

Marketing system of striped catfish (*Pangasius hypophthalmus*) from freshwater cultivation in Banjar Regency, South Kalimantan Province, Indonesia

by Emmy Lilimantik

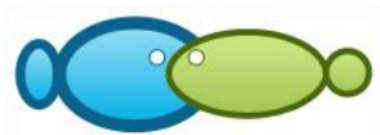
Submission date: 01-Nov-2021 08:58PM (UTC+0700)

Submission ID: 1690011583

File name: mmy_Lilimantik_Marketing_system_of_stripped_catfish_Pangasius.pdf (367.65K)

Word count: 6039

Character count: 32294



Marketing system of striped catfish (*Pangasius hypophthalmus*) from freshwater cultivation in Banjar Regency, South Kalimantan Province, Indonesia

¹Emmy Lilimantik

¹Faculty of Marine and Fisheries, Lambung Mangkurat University, South Kalimantan, Indonesia. Corresponding author: Emmy Lilimantik, emmy.lilimantik@ulm.ac.id

Abstract. This study aims to characterize the market of striped catfish (*Pangasius hypophthalmus*) from freshwater cultivation in Banjar Regency, South Kalimantan Province. The data used are primary data obtained from fish farmers, wholesalers, and retailers. They refer to the production size of fish farmers, marketing cost, farmer's price (IDR), and retail price (IDR). Data were collected through observation and interviews. Secondary data included research map area, books, journal articles, and various websites related to the study objective. The sampling method for fish farmers was simple random sampling and for the marketing agencies as snowball sampling. Data analyses included (a) marketing channel analysis, (b) farmer's share analysis, and (c) marketing margin analysis. The results of the analysis show that (a) there are three types of marketing channels, namely, (1) fish farmers sell their fish to the wholesalers who sell it to retailers; (2) fish farmers sell their fish to retailers; and (3) fish farmers sell their fish to the institutional market which sells it to consumers; (b) farmer's share value for the first and second channel is 69%, for the third it is 69%, and for the third channel the value is 57%; (c) the value of marketing margin for the first channel is IDR 5,000 (wholesaler) and IDR 4,000 (retailers), for the second channel of IDR 9,000 (retailers), and for the third channel of IDR 15,000 (institutional market).

Key Words: fish farmer, farmer's share, marketing agencies, marketing channel, marketing margin, striped catfish.

Introduction. The Indonesian fisheries sector has a Maximum Sustainable Yield of around 67 million tons/year consisting of capture fisheries of 10.2 million tons/year, including (a) marine fisheries of 9.3 million tons/year and (b) capture fisheries in inland waters (lakes, rivers, reservoirs, and swamps) about 0.9 million tons/year. The remaining 56.8 million tons/year is aquaculture potential, including Maria culture, brackish and freshwater aquaculture. The economic potential in the fisheries sector is estimated at US\$ 82 billion per year and contributes about 8% of the national gross domestic product. More than 12 million people are working in this sector as fish farmers (35.06%), fishermen (8.69%), salt farmers (0.41%), and fish marketers and fish processors (55.84%) (Suraya & Sulisty 2019).

The demand for fishery products continues to increase in line with population growth and public awareness to consume fish because of its high nutritional value with several ingredients such as calcium, phosphorus, iron, zinc, copper, and vitamins (Rahman et al 2012; Tilami & Samples 2017). One alternative to fulfilling public consumption of fish can be increased by developing aquaculture products such as fish rearing (Sampantam et al 2020). An increase of production in the cultivation sector is an important component because it is related to its role in supporting food supplies (Ranjan 2020), able to increase income (Hanafiah & Saefuddin 1986), and bring in state revenue from exports (Anindita & Baladina 2017).

Due to the increasing demand for fish, fish farming in Indonesia, especially South Kalimantan, is growing rapidly. Striped catfish is a popular freshwater fish that can be easily farmed in marginal conditions (Aisiah et al 2020). Striped catfish has a high opportunity to be marketed because its delicious taste (Nurhabib 2017), there are a lot of

processed fishery products made from striped catfish such as meatballs, nuggets, dumplings, sempol (Oktavianawati & Pa⁵⁷i 2017), and the price is can compete with the prices of other freshwater fish such as climbing perch (*Anabas testudineus*), snakehead fish (*Channa striata*), tilapia (*Oreochromis niloticus*) and goldfish (*Cyprinus carpio*) (Hayandani 2013). The price of striped catfish is the main attraction for fish farmers and traders to sell fish to main markets in South Kalimantan (Subekti 2020). The price of fish in one market affects the price of fish in other markets, while price changes are influenced by the accuracy of the delivery of fishery products from producers to consumers considering the perishable nature of fishery products (Madugu & Edward 2011) and needs prompt processing or selling after harvest (Maulu et al 2020).

The right marketing system can support the formation of price closeness between markets (Adenegan 2010) and can be used as a policy determination for efficient fisheries market development (Eltholth et al 2015). The research literature is well documented to describe an overview of the commercialization of marine and freshwater fish, including market efficiency (Lekshmi 2021), marketing channel (Madugu & Edward 2011; Nahumury & Manuhuttu 2019), marketing margin (Omar et al 2014; Lilimantik 2020), farmer's share (Hussain et al 2003; Ahmed & Hossain 2012) and typical transportation system used (Rokeya et al 1997). All fish marketed include fresh fish, frozen fish, and smoked fish originating from the catch, aquaculture, and processing industries. The Marketing of fishery products, especially in small-scale fisheries, often has not reached the ideal conditions. This happens because fish farmers are concentrated in certain locations while consumers are spread throughout the region, causing problems in their marketing channels because many marketing institutions are involved (Lekshmi et al 2020). Then there is the mastery of marketing channels by several fishery actors. This is in line with Ayyappan et al (2009) research that marketing institutions play a very important role in the fish marketing system. Another problem that often arises in the fishery commodity marketing system is the existence of fish marketing margins that are not well distributed in marketing institutions, causing prices to be relatively high (Kumar et al 2010). In this context, efforts are needed to study the fish marketing system in an area and are expected to provide up-to-date information in determining marketing policies. This paper aims to find out the striped catfish marketing system by looking at the marketing channel, farmer's share, and marketing margin from cultivation system-based fish farming to the consumers.

