



Marketing Efficiency of Economically Important Marine Fish in Malang Regency of East Java, Indonesia

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ABSTRACT

The main marine fish landed in “Pondokdadap” fish port of Malang Regency are tuna, cakalang, and tongkol fish. This study aimed to analyze marketing efficiency and fishermen’s share. Quantitative descriptive analysis consists of margin, cost and efficiency of marketing and fisherman’s share. Three marketing middlemen: Fish wholesaler, collector, and retailer distribute marine fish through seven channels. The middlemen do marketing functions except processing. While, fishermen do only bearing risk function. Almost all marketing channels are able to minimize marketing cost, except channel III-VII (tongkol fish), channel I (Gurita) and channel III (cakalang fish). The channel I (tongkol fish) earns the highest profit for IDR 3977/Kg, followed by channel II of tongkol fish IDR 3727/Kg, and channel I of tuna fish IDR 3507/Kg. While, channel IV of tongkol fish earns the lowest profit IDR 37/Kg. Marketing margin of these fish was lower than fisherman’s share, the marketing efficiency value was also <5%, it means efficient. But, channel III-VIII (tongkol fish) due to high operational cost (per Kg fish) spent by small fishermen causes they earn low fishermen’s share. While, fisherman’s share of tuna, gurita, baby tuna and cakalang fish are high. The higher marketing efficiency, the higher fishermen’s share is.

Keywords: Marketing Efficiency, Fishermen’s share, Marine Fish

JEL Classification: M31

1. INTRODUCTION

Malang regency of East Java Province has an area of approximately 3347.8 Km². Malang ranks second widest regency after Banyuwangi Regency area from 38 districts in East Java Province. Among the six areas in the coastal districts of Malang Regency, which is precisely the District Sumbermanjing Wetan, Tambakrejo village, Sendangbiru coastal area is as marine fish biggest producer. This is because concentration of landing fishery boats was in Sendangbiru due to it has a fishing port of Pondokdadap beach. It is strategical location and easy to land the fish due to its geographical position sheltered by Sempu island to protect from the Indonesian Ocean waves. In addition, the existence of the island Sempu also protect coastal area and community (Lestari, 2010. p. 27).

Fishery Port Pondokdadap in Sendangbiru, called “Pondokdadap” fish port, is categorized as Beach Fishing Port according the ministry regulation PER. 16/MEN/2006. It is intended for fishing boat operating in coastal waters until the national waters, to accommodate marine fish landed as many as 3000-4000 tons/year

or 15-20 tons/days, marketing of fish for local and inter-regional, which served fishing boats 5GT to 15GT, and can accommodate 50 fishing boats. When this study was doing, function of “Pondokdadap” fish port was enhanced into Sendangbiru Nusantara Fishery port, called PPN Sendangbiru, among others, the reclamation for landing of fishing boats to be more adequate. Function and operation of the Fish Auction, called TPI, in PPP Pondokdadap, make Sendangbiru region known as the second largest TPI after TPI of Muncar.

According to data from the Department of Marine and Fisheries Malang derived from fish landing center, called PPP Pondokdadap (2009), District of Sumbermanjing Wetan produces 79.51% of the total marine capture production in the coastal districts of Malang. It was the largest fish producer due to the concentration of landings fishing boats >5GT is in Sendangbiru, while the production of other districts are still relatively small. In addition, the high production of marine fresh fish in Sendangbiru because PPP Pondokdadap has an adequate functioning as fish auction and other supporting facilities for landing fish. Marine fish production in this region is dominated by tuna, cakalang, and tongkol fish which became the

main leading commodity in Malang Regency because having high economic value or economically important marine fish.

Community of Tambakrejo Village mostly as fishermen (72.04%), followed by farmers or farm laborers (16.29%), and traders (9.74%) (Kantor, 2009). Overall, there are four types of fishing boats operating in Sendangbiru waters, namely Sekoci, Slerek or payang, Jukung or Kunting. According to fishing boat characteristics, ownership and amount of fish catches, fisherman of Slerek or Payang is the largest fish producer. There is also a purse seine fishing gear, where the user adjusts the existing fishing season. The use of fishing gear "Pancing Tonda" is quite dominant in Sendangbiru because many fishermen from Bugis and Makassar come to Sendangbiru waters (Lestari, 2010. p. 41). Payang fishing gears are mostly used by local fishermen. Some others use Jukung and Kunting, therefore, the fish resulted by each fishing gear was also varied.

