing the channel pattern and the proportion of the catches distribution started from fishermen brought by the fish carrier vessels and the pickup trucks entered the fishing port down to the end consumers, as well as provide the strategies for marine fish market development in this area.

2. Materials and Methods
2.1 Site study
The research was carried out in Banjarmasin Fishing Port of South Kalimantan Province, Indonesia (Figure 1), located on 03°18'03" S and 114°33'02" E. Banjarmasin Fishing Port is one of the regional technical Implementing Units (UPTD)

under the Marine and Fisheries Service of South Kalimantan Province. The location is purposively selected with some reasons: (1) Banjarmasin Fishing Port is one of the famous fish landing places in South Kalimantan Province instead of Muara Kintap, Batu Licin and Kotabaru Fishing Ports; (2) fishing port infrastructures and supporting facilities has been well-prepared; (3) Banjarmasin Fishing Port is the oldest fishing port in Kalimantan Island and very strategic area because it is also accessible by fish carrier vessels from Java, Sulawesi and neighboring provinces. Banjarmasin Fishing Port was built on 1975 and positioned in the edge of Barito River. It is administratively bordered with Barito Kuala District at the western and northern, and with Banjar District at eastern and southern parts. It is only about 4 km from Banjarmasin City.

Fig 1: The picture showing the location of Banjarmasin Fishing Port, Indonesia

2.2 The fish landed and marketing destination

The fish loading and discharging activity in Banjarmasin Fishing Port is usually done at the night. About 50-100 tons a day of marine fishes are being landed by the fish carrier vessels of 6-30 GT. While the quantity of fish driven by the pickup trucks accounted for about 6-11 tons a day. Statistically, a total of 85,819 tons of marine fishes consisted of 65,691 tons landed by fish carrier vessels (76.55%) and 20,128 tons by the pickup trucks (23.45%) were recorded during 2012-2017. The fluctuation in fish landed in Banjarmasin Fishing Port is highly influenced by the weather and season. Seen from marketing destination areas, more than 75% of total fish is distributed to the local markets around South Kalimantan Province (Banjarmasin City and other Districts), and the rest is marketed to Central Kalimantan (Palangka Raya, Sampit, Kapuas, Pangkalanbun, Muara Tewe), West Kalimantan (Pontianak City), Java, Sulawesi, Batam and Bali.

2.3 Characteristic of respondents

A total of 65 respondents were randomly selected comprising 20 ship owners, 10 employees of fish distributor agent, 10 local traders, 5 outside traders, 10 retailers, 10 end consumers, and 21 officers who directly involved in fishing port operational activity. The respondents were interviewed using the structured questionnaires. The deep interview was undertaken to get overview and perception on the existing fish distribution and marketing systems, marketing service, constraints of fish distribution and marketing etc., and crosscheck interviews with key information (e.g. the head of Banjarmasin Fishing Port)

2.4 Data analysis

The average prices spread for selected fish species, marketing margin at fishermen and consumers, the cost-profit and marketing efficiencies of different marketing channels have been analyzed. Marketing margin is the difference between the price paid by the consumers and that received by the fishermen. It was calculated using the following formula (Rahman *et al*., 2012) [25]: Marketing margin (%) = (Selling price - Purchase price)/Selling price × 100.

The SWOT analysis was used to formulate the strategies for fish market development in Banjarmasin Fishing Port. It is a simple but powerful tool for sizing up an organization's resource capabilities and deficiencies, its market prospects, and the external threats to its future (Thompson *et al*., 2007) [31]. It has two dimensions: (1) internal dimension links to the strengths and weaknesses of core organization, and (2) external dimension allied to opportunities and threats toward outside environment (Gurel and Tat, 2017) [13]. The data were tabulated and analyzed using conventional statistical tools of MS Excel 2010, then presented in textual, tabular and graphical forms.

