MARGIN AND MARKETING EFFICIENCY OF SALTED FISH OF PARIGI HAMLET CENTRAL MALUKU REGENCY

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Abstract

Background: Salted fish have been preserved by salting and are very well known to the Indonesian people. Apart from being affordable, salted fish is also easy to obtain. Salted fish production is generally in coastal areas and distributed to distant places. Therefore, it is urgent to analyze the distribution process and the efficiency of that process.

Purpose: This research aims to determine marketing channels and analyze the margin and marketing efficiency of salted fish produced in Parigi Hamlet, North Seram District, Maluku Regency.

Design/methodology/approach: The primary research method used is the descriptive method, where sampling is carried out using exhausting sampling and snowball sampling. The data was analysed by using descriptive qualitative and descriptive quantitative.

Findings/Results: The distribution of salted fish products produced in Parigi Hamlet consists of three channels, namely (1) processor – consumer, (2) processor – retailer – consumer, and (3) processor – collector – retailer – consumer. The marketing margin on channel-1 is Rp 0,- channel-2 is Rp 20,000,- and channel-3 is Rp 30,000.- Marketing channel-1 has an efficiency value of 0.07%, marketing channel-3 is 2.46%, and channel-2 is 2.52%.

Conclusions: All three marketing chains are efficient, but the most efficient is channel 1 because there are no intermediary institutions, and the costs incurred are lower than others.

Oiginality/value (State of the art): Even though marketing channel-1 is the most efficient, the number of products sold is small. Processors prefer marketing channel-3 because collectors usually buy in large quantities.

Keywords: salted fish, marketing margin, efficiency.

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INTRODUCTION

Central Maluku is one of the districts in Maluku Province, whose sea area is 22.8 times the land area (Marasabessy et al. 2021; BPS, 2019). These vast waters contain considerable resource potential and make fisheries a supporting economic sector that plays a role in local, regional, and even national economic development. The fisheries sector's added value and strategic value provide financial and economic benefits, especially in earning foreign exchange, providing protein food, and employment opportunities (Shamsuzzaman et al. 2020; FAO, 2022; Ababouch, 2023).

Increasing public awareness of the importance of consuming fish and other fishery products has also encouraged increased production in the fisheries sector (Koehn et al. 2021; Bennett et al. 2021). Therefore, fish that have been caught must be handled as soon as possible so that they remain fresh in the hands of consumers (Karlsdóttir et al. 2021).

The geographical condition of Maluku, which consists of many small islands, means that the fish caught must be handled appropriately, processed, and distributed as quickly as possible so that the quality stays the same. A decrease in quality can reduce profits for fishermen and all actors involved in the fish supply chain (Basset et al. 2022; Kruijssen et al. 2020).

The unique treatment required in distributing and marketing fishery products is paramount in maintaining their quality and durability. This distinctive approach, a key marketing function, enhances the economic value of these products. It can be achieved by optimizing the efficiency of the marketing system within the context of coordination mechanisms for fish production, distribution, and consumption activities (Apituley et al. 2018).

Post-catch processing methods, such as salting, drying, and smoking, are not just crucial in preserving fish for extended periods and enabling their distribution to distant areas (Belton et al. 2022). They play a vital role in meeting the dietary needs of individuals residing far from the coast. Salted fish, a popular processed fishery commodity in both traditional and modern markets in Indonesia (Indrastuti et al. 2019), serves as a vital source of animal protein for these individuals. Its accessibility and nutritional value are instrumental in their daily lives.

Parigi is one of the hamlets in Wahai Village, North Seram District, Central Maluku Regency. Geographically, Parigi Hamlet stretches approximately 2 km along the coast and openly faces the Seram Sea. The potential for fishery resources in the Seram Sea, such as tuna, is enormous. The favorable geographic location and abundant fishing resources are the reasons the people of Parigi Hamlet become fishermen as a profession. Apart from that, several people also run salted fish processing businesses in this hamlet. People are pursuing this profession because of the high potential of fisheries, making it easier for them to obtain fish raw materials.

