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SWOT and QSPM Analysis for The Implementation of Basic Processing Feasibility in Pindang Fish Quality Development in Pekalongan Regency, Central Java

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ABSTRACT Indonesian salted-boiled processing is a type of fish processing that is widely practiced by fish processors in the Pekalongan Regency. This fish process will produce a product known as pindang. basic processing feasibility is one of the mandatory programs that must be implemented by fish processing businesses to ensure that the products have good quality and safety. For this reason, a series of efforts are needed to encourage pindang fish processors to be able to implement this program. This study aims to identify internal and external strategic factors, create alternative strategies, and prioritize policy strategies to encourage the implementation of basic processing feasibility for pindang quality development. The research was conducted using in-depth interviews with key stakeholders with an interest in this issue. Field observations were conducted to complement the interviews that had been conducted. The SWOT and QSPM analyses were used to analyze the data. The analysis yielded six alternative strategies for carrying out the basic processing feasibility program, with the priority strategy being the optimization of assistance by fisheries extension officers.

Keywords: Pindang fish; processing feasibility; QSPM; Strategy; SWOT

INTRODUCTION

Pindang fish has good potential as a food source that can help increase people's protein consumption. This product is in demand by the community, especially the middle to lower class, because of its affordable price, distinctive taste, ease of service, and high nutritional value (Bremanti *et al*., 2018). Pindang, which is made by combining heating and salting, has a good shelf life, a taste that is not too salty and can be made from various types and sizes of fish (Junianingsih, 2015). Pindang has a varied appearance, flavors, texture and durability depending on the quality of the raw materials and the manufacturing process (Swastawati & Susanto, 2009). The success of pindang processing is dependent on the quality of raw materials used and environmental conditions. The raw materials must meet requirements so that the resulting pindang fish is good quality. The primary raw materials of concern are fish and salt. Good quality fish as raw materials must be considered. should not use poor quality fish because it will produce a less good final product, thereby reducing profits. The quality of pindang fish is also affected by the salt used. The quality of salt and the right concentration will produce pindang fish with better quality and durability. Meanwhile, the environmental requirement for the success of pindang processing is the condition of the pindang processing environment that is well-maintained sanitation and hygiene (Swastawati & Kurniasih, 2019).

There are 217 pindang fish processing units in the Pekalongan Regency, which represents 50.23% of all fish processing facilities (DKP Pekalongan, 2023). These pindang processors operated alone at first, but after obtaining advice from fisheries extension officers and other institutions, they began to collaborate and create groups known as Fish Processing and Marketing Groups (POKLAHSAR). The development of these groups seeks to facilitate the learning and coaching process, as well as economic collaboration (KKP, 2012). Pindang processing groups can be found in numerous Pekalongan Regency sub-districts, including Bojong, Kedungwuni, Karangdadap, Siwalan, and Wonokerto. All of these fish processing units are traditional and operate on a micro-scale (DKP Pekalongan, 2023).

Traditional fish processors generally adopt techniques that have been passed down from generation to generation and do not have a working system that is capable of ensuring the implementation of basic processing feasibility. In addition, these fish processors have limited processing competencies, low knowledge of the quality of raw materials and additives, and do not understand good packaging procedures (Amir *et al*., 2019). Most of the pindang processing businesses operate at a micro-scale, with very simple infrastructure and procedures, such as low-circulation washing, the use of simple wood stoves that do not have clear cooking temperatures, open processing spaces, and dirt floors (Thaheer *et al*., 2015). This condition results in the difficulty of implementing Good Manufacturing Processes (GMP) and Sanitation Standard Operating Procedures (SSOP). These two standards are critical to the success of the basic processing feasibility program (Fatchiya *et al*., 2019). Whereas the basic processing feasibility program has an important role in guaranteeing high-quality pindang (Masrifah, *et al*., 2015; Angraeni *et al*., 2019). Law No. 31/2004 on Fisheries Article 20 mandates that every person conducting fish handling and processing must fulfil and implement basic fish processing feasibility requirements to provide quality assurance and safety of fishery products. Every person who meets and applies the fish processing feasibility requirements obtains a Certificate of Processing Feasibility (SKP).

