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Added Value of Canned Patin Fish as a Product of Patin Fish Agroindustry from South Sumatera

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ABSTRACT

The South Sumatra Provincial Government has provided processed food canning production facilities for developing downstream food industry products produced by food MSMEs in South Sumatra Province. Information related to the added value obtained from the canning business of processed food products and their marketing conditions is still not widely known. The purpose of this study is to calculate income and analyze the added value of fresh Patin fish in canned Patin fish Pindang products. This research was conducted at the location of the Regional Research and Development Board processed food canning production facility in South Sumatra Province with purposive sampling, namely canned Patin fish Pindang with the brand "Tangkep" processed with canning facilities provided by the South Sumatra Provincial Government through Regional Research and Development Board. The Hayami method was used for the calculation of added value analysis for canned Patin fish Pindang products. The results showed that the profits obtained based on added value analysis, namely 51% of the sales of the products, were received by business actors, namely the Tangkep MSMEs. It can be concluded that the processing of fresh Patin fish into canned Patin fish Pindang products was classified as profitable with high added value because the value-added ratio was > 40%.

Keywords: Added value, Income, Canning, Pindang patin fish

INTRODUCTION

To produce processed products, it is very necessary to support the availability and functioning of various processing and packaging equipment for the process of distributing and marketing the products to consumers. In addition to providing added value and increasing product competitiveness, food processing and packaging technology have an important role in increasing the diversity, safety, and nutritional value of food. Packaging is one of the main processes of preserving and maintaining the quality of food products for export, storage, and final consumption (Firouz et al. 2021). One form of packaging is canning which can prevent food damage due to a spoilage (Nurhikmat et al. 2016). Canning is hermetic packaging (sealed tightly so that air, water, microorganisms, and foreign materials don't penetrate) in a canned container (Ndahawali et al. 2016). Food packaged in cans can last up to 1 year or more.

South Sumatera Province is a potential area for the development of food MSMEs because it can contribute in strengthening food security of South Sumatera (Febelin and Ariska, 2019). Several types of processed food produced by MSMEs are generally made from agricultural, fishery, and livestock products which maximize the yield from the potential of the people of South Sumatera. Processed foods made from fish and meat in addition to other types of raw materials are mostly produced and at the same time have become the typical processed-food products of South Sumatera. South Sumatera has many MSMEs that produce typical snacks such as *Pindang Ikan*, *Pempek*, *Malbi*, and other typical processed foods. These typical processed foods can be made into highly competitive and distinctive products compared to other similar products. These products are not only food souvenirs for tourists but also consumption by local residents. The consumption of local products by the local people has obviously affected the local economy. In particular, *Pindang* of freshwater fish is very popular in South Sumatera because of its affordable price, delicious taste, and high nutrition. Canning

Patin fish *Pindang* can be used as a solution so that MSMEs in South Sumatra can expand the market share of canned fish products which are typical products of South Sumatra. The canned Patin fish *Pindang* product also plays a role in adding value to fresh Patin fish.

The South Sumatra Provincial Government supports the growth and development of a variety of processed food of typical South Sumatra products that are competitive, safe, and nutritious. Through the Regional Research and Development Agency (Balitbangda), the South Sumatra Provincial Government has provided canning production facilities that can be used by all levels of society, especially in South Sumatra Province to produce various canned processed food products. MSMEs only pay for canning technology services of IDR 3,000 per can. MSMEs have determined the selling price of the product, but have not calculated the actual income and added value. This research aims to make MSMEs in the Province more interested in canning their superior products (Suprianto et al. 2020; Aji et al. 2018).

RESEARCH METHODS

Methods of this research is Hayami to calculate of added value analysis for canned Patin fish *Pindang* products. This research was conducted at the Regional Research and Development Agency for South Sumatra Province and an MSMEs producing canned Patin fish *Pindang* commercially in Palembang City. There is a production facility for processed food canning. The canned Patin fish *Pindang* product already has a distribution permit, so it has been marketed. However, the calculation of income and added value from processing fresh fish into canned Patin fish *Pindang* has never been done. The research was conducted in April 2023 using a case study method.