Parigi Hamlet, located on Seram Island, one of the islands in Maluku Province, is more than 300 km from Ambon. The journey to this village is challenging, as the sea must accompany it. The distance between Parigi Hamlet and Ambon as the provincial capital results in a high dependence of processors on the collectors. Limited market access means that processors need help selling their products in large quantities, so they have to sell to traders even at lower prices, and payment is not made in cash (Kyomugisha et al. 2018). If there is no demand from traders, processors must patiently wait and store their products while waiting for traders to request them. The unique marketing channels in Parigi Hamlet, shaped by these geographical and economic factors, are the focus of this research. The objectives of this research are: To determine the marketing channels for salted fish produced by Parigi Hamlet, and to analyze the margin and marketing efficiency of salted fish produced by Parigi Hamlet.

METHODS

This research was carried out for 3 months, from January to March 2023, in Parigi Hamlet, Wahai Village, North Seram District, Central Maluku Regency. This research location was selected deliberately, considering that Parigi Hamlet was a center for processing salted fish.

This research used a descriptive method, which, according to Sugiyono (2017), was a method for researching the status of a group of people, objects, conditions, systems of thought, and classes of events in the present. Loeb et al. (2017) stated that descriptive research aimed to create systematic, factual, and accurate descriptions, images, or paintings regarding the facts, characteristics, and relationships of the investigated phenomena.

Primary data was obtained from salted fish processors, collectors, and retailers through interviews, observation, and documentation. Secondary data was obtained from the relevant agency, namely the Wahai Village Office, North Seram District, in the form of a general description of the research location and library sources. Secondary data collection is also carried out by studying literature and scientific literature published through research results and scientific articles.

The samples in this research were salted fish processors, collectors, and retailers. The sampling method for each respondent is as follows:

1. Salted fish processor

The population of salted fish processors at the research location was 15 people, and samples were drawn in a saturated manner (Saturation Sampling), so there were 15 salted fish processors. This sampling method is used if the population is small, which is at least less than 30 people (Sugiyono, 2017).

2. Collector traders

There are 2 collecting traders at the research location, and the sampling method is also saturation sampling.

3. Retailers

Retailer sampling used the snowball sampling method, which, according to Sugiyono (2017), was a sampling technique that relied on key informants. In this research, snowball sampling was a technique based on data sources from salted fish processors or collecting traders with the characteristics required in the study. The required characteristics were retail traders who bought salted fish from the processors in Parigi Hamlet or purchased from collecting traders who were used as research samples. Based on this, the researchers obtained 4 retailers to use as research samples. Thus, the total sample in this study was 21 people.

Data Analysis

The data analysis used in this research was both descriptive qualitative and descriptive quantitative. Qualitative descriptive data analysis was employed to determine the description of marketing channels for salted fish and the characteristics of respondents, such as age, education, gender, business experience, and level of education. Meanwhile, quantitative descriptive analysis was utilized to determine marketing channels and selling prices for salted fish, as well as marketing costs, marketing margins, profit, and marketing efficiency of salted fish.

Marketing Channel Analysis was used to identify the marketing channels that ran from producers to consumers and the actors involved in the marketing process of salted fish produced in Parigi Hamlet. Qualitative descriptive analysis was applied to analyze the marketing channels.

Marketing margin is the difference between the price paid by final consumers for a product and the price received by farmers (producers) for the same product (Acharya, et al. 2023). According to Baagyere (2023), the marketing margin is computed as follows:

$$MM = CP - PP \ ...... (1)$$

where: MM (Marketing Margin (IDR/Kg)); CP (Price of salted fish at consumer level (IDR/Kg)); PP (Price of salted fish in processors (IDR/Kg)).

Marketing efficiency is calculated by using the formula according to Soekartawi (2002):

$$ME = (MC/CP) \times 100\% \ .... (2)$$

where: ME (Marketing Efficiency (%)); MC (Marketing Costs (IDR/Kg)); CP (Consumer Price (IDR/Kg)). If the ME value is <5%, marketing in the research area is efficient. If the ME value is >5%, marketing in the research area is inefficient.