Pindang processing is one of the most popular fish processing businesses and the main source of income for most fish

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processors in Pekalongan Regency. Because most people still like pindang, this business still survives. However, pindang processing businesses face many challenges amid many other options for quality food substitutes, as well as the public's demand for quality and safe food products. To ensure the quality and safety of the products produced, it is necessary to develop a policy strategy that can encourage pindang processing units to implement a basic processing feasibility program. The purpose of this study is to identify internal and external strategic factors in the pindang processing business, create alternative strategies, and prioritize policy strategies to encourage the implementation of basic processing feasibility programs in pindang processing units in the Pekalongan Regency.

METHODS

This research uses an applied study approach to solve problems and encourage a basic processing feasibility program implementation for pindang quality development in Pekalongan Reagency. The research used primary data collected through in-depth interviews and field observations conducted in the Pekalongan Reagency from May to June 2023. This data relates to the evaluation of the internal strategic factor of the pindang processing business, which includes strengths and weaknesses, as well as strategic factors of the external environment, such as opportunities and threats that may affect the implementation of a basic processing feasibility program at pindang processors in Pekalongan Regency. Interviews using questionnaires were carried out with key stakeholders, specifically the POKLAHSAR leader (three persons), Marine and fishery product quality supervisors (two persons), fisheries surveillance officers (one person), fisheries extension officers (six persons) and academics (one person). The observations were made to 30 pindang processing units to complement the interviews.

The gathered data was examined utilizing the SWOT approach before proceeding with QSPM Analysis. SWOT analysis is based on logic to maximize strengths and opportunities while minimizing weaknesses and threats that originate from the internal and external environments of the business. The analysis process will produce four types of strategies: Offensive strategies (SO), Conservative strategies (WO), Competitive strategies (ST), and defensive strategies (WT) (Rangkuti, 2016; Dorcheh *et al.*, 2021). The analysis continued to determine the priority of policy strategies using the Quantitative Strategy Planning Matrix (QSPM) method. This analysis helps evaluate and prioritize alternative strategies derived from SWOT analysis. QSPM analysis will measure the relative attractiveness of alternative strategies against internal and external factors, making it possible to understand the influence of these strategies on the internal and external environment (David & David, 2016).

RESULTS AND DISCUSSION

Internal factors identification

The results of the identification of internal factors that are the strengths of pindang processing businesses in Pekalongan Regency are as follows:

Availability of labor that is ready to work

The pindang fish processing units in Pekalongan Regency do not experience difficulties in finding labor; quite a few people are willing to work in this sector. In general, labor in pindang fish processing units generally comes from the family environment. However, if the need for labor is not met, fish processing units will recruit workers from outside the family, especially those living around the location of the processing unit. According to Surya *et al.* (2021) research, Micro and small businesses generally have similar characteristics, one of which is employing workers who come from the family environment or have kinship relations.

Low labor costs

Pindang processing businesses in Pekalongan Regency are family businesses where family members such as husbands, wives, or children are involved in the processing process without receiving payment for their work. Some fish processing units also involve nearby neighbors to assist in the process by providing low daily wages, thereby reducing production costs.

Fish processing unit managers are persistent and have long business experience

The results of the interviews show that pindang fish processing units in Pekalongan Regency have been operating for a relatively long period, with an average of 21 years. The long duration of this business means that pindang fish processing unit managers have a high level of work experience and strong tenacity in facing various challenges that arise. This can be seen from their ability to maintain the continuity of the pindang business.

Simple production process

Pindang processing is one of the traditional processing techniques that has relatively uncomplicated production stages, is easy to work with, and can be done with simple equipment. The uncomplicated process of fish scavenging has several advantages, including reducing errors in production and having a fast production time.

Joining fish processing and marketing groups (POKLAHSAR) as a collaborative platform for business.

POKLAHSAR serves as a platform for groups of main actors in the fisheries processing and marketing sector to carry out economic activities together. The interview results show that assistance and coaching from the fisheries office and fisheries extension officers are more focused on fisheries group members compared to independent main actors. Joining a group provides an opportunity to obtain assistance and grants from the government, by the regulation of the Regent of Pekalongan Regency which requires that the main actors who can be targeted as recipients of assistance and grants in the fisheries sector are members of fisheries groups.

The results of the identification of internal factors that are weaknesses in pindang processing businesses in Pekalongan Regency are as follows:

Low quality human resources for fish processors

Limited formal education is generally a weakness that can hamper fish processing actors in the Pekalongan district in their efforts to improve the quality and efficiency of their businesses. This can also affect their understanding of regulations applicable to fisheries processing activities.