The sample is part of the population that has relatively the same characteristics and is considered to be representative of the population. The sample is part of the number and characteristics possessed by a population to be studied. Determination of the sample in this study was carried out with the type of

Non-Probability Sampling. This type of sample was not randomly selected. Not all elements or elements of the population have the same opportunity to be selected as a sample (Sugiyono 2014). The sample was chosen using Purposive sampling. A sample of canned Patin fish *Pindang* product produced by an MSMEs with the Tangkep brand was taken with the consideration that the MSMEs only produced canned Patin fish *Pindang* with no other businesses so that the calculation of the costs incurred by the MSMEs to produce the product is more real.

The data collected were: 1) primary data, namely data collected by researchers directly from the first source; and 2) secondary data, namely data obtained indirectly from research subjects. Secondary data were collected and presented by other parties concerned, for commercial and non-commercial purposes. Secondary data is usually in the form of statistical research results from survey report books, magazines/ newspapers, official documentation, and archives (Suliyanto 2018).

To solve research problems and prove the truth of the hypotheses proposed as a reference material in this research, the analysis used was descriptive analysis and quantitative analysis, namely data analysis which was carried out chronologically or by calculating numbers after the existing data collected. Added Value was analyzed using the Hayami method. Data obtained from the field were processed by analysis and mathematical calculations and are explained descriptively in the discussion (Table 1).

RESULTS AND DISCUSSION

The manufacture of canned Patin fish *Pindang* are divided into two processes, namely the processing carried out by the MSMEs and the canning process carried out by the canning team. The processing carried out by the MSMEs include the stages of preparing materials and tools, cutting fish, and

cooking *Pindang* soup. The canning process carried out by the canning team include the stages of preparing tools and machines, putting in the fish, weighing the fish, blanching, putting in the *Pindang* soup, exhausting, sealing the cans, sterilizing, cooling, quarantining the product, sorting, labeling, and delivering of the finished product.

The materials prepared by the MSMEs for making Patin fish *Pindang* are Patin fish, water, seasonings, and complementary ingredients where all these ingredients have to be fresh, not defective (mechanically), and clean. The Patin fish are obtained from the local market and still alive and fresh with the same or similar size. The water used for washing the fish is water complying with drinking water standards with low chlorine levels, and PDAM water settled for 24 hours can be used. The water used for cooking the soup is clean ready-to-drink water. Spices are purchased from the local market, cleaned, washed in running water, and then sliced/ mashed. Complementary ingredients such as soy soup, sugar, salt, and shrimp paste using brands with a distribution permit from BPOM (Food and Drug Supervisory Agency) are used.

Equipment made of stainless steel in clean condition is used. Kitchen utensils are used such as knives and cutting boards for cutting fish and slicing spices, basins as containers for washing fish and spices, pots for cooking *Pindang* soup, spoons for stirring *Pindang* soup, strains for straining *Pindang* soup, towels, food-grade gloves, a blender for grinding the spices, and a stove for cooking the *Pindang* soup.

Fresh and clean Patin fish are cut according to size and washed thoroughly with running water. Only the body parts of the fish are used. The fish that have been cut and washed were then handed over to the canning team.

Table 1. Hayami method added value analysis framework

No	Variable	Calculation method
Output, Input, Price		
1	Total Output/Product (Kg)	(1)
2	Raw Material Input (Kg)	(2)
3	Labor Inputs	(3)
4	Conversion Factor (Kg)	(4) = (1)/(2)

No	Variable	Calculation method
5	Labor Coefficient (Kg/Raw Material)	$(5) = (3)/(2)$
6	Output Price (Rp/Kg)	(6)
7	Labor Wages (Rp/person)	(7)
Acceptance and Profits		
8	Raw Material Prices (Rp/Kg)	(8)
9	Contribution of Other Inputs (Rp/Kg)	(9)
10	Output Value (Rp/Kg)	$(10) = (4) \times (6)$
11	a. Value Added (Rp/Kg)	$(11a) = (10) - (8) - (9)$
	b. Value Added Ratio (%)	$(11b) = (11a) / (10) \times 100 \%$
12	a. Labor Income (Rp/Kg)	$(12a) = (5) \times (7)$
	b. Labor Share (%)	$(12b) = (12a) / (11a) \times 100 \%$
13	a. Profit (Rp/%)	$(13a) = (11a) - (12a)$
	b. Profit Rate (%)	$(13b) = (13a) / (10) \times 100 \%$
Compensation for Factors of Production		
14	Margin (Rp/kg)	$(10) - (8)$
	a. Labor Income (%)	$(12a) : (14) \times 100 \%$
	b. Contribution of Other Inputs (%)	$(9) : (14) \times 100 \%$
	c. Profit (%)	$(13a) : (14) \times 100 \%$