Considering fisheries commodity from Sendangbiru, tuna fish (including baby tuna fish), cakalang fish, and tongkol fish have high economic value and export class, therefore, marketing activities affect to people's lives, especially fishermen in Sendangbiru. Other species resulted in Sendangbiru waters are octopus, lemuru fish, marlin fish, salmon fish, jonglus fish, grouper fish, and others. Thus, a study to assess efficiency of marketing activities undertaken by marketing institutions is important to do. This study also determines whether the marketing done gave fisherman's share fairly. The purpose of this study is to analyze the efficiency of marketing and fishermen's share.

Marketing problems of marine fisheries commodities could not be separated from their typical characteristics, which is perishable. Therefore, it is necessary to handle them specifically and carefully, both in the production process (fish catching and landing) as well as for marketing, in order to avoid deterioration of the quality (Hanafi and Saefuddin in Amanah, 2013. p. 3). The other characteristics are not uniform, seasonal product, production area are generally in coastal area, and require more spaces for storage. Then, the market will take long marketing channels and many actors involved in the marketing, marketing costs are quite large, and therefore the marketing of fishery products in general tend to be not efficient. It was possible that marketing doer, especially fishermen, would not receive share worth with the cost. If the marketing issues were not addressed, it will have an impact on the welfare of producers, traders, consumers, and general society.

2. METHOD

This descriptive study was aimed to explore and clarify a phenomenon or social reality, by describing variables related to the problem studied. Descriptive study does not require the presence of relation between variables in the study. Data processing and analysis use descriptive statistical processing. This study uses a part of Rapid Marketing Appraisal (RMA) method to see a commodity marketing system completely (Anindita, 2004. p. 221-226). RMA is an interdisciplinary research technique to deliver an overview of the organization, implementation, and performance of an agricultural marketing system, including marine fisheries.

Tuna, cakalang, and tongkol fish can be caught by Slerek or payang fishing gear, pancing tonda fishing gear, jukung and kunthing (with handline fishing gear). Total population of boat or fishing gear of Slerek or payang is 27 units, pancing tonda is 242 units. First, this study used snowball method and obtained population data of wholesaler as many as 15 people, 15 units of fish processors, 5-10 people of fish collectors, and retailers who has kiosks in Sendangbiru Fish Market as many as 15 people. After the key respondents (key informants) and information about the number or population of each marketing institutions were obtained through the snowball technique, then researchers determine respondents using purposive sampling to meet the desired goal of researchers follow Gay and Diehl (1992. p. 140), where the number of representative samples for the descriptive study was 10% of the population. For smaller populations, the number of samples needed as much as 20% or more. Each of the marketing institutions consist of fish collectors, wholesalers, processors, and retailers that have been mapped using snowball method and secondary data, then, the respondents were determined using purposive sampling method, namely the selection of a group of subjects have characteristics similar to the population characteristics. Purposive technique was used because the procedure is simple and will give good results because the population is not spread out in the field. The basic consideration in the selection of purposive respondents are the respondents have informations associated with problems in this study, which they know and directly involve in the fishing effort, processing, and marketing of marine fresh fish, especially tuna, baby tuna, cakalang, and tongkol fish, and they would allocate time to be interviewed in order to obtain in-depth data and information. Population size and respondents could be seen in the Table 1.

Data were collected through interviews with semi-structured questionnaires; observation and documentation, and then analyzed using descriptive method to describe qualitatively about institutions and existing marketing channels in the Fishery Port Pondokdadap, implementation of marketing functions, as well as to explain the relationship between marketing efficiency and fisherman's share. Whereas, the quantitative descriptive method to describe the types and amounts of costs and volume of sales or purchases of each marketing institutions, marketing margins, fisherman's share and marketing efficiency of each institution and channel of marketing.

a. Marketing margin

Marketing margin could be measured absolutely or in percentage or combination of them (Anindita, 2004. p. 112).