Lack of awareness of the importance of GMP and SSOP implementation

Pindang processors in Pekalongan District do not have sufficient understanding and awareness of the impor-

tance of implementing GMP and SSOP in the production process. This condition can be an obstacle to improving product quality, ensuring product safety, and meeting basic processing feasibility standards.

Use of traditional processing technology

The processing of pindang in Pekalongan Regency still relies on traditional methods and equipment that have been used for generations. This method is believed to be able to maintain the flavors and characteristics of pindang that have been in demand by consumers. However, the use of traditional processing technology is considered less efficient in production and does not optimally support the improvement of product quality.

Simple packaging

Pindang products in Pekalongan Regency are transported to markets or consumers using cooking containers such as basins or packaged using materials that are not entirely safe, such as used cement paper and bamboo baskets. When sold, the fish is wrapped in banana leaves, oil paper, or even old newspapers. Such packaging is not effective enough to keep the product clean and maintain its good quality.

Facilities and infrastructure that do not meet the requirements for the assessment of SKP

The facilities and infrastructure owned by fish processing businesses in Pekalongan Regency are still simple and traditional. Some pindang processing units have adopted changes to the cooking process by using gas stoves, although the use of wood stoves is still common. This condition can be an obstacle for pindang processing businesses to meet the requirements for the assessment of SKP referred to as PermenKP No. 17 of 2019 and achieve the desired quality standards by the established guidelines.

Limited capital

Pindang processing businesses in Pekalongan Regency have limited financial resources, which may affect their ability to make improvements to meet the requirements of basic processing feasibility standards to encourage the improvement of the quality of the products produced.

External factors identification

The results of the identification of external factors that constitute opportunities for pindang processing businesses in Pekalongan Regency are as follows:

Government policy support for capacity building of main actors in the fisheries sector

The government has shown considerable interest in helping to improve the capacity of main actors in fishery product processing, especially in improving the quality and safety of fishery products for micro and small-scale enterprises. This is evident from the inclusion of this activity in the priority programs and activities in the work plan launched by the government.

Assistance from fisheries extension officers

Fisheries extension officers are functional personnel tasked with assisting groups of main actors in the fisheries sector in the areas they foster through fisheries extension programs. The aim is to encourage the growth of independence in marine and fisheries businesses, which in turn will increase their business productivity. The interview results show that fisheries extension officers have a work program to hold meetings with each group in the context of extension at least once per month.

Having regular customers

In general, two strategies are used to market pindang fish goods in the Pekalongan Regency. First, pindang processing units with a daily output greater than 15 kg sell their wares through district market stalls. Meanwhile, pindang processing units with daily production of less than 15 kg sell their products by travelling to numerous communities near their home. Travelling sales have fixed clients, primarily residential consumers, whereas district market sales have fixed customers, specifically traders who would re-sell the pindang fish items.

Increasing fish consumption

The level of fish consumption in Pekalongan Regency is increasing, as can be seen from the data on per capita fish consumption, which continues to increase every year. In 2022, the average fish consumption per individual was 27.84 kg/cap/year, an increase compared to the previous year's 24.54 kg/cap/year (DKP Kabupaten Pekalongan, 2023).

Raw materials are always available

Interview results show that throughout the year there is always an available supply of scad mackerel (Decapterus spp) that can be used as raw material in the pindang process. This information is in line with data on scad mackerel (Decapterus spp) production at the Perikanan Nusantara Port of Pekalongan in 2022, which noted that the average production of scad mackerel (Decapterus spp) reached 413,665 tons each month (PPN Pekalongan, 2023).

The results of the identification of external factors that pose threats to pindang processing businesses in Pekalongan Regency are as follows:

Limited budget allocation for activities from related agencies

The budget allocated by the Pekalongan Regency Maritime Affairs and Fisheries Agency for product quality development of fish processing units is very limited. This condition has the potential to hamper the development of fish processors and the improvement of the quality of fishery products in the Pekalongan Regency.

Socialization of the importance of an SKP that is not yet optimal

Socialization of the importance of obtaining an SKP and regulations related to quality standards and food safety to the main actors of fish processing in the Pekalongan Regency is considered very minimal. As a result, the knowledge of fish processors on the application of basic processing feasibility programs, as well as the requirements of quality and safety standards for fishery products is limited.

SKP standards remain challenging for the main actors in fish processing to meet

The requirements that must be prepared by fish processing units in Pekalongan Regency to apply for a Processing Feasibility Certificate are quite numerous and difficult to fulfil, thus making main actors in fish processing tend to be reluctant to do so unless there is encouragement and incentives from the government.

