Marketing Channels Efficiency Analysis of Scad (*Decapterus* sp.) Catches of Traditional Fishermen in Pengambengan Village Jembrana, Bali

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Abstract: Efficient marketing is characterized by low marketing margins and high farmer's share. This research was conducted to determine the condition and level of efficiency marketing channels Scad in Pengambengan Village during February-March 2020. The method used was descriptive qualitative method and quantitative descriptive by observation and interviews. Interviews were conducted with fishermen, collectors, wholesalers and retailers. The Marketing margin analysis and farmer's share were used to determine level of efficiency marketing channel. The results of the analysis show that there were two patterns of marketing channels for Scadthat were caught by traditional fishermen in Pengambengan Village. Marketing channel pattern I was a two-level channel pattern, while marketing channel pattern II was a three-level channel pattern. The marketing margin value in the two-level channel pattern was Rp5.700/kg with a farmer's share of 71%. The marketing margin value in the three-level channel pattern was Rp9.700/kg with a farmer's share of 59%. The marketing efficiency value obtained in two-level marketing channel pattern was 6%, while in three-level channel marketing pattern the marketing efficiency value was 8%. Based on the values obtained, the marketing efficiency of two-level channel pattern was as efficient as the three-level channel pattern. Thus, the marketing of Scad that were caught by traditional fishermen in Pengambengan Village was classified as efficient marketing.

Keywords: efficiency; marketing; pengambengan; scad

I. INTRODUCTION

Indonesia's fishery potential as an archipelago with a very wide maritime zone is 23.18 million tons. The total production is obtained from aquaculture and capture fisheries products. Capture fisheries production is 7.07 million tons, with the main commodities being Skipjack (*Katsuwonus pelamis*), Tuna (*Thunnus* sp.), Mackerel Tuna (*Euthynnus* sp.), and Scad (*Decapterus* sp.) [1].

Scad is one of the main capture fisheries commodities in Indonesia which has high economic value, where it is spread throughout Indonesian waters including the marine waters in Bali.One of the areas in Bali that has abundant fish production is West Bali, Pengambengan Village.This village is one of the potential areas for capture fisheries business development, supported by the existence of the Pengambengan Nusantara Fishing Port (NFP).The volume fishery production of Scad in Bali is 5.8 thousand tons, and it had been distributed from local to inter-island [1].

Based on the preliminary survey, the Scad landed by traditional fishermen at Pengambengan is distributed through marketing agencies to reach consumers.Marketing Scad with several marketing agencies will help Pengambengan fishermen, because the fish that are not directly marketed will be damaged.This can lead to a decrease in the price and quality of the catch. It is assumed that the fish marketing process through many hands or marketing agencies will be inefficient [2]. Fish marketing activities have become inefficient due to the existence of some marketing agencies that try to take profits disproportionately and incur marketing costs inefficiently [3].

Efficient Scad marketing will benefit all parties or marketing agencies involved in it.A marketing activity can be said to be efficient if the difference between the price of fish in fishermen and the price of fish in consumers is not too big. This is supported by the large share and influence of fishermen in pricing [4]. For this reason, it is necessary to know the marketing efficiency of the Scad in Pengambengan Village.

II. METHODS

This research was conducted for two months, in February-March 2020 in Pengambengan Village, Jembrana, Bali.The research method used was descriptive

qualitative and quantitative methods by means of observation and interviews.Respondents in this research were traditional fiber fishermen (gillnet fishing gear) and marketing agents (collectors, wholesalers and retailers).Determination of research respondents using the sampling technique based on the following Yount [5]. Based on the Yount table, the number of respondents in this research was 10% of the total population. The total population in this research was 525, so that 10% of the respondent population was 52 consisting of 30 fishermen and 22 marketing agencies.

Data Analysis

a. Marketing Channel Analysis

This analysis was conducted to identify existing marketing channels, to determine the process of distributing fish from fishermen to consumers.

b. Marketing Efficiency Analysis

Marketing margin was the price difference between the selling price and the purchase price of Scad at each marketing agency involved [6]. Marketing margin can be calculated using the following formula [7]:

$$MP = Pr - Pf$$

Noted: MP is the marketing margin (IDR/kg); Pr is the price of fish at the consumer level (IDR/kg) and Pf is the price of fish at the fishermen level (IDR/kg).

Analysis of farmer's share was useful for knowing the share of the price received by fishermen from the price at the consumer level which was expressed as a percentage [8]. To calculate the farmer's share, use the following formula [9]:

$$FS = \frac{Pf}{Pr} \times 100 \%$$

Noted: Fs is farmer's share (%); Pf is the price of fish at the fishermen level (IDR / kg) and Pr is the price of fish at the consumer level (IDR / kg).