The research framework can be seen in the Figure 1. Marketing efficiency and margin determine whether a marketing chain is efficient. Putri et al. (2018) and Mursalat and Haryono (2023) state that the efficiency of agribusiness marketing is characterized by creating or increasing high-added value in agribusiness products, generating profits for each marketing institution involved based on the costs incurred and increasing final consumer satisfaction and providing a share received by producers (farmers or fishermen's share) to stimulate them to continue producing. The lower the costs incurred in a marketing system, the more efficient the marketing system will be and the lower the marketing margin. Low marketing margins will increase producer income and make prices cheaper for consumers.
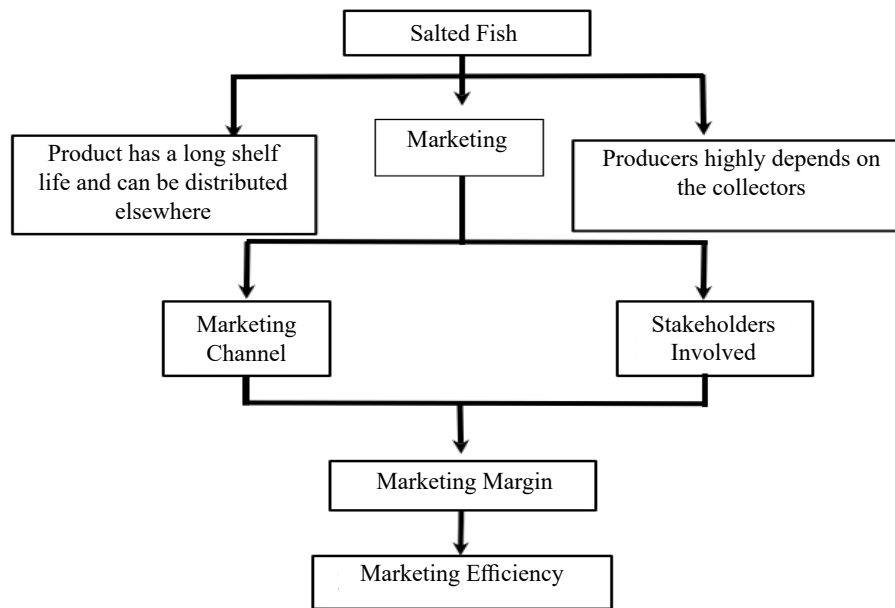
Figure 1. Research framework

RESULTS

Respondents Characteristics

The samples in this study comprised 21 people, including 15 salted fish processors, 2 collectors, and 4 retailers. The characteristics of the respondents discussed were age, gender, business experience, education, and number of family dependents.

Table 1 showed that most salted fish processors were aged 42-47 years and 48-55 years, with five people each (33.33%). The age group of the most prominent collectors and retailers was around 42-47 years, with two people each, resulting in percentages of 100% and 50%, respectively. The classification of respondents indicated that 100% were of productive age, meaning they had an age range of 30-55 years. Generally, the workers engaged in the fisheries sector in Parigi Hamlet were middle-aged, typically referring to individuals between 45 and 65 years old (Collins English Dictionary, n.d.).

From Table 1, it could also be seen that those who worked in the salted fish processing sector were primarily women who had primary and secondary education. In contrast, those who distributed and marketed the fish were men with secondary and upper-secondary education. Five salted fish processors (33.33%) had business experience of 11-14 years, while most collectors and retailers had business experience in the range of 7-10 years, with the same number of two people, resulting in percentages of 100% and 50%. The highest number of family dependents among salted

fish processors was 4-6 people, with eight individuals, representing 53.33%. Meanwhile, each collecting trader had family dependents of 1-3 people and 4-6 people, with a percentage of 50%. Two retail traders had family dependents of 1-3 people, while the other two had 4-6 people, also with a percentage of 50%.

Salted Fish Business

The availability of raw materials dramatically influenced salted fish processing activities in Parigi Hamlet. During the fishing season, business activities were carried out almost every day. However, during the non-fishing season, activities were only conducted once every two weeks or once a month. The primary raw material in the salted fish processing business was fresh skipjack or baby tuna, which was obtained by purchasing from fishermen in Parigi Hamlet. The average price of fish purchased from fishermen was IDR 13,000/Kg. If processors faced difficulties in obtaining raw materials, such as during the surf season, the amount of salted fish produced would be small. Conversely, when the fishing season commenced, the quantity produced would significantly increase. From 100 kg of fresh fish, the processor could produce an average of 55 kg of salted fish, and the salt used reached 20 kg. However, the amount of raw materials obtained significantly influenced production activities and the quantity of salted fish processed. Salted fish in Parigi Hamlet was still dried naturally using sunlight, and this process was carried out for approximately five days until the fish was ready to be marketed.