Absolute Margin = selling price (Ps) – buying price (Pb)

Margin percentage = (absolute margin: selling price) × 100%

a. Profit

Harifuddin, dkk (2011. p. 3) stated that profit of each marketing institution could be measured as follows:

$$\pi = M - Bp$$

Where:

π = profit of marketing

M = marketing margin

Bp = marketing cost.

b. Fisherman's share or producer's share

Concept of fisherman's share is adopted from farmer's share (Abidin et al., 2016), it is share received by fisherman return for their fishing effort. In general, fishermen's share would be smaller if the number of middlemen increase. The formula for calculating fishermen's share, in common we use producer's share as follows:

$$\text{Producer's share (PS)} = \frac{P_f}{P_r} \times 100\%$$

Where:

PS = Producer/fisherman's share of gurita, tuna, cakalang and tongkol fish

Pf = Fisherman's price

Pr = Retailer's price

(Abidin et al., 2017).

c. Marketing efficiency

Formula of marketing efficiency as below:

$$EP = \frac{B_p}{H_e} \times 100\%$$

Where:

EP = Marketing efficiency

Bp = Total cost incurred by middlemen and fisherman in a channel of marketing

He = Retailer's price

Criteria:

If EP > 5%, it means marketing was not efficient.

If EP < 5%, it means marketing was efficient.

3. RESULT AND DISCUSSION

Marine fish landed in fish auction of Pondokdadap are dominated by tuna, baby tuna, cakalang and tongkol fish. Other species in Sendangbiru are octopus, lemuru, marlin, salmon, marlin, jonglus, grouper, snapper, and others. These fish were distributed through two main channels, namely inside and outside fish auction channel. The fish in "Pondokdadap" fish auction were purchased by wholesaler, then shipped to fish factories in major cities such as Jakarta, Surabaya, Probolinggo, Banyuwangi and Bali. The rest of fish would be processed into fish pindangan processing effort, grilled fish, tuna fish abon, tuna sticks, and others. The two main marketing channels of marine fish landed in the fish port were divided into three channels inside of the fish auction, and four channels outside the auction. They are wholesalers, fish collector, retailer, and various consumers (local consumers and tourists) and local fish processor, and fish factories outside Sendangbiru. Further information of the channels can be seen in Figures 1 and 2:

Figures 1 and 2, there are direct and indirect marketing of marine fresh fish resulted from Sendangbiru waters. Indirect marketing is marketing the fish from fishermen to consumer through marketing intermediaries such as in channel I-VI. While, direct marketing in channel VII is the marketing from fishermen direct to consumer. Middlemen involved are wholesaler as member of the auction in TPI Pondokdadap, fish retailers in Sendangbiru

Table 1: Population and respondents

Marketing institutions	Population	Respondents	Respondents determination method
Fisherman*)			
Slerek	27 unit	2 unit	Fisherman are needed to validate data and information of marketing got from middlemen. So, the number of fisherman did not fully follow Gay and Diehl (1992)
Sekoci	242 unit	2 unit	
Jukung	15 unit	2 unit	
Fish collector	10 person	1 person	Snowball→(getting key informan, population and institution associated with the marketing)→ <i>purposive sampling</i> →as much as 10 to 20% from population (Gay and Diehl, 1992)
Wholesaler	15 person	4 person	
Processor	16 person	4 person	
Fish retailer	17 person	8 person	
Consumer	Marketing data and information already got from fish retailers, so the consumers were needed to validate the data and information got from retailers. Here, they were 2 consumers as respondents		
Institutions associated with the marketing	They consist of Pengamba', Fish Auctioneer in Pondokdadap, Co-operative in Sendangbiru or KUD, Village Government, and Ministry of Marine and Fishery of Malang regency. At least 1 person in each institution		

*) Fishermen catch gurita, tuna, baby tuna, cakalang, and tongkol fish

Figure 1: Marketing Channel of Marine Fish through "Pondokdadap" Fish Auction, Malang Regency. (I: Tuna, baby tuna, cakalang, tongkol fish and gurita; II and III: Baby tuna, cakalang and tongkol fish)