Raw material costs continue to rise

The price of ingredients used in the processing of pin-

dang fish often fluctuates and tends to increase from time to time. Processors are not always able to adjust the selling price to maintain the marketability of the pindang fish they produce. The main challenge for fish processing businesses in Pekalongan Regency is the price of these raw materials, as it has the potential to affect the profitability and sustainability of their businesses.

The number of alternative food products

With more and more similar food products on the market, consumers have many choices. For reasons of price, quality and so on, consumers often switch to other food products, especially at certain times of the year, thus disrupting pindang sales and impacting business turnover.

Internal factor evaluation (IFE) analysis

The IFE matrix is used to analyze the internal environment by considering the results of identifying internal strategic factors that are strengths and weaknesses in the implementation of the basic processing feasibility program in the pindang processing unit. Furthermore, the weighting and rating of each factor was determined. The evaluation matrix of internal strategic factors in the pindang processing business is presented in Table 1. The internal strategic factor is the biggest strength of the pindang processing unit joining Fish Processing and Marketing Groups (POKLAHSAR) as a collaborative platform for business, with a weighted score of 0.352. Joining the group provides benefits to the fish scavenger businesses, especially in exchanging information and experiences related to business operations. Collaboration in groups allows pindang processors to work together in running the business. For example, processing units with a small turnover can obtain raw material supplies from other group members who have access to wholesalers. Grouping also provides more opportunities to get guidance and assistance from the government.

The internal factor that is the highest weakness is facilities and infrastructure that do not meet the requirements for the assessment of the SKP, with a weighted score of 0.363. The limited facilities and infrastructure make it difficult for the pindang processors to implement a basic processing feasibility program. Processing unit buildings that have not been designed according to good standards, processing rooms that are inadequate and some are still shared with family kitchens, and the availability of inadequate processing equipment, need major attention to improve the quality of pindang fish products in Pekalongan Regency.

The assessment of internal factors shows that joining POKLAHSAR is the most influential strength, so this variable must be optimally utilized to make improvements to the existing weakness variables, while the facilities and infrastructure of the pindang processing unit that do not meet the requirements for the assessment of SKP are the highest weakness variable, so they require special attention to make improvements.

Table 1. The evaluation matrix of internal strategic factors in the pindang processing business.

No.	Strengths	Weight	Rating	Score
1.	Availability of labour that is ready to work	0,081	3,000	0,243
2.	Low labour costs	0,098	3,385	0,333
3.	Fish processing unit managers are persistent and have long business experience	0,087	2,923	0,253
4.	Simple production process	0,084	3,154	0,264
5.	Joining Fish Processing and Marketing Groups (POKLAHSAR) as a collaborative platform for business	0,095	3,692	0,352
	Total Strength scores			1,445
No.	Weakness	Weight	Rating	Score
1.	Low quality of human resources for fish processors	0,098	3,462	0,340
2.	Lack of awareness of the importance of GMP and SSOP implementation	0,104	3,385	0,352
3.	Use of traditional processing technology	0,075	2,615	0,197
4.	Simple packaging	0,075	2,000	0,150
5.	Facilities and infrastructure that do not meet the requirements for the Assessment of SKP	0,110	3,308	0,363
6.	Limited capital	0,092	3,385	0,313
	Total weakness scores	1,000		1,715
	Total score of internal factors			3,161

External factor evaluation (EFE) analysis

The EFE matrix is used to analyze the external environment by considering the results of identifying external strategic factors that become opportunities (Opportunities) and threats (Threats) in the implementation of the basic processing feasibility program in the pindang processing unit. Furthermore, the determination of the weight and rating assessment of each factor is carried out. The evaluation matrix of external strategic factors in the pindang processing business is in Table 2. The external strategic factor that is the highest opportunity for pindang processing units is assistance from fisheries extension officers, with a weighted score of 0.435. Assistance from fisheries extension officers needs to be implemented optimally because pindang processors are very dependent on fisheries extension officers to obtain various information related to business development, amidst the limitations of fish processors in accessing other sources of information. This is by the role of fisheries extension officers as facilitators in accessing capital and financing for the marine and fisheries sector, market access, access to information and technology, and providing socialization of laws and regulations related to marine and fisheries.

The external strategic factor that poses the highest threat is raw material cost continues to rise, with a weighted score of 0.450. The price of frozen scads mackerel (Decapterus spp) is unstable and tends to increase, with

Table 2. The evaluation matrix of external strategic factors in the pindang processing business.