Source: Hayami method (1987)

The soup is cooked by mixing all the chopped/mashed spices into the boiling water, adding the complementary ingredients (soy soup, sugar, salt, and shrimp paste), and simmering the soup until its color turned dark. The soup is then handed over to the canning team.

The canning process carried out by the canning team include the stages of preparing tools and machines, putting in the fish, weighing the fish, blanching, putting in the *Pindang* soup, exhausting, sealing the cans, sterilizing, cooling, quarantining the product, sorting, labeling, and delivering of the finished product (Figure 1).

The tools and machines are stainless steel knives, cutting boards, stainless steel basins, stainless steel scoops, stainless steel strains, wipes, scales, stainless thermometers, food-grade gloves, stoves, boilers/steamers, preparation tables, can sealer, autoclave sterilizers, and cooling tub. The Patin fish received by the canning team have been cut and washed. Pieces of fish are put into cans and then weighed at 125 grams per can. Next, all the cans filled with pieces of fish are arranged into the boiler for the blanching process. The goals of blanching include inactivating enzymes that are naturally present in fish, withering fish, removing mucus and fat, improving the color of the product, and helping to remove air bubbles trapped inside the fish. Blanching is carried out for 10 minutes with boiling water at 100 °C. After 10 minutes, the team remove all the

cans from the pot and arrange them on the preparation table.

The next stage is putting in the *Pindang* soup. The *Pindang* soup is strained to separate the soup from coarse spices. All cans containing blanched fish are filled with *Pindang* soup until the size reaches 2 cm from the surface of the can. After all the cans are filled with soup, they are put into the boiler for the exhausting/vacuuming process. This vacuuming is done by heating the ingredients in the can using hot steam from boiling water in a steamer/steamer. The purpose of the exhausting process is to prevent cans from leaking or cans breaking due to excessive pressure during heating in the sterilization process, preventing cans from becoming bloated due to hot storage temperatures, minimizing the possibility of the life of certain organisms, especially aerobic bacteria, and preventing corrosion on the inside of the can. The exhausting process is carried out for 20 minutes or until the temperature of the material inside the can reaches 80 °C.