Based on the research results, the marketing channel for salted fish in Parigi Hamlet, North Seram Regency, involves 3 marketing institutions: processors as producers, collectors, and retailers. The marketing channels formed are zero-level or direct marketing channels (Tarigan et al. 2021) or channel-1, one-level channel or channel-2, two-level channels or channel-3.

1.Marketing Channel-1

The marketing channel consisted of salted fish processors and consumers, where the processors were in direct contact with consumers. This channel was effortless to implement, but the amount of salted fish consumers purchased was not significant. This marketing channel occurred when consumers were near Parigi Hamlet or passed through it and wanted to buy salted fish as a side dish for their households or souvenirs for their relatives.

2. Marketing channels-2

Marketing channel-2 consisted of salted fish processors and retailers. Of the fifteen salted fish processors, only eight used this channel. Not all processors utilized this marketing channel because not all processors had retailer subscriptions. Sales were made by retailers contacting the processor first to purchase the required quantity of salted fish. The processor sold the salted fish by sending the product to the retailer. After obtaining the salted fish, the retailer sold it to the final consumers.

Table 1. Characteristics of respondents

Characteristics	Respondents					
	Processors	%	Collectors	%	Retailers	%
Age (Year)						
- 30-35	2	13.33	-	-	1	25
- 36-41	3	20	-	-	-	-
- 42-47	5	33.33	2	100	2	50
- 48-55	5	33.33	-	-	1	25
Total	15	100	2	100	4	100
Sex (People)						
- Man	2	13.33	-	-	2	50
- Woman	13	86.66	2	100	2	50
Total	15	100	2	100	4	100
Education						
- Elementary School	6	40	-	-	2	50
- Junior High School	6	40	1	50	-	-
- Senior High School	3	20	1	50	2	50
Total	15	100	2	100	4	100
Business Experience (Years)						
- 3-6	4	26.66	-	-	1	25
- 7-10	4	26.66	2	100	2	50
- 11-14	5	33.33	-	-	1	25
- 15-17	2	13.33	-	-	-	-
Total	15	100	2	100	4	100
Family Members (People)						
- 1-3	7	46.66	1	50	2	50
- 4-6	8	53.33	1	50	2	50
Total	15	100	2	100	4	100

3. Marketing Channel-3

Marketing channel-3 was a channel that occurred frequently and involved several marketing institutions, namely salted fish processors, collectors, and retailers. Based on the research that had been carried out, all respondents who processed salted fish in Parigi Hamlet implemented marketing channel-3.

The existence of collecting traders made it easier for processors to sell salted fish. The marketing process in channel-3 involved the processors selling their production to collectors, who then sold it back to the retailers and the final consumers. Figure 2 summarized the marketing channels for salted fish in Parigi Hamlet.

Margin and Marketing Cost of Salted Fish

The marketing of a product, including the margin, costs, and marketing profits, was intricately intertwined (Faith & Agwu, 2018). This research successfully identified and summarized each channel's margins, costs, and marketing profits in Table 2. It comprehensively explained their close relationship, making the audience feel well-informed. Marketing channel-2 involved processors and retailers; the marketing margin was IDR20,000. Several marketing costs were incurred, such as purchasing costs for fish and salt amounting to IDR25,386/Kg, as well as transportation, communication, and packing costs. In this marketing channel, processors and retailers met in person rather than by telephone. The costs incurred by the processor included transportation at IDR1,600/Kg, communication at IDR100/Kg, and packing at IDR40/Kg. Retailers also incurred communication costs of IDR100/Kg because they contacted processors by telephone, and packaging costs were IDR50/Kg.

The marketing institutions involved in channel-3 were processors, collectors, and retailers. This channel had the highest marketing margins and marketing costs. Processors in marketing channel-3 only incurred costs for purchasing raw fish and salt materials of IDR25,386/Kg, while collectors bore marketing costs. Usually, the collectors went directly to the processor, so the transaction was carried out at the processor's house. Collectors incurred several costs, such as transportation, communication, and packaging. The collectors bore the transportation costs because they transported the salted fish from the processor to their house and then sent it to the retailers, totaling IDR1,680/Kg. Collectors informed the retailers by phone, and communication costs were IDR100/Kg, with packaging at IDR40/Kg. Furthermore, the retailer incurred communication costs of IDR100/Kg and packaging costs of IDR50/Kg, bringing the total marketing costs in channel-3 to IDR1,970/Kg. The longer the marketing chain, the more costs were incurred, leading to higher prices at the consumer level.