3. Results

Based on the daily report issued by fishing port authority, there are about 5-20 tons of fish catches landed by one vessel a day or equal to 50-100 tons given by 10 vessels (6-30 GT). The fish carrier vessels came from Banjarmasin, Barito Kuala, Tanah Laut, Tanah Bumbu and Kotabaru. The transshipment goes on the sea around Masalembo, Maradapan, Masalima, Marabatuan, Matasirih, Bawean, Kangean, Kalokuang, Asam-asam, Kintap, Batulicin, Tabunio, Tangkisung, Mamuju, Flores and Wakatobi. Meanwhile the pickup trucks obtained the catches from local fishermen along the coastal area or small islands. The fish price falls between IDR 3,600 and IDR 57,000 per kg corresponding to the types of fish sold. There are six top ranks of commercial marine fishes, namely *tenggiri*, *kembung*, *tongkol*, *layang*, *kakap merah* dan *kuwe*. There is a variation in the fish prices at different marketing channels. The lowest fish price usually goes to the fishermen level and gradually increases to next levels and terminates in the retailer levels leading to variation in the marketing margin (Table 1). It was clearly pointed out that the marketing margin of fish sold outside fishing port was higher than inside fishing port due to handling and transportation fee. The marketing margins inside fishing port were 60.53% for *Kembung*, 57.14% for *layang*, 43.75% for *tongkol*, and 42.86% for *kuwe*, while those outside fishing port for the same fish species were 66.67%, 65.71%, 55.00% and 50.00% respectively. Seen from transportation used, the marketing margin by mean of the fish carrier vessels was 15-25% higher than by using the pickup trucks because of their longer channels. The daily transaction value of the fish selling can reach about six hundred million rupiah. At the wholesale level (Table 2), the average net profit per trip received by the vessel owners (IDR 25,300,000) was considerably higher than obtained by the pickup truck owners (IDR 2,800,000). This because the quantity of fish sold by the vessel owners (10,000 kg) was about 14 times higher than sold by the pickup truck owners (700 kg). The total cost spent by the vessel owners (IDR 274,700,000) was

about 15 times greater far than spent by the pickup truck owners (IDR 18,200,000) accordingly. The amount of net profit per trip received by the fish distributor agent (IDR 9,250,000) was comparatively higher than that of other intermediaries (pickup truck owners, fish traders and retailers). The detailed amount of fixed cost and variable cost spent by the actors who involved in the marketing channels was described in Table 3. The highest total cost per trip paid out by the fish carrier vessel owners (IDR 274,700,000), followed by the outside collector traders (IDR 22,870,000), the pickup truck owners (IDR18,200,000), fish distributor agent (IDR 10,750,000), local collector traders (IDR 3,400,000), retailers (IDR 750,000) and lastly fishermen (IDR 675,000). The purchase of fish is the extra-ordinary item of all variable costs mainly paid for vessel owners. It can reach IDR 200,000,000 per trip, followed by fee for the agent (IDR 50,000,000) and cost for the fuels (IDR 11,000,000).

Table 1: The average fish prices and marketing margins of fish landed by the fish carrier vessels in Banjarmasin fishing port

Marketing Channel Level through the Fish Carrier Vessels	**Average Fish Prices (IDR/kg)**					
	Kembung	***Layang***	***Tenggiri***	***Tongkol***	***Kakap Merah***	***Kuwe***
A. Fishermen/fishing vessel owners	15,000	12,000	50,000	18,000	45,000	20,000
B. Wholesalers/fish carrier vessel owners	32,000	23,000	54,000	26,000	45,000	29,000
C. Fish distributor agent	32,000	23,000	54,000	26,000	45,000	29,000
D. Local collector traders	35,000	25,000	59,000	27,000	50,000	30,000
E. Outside collector traders	40,000	30,000	65,000	35,000	57,000	35,000
F. Retailers inside fishing port	38,000	28,000	63,000	32,000	55,000	35,000
G. Retailers outside fishing port	45,000	35,000	70,000	40,000	65,000	40,000
Marketing margin I (F-A)	23,000	16,000	13,000	14,000	10,000	15,000
Marketing margin II (G-A)	30,000	23,000	20,000	22,000	20,000	20,000
Marketing margin I (%)	60.53	57.14	20.63	43.75	18.18	42.86
Marketing margin II (%)	66.67	65.71	28.57	55.00	30.77	50.00
Marketing Channel Level through the Pickup Trucks	**Average Fish Prices (IDR/kg)**					
	Kembung	***Layang***	***Tenggiri***	***Tongkol***	***Kakap Merah***	***Kuwe***
A. Fishermen/fishing vessel owners	20,000	15,000	50,000	20,000	45,000	22,000
B. Wholesalers/pickup truck owners	32,000	23,000	54,000	26,000	45,000	29,000
C. Fish distributor agent	32,000	23,000	54,000	26,000	45,000	29,000
D. Local collector traders	37,000	25,000	59,000	27,000	50,000	30,000
E. Retailers inside fishing port	38,000	28,000	63,000	32,000	55,000	35,000
Marketing Margin (E-A)	18,000	13,000	13,000	12,000	10,000	13,000
Marketing margin (%)	47.37	46.43	20.63	37.50	18.18	37.14