Material and Method

Description of the study sites. The research location in Banjar District, South Kalimantan Province in 2020, started from a field survey to 34 fish fa⁵⁰ing sites in Banjar Regency and then moved into local fish markets located in Banjar, Banjarbaru, Banjarmasin, Barito Kuala, Tapin, Hulu Sungai Tengah (HST) and Tanah Laut of South Kalimantan Province (Figure 1).

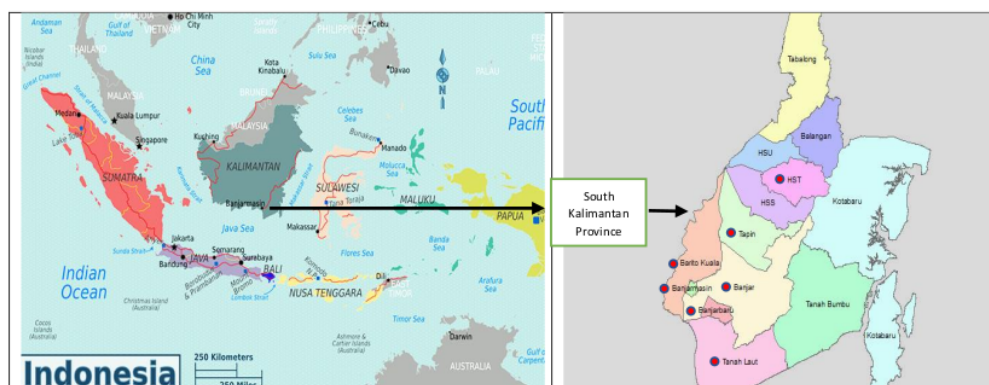


Figure 1. The map of the sampling sites for fish marketing of striped catfish in Banjar Regency, South Kalimantan Province, Indonesia (Simtaru 2020).

These locations were purposely selected to illustrate the marketing and distribution channels for striped catfish at different levels. The fish market generally opens early in the morning and then closes in the middle of the afternoon. These fish markets are often connected to wet markets that also sell fresh meat, dried fish, and other perishable items such as vegetables and fruits (Lilimantik & Ahmadi 2020; Buton et al 2017). The fish retailers are mostly women, and the fish market selling activities start in the morning and continue into the afternoon or evening (Ahmadi et al 2021).

Respondents' characteristics and data collection method. A total of 65 respondents who participated directly in the marketing channels were selected, including 34 fish farmers (out of the total population of 330 fish farmers at the study site), eight wholesalers, 20 retailers, and three institutional markets (local restaurants). The age of respondents varied between 35-50 years old and the duration of business experience was between 3 and 6 years. The fish farmer sample was selected through simple random sampling method through the following steps. The first step was to obtain from the Marine and Fisheries Office of Banjar Regency, South Kalimantan Province, a list with villages specialized in striped catfish cultivation. The list contained nine villages (Karang Intan, Pandak Daun, Jingah Habang Ulu, Jingah Habang Ilir, Pandak Daun, Sungai Alang, Mandiangin Barat, Mandiangin Timur, Mali-mali) with 351 striped catfish fish farmers (2020 data). The second step was to make an interview with the head of each village to confirm the number of fish farmers. This resulted in an adjusted number of 330 fish farmers. In the third step, a sample of 34 persons (10% of the total population) was created by selecting at random 3-4 people in each village from the list of fish farmers corresponding to each village. In the fourth step, an appointment for the interviews with these fish farmers was established with the help of the village head and, finally, the interview was done to collect study data.

The sampling of marketing agencies (i.e. wholesalers, retailers) adopted the snowball sampling method, a method of identification, selection, and sampling in a continuous network or chain of relationships (Dragan & Maniu 2013). A small sample is selected at the beginning, then the sample selects its peers for sampling, and so on, until the number of individuals who participate is the one desired by the researcher (Nurdiani 2013).

Data collection is done through observation and interview methods. The observation method directly collects data from the field for the success and accuracy of the research results (Hasanah 2016). The interview method is an event or process in which the interviewer and the interviewee interact through direct communication (Ryan et al 2016). There are two interview methods: the structured interview in which the interviewer prepares to interview with the interviewee and the unstructured interview. The interviewer does not prepare a list of questions but conducts questions spontaneously (Corbin & Morse 2003). The documentation method is used to obtain data through facts stored in the form of letters, diaries, photo archives, meeting results, souvenirs, activity journals and so on (Bowen 2009).

The data used are primary and secondary data. Primary data is data obtained directly from the first source by using measurement tools or data collection tools directly on the subject as the source of information sought (Ramallal 2018). The primary data in this study are fish farmer, wholesaler, retailer, production of the fish farmer, marketing cost, farmer's price (IDR), and retail price (IDR). Secondary data is not obtained directly by researchers, for example, the research must go through other people or search through documents (Wickham 2019). Secondary data is obtained through books, government publications, internal organization records, reports, journals, to various sites related to the information being sought (Martins et al 2018). Secondary data in this study include maps of the research area, books, journals, and various sites related to the information being sought. Generally, these two data are combined to complement each other and assist researchers in observing any existing phenomenon (Rabinovich & Cheon 2011).