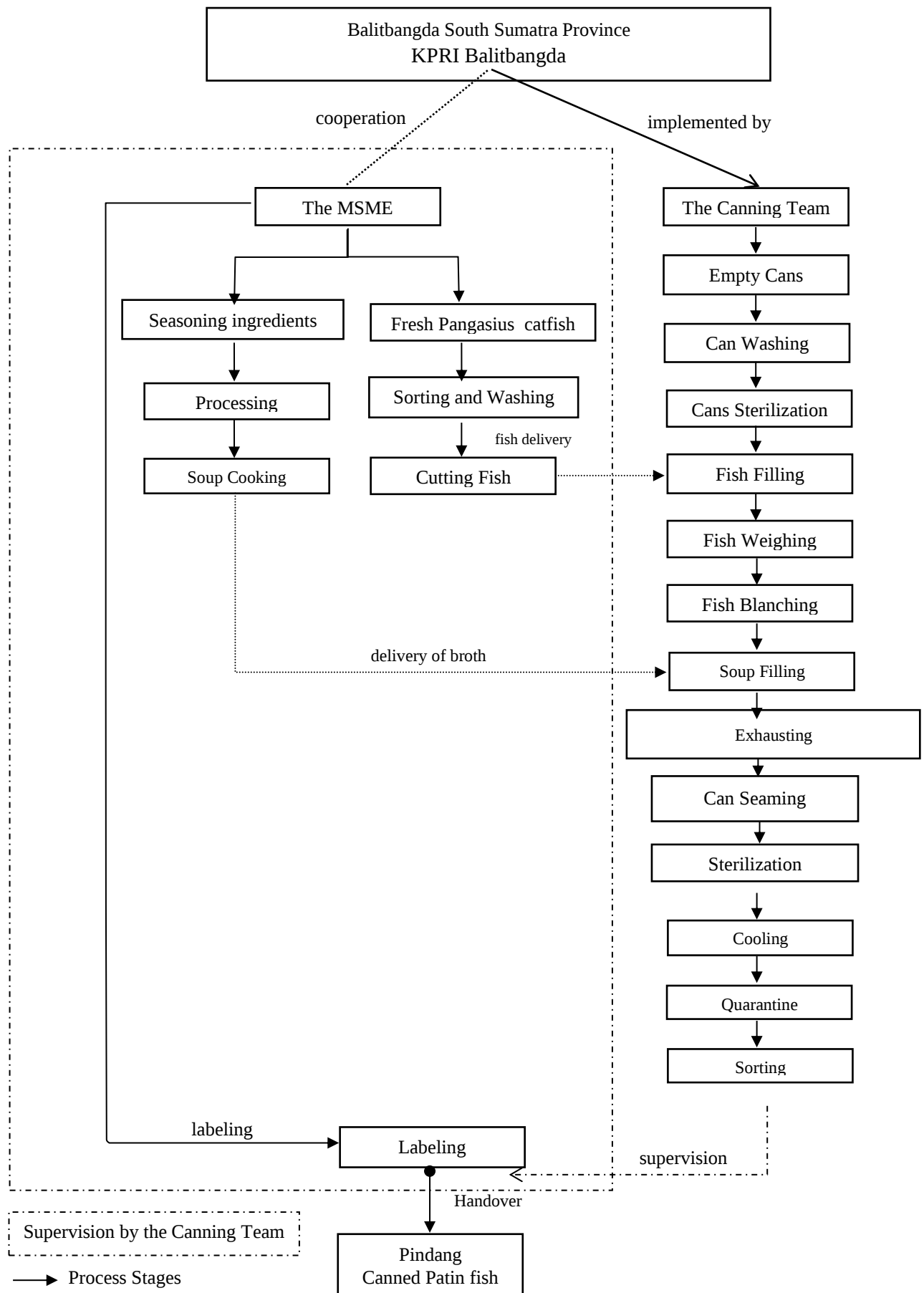


Figure 1. Canned Pangsius catfish *Pindang* production process
Source: Results of primary data processing, 2023

Cans are sealed immediately after the exhausting process to avoid contamination. Sealing the cans is done when the *Pindang* in the cans is still hot so that air cannot get into the cans. It is done with a can seamer using electricity. After all canned products are sealed, the sterilization process is then carried out using an autoclave sterilization machine at 121°C for 15 minutes.

After the sterilization process is complete, and all canned products have been removed from the autoclave sterilizer, the cooling process is immediately carried out by placing the canned products into a cooling bath filled with running water to maintain a stable water temperature. The purpose of cooling is to provide a shock therapy action against thermophilic bacteria (bacteria that can withstand high temperatures), to prevent the possibility of these bacteria still being active (growing and developing) in cans after the sterilization process, and to avoid overcooking.

Canned products that have gone through the cooling process are dried, given a production code, arranged on shelves, and quarantined for 14 days in the quarantine room. The purpose of quarantine is to observe canned products. If during the quarantine period the canned products do not swell, the products are relatively safe for consumption.

Canned products that have passed the 14-day quarantine are then labeled. Installation of packaging labels is carried out

by the MSMEs but under the supervision of the canning team to ensure that the labels comply with predetermined requirements. After the labeling of all canned products is completed, the canning team hand over the canned Patin fish *Pindang* products to the MSMEs.