Table 2: The average total revenue, total cost and the profit per trip received by the actors at different marketing channels.
Q = quantity, P = price, TR = total revenue, TFC = total fixed cost, TVC = total variable cost, π = profit

Marketing Channels	**Q (kg)**	**P (IDR/kg)**	**TR = Q × P (IDR)**	**TFC (IDR)**	**TVC (IDR)**	**TC = TVC+TFC (IDR)**	**π = TR-TC (IDR)**
Fishermen/fishing vessel owners	200	20,000	4,000,000	150,000	525,000	675,000	3,325,000
Wholesalers/fish carrier vessel owners	10,000	30,000	300,000,000	1,200,000	273,500,000	274,700,000	25,300,000
Wholesalers/pickup truck owners	700	30,000	21,000,000	300,000	17,900,000	18,200,000	2,800,000
Fish distributor agent	20,000	1,000	20,000,000	5,000,000	5,750,000	10,750,000	9,250,000
Outside collector traders	700	35,000	24,500,000	250,000	22,620,000	22,870,000	1,630,000
Local collector traders	150	32,000	4,800,000	250,000	3,150,000	3,400,000	1,400,000
Retailers inside fishing port	25	38,000	950,000	70,000	680,000	750,000	200,000
Retailers outside fishing port	25	40,000	1,000,000	70,000	680,000	750,000	250,000

Table 3: The amount of fixed cost and variable cost spent by the actors at different marketing channels

Fixed Cost	**Fishermen**	**Fish carrier vessel owner**	**Pickup truck owner**	**Local collector trader**	**Outside collector trader**	**Retailer**	**Fish distributor agent**
Fee for vessel/vehicle documents	50,000	200,000	150,000	150,000	150,000	50,000	-
Depreciation cost	100,000	1,000,000	150,000	100,000	100,000	20,000	5,000,000
Sub Total	150,000	1,200,000	300,000	50,000	250,000	70,000	5,000,000
Variable Cost							
Fuels	250,000	11,000,000	300,000	300,000	300,000	15,000	-
Logistic	100,000	5,000,000	30,000	30,000	50,000	15,000	250,000
Icing	-	4,500,000	50,000	50,000	50,000	5,000	-
Retribution fee	100,000	300,000	20,000	20,000	20,000	5,000	-
Labour wage	-	500,000	350,000	-	350,000	-	-
Weigh wage	-	500,000	350,000	-	350,000	-	-
Machine oil	25,000	500,000	-	-	200,000	-	-
Freshwater	50,000	300,000	-	-	-	-	-
Fee for fish distributor agent	-	50,000,000	2,500,000	-	-	-	-
Purchase of fish		200,000,000	14,000,000	2,500,000	21,000,000	640,000	-
Rent expenses (land/warehouse)	-	900,000	-	-	-	-	500,000
Employees/driver	-	-	300,000	250,000	300,000	-	5,000,000
Sub Total	525,000	273,500,000	17,900,000	3,150,000	22,620,000	680,000	5,750,000
Total	675,000	274,700,000	18,200,000	3,400,000	22,870,000	750,000	10,750,000

3.1 Marketing channel patterns landed by the fish carrier vessels

Since there is no fish auction center, the marketing system in Banjarmasin Fishing Port is fully controlled by the fish distributor agent. Of the total catches received from fishing vessels and fish carrier vessels, the proportion of the catch distribution is globally set by the agent as follows: 60% for local collector traders, 30% for outside traders and 10% for local retailers. From local collector traders, then the catch was distributed 80% for local retailers and 20% for the end consumers inside Banjarmasin Fishing Port. While the catch quota of outside traders, 100% goes to outside retailers and the ultimate consumers beyond Banjarmasin Fishing Port. The marketing channel patterns are displayed in Figure 2.