Marketing Efficiency

Marketing efficiency in each marketing channel could be seen in Table 3. The marketing channel for salted fish that had the smallest efficiency value was marketing channel-1 at 0.07% because, in this channel, the processor sold salted fish directly to consumers without going through an intermediary institution, resulting in higher profits and selling prices. Next, marketing channel-3 had an efficiency value of 2.52%, which was less than the efficiency of marketing channel-2, at 2.46%. Even though marketing channel-3 had a more extended marketing chain, the marketing costs incurred were slightly different from those in marketing channel-2, and the price comparison for each institution was similar.
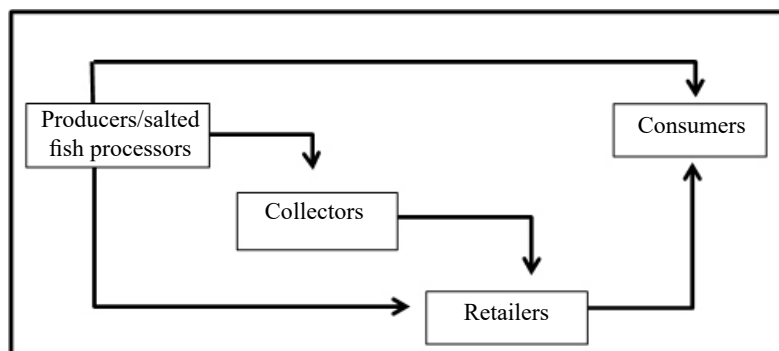

Figure 2. Marketing channels of salted fish

Table 2. Marketing margin and cost in each channel

Description	Channel-1 Price/Cost (IDR/Kg)	Channel-2 Price/Cost (IDR/Kg)	Channel-3 Price/Cost (IDR/Kg)
Processors of Salted Fish			
a. Raw materials (salt)	1,750	1,750	1,750
b. Raw materials (fish)*	23,636	23,636	23,636
c. Packaging	50	-	-
d. Transportation	-	1,600	-
e. Packing	-	40	-
f. Communication	-	100	-
g. Selling Price	65,000	55,000	50,000
h. Total costs of raw material (a+b)	25,386	25,386	25,386
i. Total costs of marketing (c+d+e+f)	50	1,740	-
j. Profit (g-(h+i))	39,564	27,874	- 24,614
Collectors			
k. Purchase Price	-	-	50,000
l. Packing	-	-	40
m. Freight Costs	-	-	1,680
n. Communication	-	-	100
o. Selling Price	-	-	63,000
p. Total Cost (l+m+n)	-	-	1,820
q. Marketing Margin (o-k)	-	-	13,000
r. Profit (q-p)	-	-	11,180
Retailers			
s. Purchase price	-	55,000	65,000
t. Packaging	-	50	50
u. Communication	-	100	100
v. Selling Price	-	75,000	80,000
w. Total Cost (t+u)	-	150	150
x. Marketing Margin (v-s)	-	20,000	17,000
y. Profit (x-w)	-	19,850	16,850
z. Consumer Purchase Price	65,000	75,000	80,000
Total Marketing Margin (z - g for channel I and v-g for channels II and III)	0	20,000	30,000
Total Marketing Costs (i+w)	50	1,890	1,970

Table 3. Marketing efficiency in each channel

	Channel-1	Channel-2	Channel-3
Marketing Margin (Rp/Kg)	0	20,000	30,000
Marketing Cost (Rp/Kg)	50	1,890	1,970
Production Value (Rp/Kg)	65,000	75,000	80,000
Marketing Efficiency (%)	0.07	2.52	2.46

Based on this, marketing channels-1, 2, and 3 were found to be equally efficient. However, the most efficient was marketing channel-1 because the costs incurred were the lowest. The processor's selling price in channel-1 was higher than in marketing channels-2 and 3 due to its simplicity. Thus, the more intermediaries there were in a marketing channel, the lesser the marketing efficiency became, and vice versa (Kumar et al. 2021). However, Salsa Bila et al. (2022) stated that the existence of intermediaries could not be considered entirely a threat to the supply chain. The involvement of intermediaries in the supply chain still strongly influenced farmers and fishermen, especially in developing countries.