The provision of production facilities for processed food canning at Balitbangda South Sumatra Province is the government's effort to encourage MSMEs in South Sumatra Province to innovate. The canned Patin fish *Pindang* brand "TANGKEP" is a product of an MSMEs produced at the Balitbangda processed food canning production facility, in South Sumatra Province. MSMEs have several tools and materials to carry out the production process. The investment costs incurred by MSMEs to can their products are the cost of a canning business permit and the cost of equipment depreciation. For factory buildings, Balitbangda has been provided. Factory buildings are not only semi-permanent buildings but some are integrated with home kitchens for MSMEs employees to cook products to be canned (Yanita et al. 2021; Wildayana et al. 2016). In this study, fixed costs include permits and depreciation costs as well as research (Putra et al. 2020; Wildayana et al. 2016). The average fixed costs for production of canned Patin fish *Pindang* can be seen in Table 2.

Table 2. Average fixed cost for canned Patin fish *Pindang*

No	Fee Type	Quantity	Unit price (IDR)	Amount (IDR)	Lifespan (months)	Residual value (Rp)	Depreciation price
A Investment Cost							
1	Licensing	1 package	20,000,000	20,000,000	60		333,333
B. Fixed cost							
2	Kitchen set	1 package	5,000,000	5,000,000	36	20,000	138,333
Amount							471,667

Source: Results of primary data processing, 2023

Table 2 shows that the average fixed cost is IDR 471,667.00 in one the production period (assuming optimum capacity) or for one year (based on original data from MSMEs of Tangkep Brand).

Variable Costs are costs incurred by the MSMEs that depend on the amount of the production (Rahayu 2021). In this study

variable costs are displayed in Table 3. The operational costs incurred by canned Patin fish *Pindang* with the Tangkep brand consist of the cost of purchasing raw materials and labor wages. The cost of purchasing raw materials is very dependent on the amount of production per day.

Table 3. Average variable cost of canned Patin fish MSMEs

No	Fee Type	Unit	Quantity	Unit Price (Rp)	Amount (IDR)
1	Canning Services	can	5,000	3,000	15,000,000
2	Patin fish	kg	600	22,000	13,200,000
3	Water	gallon	50	15,000	750,000
4	spices	package	5,000	2,300	11,500,000
5	Supplementary material	package	5,000	500	2,500,000
6	Packaging label, box	can	5,000	200	1,000,000
7	LPG	tube	20	25,000	500,000
8	Labor	Person	4	2,000,000	8,000,000
	Amount				52,450,000

Source: Results of primary data processing, 2023

Table 3 shows that the average variable cost incurred by the MSMEs is IDR 52,450,000.00 (assuming optimum capacity) or for one year (based on the original Tangkep MSMEs data).

In carrying out *Pindang* fish canning activities, it requires labor for the cooking process to labeling which must be provided

by the MSMEs. The payment system is under the prevailing wages in the city of Palembang. Wages are given monthly. The following is the total cost of the sum of fixed costs and variable costs (Nofiani et al. 2022). Table 4 shows the total cost of canned Patin fish *Pindang* with Tangkep MSMEs.

Table 4. Total cost of canned Patin fish *Pindang*

No	Total Cost	(Rp/Can)	(Rp/Month)	(Rp/Y)	(%)
1	Fixed cost	94.33	471,667.00	5,660,004.00	0.89
2	Variable Cost	10,490.00	52,450,000.00	629,400,000.00	99.11
	Amount	10584.33	52,921,667.00	635,060,004.00	100.00

Source: Results of primary data processing, 2023

Based on Table 4, the total cost that the MSMEs has to incur is IDR 10,584.33 for one can of canned Patin fish *Pindang* product. Revenue is the gross income from the business or it can be said that the entire revenue received by the MSMEs before deducting production costs (Harjanti et al. 2020).

For canned Patin fish *Pindang* products, the selling price is Rp. 25,000.00/can. The average acceptance is displayed in Table 5. The calculation of the MSMEs income predictions in one month is 72,078,333.00 per month, if product sales are expanded

Table 5. Flat-average revenue forecast of canned Patin fish *Pindang*

No	Description	Amount (Rp/month)
1	Selling Price (Rp/can)	25,000.00
2	Production (cans)	5000.00
3	Revenue (IDR)	125,000,000.00
4	Production Cost (Rp)	52,921,667.00
5	Income	72,078,333.00

Source: Results of primary data processing, 2023

In real conditions, Tangkep MSMEs produces 500 cans per year, so the calculation of income earned for one year is IDR 72,078,333.00.