The criteria for making decisions on the efficiency of marketing channels, namely if the EP ranges from 0-33% then the marketing channels are efficient, if the EP ranges from 34-67% then the marketing channels are less efficient, and if the EP ranges from 68-100% then the marketing channels are inefficient using the formula as follows [9]:

$$EP = \frac{Bp}{Np} \times 100 \%$$

Noted: EP represents marketing efficiency (%); Bp is the total marketing cost (IDR / kg) and Np is the value of the product marketed (IDR / kg).

III. RESULTS AND DISCUSSION

Catching

The catch of Scad in Pengambengan was carried out at night and will return to sea in the morning, because the fishermen in Pengambengan Village were catching one day fishing.In the catch of Scad, traditional fishermen in Pengambengan Village used fiber boats with outboard engines. The size of the fiber boat used is $10.5 \times 1.2 \times 1$ (PxLxD) meters and gillnet with a mesh size of 1.9 cm as fishing gear.

Fishermen made preparations before fishing in the afternoon at 16.00 WITA. Preparations made such as preparing diesel fuel, nets, ice and special necessities required during fishing operations.After the preparations were complete, the fleet was ready to go to the fishing location. Then, the nets were spread in the upright position of the waters and block the currents.The nets that have been spread are left for $\pm$ 3 hours, then the nets are removed. Fish trapped in the net will be transferred to the boat's hold, where the hatch is also filled with ice to keep the catch fresh. After the sun began to rise, the fishermen returned and marketed their catch.
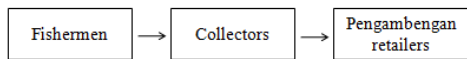
Marketing

Marketing of Scad caught by traditional fishermen in Pengambengan Village was indirect marketing, because in the distribution of fish to the consumers there were interference from marketing agencies such as collectors and retailers.Most of the traditional fishermen in Pengambengan Village had regular subscriptions to collecting traders when the catch was ready to be marketed. This could help fishermen in catching the Flying Fish.

The scad that had been landed will be moved using a basket measuring $\pm$ 50 kg. The transfer of Scad was assisted by shoulder workers with a wage of IDR 20,000 / basket.The baskets containing the fish were moved to the weighing location and sale and purchase transactions were carried out by collecting traders and fishermen at the agreed price. Then, wholesalers and retailers go directly to collectors to make buying and selling fish.The scads purchased from these collectors were distributed to consumers around Pengambengan Village by retailers. Meanwhile, wholesalers distribute Layang Fish to regular retailers located outside Pengambengan Village.

Marketing Channel

The condition of the marketing channel for Scad that was caught by traditional fishermen in Pengambengan Village consists of two marketing channel patterns. The marketing channel for flying fish in Pengambengan village can be seen below:

1st Marketing Channel

2nd Marketing Channel

Scad production from February to March traditional fishermen in Pengambengan Village got an average catch of 51 kg in one fishing trip.The selling value of Scad by fishermen ranges from IDR 12,000-15,000 / kg, with an average selling value of IDR 14,000 / kg.The operational costs incurred by fishermen during one fishing trip were IDR 6,554 / kg, the value of operational costs was obtained from the total operating costs divided by the volume of the catch. The operational costs were the costs needed by fishermen to catch fish, ranging from fuel to wages for shoulder labor and boat drains.The costs spent by fishermen for fuel were around IDR 150,000-200,000, for other necessities such as ice cubes and consumption around IDR 50,000-100,000. Shoulder labor were given a wage of IDR 20,000 / basket, while boat drained workers were given a wage of 10% of their catch after deducting the costs of fuel, consumption, ice cubes and shoulder labor.

The fish collectors traders in Pengambengan Village had an average age of 53 years with 21 years of experience as a trader.During the February-March catch, the collector traders purchase 1000-3000 kg of fly fish with an average price of IDR 14,000 / kg. Marketing costs incurred by collectors were IDR 123 / kg, marketing costs were obtained from the total marketing costs in the form of costs for fish storage ice, this cost was around IDR 240,000-360,000 divided by the volume of fish purchases. Collecting traders did not incur labor costs, because those that incur marketing costs were from fishermen and buyers.Collector traders sold Scad with a price range of IDR 15,000-17,000 / kg. Scad was distributed to consumers in the Pengambengan Village area and outside the Pengambengan area through other marketing agencies. Collector traders market Scad to wholesalers and retailers in the Pengambengan area. However, collecting traders would distribute to the fishery factories in the PPN Pengambengan area if the fish purchased was abundant and the buyers did not match the price and the fish.