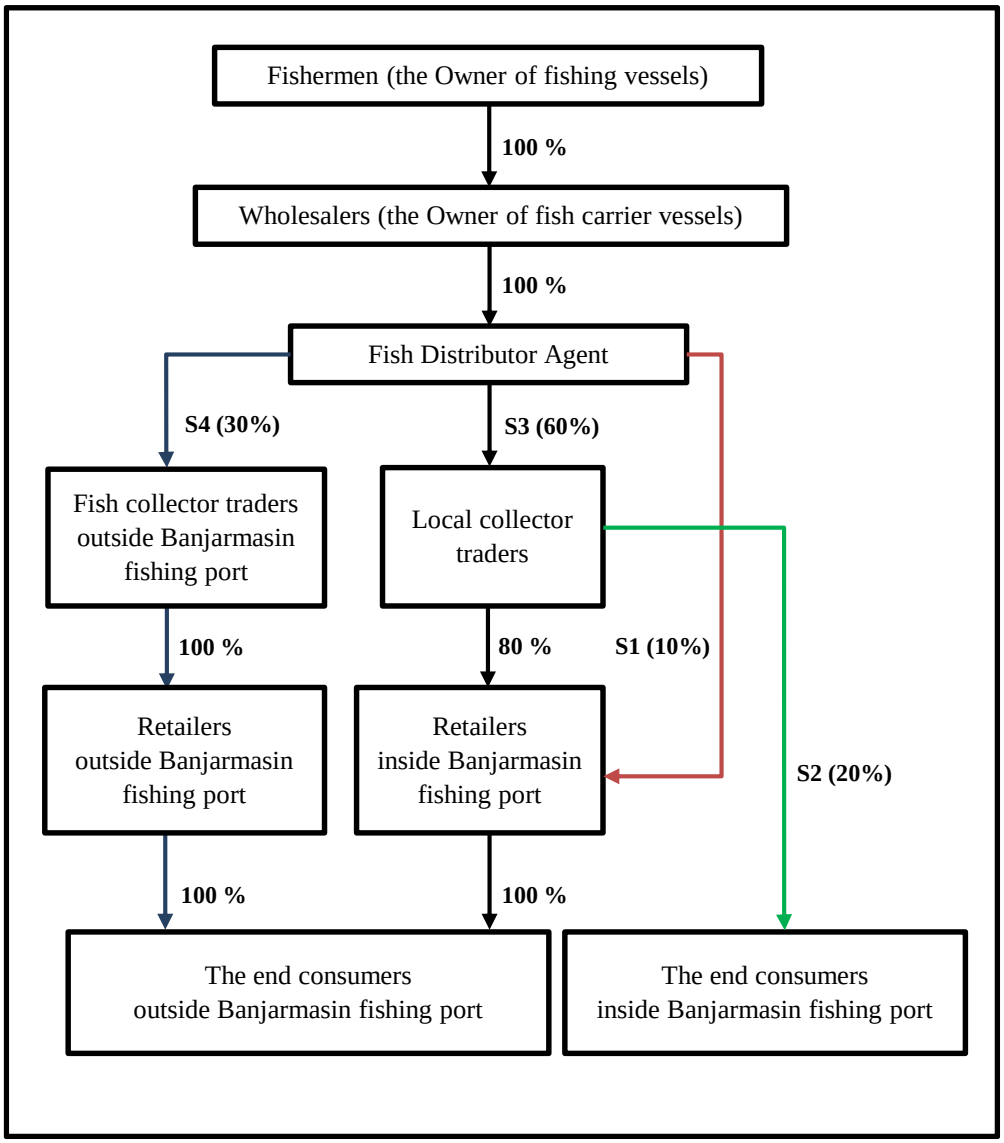

Fig 2: Marketing channels of marine fishes landed by the fish carrier vessels in Banjarmasin Fishing Port

The local collector-traders in the second and third marketing channels equally received the portion of the catch (60%). We proposed the shortest marketing channel and the smallest portion (10%) of the catch received by the local retailers were found in the first marketing channel. The other way, the third and fourth channels were considered the longest marketing channel as compared to the first and second marketing channels, while the biggest portion (100%) received by the outside retailers in the fourth channel. The consumers inside Banjarmasin Fishing Port in the second marketing channel received the smallest portion (20%) among others. For the time being, the end consumers came from both inside and outside Banjarmasin Fishing Port. According to the local collector traders, some of the catches are sold to Hypermart, seafood restaurants and food stalls around Banjarmasin City.

3.2 Marketing channel patterns driven by the pickup trucks

Figure 3 shows the pattern of marketing channels for marine finfish, which is transported by the pickup trucks. With the same procedure, the fish distributor agent in Banjarmasin Fishing Port divided the catches with the following proportions: 70% for local collector traders and 30% for local retailers. From local collector traders, 80% of the catch was given to local retailers to be sold to the end consumer outside Banjarmasin Fishing Port and the rest 20% disposable for the end consumers inside Banjarmasin Fishing Port.