Managerial Implication

Salted fish was one of the most preserved fish products in Indonesia. Almost 65% of the fishery population was processed and preserved by salting (Sabilah et al. 2022). The Indonesian Government had designated salted fish as one of the essential ingredients of the community. This showed that salted fish was popular among the lower class of the economic community as well as the middle and upper classes.

This research demonstrated that the longer the marketing chain, the more costs were incurred, leading to higher prices at the consumer level. The entire salted fish marketing chain in Parigi Hamlet was found to be efficient. Therefore, the Government needed to ensure that this marketing model continued to be implemented while still paying attention to the distribution of profits to each stakeholder involved. Even though marketing channel-1 was the most efficient, the number of products sold was small. Processors preferred marketing channel-3 because collectors usually bought in large quantities. BUMDES (Village-Owned Enterprises) had to function to distribute salted fish to other areas so that producers did not depend only on collecting traders.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The marketing channels for salted fish in Parigi Hamlet, North Seram District, Central Maluku Regency consisted of channel-1 (Processor – Consumer), channel-2 (Processor – Retailer – Consumer), and channel-3 (Processor – Collectors – Retailers –

Consumers). The marketing margin for salted fish in channel-1 was IDR0, while in channel-2 it was IDR20,000 and in channel-3 it was IDR30,000. The marketing efficiency of salted fish in each channel was Marketing Channel-1 at 0.07%, Marketing Channel-2 at 2.52%, and Marketing Channel-3 at 2.46%. All marketing channels were efficient, but marketing channel-1 was the most efficient because the ratio of costs incurred to the consumers' purchasing price of salted fish was higher than that of marketing channels-2 and 3.

Recommendation

With the marketing channels in salted fish marketing, processors were expected to study market information actively so that more profitable marketing channels could be selected. Processors needed to improve product sanitation and hygiene to enable distribution to further places.

REFERENCES

Ababouch L, Nguyen KAT, Souza MCD, Fernandez-Polanco J. 2023. Value chains and market access for aquaculture products. *Journal of the World Aquaculture Society* 54(2): 527–553.https://doi.org/10.1111/jwas.12964.

Acharya N, Chaurasia J, Kandel P. 2023. Value-chain analysis of the ginger sub-sector in Salyan District, Nepal. *Asian Journal Agriculture* 7(2): 76-82.https://doi.org/10.13057/asianjagric/g070202.

Apituley YMTN, Bawole D, Savitri IKE, Tuapetel F. 2018. Pemetaan rantai nilai ikan pelagis kecil di Kota Ambon. *PAPALELE: Jurnal Penelitian Sosial Ekonomi Perikanan dan Kelautan* 2(1): 15-21. https://doi.org/10.30598/papalele.2018.2.1.15

Baagyere J et al. 2023. Organization and performance of chicken egg marketing in Northern Ghana. *Journal of Agriculture and Food Research* 12(2023): 100633. https://doi.org/10.1016/j.

jafr.2023.10 0633.

Bassett HR, Sharan S, Suri SK, Advani S, Giordano C. 2022. A comparative study of small-scale fishery supply chains' vulnerability and resilience to COVID-19. *Maritime Studies* 21(2022): 173–192. https://doi.org/10.1007/s40152-021-00231-4

Belton B, Johnson DS, Thrift E, Olsen J, Hossain MAR., Thilsted SH. 2022. Dried fish at the intersection of food science, economy, and culture: a global survey. *Fish and Fisheries* 23(4): 9 4 1 – 9 6 2 . https://doi.org/10.1111/faf.12664.

Bennett A, Patil P, Kleisner K, Rader D, Virdin J, Basurto X. 2018. *Contribution of Fisheries to Food and Nutrition Security: Current Knowledge, Policy, and Research.* NI Report 18-02. Durham: Duke University.

[BPS] Badan Pusat Statistik. 2019. Kabupaten Maluku Tengah Dalam Angka Tahun 2019. Penyediaan Data Untuk Perencanaan Pembangunan.

Bila SS, Fahmi I, Suprehatin. 2022. A bibliometric analysis of middlemen research: a closer look at agricultural marketing. *Business Review and Case Studies* 3(3): 249- 260. https://doi.org/10.17358/brcs.3.3.24

Faith DO, Agwu E. 2018. A review of the effect of pricing strategies on the purchase of consumer goods. *International Journal of Research in Management, Science & Technology* 2(2): 1-15.