The big fish traders in Pengambengan Village had an average age of 42 years with 15 years of experience as a wholesaler.Wholesalers purchase Scad with collectors to be distributed outside the Pengambengan area. During the February-March catch, the wholesaler bought 1000-2000 kg of fly fish, with an average purchase price of IDR 16,000 / kg.Marketing costs incurred by wholesaler were IDR 705 / kg. These costs were incurred by large traders

for fuel, labor, ice cubes and others. Wholesalers spent IDR 200,000-250,000 for transportation fuel, IDR 400,000-800,000 for labor, and IDR 150,000-360,000 for ice cubes and others. Wholesalers distributed fly fish outside the Pengambengan Village area, with a selling price of IDR 18,000-20,000 / kg. Scad was marketed outside the Pengambengan Village area such as in the Jembrana Regency to Singaraja areas. Wholesalers would also send Layang Fish to Java Island when fishing was abundant.

Fish retailers in Pengambengan Village bought fish directly from collectors at Pengambengan NFP. The retailers had an average age of 45 years with 12 years of experience as a retailer. The total volume of fish purchased by retailers was 20-50 kg in one day.Retailers boughtScad with a price range of IDR 15,000-18,000 / kg and will be sold at an average price of IDR 20,000 / kg. Marketing costs incurred by retailers were IDR 1,001 / kg, consisting of fuel, ice and other necessities.Fuel costs range from IDR 10,000-25,000, while costs for ice and other necessities range from IDR 10,000-12,000 in one day of buying Scad. Pengambengan retailers distributedScad to consumers around Pengambengan Village by using motorbikes to go around. However, there were other retailers who distribute Layang Fish by opening shop houses at their homes.

Retailers outside Pengambengan Village purchase Scad from large traders. The average age of an outside Pengambengan retailer was 41 years with 10 years of retail experience. The total volume of fish purchased by outside retailers ranges from 20-30 kg at a price of IDR 18,000-20,000 / kg.The marketing costs incurred by retailers outside Pengambengan Village are IDR 992 / kg. The marketing costs consist of the cost of fuel, ice and others. The cost of fuel incurred was around Rp. 10,000-15,000 and the cost of ice and others was Rp. 10,000. Retailers outside Pengambengan Village market the Scad around Jembrana, such as the Negara General Market at a selling price of IDR 23,000-25,000 / kg.

There were 4 distribution channel patterns, namely the zero-level channel pattern to the three-level channel pattern [10].The marketing channel pattern I of Scad in Pengambengan Village was classified as a two-level channel, while the marketing channel pattern II was classified as a three-level channel.Every Scad marketing agency took advantage of its distribution business, because besides the business it also incurs marketing costs.This statement was also reported by Ningsih et al [11], that intermediary traders (marketing agencies) incur costs for product marketing activities to consumers, the costs incurred by each intermediary were also different. Jumiati et al [8] stated that the high marketing costs incurred led to low profits.In contrast to the above statement, the Scad three-tiered marketing channel pattern in Pengambengan

Village had a higher advantage with higher marketing costs than the two-tier marketing channel pattern.

The two-level marketing channel pattern was a marketing channel in which there were 2 marketing institutions (collecting traders and retailers) that distribute Scad from fishermen to consumers. Marketing of Scad in Pengambengan Village had a two-level marketing channel pattern when the fishermen's production was not high, this was different from the research results of Saputra et al [12], a two-level marketing channel pattern was formed because of the large amount of production produced by producers. Scad were distributed by fishermen to collecting traders because collecting traders can bougth catches and can also provide initial capital, this was the same as Nuriati's research [13] that the distribution of fish from fishermen to collecting traders was due to cooperation between fishermen and collecting traders in terms of capital.

The three-level marketing channel pattern was a marketing channel pattern with 3 marketing agencies (collectors, wholesalers, and retailers) distributing Scad to consumers. The marketing of Scad in Pengambengan Village was based on a three-level marketing channel pattern, where fishermen and collectors sold fish at the same price and marketing costs as the two-level marketing channel pattern.Most of the price formation at the Scad marketing institutions was a bargaining process with a payment system made in cash, this was in line with the results of research by Pradika et al [14] where a price can be formed through a bargaining process. During the research, the price of Scad in Pengambengan village was classified as high because the production of fly fish was low. As with the research results of Damayanti et al [15], states that the ups and downs of production can affect the decline and increase in fish prices.

Efficiency of Marketing Channel

Efficient marketing would benefit all parties in the marketing chain. The beneficiaries were fishermen, traders to consumers. The efficiency of a marketing was characterized by the value of low marketing margins, low marketing costs, and the profit taking of each institution is not high [3]. Based on the research of Giamurti [4], there were several marketing aspects that need to be known to indicate the efficiency of a marketing. These aspects include marketing margin, farmer share, and marketing efficiency. The value and total farmer share, marketing costs, profits, marketing margin, and marketing efficiency can be seen in Table II.

The second size of the total marketing margin for Scad in Pengambengan Village shew the difference in prices that occur at the fishermen level and the prices for Scad at the consumer level. According to Pay and Nubatonis [16], marketing margin was not only the difference between the

consumer's purchase price and the producer selling price but was the sum of the margins of each marketing agency concerned. Thus, the longer a marketing channel can led to an increase in the value of the marketing margin.