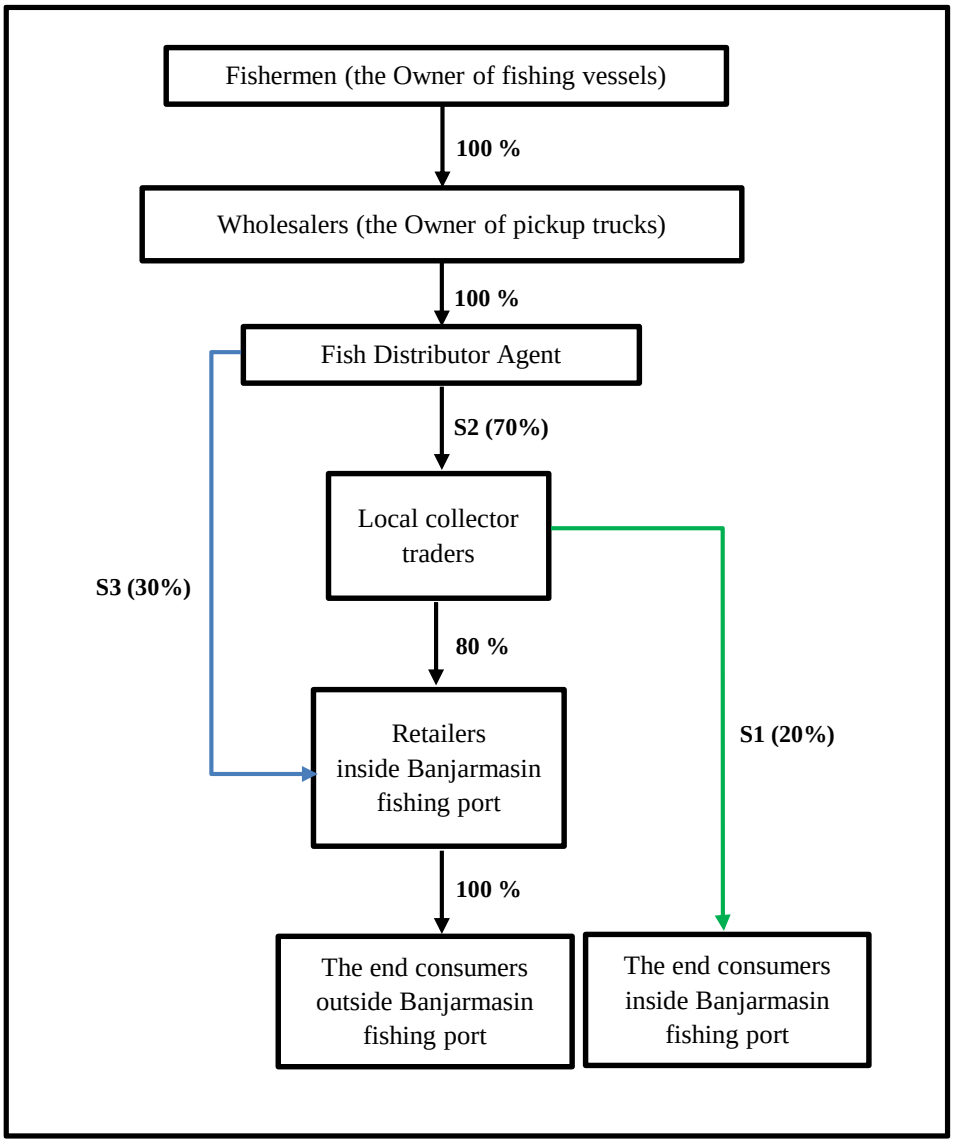

Fig 3: Marketing channels of marine fishes driven by the pickup trucks in Banjarmasin Fishing Port

The largest number of marketing channels was revealed in the second marketing channel, while the first and the third marketing channels were applied equally. We found that the smallest portion (30%) of the catch received by the local retailers in the third marketing channel, while the local retailers in the first and second marketing channel were equally received (70%). The consumers inside Banjarmasin Fishing Port in the first marketing channel received the smallest portion (20%) among those beyond Banjarmasin Fishing Port in the second and third marketing channels. Dealing with the purchase ability of the party, most of local fish collectors and retailers use their own capital to do business, while the fish distributor agent (marketing service agent) uses the capital from a bank to pay the fish owners in cash, in consequence the agent will receive a fee of the total catches sold (20%).