Data Analysis Method. There are three ways to analyze the Marketing system of striped catfish from freshwater cultivation in Banjar district, South Kalimantan Province, Indonesia, and they are presented in the following paragraphs.

(a) Marketing Channel Analysis. The marketing channel of striped catfish in Banjar Regency, South Kalimantan Province was analyzed using a quantitative descriptive method. It analyzed every marketing agency involved and the marketing channels through which it went from a fish farmer to the consumers (Parmar 2018).

(b) Farmer's Share Analysis. Farmer's Share is a comparison of the price received by the farmer with the price at the retailer level expressed as a percentage, formulated as follows (Harviyantho et al 2021):

$$F_s = \frac{P_f}{P_r} \times 100\%$$

Where: F_s is the farmer's share (%), P_f is the farmer's price (IDR/kg), and P_r is the consumer's price (IDR/kg). According to Saravanapandeeswari and Vanitha (2017), if farmers receive more than 50% of the price, the marketing system can be considered efficient.

(c) Marketing Margin Analysis. Marketing margin is the difference between the price at the fish farmer level and the price at the retail level. It can simply be expressed with the following formula (Madugu & Edward 2011):

$$MM = P_r - P_f$$

Whereas:

MM is marketing margin (IDR),

P_r is price retail (IDR),

P_f is the price at fish farmer (IDR).

It can also be calculated using the following formula (Monica et al 2018):

$$MM (\%) = (\text{Selling price} - \text{Purchase price}) / \text{Selling price} \times 100$$

Results and Discussion. The cultivation of striped catfish in the rearing category is usually carried out when the striped catfish fry weighs 8-12 grams/head, and after 6-8 months, it can reach 700 grams/head – 1 kg/head (Aisiah 2020). In this study, the harvesting of striped catfish per period ranges from 6-8 months with the size of the fish harvested varies between 0.5-1 kg/head, has a length of 35-40 cm with a total production of 60 tons per period (Table 1). Usually, in one rearing pond, harvests are carried out simultaneously and sold on the same day to avoid deterioration of fish quality. Of the 60 tons of total fish harvested, 49.2 tons (82%) were sold to wholesalers, 7.2 tons (12%) were sold to retailers, and 3.6 tons (6%) were given to the institutional market (local restaurants). In pricing, usually, fish farmers will calculate in advance the amount of production costs and the estimated profit they will get, while in marketing agencies, including wholesalers, retailers, and institutional markets, what is calculated is marketing costs and the estimated profit they will get. Once the price is set, the fish are ready to be distributed on-demand. There are around 1 - 3 tons of fish harvested by each fish farmer, and the price of fish at the fish farmers' level is set at IDR 20,000 per kg. Fish farmers will receive a payment of IDR 20,000,000 to IDR 60,000,000 per harvest period. There are eight wholesalers who buy fish directly from fish farmers with amounts ranging from 15 to 34.2 tons, which are then distributed to retailers. The selling price at the wholesaler level is set at IDR 25,000 per kg, and they accept payments ranging from IDR 375,000,000 to IDR 885,000,000 per harvest period. There are 20 retailers involved in the marketing process with an average purchase of 360 kg per person. At retail prices, the price is set at IDR 29,000 per kg, and they receive a payment of IDR 10,440,000 per harvest period. The institutional market in this study consists of three local restaurants, whose business locations are close to producers with an average purchase of 1.2 tons per business. At the institutional market, the price is set at IDR 35,000 per kg, and they receive a payment of IDR 42,000,000 per harvest period.

Table 1
The volume and value of striped catfish at different marketing levels per period harvest

Level of marketing	Sample	Share of production (ton)		Price (IDR/kg)	Revenue (IDR)	
		Average	Quantity		Average	Total
Fish farmers	34	1,76	60,0	20.000	35.200.000	1.200.000.000
Wholesalers	8	6,15	49,2	25.000	153.750.000	1.230.000.000
Retailers	20	0,36	7,2	29.000	10.440.000	208.800.000
Institutional market	3	1.2	3,6	35.000	42.000.000	126.000.000

Source: Data collected by authors through interviews, 2021.

Marketing channel. Post-harvest activities generally include loading and unloading harvested produce, transportation, and marketing (Yıldırım & Akyol 2012). Fish farmers often use marketing agencies as their distributors (Kakati et al 2017). Prices will usually not be the same in each distribution channel because several channels are used before fish reaches consumers (Septiara et al 2012). The right marketing will affect the income of fish farmers and marketing agencies. There are three patterns of marketing channels for aquacultured striped catfish in Banjar Regency, South Kalimantan Province (Figure 2).

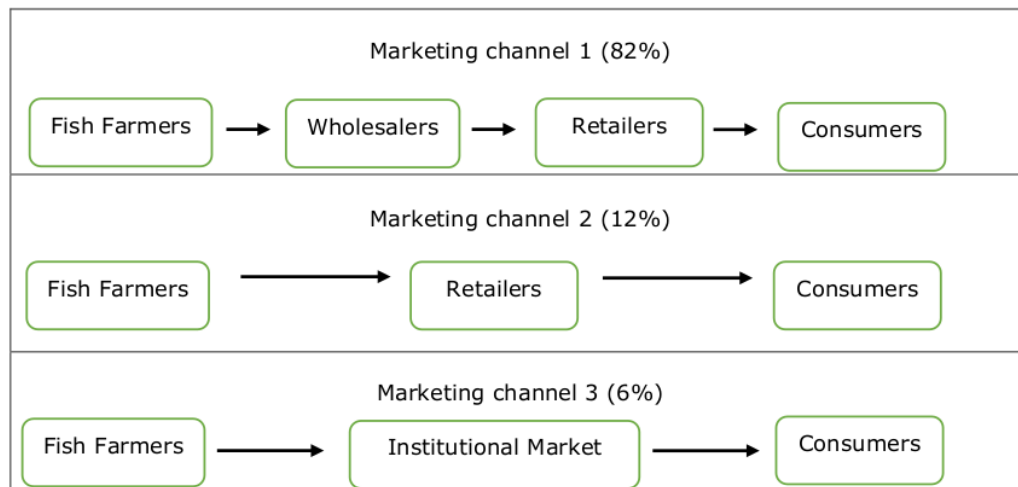


Figure 2. Marketing channels of striped catfish from fish farmers to consumers .
Source: Data collected by authors through interviews, 2021.