TABLE II
FARMER'S SHARE, COSTS, PROFITS, MARGINS, AND EFFICIENCY OF SCAD MARKETING IN MARKETING CHANNELS I AND II

Markerters	Channel I (IDR/Kg)	Channel II (IDR/Kg)
Fishermen		
Selling Price	14.000	14.000
OperatingCosts	6.554	6.554
Provit	7.446	7.446
Collectors		
Purchase Price	14.000	14.000
Marketing Costs	123	123
Selling Price	16.000	16.000
Marketing Margin	2.000	2.000
Profit	1.877	1.877
Wholesalers		
Purchase Price	-	16.000
Marketing Costs	-	705
Selling Price	-	18.500
Marketing Margin	-	2.500
Profit	-	1.795
Pengambengan Retailers		
Purchase Price	16.000	-
Marketing Costs	1.001	-
Selling Price	19.700	-
Marketing Margin	3.700	-
Profit	2.699	-
Outside Pengambengan Retailers	-	
Purchase Price	-	18.500
Marketing Costs	-	992
Selling Price	-	23.700
Marketing Margin	-	5.200
Profit	-	4.208
Consumer Purchase Price	19.700	23.700
Total Marketing Costs	1.124	1.820
Total Marketing Margin	5.700	9.700
Total Profit	4.576	7.880
Farmer's Share (%)	71	59
Marketing Margin (%)	29	41
Efficiency of Marketing (%)	6	8

A marketing margin exists because every distribution into the hands of consumers each institution took advantage. In the research of Febrianti et al [17] their marketing channel pattern had a low marketing margin because in taking profits, marketing agencies only took a

little profit.Whereas in the research of Maisyaroh and Boesono [18] the high marketing margin was due to the large profits taken by the marketing agency. Both the results of these research indicate that the amount of profit can affect the level of a marketing margin, but it was supported by the amount of marketing costs incurred. According Pamuji et al [19], the amount of marketing margin was determined by the amount of marketing costs that occur with the amount of profit in each marketing agency involved in marketing activities. This proves that the total marketing margin for Scad in Pengambengan Village was generated from the marketing costs incurred and the profits taken by the marketing agency.

In the three-level marketing channel pattern, there was a bigger marketing margin due to the longer marketing chain that was formed. This was in accordance with the research results of Jumiati et al [8], where a longer marketing channel had a larger marketing margin.Apart from the longer chain of marketing, outside retailers take higher profits than other marketing agencies. This was the same as the results of research conducted by Giamurti et al [4], stated that the higher the profit taking at the marketing agency, the higher value of the marketing margin.

A marketing channel was said to be efficient if the share received by fishermen (farmer's share) is higher than the value of the marketing margin. Elpawati et al [20] stated that farmer's share had a negative relationship with marketing margins where the higher marketing margin, the lower fishermen's share was.In this research, the channel I (two-level) and channel II (three-level) patterns were classified as efficient marketing channels based on the comparison between the farmer's share and the marketing margin. The percentage of farmer 'share and marketing margin in channel I pattern was 71% and 29%, while in channel II pattern was 59% and 41%.The results of this research were directly proportional to the research of Apriono et al [21], namely the share obtained by producers was higher than the marketing margin, so that the marketing chain was classified as efficient.

The efficiency of the Scad marketing channel in Pengambengan Village was classified as efficient. The two-level channel pattern had an efficiency value of 6%, while in the three-level channel pattern it was 8%.The efficiency results in the two marketing channel patterns were obtained from dividing the total marketing costs by the value of the product marketed or the price paid by the end consumer.The two patterns of marketing channels indicate an efficient marketing, with the criteria for marketing efficiency values ranging from 0-33%, the marketing channel was efficient, if the efficient value ranges from 34-67%, the marketing channel was less efficient and if the value was 68-100% efficient, the marketing channel was not efficient [9]. These results were

the same as the results of the comparison between marketing margin and farmer's share, where the two marketing channels of Scad in Pengambengan Village were efficient marketing.

IV. CONCLUSION

Marketing of Scad in Pengambengan Village had 2 marketing channel patterns, namely a two-level marketing channel pattern: fisherman-collector-retailer-consumer and a three-level marketing channel pattern: fisherman-collector-wholesaler-retailer-consumer.This means that the marketing of Scad in Pengambengan Village was indirect marketing, where the collecting traders to the retailers who distribute the Scad to consumers. The efficiency level of the Scad marketing channel in Pengambengan Village was classified as efficient marketing. The two marketing channel patterns had a higher farmer's share value than the marketing margin, the two-level channel pattern had an efficiency value of 6% and a three-level channel pattern efficiency value of 8%.

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