3.3 Grand strategy for fish market development

From the SWOT matrix analysis, we determined the point of intersection between internal and external strategy factors so-called 'the quadrant I' (x = 0.38, y = 0.54), which is a very favorable condition of combining the strength and the opportunity (S-O) that very useful for fish market development. The recommended strategy for increasing the performance of marine fish market is currently being discussed.

4. Discussion

Basically the marketing system is the exchange activities associated with transferring property rights to commodities, physically purchasing and allocating resources, handling of products, disseminating information to participants and institutional arrangements for facilitating these activities (Hossain *et al*., 2015) [14]. Sathiadas and Narayana Kumar (1994) [29] characterized the marine fish marketing as follows: (1) greater uncertainities in fish production and hence in the supply of fish, (2) high perishability of fish, (3) assembling of fish from too many coastal landing centres, (4) too many varieties and hence too many demand patterns, (5) wide spatial and temporal variations in market arrivals and prices, (6) dis-equilibrium of demand and supply, (7) difficulty in maintaining the quality of fish, (8) lack of proper infrastructural facilities for storage, preservation, processing and transport at various stages of marketing, (9) lack of information on fish price and production. Some problems of these situations are also being faced by Banjarmasin fishing port and other fishing ports in South Kalimantan Province.

It is unlike common fish landing centers from different geographical areas (Aswathy and Abdu Samad, 2013; Begum *et al*., 2014; Hossain *et al*., 2015) [7, 8, 14], Banjarmasin Fishing Port has no fish auction center. All transactions of the marketing channels are organized by a fish distributor agent (marketing service agent). This marketing decision has been well-accepted by all the parties involved due to some reasons: (1) it is easier for the fish owners (fish carrier vessels and pickup truck owners) to find the buyers, because the buyers are the fixed customers of the agent; (2) the fish owners have the right to determine the reasonable price to be sold based on the quality, type and initial price of the catches being bought from the owners of fishing vessels); (3) the whole traders and the retailers do not need to pay the fish buying-prices in cash to the owners of fish carrier vessels or pickup truck (wholesalers). In this case, all payments for the owners are handled by the agent (within 2-5 days) after all expenses are deducted; (4) management handling related to the fishing vessel and fish carrier vessel's documents are fully supported by the agent. Olukosi and Isitor (1990) [23] categorized marketing channels into centralized and decentralized channels. The marketing channel in the present study is categorized as the centralized channel where the agent acts as middlemen between producers and consumers, instead of decentralized channel where both consumers and agents can buy directly from the producers. It is interested to note that fish distributor agent is an independently private association who uses fishing port facilities, and all market transactions go through the agent service. In the long term, it is unprofitable for Banjarmasin Fishing Port itself. All functions related to the fish auction system have been changed to the catch allocation system set by the agent, and the fishing port only received insignificant amount of the whole business. To find the solution, we strongly recommend the agent and local fishermen to form the cooperative fish marketing society and work under Banjarmasin fishing port's organization with legal entity. The defined role of the cooperative society will support beneficially for fish marketing system as a whole (Madugu and Edward, 2011; Begum *et al*., 2014; Rabby *et al*., 2015) [8, 20, 24]. Furthermore, Rahman *et al*. (2012) [25] suggested introducing 'the government fish shops' to reduce the marketing margin of middlemen. Through this system, fishermen and consumers could sell/buy fish directly in these shops and ultimately it will increase margin share for fishermen and provide lower price for consumers.