The first channel was composed of 28 fish farmers (82% of the fish farmers sample that had 34 persons) who sold the fish to the eight wholesalers, who, at their turn, distributed it to the 16 retailers, who finally marketed it to the consumers. The second channel was composed of four fish farmers (12% of the fish farmers sample) who sold the fish to the four retailers for distribution to consumers. The third channel was formed of two fish farmers (6%) who sold the fish to the institutional market (in this study, the institutional market referred to restaurants) where the fish was processed and sold to consumers. The most used pattern is channel 2 and has the following characteristics: (a) Fish farmer has no risk because the harvested fish are sold out; (b) fish farmer does not incur marketing costs because wholesalers usually come directly to the farm location to buy fish and then all the fish is redistributed to subsequent buyers upon request (Rokeya et al 1997); (c) fish farmers have agreements with wholesalers, especially in terms of payments (Rahman et al 2019). Wholesalers usually make payments in cash or depending on a mutually agreed agreement between fish farmers and wholesalers (Sathiadhas & Panikkar 1992); and (d)

wholesalers also cooperate with retailers so that fish is directly distributed to several market areas (Flowra et al 2012).

Farmer's share. Farmer's share analysis is a comparison of the price received by producers with the price paid by the final consumer (Subekti 2015). It is usually expressed as a percentage (%) (Kinnucan & Forker 1987). The higher the value of the farmer's share, the higher the share of the price received by the fish farmer (Sathiadhas & Panikkar 1992). The value of the farmer's share of striped catfish can be seen in Table 2.

Share of the price received by the fish farmers

Table 2

No.	Channel	The average price at fish farmers (IDR/kg)	The average price at consumers (IDR/kg)	Farmer's share (%)
1.	Channel 1	20.000	29.000	69
2.	Channel 2	20.000	29.000	69
3.	Channel 3	20.000	35.000	57

Source: Data collected by authors through interviews, 2021.

The value of farmer's share was 69% for channel 1 and 2, and 57% for channel 3 (Table 3), and the overall value was greater than 50%. From the fish farmer's perspective, this value indicates an efficient marketing system (Saravanapandeeswari & Vanitha 2017). The share of the price received by fish farmers is closely related to the marketing system that has been established between fish farmers and marketing agencies (Hanafiah & Saefuddin 1986). Fish farmers have a good bargaining position with marketing agencies in determining reasonable prices based on the size and quality of fish (Ahmadi et al 2021). They want to get bigger profits share of the price without any risks, such as the risk of deterioration of the fish because it is a perishable product and the risk to have unsold fish (Shahi et al 2012). The amount of farmer's share received by the fish farmer will affect the amount of production produced (Agbekpornu et al 2019), if the share of the price received is sufficient. If the income share in selling price is high, then the income of fish farmers will increase, and this can encourage them to produce more (Hapsari 2014).

Marketing Margin. Marketing margin shows the magnitude of the role of marketing agencies (i.e., wholesalers, retailers) in a fishery market (Kaygisiz & Eken 2018). The difference in the marketing margin obtained will affect the price of fish at the consumer level (Ahmadi et al 2021). The price at the fish farmer level is the lowest price in the fishery product market system; then it increases at the marketing agency level because of the marketing costs incurred (Kartikasari 2010). The retail price is the highest price because consumers pay two types of price, namely the product price and the marketing price (Albari & Safitri 2013).

Striped catfish distribution from fish farmers to customers involves three marketing agencies, namely wholesalers, retailers, and institutional markets, and three marketing channels (Table 3). In the first channel, there is a difference in price at fish farmer (IDR 20,000 per kg) and retail price (IDR 29,000 per kg) of IDR 9,000 per kg, which is called margin. Margin share at wholesalers is 55% (IDR 5,000 per kg), and margin share at retailers is 45% (IDR 4,000 per kg). The high share margin at wholesalers is due to the marketing costs incurred by wholesalers (IDR 2,200 per kg), such as transportation costs, shrinkage, employee fees, and other expenses are greater than the marketing costs incurred by retailers (IDR 1,400 per kg) such as store rental costs, taxes, plastic wrapping, and other expenses. Furthermore, the profit obtained by the wholesaler is also greater (IDR 2,800 per kg) when compared to the profit for the retailer (IDR 2,600 per kg) because although the marketing cost is higher, the wholesaler sells fish in a larger volume than the retailer. The large volume of fish sold by wholesalers is due to the close cooperation between several fish farmers and wholesalers and their good relationship with retailers (Kumar et al 2010).