Indonesia is rich in natural resources but has not been optimal in movement in the real sector which has an impact on limited employment opportunities and business opportunities. The majority of the population is engaged in agriculture which is very bound to nature so the products are dominated by natural primary products (resources-based and unskilled-labor intensive). The government continues to struggle to reduce poverty and increase unemployment because this is still a crucial problem today (Elizabeth 2019). Opportunities to meet the increasing primary human needs must be met by increasing the

competitiveness of processed products and developing the strength of the domestic agricultural industry that improves quality, quantity and efficiency. Fishery processing aims to increase the added value of domestic fishery products (Junianto et al. 2022). The processing of fresh marine fish into dried marine fish is an example of an effort to increase product competitiveness in the fisheries sector (Wachdijono, W., and R. Julhan 2019). The processing industry can create added value. Assessing the added value of processed fishery products will be an inspiration to examine more deeply the aspects of the market and marketing (Askar 2023).

Table 6. Calculation of the added value of canned Patin fish *Pindang*

No	Variable	Unit	Mark
Output, input and price			
1	Total output/product	Grams / Cans	270
2	Raw material inputs	Grams / Cans	315
3	Labor inputs	HOK/production process	4
4	Conversion factor		0.86
5	Labor coefficient		0.0127
6	Output price	IDR/Kg	25,000
7	Labor wages	IDR/HOK	100,000
Acceptance and profits			
8	Raw material prices	IDR/Kg	10,584
9	Contribution of other inputs	IDR/Can	-
10	Output value	IDR/Can	21,428.57
11	a. Value-added	IDR/Can	10844.24
	b. Value added ratio	%	51,00
12	a. Labor income	IDR/Can	1269.84
	b. Labor section	%	11.71
13	a. Profit	IDR/Can	9574.40
	b. Profit rate	%	44,68
Compensation for factors of production			
14	Margin	(Rp/kg)	10844.24
	a. Labor income	(%)	11.71
	b. Contribution of other inputs	(%)	-
	c. Profit	(%)	88,29

Source: Results of primary data processing, 2023

Based on the results of the research conducted, one can of Patin fish *Pindang* comes from raw materials or inputs weighing 315 grams. The results of these raw materials are made into canned Patin fish *Pindang* which weigh 270 grams per can. The ingredients are Patin fish and spices for *Pindang* soup. The calculated workforce is all workers who play a direct role in the processing of canned product. The workforce

is a workforce from Tangkep MSMEs. In processing this product, generally, 4 workers are needed for the cooking process to labeling.

In the results of the analysis with the Hayami method, the conversion factor was obtained by dividing the number of outputs by the number of inputs. Based on the calculation, the conversion factor for canned Patin fish *Pindang* is 0.86 indicating that

every 1 kilogram of ingredient made into canned Patin fish *Pindang* will produce 0.86 kg of canned Patin fish *Pindang*. The labor coefficient is the division between labor (HOK/year) and raw materials (kg/year) used in the production process. If each labor value is divided by the raw materials used, a labor coefficient value of 0.0127 is obtained, indicating that to process 100 grams of raw materials, one to two workers are needed. The need for labor to cook Patin fish *Pindang* is relatively small because the processing uses sophisticated technology done by machines. The output price set by the MSMEs for a can of Patin fish *Pindang* is Rp. 25,000.00. The selling price is determined by MSMEs by adjusting market prices. The average wage for workers in the *Pindang* fish canning business is IDR 100,000 per HOK.

Receipt and profit from canned *Pindang* products are calculated from the price of raw materials which is determined based on market prices. The average price for one can of *Pindang* is IDR 10,584.00. In this study, there was no contribution of other inputs. The output value is obtained from the product price multiplied by the conversion factor, which is IDR 21,428.57 indicating that for every one can of product, it will produce IDR 21,428.57 from the sale of canned Patin fish *Pindang*. The output value is equal to the gross receipts for every 1 can of input used. The added value generated from the processing of fresh Patin fish into canned Patin fish *Pindang* is IDR 10,844.24/can. Value added is obtained by reducing the value of the product with the price of raw materials and other input prices. The added value ratio is the ratio between added value and output value. In this study, the added value ratio generated in the processing of canned Patin fish *Pindang* was 51.00%. Based on the results of Hayami's analysis, a positive added value of > 40%, which is equal to 51.00%, means that the development of this canning agro-industry provides added value for the MSMEs. According to (Hubeis 1997) if the value added ratio is > 40%, it means that the added value is high.