We have proven that the longer the marketing channels, the higher the fish price paid by the consumers. In the present study, we compared the initial price of fish at fishermen and the final price at the retailer level (the end consumers) both through the fish carrier vessels and the pickup trucks. In view point of marketing channel by mean of the fish carrier vessels, the local retailers received fish price of 1.2-2.5 times higher than the price at fishermen or even can reach 1.4-3.0 times for outside retailers. The marketing margin falls between IDR 10,000 for *kakap merah* and IDR 30,000 for *kembung* (Table 3). Compared to another channel driven by the pickup trucks, the local retailers settle for fish price of 1.2-1.9 times higher than the initial price at fishermen/the owners of fishing vessels. The marketing margin ranged between IDR 10,000 and IDR 18,000 for both fish species. In other word, the marketing system driven by the fish carrier vessels was less efficient than another one; this because the volume of fish landed was about 3.5 times greater than discharged by the pickup trucks. According to Huger and Hirenath (1984) [15], the higher the value of marketing margin, the lower the efficiency of the marketing system. Rabby *et al*. (2015) [24] assumed that the producers and intermediaries could be more benefited financially, if efficient marketing was arranged properly. The higher marketing cost here was mainly attributable to the number of marketing channels, supply and demand, season, and labor required, as well as inter-channel distance for example how far the catches being transferred from fishing boats to fish carrier vessels or being taken by the pickup trucks from the remote areas/small islands, which consumed the fuels and paid for other additional fees. In the investigated area, the retailers received the lowest amount of profit (IDR 200,000 - 250,000 per trip) corresponding to the quantity of fish sold, which is only about 25 kg per trip (see Table 2). Differ from a study undertaken in Moulavibazar District of Bangladesh (Rabby *et al*., 2015) [24], the retailers got the highest amount of profit because of their lower marketing cost and assuming more risk compared with other intermediaries. Jamali *et al*. (2013) [17] clearly pointed out that about 70% retailers in Tangail District used their own money for fish trading. The variation in the marketing costs was also well-documented in the previous studies (Briones *et al*., 2004; Begum *et al*., 2014) [8, 10]. Sathiadhas (1997) [27] found that marketing cost for big sized fishes was comparatively higher than that of small ones due to the extra cost for handling and transportation.

A total of 20% fee of the total catches sold received by the agent of fish distributor in the present study was considered much greater than the amount of fee received by the Bangladesh's commission agents who typically earn 3-5% commission of auction price in Chittagong fish market (Begum *et al*., 2014) [8] or similarly received by a local agent (1-5%) in Dinajpur fish markets (Hossain *et al*., 2015) [14]. Meanwhile, the Indian's auctioneers charge 5-10 per cent of sales value as their commission from the fishermen (Kumar *et al*., 2008) [19]. Each kilogram of fish, the agent will get a service fee of IDR 1,000. There are 20,000 kg per day fish shared to the markets. The amount of total revenue received and total cost spent was IDR 20,000,000 and IDR 10,750,000, respectively. Thus the average daily profit gained from this business service was about IDR 9,250,000 per day. In our survey, 100% of the marine catch is marketed for domestic consumption, while in Bangladesh fish markets it accounted for 85-88% (Nesar and Helen, 2006; Begum *et al*., 2014) [8, 22]. In India, about 50% of the fish caught are marketed in and around the landing centers (Aswathy and Abdu Samad, 2013) [7]. Dealing with the marketing profit gained, we observed that the wholesalers make a significant amount of profit. It was about 2-6 times higher than local traders or retailers received depending on the types of marine fish sold. This because they have more power to negotiate in the prices and more capital to buy the fish from the owners of fishing vessels, as well as have greater control over the agent, trader and retailers. Generally they can make a profit of IDR 25,300,000 per day. The similar scenario was also observed in Rajshahi City and Gopalpur fish markets (Rahman *et al*., 2012; Jamali, 2013) [17, 25], Chittagong fish market (Begum *et al*., 2014) [8] and Dinajpur fish markets (Hossain *et al*., 2015) [14].

From the SWOT analysis, we formulate a grand strategy for fish market development in Banjarmasin Fishing Port by:

(1) increasing the mooring, loading and discharging services by reconstructing Banjarmasin Fishing Port's pier to allow the large fishing vessels tie up; (2) applying the refrigeration technology for fishing boats and fish carrier vessels as well as the ice plant facilities at the fishing port (3) utilizing information technology to attract investors or businessmen in order to create Banjarmasin Fishing Port as a fishery business center; (4) providing facilitative services in term of pre-production, production and post-harvest; (5) increasing the port security and guard security; (6) monitoring, evaluating and investigating the trend an fluctuate of the fish landed in Banjarmasin Fisheries Port to ensure the sustainability of fisheries resources; (7) creating a comfortable, attractive and clean area for culinary tourism.

5. Conclusion

It is concluded that the marketing channel landed by the fish carrier vessels was less efficient than driven by the pickup trucks because of their large number of marketing channels and intermediaries. The highest net profit per trip was received by the wholesalers, followed by the fish distributor agent and fishermen. The marketing margin of fish sold outside fishing port was higher than inside fishing port due to handling and transportation fee. It is a great challenge to make Banjarmasin Fishing Port as a fishery business center.

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