In the second channel, the price difference between fish farmers and retailers is the same as the price difference in the first channel (IDR 9,000 per), but because there is only one marketing agency involved, the margin share at a retailer is high. In this channel,

retailers directly buy fish from farmers so that the marketing costs incurred are relatively high (IDR 3,300 per kg), including transportation costs, transportation costs, rent costs, taxes, fish packaging costs, et al. As for the profit, it is also greater (IDR 5,700 per kg) because retailers directly sell fish to final consumers according to the prices prevailing in the market. In three channels, the price difference between the fish farmer (IDR 20,000 per kg) and the institutional market (IDR 35,000 per kg) is equal to (IDR 15,000 per kg). The high price difference is due to the institutional market (local restaurant) also buying fish directly from fish farmers for processing and selling them to final consumers in the form of ready-to-eat food. The marketing cost at the institutional market (IDR 6,500 per kg) is also higher when compared to channels 1 and 2, because in addition to transportation costs, transportation costs, they also pay for space rent, employee wages, user fees, cleaning costs, security costs, packaging costs and other costs such as the provision of cooking spices et al. The profit obtained by the institutional market (IDR 8,500 per kg) was comparatively higher than the profit obtained by wholesalers (IDR 2,800 per kg) and retailers (IDR 2,600 per kg) in channel 1 and obtained by retailers (IDR 5,700 per kg) in channel 2. This means that market intermediaries can be considered efficient because they run more profitable businesses.

In a study by Kaygisiz & Eken (2018), the share of total marketing expenses in marketing channels ranged from 38.48% to 55.11%. It can be seen that the share of the cost of shipping fish to Istanbul consumers is high. The commercial benefit has been investigated in other studies in the field of the fish market (Hussain et al 2003; Ali et al 2008; Kaygisiz & Eken 2018).

Table 3
Marketing margin of striped catfish at different levels of marketing channels

Marketing Level	Parameter Observed	Marketing Channel					
		Channel 1		Channel 2		Channel 3	
		Value (IDR/Kg)	Margin share (%)	Value (IDR/Kg)	Margin share (%)	Value (IDR/Kg)	Margin share (%)
Fish farmers							
	Production cost	14.000		14.000		14.000	
	Selling price	20.000		20.000		20.000	
	Marketing cost	-		-		-	
	Profit	6.000		6.000		6.000	
Wholesalers							
	Purchase price	20.000					
	Selling price	25.000					
	Marketing cost	2.200	24				
	Profit	2.800	31				
	Marketing margin	5.000					
Retailers							
	Purchase price	25.000		20.000			
	Selling price	29.000		29.000			
	Marketing cost	1.400	16	3.300	37		
	Profit	2.600	29	5.700	63		
	Marketing margin	4.000		9.000			
Institutional market							
	Purchase price					20.000	
	Selling price					35.000	
	Marketing cost					6.500	43
	Profit					8.500	57
	Marketing margin					15.000	
Consumers							
	Purchase price	29.000		29.000		35.000	
	Total marketing margin	9.000	100	9.000	100	15.000	100

Source: Data collected by authors through interviews, 2021

Conclusions. Striped catfish distribution from fish farmers to customers involves three marketing agencies (wholesalers, retailers, and institutional markets) and three marketing channels. The institutional market received the highest net profit per kg, followed by fish farmers, wholesalers, and retailers. The marketing system at the fish farmer level is efficient because, in all marketing channels, the value of the farmer's share is greater than 50%. In contrast, the striped catfish marketing channel through the institutional market is more efficient than through intermediary traders because the marketing margin of the institutional market is 2-3 times higher than that of the institutional market compared to wholesalers and retailers. The current marketing system is considered efficient. With the opening up of the culinary business prospects, increasing fish production is a considerable challenge. In particular, this study references the commercialization of striped catfish in fish farming systems in the study area.

Acknowledgements. The authors would like to thank the Dean of the Faculty of Fisheries and Staff of the Fisheries Socio-Economic Study Program for their support, fish farmers, and marketing agencies involved in the research. The authors also thank all colleagues who advised how to write this paper.

References

- Adenegan, Kemisola O., Anifat O. B., 2010 Price Transmission and Market Integration of Fish in Oyo State. *Journal of Rural Economics and Development*. 9(1):1-14.
- Agbekpomu H., Yeboah D., Oyih M., Agyakwah S., 2019 Characteristics and Structure of Freshwater Fish Farmers in Ghana: A Socio-economic Analysis. *Asian Journal of Fisheries and Aquatic Research*. 4(3):1-15.
- Ahmadi, Lilimantik E., Mahreda E., 2021 Marketing Efficiency of the Climbing Perch (*Anabas testudineus*) Cultured with Bioflock System. *Egyptian Journal of Aquatic Biology and Fisheries* 25(2):561-572.
- Ahmed S., Hossain B., 2012 Marketing strategies for frozen fish exporters in Bangladesh. *J. Arts. Sci. Commer* 3(3):1-8.
- Aisiah S., Prajitno A., Maftuch M., Yuniarti A., 2020 Effect of *Nauclea subdita* (Korth.) Steud. Leaf extract on hematological and histopathological changes in liver and kidney of striped catfish infected by *Aeromonas hydrophila*. *Veterinary World* 13(1):47-53.
- Albari, Safitri I., 2013 The Influence of Product Price on Consumers' Purchasing Decisions. *Review of Integrative Business and Economics Research*. 7(2):328-337.
- Ali E.A., Gaya H.I.M., Jampada T.N., 2008 Economic Analysis of Fresh Fish Marketing In Maiduguri Gaboru Market and Kachallari Alau Dam Landing Site of Northeastern, Nigeria. *Journal Of Agriculture & Social Sciences*. 4(1):23-26.
- Anindita R., Baladina N., 2017 [Marketing of Agricultural Products]. Andi Press, Yogyakarta, Indonesia, 304 p. [In Indonesian].
- Ayyappan S., Gopalakrishnan A., Kumar B. G., 2009 Species Diversification in Aquaculture and Domestic Fish Marketing in India. In: MPEDA Souvenir released on the occasion of Indaqua held at Bhubaneswar 21-23 January. pp. 13-22.
- Buton H., Pontoh O., Manoppo V. E. N., 2017 [The Contribution of Fresh Fish Traders in Bersehati Market, Calaca Village to Employment in Manado City, North Sulawesi Province]. *Akulturas* 5(9):655-666. [In Indonesian].
- Corbin J., Morse J. M., 2003 The Unstructured Interactive Interview: Issues of Reciprocity and Risk when Dealing with Sensitive Topics. *Qualitative Inquiry* 9(3):335-354.
- Dragan I. M., Maniu A. I., 2013 Snowball Sampling Completion. *Journal of Studies in Social Sciences*. 5 (2):160-177.
- Eltholth M., Fornace K., Grace D., Rushton J., Häsler B., 2015 Characterisation of production, marketing and consumption patterns of farmed tilapia in the Nile Delta of Egypt. *Food Policy* 51:131-143.