Direct labor income is the result of multiplying the labor coefficient by labor wages (Supriadi et al. 2021). Direct labor income is the income obtained by labor from each processing of one kilogram of raw material. The direct labor income provided for each processing of one can of raw material which is processed into *Pindang* cans is IDR 1,269.84/can, so that the share of labor in this business is 11.71%. The large proportion of this share of labor does not reflect the magnitude of labor acquisition. This figure only illustrates the balance between the size of the share (labor income) and the share of the income of the business owner (Arifin et al. 2017). From the calculation of the added value, it is obtained that the MSMEs profit in canned Patin fish *Pindang* was IDR 9,574.40 per can with a profit rate of 44.68% after deducting labor costs.

If the level of profit earned (in percent) is high, then the agro-industry will increase economic growth. If the ratio of labor compensation to added value (in percent) is high, then agro-industry plays a role in providing income for its workers, so that it plays a greater role in overcoming the problem of unemployment through equal distribution of employment opportunities (Hasanah et al. 2016).

The next analysis is the value of the profits obtained by the MSMEs. The profit value is the difference between the added value and the labor reward, so it can be said to be a net added value because it has been deducted by the labor reward. The profit that is obtained by the MSMEs is IDR 9,574.40/can with a profit value of 44.68%. The profit value shows the amount of compensation received by the MSMEs for the processing of canned Patin fish *Pindang*. In part III, compensation for production factor owners, the margin is the difference between the output/*Pindang* value of canned Patin fish *Pindang* and raw materials or the amount of the contribution of the owners of the factors of production. The company's profit is the profit percentage of the processing owner to the margin. In this study, the profit obtained by the MSMEs in

canning Patin fish *Pindang* can reach 88.29%.

CONCLUSION

The canning of Patin fish *Pindang* provides benefits for the MSMEs with an added value of 51% from the sale of the product, so it can be recommended to continue with optimum production. Another advantage that can be obtained is that canned Patin fish *Pindang* has a product shelf life that is quite long, practical and nutritious so that it can be easily accepted by consumers, and is profitable for the MSMEs.

SUGGESTION

The government, the MSMEs, and the public need to promote canned Patin fish *Pindang*. The right strategy is needed to encourage the growth and development of canned processed food, especially canned Patin fish *Pindang* which is a special food from South Sumatra Province.

REFERENCES

- Aji, Vania Putri, Rasyid Yudhistira, and Wahyudi Sutopo. 2018. "Analysis of Added Value of Lemuru Fish Processing Using the Hayami Method." *Industrial Engineering Scientific Journal* 17 (1): 56.
- Arifin and M. Arsyad Biba. 2017. *Introduction to Agribusiness*. Muhajid Press. 1st ed. Bandung: Mujahid Press.
- Askar, Hardianty. 2023. "Added Value Of Smoked Tuna Household Industry In Bulukumba Regency, South Sulawesi, Indonesia." *International Journal of Scientific and Research Publications* 13(2): 53–63.
- Elizabeth, Roosganda. 2019. "Accelerating the Empowerment of Farmer Participation to Achieve Product Added Value, Supporting Agro-industry and Farmer Welfare." *UNES Journal of Sciencetech Research* 4 (1): 34–51.
- Feblin, Anis, and Feby Ariska. 2019. "Analysis of the Determination of the Cost of Production of Coffee at MSMEs The Coffee Legend in Sipatuhu Village, Bandung Agung District, South Oku Regency." *COLEGIAL Journals* 7 (1): 49–61.
- Firouz, Soltani, Mahmoud, Khaled Mohi-Alden, and Mahmoud Omid. 2021. "A Critical Review on Intelligent and Active Packaging in the Food Industry: Research and Development." *Food Research International* 141 (2021): 110113.
- Harjanti, Ririh Sri, Hetika, Erni Unggul SU, Anita K, Hikmatul Maulidah, and Iqmarina. 2020. "Ability to Determine the Right Cost of Production and Selling Prices for MSMEs in Tegal City in the Midst of the Covid 19 Pandemic." *Unwahas Service* 6 (2): 106–12.
- Hasanah, Uswatun, Masyhuri Masyhuri, and Djuwari Djuwari. 2016. "Analisis Nilai Tambah Agroindustri Sale Pisang Di Kabupaten Kebumen." *Ilmu Pertanian (Agricultural Science)* 18 (3): 141.
- Hubeis, M. 1997. *Towards a Professional Small Industry in the Era of Globalization Through Empowerment of Industrial Management*. Bogor: IPB Press.
- Junianto, M. Fachry Maula, Alifia Ajmala Palsa, Mia Sonia, Kartika Nurezka, Wike Normalisa, and Ezekiel Danovic Rambing. 2022. "Analysis of Value Added Products of Tenggiri Fish Dried Batagor at PT Hade Bogatama Nusantara, Bandung City, Indonesia." *Asian Journal of Fisheries and Aquatic Research* 20 (3): 10–18.
- Ndahawali, DH, F Wowling, SP Risnawati, S Kaharu, SH Gani, and Sasara SM. 2016. "Study of Fish Canning Process at PT. Sinar Pure Foods International Bitung." *Matric Bulletin* 13 (2): 42–53.