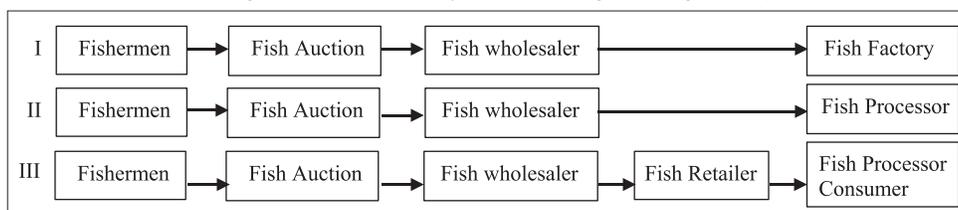
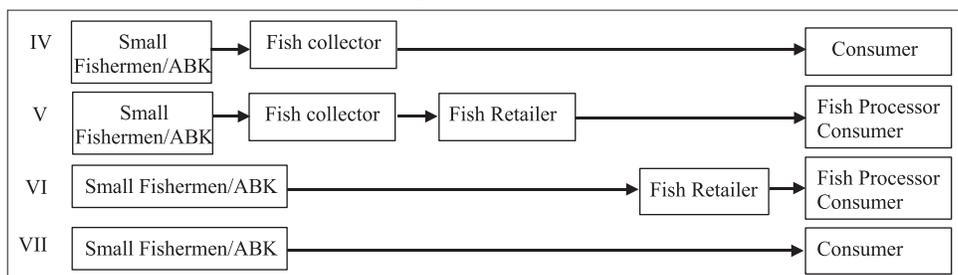


Figure 2: Marketing Channel of Marine Fish outside “Pondokdadap” Fish Auction, Malang Regency. (IV-VII: Baby tuna, cakalang and tongkol fish)



Fish Market which is located 200meter from TPI Pondokdadap. All marketing intermediaries do almost all marketing functions, except processing. They perform selling activities, transportation, storage, financing, risk bearing, standardization or grading the fish, and search for market information. While, fishermen only bearing risk during fishing on the sea. It is because when the fish landed in the fish auction, fishermen rely on their wholesalers to take care of selling. Even financing activities were also conducted by wholesalers who also as pengamba'. Pengamba' is people who lend capital to fishermen and arrange financing for fishing effort. While, small fishermen and ABK fishermen sale their fish outside the fish auction, typically use their own capital or some of them borrow capital from their fish collectors. It means small fishermen are still doing more marketing activities, such as financing, selling to fish collector or fish retailers, transportation to Sendangbiru Fish Market and search for market information.

Longer marketing channel in channel III and V resulted in lower marketing efficiency than the shorter channel (channel I-II, IV, and VI-VII). All marine fish marketing channels in Sendangbiru have been able to minimize marketing costs, unless the channel III-VII for tongkol fish and channel I for octopus and channel III for cakalang. Channel I in marketing of tongkol fish earn highest profit for IDR 3977/Kg, followed by channel II for IDR 3727/Kg and channel I of tuna fish for IDR 3507/Kg. While, on channel IV of tongkol fish earns the smallest profit IDR 37/Kg.

In the marketing of baby tuna fish, the highest percentage of marketing margin was in the channel III (20.93%), while the lowest was in the channel II (5.71%). This is because the channel III and V for baby tuna fish involves two middlemen (wholesalers and retailers), while the channel II involves only 1 middleman (wholesaler). The more middlemen involved in the marketing, the longer the marketing channels and the higher the marketing margin is. In the marketing of octopus and cakalang fish, the highest percentage of marketing margin is equal to the tuna and baby tuna fish marketing, which occurs in the channel III of cakalang fish (17.95%), and the lowest is in the channel I of octopus (9.09%). This is because the channel III and V involves two middlemen (wholesalers and retailers), while in the octopus marketing only have 1 middleman (wholesalers). In the marketing of tongkol fish, the highest percentage of marketing margin is in the channel I (37.5%), and the lowest is in the channel IV (15.79%).

In the channel III involves two middlemen, wholesalers and retailers. Here, fishermen received lower share of the retail price than the other

five channels (channel I-II, IV, and VI-VII), both in tuna fish, baby tuna fish, cakalang fish, tongkol fish and octopus. While, the channel V although involving two middlemen, fish collector and fish retailer, but fish collector spent relatively lower marketing costs than other middlemen. Marketing costs incurred by any marketing institutions were closely related to the marketing functions did. The types and amount of costs incurred were varied; once again it also depends on the kind of marketing functions performed, and the ability of marketing institutions in managing activities that have an impact on the efficient use of marketing costs. The more marketing functions performed, the higher marketing expenses incurred is. The selling price of marine fresh fish at fishermen level in Sendangbiru was commonly determined through auction process in “Pondokdadap” fish auction. The highest marketing costs incurred by marketing intermediaries was in the channel III for baby tuna fish and also here the lowest the marketing efficiency level. Similarly, on the other channels have tendencies that the lower the marketing cost, the better the efficiency of marketing is.