- Flowra F. A., Bashar A. H. M. K., Jahan S. N., Samad M. A., Islam M. M., 2013 Fish Marketing System and Socio Economic Status of Aratdars in Natore and Rajshahi, Bangladesh. *Our Nature*, 10(1):34-43.
- Hanafiah A. M., Saefuddin., 1986 [Fishery product trading]. University of Indonesia Press, Jakarta, Indonesia, 165 p. [In Indonesian].
- Hapsari D., 2014 [Distribution and Marketing Margin of Tuna Catch (*Euthymnus affinis*) at TPI Ujungbatu Jepara]. *Aquasains*, 2(2):131-138. [In Indonesian].
- Harviantho M.B., Suryantini A., Nugroho A.D., 2021 [Farmer's Share, Margin and Efficiency of Online and Offline Marketing of Cabbage in Semarang Regency]. *Journal of Agribusiness Management and Development* 2(1):144-150. [In Indonesian].
- Hasanah H., 2017 [Observation Techniques (An Alternative Method of Collecting Qualitative Data in Social Sciences)]. *Journal at-Taqaddum* 8(1):21-46. [In Indonesian].
- Hayandani S., Firdaus M., Rindayati W., 2013 [Competitiveness of Catfish Cultivation Business in Indragiri Hulu Regency, Riau Province]. *Journal of Management & Agribusiness* 10 (3):137-145. [In Indonesian].
- Hussain S. A., Badar H., Khokhar S. B., 2003 Market Intermediaries and Their Marketing Margins for Inland Fish – A Case Study of Lahore District. *International J. Agric. Biol* 5(1): 73-76.
- Kakati R.P., Chakraborty M.B., 2017 Evaluation of Tradisional Marketing Chanel of Agricultural Produce: Paddy and Rice. *Journal of Marketing Management* 16(2):54-69.
- Kartikasari D., 2010 [Analysis of Commodity Distribution Pattern and Price Setting Pattern. *Journal of Economics, Business, and Accountancy | Ventura*, 13(2):105-121. [In Indonesian].
- Kaygisiz F., Eken M., 2018 A Research on Determination of Fish Marketing Margins in Istanbul Province of Turkey. *Turkish Journal of Fisheries and Aquatic Sciences* 18(6):801-807.
- Kinnucan H. W., Forker O. D., 1987 Asymmetry in Farm-Retail Price Transmission for Major Dairy Products. *American Journal of Agricultural Economics* 69(2):285-292.
- Kumar B. G., Ravisaar T., Suresh R., Bhatta R., Vimala D. D., Kumaran M., Mahalakshmi P., Devi T. S., 2010 Lessons from Innovative Institutions in the Marketing of Fish and Fishery Products in India. *Agric. Econom* 23:49-504.
- Lekshmi P. S. S., Narayanakumar R., Salim S. S., 2020 Market Efficiency Indicators in Marine Fish Marketing in Goa, India. *Journal of Agricultural Science*, 12(7):112-117.
- Lilimantik E., 2020 [Fishery Product Market Integration]. *Global Science, Lowokwaru-Malang, Indonesia*, 70 [In Indonesian].
- Lilimantik E., Ahmadi., 2020 Institutional Analysis and Market Structure of Climbing Perch with Biofloc Culture System. *Russian Journal of Agricultural and Socio-Economic Sciences* 107(11):117-125.
- Madugu A.J., Edward A., 2011 Marketing and Distribution Channel of Processed Fish in Adamawa State, Nigeria. *Global Journal of Management and Business Research* 11(4):20-26.
- Martins F., Cunha J., Serra F., 2018 Secondary Data in Research – Uses and Opportunities. *PODIUM Sport, Leisure and Tourism Review* 7(3):1-4.
- Maulu S., Hasimuna O. J., Monde C., Mweemba M., 2020 An assessment of post-harvest fish losses and preservation practices in Siavonga district, Southern Zambia. *Fisheries and Aquatic Sciences* 23(1):25.
- Monica U., Ogbanje C.E., Ayopo O., 2018 Analysis of the Marketing Margin of Soyabeans in Benue State, Nigeria. *International Journal of Environment, Agriculture and Biotechnology* 3(3):944-950.
- Nahumury M. A. I., Manuhuttu F., 2019 Analysis of Channels and Marketing Efficiency of Local Fisheries in Merauke. *International Journal of Mechanical Engineering and Technology* 10(3):766-772.
- Nurdiani N., 2014 [Snowball Sampling Technique in Research]. *ComTech: Computer, Mathematics and Engineering Applications* 5(2):1110-1118. [In Indonesian].