- Nofiani, Shasa Yuni, Kokom Komariah, and Acep Syamsudin. 2022. "Analysis of Determination of Cost of Production Based on the Full Costing Method in Sehi Kerpik MSMEs." *Journal of Management and Business (JOMB)* 4(1): 115–27.
- Nurhikmat, A, B Suratmo, N Bintoro, and Suharwadji. 2016. "The Effect of Temperature and Time of Sterilization on the F and Physical Values of Packaged Cans in Gudeg Canning." *Agritech* 36 (1): 71–78.
- Putra, Satria Iswara, Diah Setyorini Gunawan, and Sodik Dwi Purnomo. 2020. "Revenue Analysis and Added Value of the Coffee Processing Industry: The Hayami Method Approach" 3 (3): 994–1005.
- Rahayu, S. 2021. "Analysis of Land Area on Rice Farming Income in Sumbawa Regency." *Research Journal of Technology and Environmental Studies*, 297–303.
- Sugiyono. 2006. *Quantitative, Qualitative and R & D Research Methods*. Alfabeta. Bandung.
- . 2014. *Quantitative, Qualitative, and Combination Research Methods (Mixed Methods)*. Bandung: Afabeta.
- Suliyanto. 2018. *Metode Penelitian Bisnis : Untuk Skripsi, Tesis, Dan Disertasi*. Edited by Aditya Cristian. Yogyakarta.
- Supriadi, Dedi, Eulis Henda Nugraha, Restu Widayaka, and Rena. 2021. "Value Added Analysis of Marketing and Processing of Fishery Products in the City of Cirebon." *Investment Journal* 7(2): 1–12.
- Suprianto, and Sarifudin. 2020. "Analysis of Efficiency and Added Value of Agro-Industry Products Processed from Cowhide Crackers (Case Study in Seganteng, Mataram City)." *Journal of Economics and Business* 6 (2): 114–33.
- Wachdijono, W., and R. Julhan. 2019. "Analysis of Added Value in Dry Sea Fish Agroindustry in Gebang Sub District, Cirebon Regency." *Journal of Physics: Conference Series* 1360 (2019): 1–6.
- Wildayana, Elisa, MS Imanudin, H Junedi, Mohd. Zuhdi, and M Edi Armanto. 2016. "Parameters Affecting Household Income Diversity of Farmer's Tribes in South Sumatra Tidal Wetland." *Sriwijaya Journal of Environment* 1 (3): 47–52.
- Yanita, Mirawati, Ernawati HD, Zulkifli Zulkifli, Dompak Napitupulu, and Gina Fauzia. 2021. "Scheme of Sustainable Self-Help Oil Palm Rejuvenation Pattern in Jambi Province." *Scientific Journal of Socio-Economics of Business* 24 (01): 21–27.