Although there is only 1 middleman involves in the channel I of tongkol fish marketing, marketing margin was high due to wholesalers as middlemen took high profit from the marketing, not incurring high costs in marketing. Value of marketing margin in all channels is lower than its fisherman' share, so the overall marketing system of marine fresh fish in Sendangbiru relatively efficient. This is also relevance with calculation of marketing efficiency indicates that the overall marketing of marine fresh fish in the “Pondokdadap” fish auction was efficient, except marketing of tongkol fish in channel III-VII. Fishermen' share of tuna fish, baby tuna fish, cakalang fish and octopus are high, while in tongkol fish is low.

Generally, fisherman' share would be less if the number of middlemen rate increased, for example, in the channel III with 2 middlemen, fisherman gain lower share than the other five channels (in all kinds of marine fresh fish). Although the channel V involving two middlemen, but the fish collectors spent relatively lower marketing cost than the other middlemen and had role to help small fishermen and fishermen ABK in strengthening their bargain position to sell the fish to fish retailers in Sendangbiru fish market. This is because if the fishermen ABK and small fishermen sell the fish directly to fish collector will get lower price. Therefore, due to the role of the fish collectors, fisherman' share in the channel V was higher than in the channel III.

In the marketing of tuna and baby tuna fish, the more efficient the marketing, the higher the share received by fishermen is. For further information can be seen in Figures 3-5. It is similar to

Figure 3: Fisherman' share and Marketing Efficiency of Tuna and Baby Tuna Fish in "Pondokdadap" Fish Auction, Malang Regency

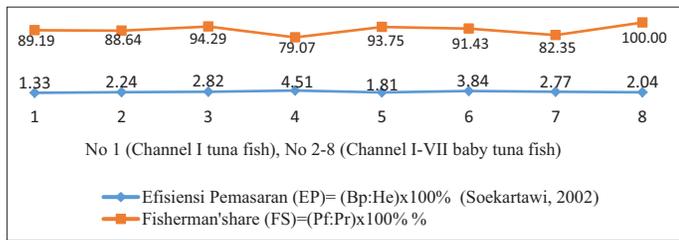


Figure 4: Fisherman' share and Marketing Efficiency of Gurita and Cakalang Fish in "Pondokdadap" Fish Auction in Malang Regency

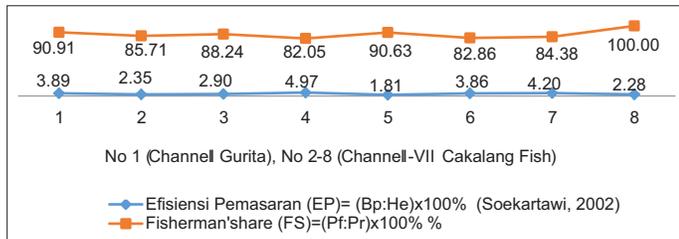
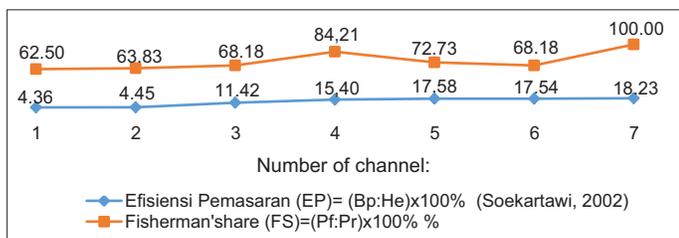


Figure 5: Fisherman' share and Marketing Efficiency of Tongkol Fish in "Pondokdadap" Fish Auction, Malang Regency



Anwar and Darwis (1998) which states that marketing is efficient if the price received by producers is relatively large when compared with the percentage of marketing margin. Thus, if the price received by fishermen is bigger than marketing margin, marketing of these products become more efficient.

4. CONCLUSIONS

Overall, marketing of marine fresh fish from Sendangbiru waters conducted by marketing institutions run efficiently by comparing the values of fisherman' share in all marketing channels are greater than the marketing margin. Partially from 23 marketing channels of 5 fish kinds and 2 fishermen types, there were only channel

III to VII for tongkol fish marketing were not efficient due to the large of marketing costs per kg of fish spent by small fishermen during fishing effort. Fishermen' shares of marketing of octopus, tuna, baby tuna, and cakalang fish were higher than fishermen' share in tongkol fish marketing. The more efficient the marketing system, the better the fishareman' share is.

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