- Nurhabib A., Arfiati D., Sartimbul A., 2017 [Strategic Planning of Striped Catfish (*Pangasianodon hypophthalmus*) Farming in East Tanjung Jabung Regency, Jambi Province]. *J-PAL* 8 (1):25-29. [In Indonesian].
- Oktavianawati I., Palupi N. W., 2017 [Processing catfish into Presto Patin Food products, Meatballs and Nuggets in Semboro-Jember]. *Jurnal ABDI* 2(2):40-44. [In Indonesian].
- Omar I., Dewan F., Janifa U. A., Hoq M. S., 2014 Analysis of Spatial Cointegration and Marketing Margin of Tilapia (*Oreochromis Niloticus*) Fish in Some Selected Areas of Bangladesh. *J. Econom* 5(7): 63-70.
- Parmar G., Leua A., Vanza J., 2018 Study on Fish Marketing Channel and Consumption Pattern for Fish Navsari. *Multilogic in Science* 3(25):74-76.
- Rabinovich E., Cheon S., 2011 Expanding horizons and deepening understanding via the use of secondary data sources. *Journal of Business Logistics* 32(4):303-316.
- Ramallal G., Roque F., Herdeiro M. T., Takkouche B., Figueiras A., 2018 Primary versus secondary source of data in observational studies and heterogeneity in meta-analyses of drug effects: A survey of major medical journals. *BMC Medical Research Methodology* 18(97):1-4.
- Rahman, Ahmadi, Mahreda E. S., 2019 Marketing channels of marine fish in Banjarmasin fishing port, Indonesia. *International Journal of Fisheries and Aquatic Research* 4(3):15-22.
- Rahman M.M., Hossain A., Fatematuzzhura, Tasnoova S., Ahamed., Hossain M.Y., Ohtomi J., 2012 Fresh fish marketing status in the Northwestern Bangladesh: Recommendations for Sustainable Management. *Our Nature* 10(1):128-136.
- Ranjan D. P., 2020 Analysis and Information Needs for Fisheries Production with Freshwater Aquaculture 2(10):117-123.
- Rokeya J.A., Ahmed S.S., Bhuiyan A.S., Alam M.S. 1997 Marketing system of native and exotic major carps of Rajshahi District. *Bangladesh Journal of Fisheries* 20(1-2):99-103.
- Ryan F., Coughlan M., Cronin P., 2009 Interviewing in qualitative research: The one-to-one interview. *International Journal of Therapy and Rehabilitation* 16(6):309-314.
- Sampantamit T., Ho L., Lachat C., Sutummawong N., Sorgeloos P., Goethals P., 2020 Aquaculture Production and Its Environmental Sustainability in Thailand: Challenges and Potential Solutions. *Sustainability* 12(5):1-17.
- Sathiadhas R., Panikkar K.K.P., 1992 Share of Fishermen and Middlemen in Consumer Price: A Study at Madras Region. *Journal of the Marine Biological Association of India* 34(2):18-25.
- Septiara I., Maulina I., Buwono I.D., 2012 [Marketing Analysis of Goldfish (*Carassius auratus*) in the Kalapa Ciung Fish Cultivator Group, Cimalaka District, Sumedang Regency]. *Journal of Fisheries and Marine Affairs* 3(3):69-73. [In Indonesian].
- Shahi H.M., Zeratkish Y., Foroughi V., 2012 Factors affecting Trout marketing in Kohgiluyeh and Boyer Ahmad Province of Iran. *J. Food Agri. Envi* 10(1):248- 250.
- Siregar R. R., Wisudo S. H., Nurani T. W., 2021 Marketing system, quality and safety characteristics of mackerel (*Rastrelliger sp.*) at the domestic market in Jakarta, Indonesia. *AAFL Bioflux* 14(1):59-71.
- Subekti D., Mahreda E., Lilimantik E., 2020 Marketing Analysis of Striped Catfish Pond Cultivation in Basarang Village Basarang Sub-district Kapuas Regency Central Kalimantan. *Journal of Marketing and Consumer Research* 65:34-40.
- Suraya, Sulisty P.B., 2019 [Socialization of the identification of marine and fisheries business opportunities in the Sawarna Coastal Coast - Lebak Banten]. *Journal Abdi MOESTOPO* 2(1):30-37. [In Indonesian].
- Tilami S.K., Sampels S., 2017 Nutritional value of fish: lipids, proteins, vitamins, and minerals. *Rev. Fish. Sci. Aquac* 26(2): 43-253.
- Wickham R.J., 2019 Secondary Analysis Research. *Journal of the Advanced Practitioner in Oncology* 10(4):395-404.
- Yıldırım B.R., Akyol O., 2012 Izmir Wholesale Fish Market: Current Status, Fish Amounts (2007–2011) and Problems. *Ege Journal of Fisheries and Aquatic Sciences*. 29(4):151-155.

Simtaru, 2020 Department of Public Works and Spatial Planning of South Kalimantan Province. <http://simtaru.kalselprov.go.id/> [In English].

Received: 02 September 2021. Accepted: 20 October 2021. Published online: 23 October 2021.

Authors:

Emmy Lilimantik, Faculty of Marine and Fisheries, Lambung Mangkurat University, Jl. A. Yani Km 36,5 Banjarbaru

South Kalimantan 70714, Indonesia, e-mail: emmy.lilimantik@ulm.ac.id

This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

How to cite this article:

Lilimantik E., 2021 Marketing system of striped catfish (*Pangasius hypophthalmus*) from freshwater cultivation in Banjar Regency, South Kalimantan Province, Indonesia. *AAFL Bioflux* 14(5):2947-2957.