[FAO] Food and Agriculture Organization of the United Nations. 2022. *The State of Worls Fisheries and Aquaculture Towards Blue Transformation.* Rome: FAO. https://doi.org/10.4060/cc0461en.

Indrastuti NA, Wulandari N, Palupi NS. 2019. Profil pengolahan ikan asin di wilayah pengolahan hasil perikanan tradisional (PHPT) Muara Angke. *Jurnal Pengolahan Hasil Perikanan Indonesia* 22(2): 218-228. https://doi.org/10.17844/jphpi.v22i2. 27363

Karlsdóttir I, Cook D, Minelgaite I. 2021. Efficiency management in catch handling onboard small boats – standardisation of processes in icelandic fisheries. *Sustainable Futures* 3(2021): 1-14. https://doi.org/10.1016/j.sftr.2021.10 0060

Koehn JZ et al. 2022. Fishing for health: do the world's national policies for fisheries and aquaculture align with those for nutrition? *Fish and Fisheries* 23(1): 125–142. https://doi.org/10.1111/faf.12603

Kruijssen F, Tedesco I, Ward A, Pincus L, Love D, Thorne-Lyman AL. 2020. Loss and waste in fish value chains: a review of the evidence from low and middle-income countries. *Global Food Security* 26(2020): 1-13. https://doi.org/10.1016/j.gfs.2020.10 0434

Kumar M, Singh R, Kumar K. 2021. Marketing efficiency of different marketing channel of mustard crop in swai madhopur district of rajasthan. *Economic Affairs* 66(1): 143-147. https://doi.org/10.46852/0424- 2513.1.2021.18

Kyomugisha H, Sebatta C, Mugisha J. 2018. Potato market access, marketing efficiency and on-farm value addition in Uganda. *Scientific African* 1(2018): 1-14. https://doi.org/10.1016/j.sciaf.2018.e 00013.

Loeb S, Dynarski S, McFarland D, Morris P, Reardon S, Reber S. 2017. *Descriptive Analysis in Education: A Guide for Researchers. (NCEE 2017– 4023).* Washington: Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance.

Marasabessy I, Marasabessy A, Tualeka ONA, Tualeka DI. 2021. Penentuan klaster wilayah kecamatan berdasarkan pusat pelayanan masyarakat di wilayah Kepulauan Kabupaten Maluku Tengah Provinsi Maluku. *Agrokreatif* 7(3): 314-325. https://doi.org/10.29244/agrokreatif.7.3.314-325

Mursalat A, Haryono I, 2023. Ginger marketing efficiency through product innovation in improving farmers' economy in sidenreng rappang regency. *Agricultural SocioEconomics Journal* 23(2): 177-183. https://doi.org/10.21776/ub.agrise.20 23.023.2.7

Putri RK, Nurmalina R, Burhanuddin. 2018. Analisis efisiensi dan faktor yang memengaruhi pilihan saluran pemasaran. *Mix: Jurnal Ilmiah Manajemen* 8(1): 109–135. https://doi.org/10.22441/mix. 2018.v8i1.007.

Sabilah A, Khairunnisa A, Monalia, Sahriani, S, Putri WPS, Lubis YA, Marta E. 2022. The effectiveness of using direct sunlight on the drying process of salted fish without formalin. *International Journal of Natural Science and Engineering* 6(1): 14-20. https://doi.org/10.23887/ijnse.v6i1.4 1471

Shamsuzzaman MM, Mozumder MMH, Mitu SJ, Ahamad AF, Bhyuian MS. 2020. The economic contribution of fish and fish trade in bangladesh. *Aquaculture and Fisheries* 5(4): 174-181. https://doi.org/10.1016/j.aaf.2020.01. 001

Soekartawi. 2002. *Panduan Membuat Usaha Proyek*

Pertanian Dan Pedesaan. Yogyakarta: PT. Bumi Aksara.

Sugiyono. 2017. *Metode Penelitian Manajemen Pendekatan Kuantitatif, Kualitatif, Kombinasi (mixed method), Penelitian Tindakan (action research) dan Penelitian Evaluasi.* Bandung: Alfabeta.

Tarigan R, Asmara A, Hidayat NK. 2022. Marketing channels analysis of carica (carica pubescens) farming in Kejajar District, Wonosobo Regency. *Jurnal Manajemen & Agribisnis* 18(1): 78-89. https://doi.org/10.17358/jma.18.1.78