Marketing system of striped catfish (*Pangasius hypophthalmus*) from freshwater cultivation in Banjar Regency, South Kalimantan Province, Indonesia

ORIGINALITY REPORT

17%

SIMILARITY INDEX

14%

INTERNET SOURCES

7%

PUBLICATIONS

7%

STUDENT PAPERS

PRIMARY SOURCES

1	royalsocietypublishing.org Internet Source	<1%
2	Submitted to University of Florida Student Paper	<1%
3	www.vliz.be Internet Source	<1%
4	Submitted to Kisii University Student Paper	<1%
5	Submitted to Liberty Union High School District Student Paper	<1%
6	jyx.jyu.fi Internet Source	<1%
7	dagda.shef.ac.uk Internet Source	<1%
8	penerbit.uthm.edu.my Internet Source	<1%

9	www.cambridge.org Internet Source	<1 %
10	www.nature.com Internet Source	<1 %
11	www.savap.org.pk Internet Source	<1 %
12	Submitted to Grand Canyon University Student Paper	<1 %
13	ijisrt.com Internet Source	<1 %
14	www.globalscientificjournal.com Internet Source	<1 %
15	Submitted to Otago Polytechnic Student Paper	<1 %
16	nbn-resolving.de Internet Source	<1 %
17	repository.uph.edu Internet Source	<1 %
18	repo.isi-dps.ac.id Internet Source	<1 %
19	P.C. Das, P.K. Sahoo, S.P. Kamble, K. Murmu, C. Basudha. "Compatibility of pengba, <i>Osteobrama belangeri</i> (Valenciennes) with Indian major carps and evaluation of its ideal	<1 %

incorporation level in carp polyculture system in planes of India", Aquaculture, 2020

Publication

20	hvlopen.brage.unit.no Internet Source	<1 %
21	www.abacademies.org Internet Source	<1 %
22	www.scinapse.io Internet Source	<1 %
23	Submitted to Universitas Muhammadiyah Yogyakarta Student Paper	<1 %
24	Submitted to Vietnamese-German University Student Paper	<1 %
25	ijeab.com Internet Source	<1 %
26	brrri.portal.gov.bd Internet Source	<1 %
27	www.socialpublishersfoundation.org Internet Source	<1 %
28	fpik.ub.ac.id Internet Source	<1 %
29	ilri.org Internet Source	<1 %

www.agri.ruh.ac.lk

30

Internet Source

<1 %

31

www.fishjournals.com

Internet Source

<1 %

32

Ahmadi Ahmadi. " Phototactic Response and Morphometric Characteristic of Climbing Perch (Bloch, 1792) Under Culture System ", Croatian Journal of Fisheries, 2018

Publication

<1 %

33

ejournal.unsrat.ac.id

Internet Source

<1 %

34

unsri.portalgaruda.org

Internet Source

<1 %

35

Submitted to University of Bristol

Student Paper

<1 %

36

asianfisheriessociety.org

Internet Source

<1 %

37

catalog.ihsn.org

Internet Source

<1 %

38

koreascience.or.kr

Internet Source

<1 %

39

www.sciencepub.net

Internet Source

<1 %

40

Submitted to Westcliff University

Student Paper

<1 %

41	researcherslinks.com Internet Source	<1 %
42	animalsciencejournal.usamv.ro Internet Source	<1 %
43	Amzul Rifin. "The Impact of Export Tax Policy on Cocoa Farmers and Supply Chain", The International Trade Journal, 2014 Publication	<1 %
44	egefjas.org Internet Source	<1 %
45	www.sabiia.cnptia.embrapa.br Internet Source	<1 %
46	www.ncbi.nlm.nih.gov Internet Source	<1 %
47	insightsociety.org Internet Source	<1 %
48	ojs.unud.ac.id Internet Source	<1 %
49	Imelda Yunita, Gunarif Taib, Rika Ampuh Hadiguna. "Coffee bean supply chain strategy: the case of trading institution and profit margin for pioneer coffee commodities in Indonesia", International Journal of Agriculture Innovation, Technology and Globalisation, 2019 Publication	<1 %

50	www.bmkg.go.id Internet Source	<1 %
51	www.scribd.com Internet Source	<1 %
52	A H Daulay, A Sadeli, F Hasan, M Khaliqi. "Marketing margin of qurban beef", IOP Conference Series: Earth and Environmental Science, 2020 Publication	<1 %
53	B. V. Arumsari, L. R. Waluyati, D. H. Darwanto. "Marketing of Bantul regency semi-organic rice", International Journal of Business Management and Social Research, 2019 Publication	<1 %
54	Heliawaty, D Rukmana, Y lumoindong, A Sulili, N Lanuhu, I Natsir. "Social capital and income of cocoa farmers in peta village, Sendana District, Palopo City, South Sulawesi Province", IOP Conference Series: Earth and Environmental Science, 2021 Publication	<1 %
55	M S A Ningsih, Prayogo, A M Sahidu. " Vaname shrimp () post-harvest marketing analysis in traditional pond systems at Turi District, Lamongan, East Java, Indonesia ", IOP Conference Series: Earth and Environmental Science, 2020 Publication	<1 %

56 S Rohmat, Nisyawati, S E Rahayu. " Diversity of medicinal plants for pregnancy and postpartum care of tribe in Mantangai sub-district, Kapuas regency, Central Kalimantan ", Journal of Physics: Conference Series, 2019
Publication <1 %

57 fliphtml5.com
Internet Source <1 %

58 www.ejournal.warmadewa.ac.id
Internet Source <1 %

59 YILDIRIM, Burak Rahmi and AKYOL, Okan. "İzmir balık hali: Mevcut durum, pazarlanan türler (2007-2011) ve sorunlar", TUBITAK, 2012.
Publication <1 %

Exclude quotes Off

Exclude matches Off

Exclude bibliography Off