No.	Opportunities	Weight	Rating	Score
1.	Government policy support for capacity building of main actors in the fisheries sector	0,067	2,154	0,144
2.	Assistance from fisheries extension officers	0,120	3,615	0,435
3.	Having regular customers	0,097	3,000	0,291
4.	Increasing fish consumption	0,100	3,000	0,301
5.	Raw materials are always available	0,117	2,923	0,342
	Total opportunity scores			1,514
No.	Threats	Weight	Rating	Score
1.	Limited budget allocation for activities from related agencies	0,087	2,231	0,194
2.	Socialization of the importance of an SKP that is not yet optimal	0,097	2,538	0,246
3.	SKP standards remain challenging for the main actors in fish processing to meet	0,110	2,923	0,323
4.	Raw material costs continue to rise	0,127	3,538	0,450
5.	The number of alternative food products	0,077	1,769	0,136
	Total threat scores	1,000		1,349
	Total external scores			2,862

price changes depending on wholesaler stock availability. Other ingredients, such as salt, have also seen significant price increases. Such price increases will erode the profits earned and pose a threat to pindang quality development.

The assessment of external conditions shows that assistance provided by fisheries extension officers to pindang processors is the most influential opportunity, so this variable must be optimally utilized to anticipate the threats faced, while the increasing cost of raw materials is the highest threat variable, because the cost of raw materials is the largest component of production costs, so this condition seriously needs to be anticipated for for pindang quality development in Pekalongan Regency.

Alternative strategies for implementing the basic processing feasibility for pindang quality development

The values obtained from the evaluation of internal and external factors are compared and outlined in the SWOT analysis diagram to determine the strategic position for implementing the basic processing feasibility program for pindang quality development. Based on the IFE Matrix, it is known that the internal condition gets an assessment score on the strength factor of 1.445 and the weakness factor of -1.715. The summation value between the strength and weakness scores is -0.27. Meanwhile, the EFE Matrix shows that the external conditions obtained an assessment score on the opportunity factor of 1.514 and a threat factor of -1.349. The summation value between the opportunity and threat scores is 0.16. The comparison of the internal and external evaluation scores shows the ordinate position, which is -0.27: 0.16. These results show that the position of the pindang processing business in Pekalongan Regency is in quadrant III, meaning that the pindang processing business has great opportunities but on the other hand, has worrying internal weaknesses, a situation like this supports taking a turn-around strategy, that is, making strategic changes to focus more on improving internal weaknesses while taking advantage of available opportunities because the old strategy is considered not effective enough to overcome this challenge (Rangkuti, 2016).

Referring to the recommendations of the SWOT analysis results to make strategic changes with a focus on improving weak internal conditions while utilizing the opportunities available in the external environment. Therefore, several alternative strategies for implementing the basic processing feasibility program for the development of pindang product quality were formulated. The alternative strategies are as follows:

S-O strategy

The strategy of implementing the basic processing feasibility program for the development of pindang product quality by utilizing all the strengths possessed by the pindang processing business to seize as many opportunities as possible. Strategies that can be applied include: (a) Improving service and product quality for consumer satisfaction, and (b) Strengthening POKLAHSAR for business development and independence.

W-O strategy

The strategy of implementing the basic processing feasibility program for the development of pindang product quality by minimizing the weaknesses and making the most of existing opportunities. The strategy that can be applied is to Optimization of assistance by fisheries extension officers.

S-T strategy

The strategy of implementing the basic processing feasibility program for the development of pindang product quality by relying on all the strengths possessed by the pindang group to minimize various threats that may arise. The strategy that can be applied in the provision of cold storage in processing centres is to make it easier for processors to obtain and store raw materials and maintain the cold chain of fish.

W-T Strategy

The strategy for implementing the basic processing feasibility program for developing the quality of pindang products is based on a defensive strategy, namely by minimizing the weaknesses that are owned and avoiding possible threats that arise. Strategies that can be applied are (a) Training to improve the competence of processors in fulfilling GMP and SSOP, and (b) Building collaboration with various parties to increase the capacity of processors.

Table 3. QSP matrix analysis.

No	Strategy Alternatives	TAS	Priority
1.	Optimization of assistance by fisheries extension officers (WO)	6,521	1
2.	Strengthening Poklahsar for business development and independence (SO2)	6,468	2
3.	Training to improve the competence of processors in fulfilling GMP and SSOP (WT1)	5,802	3
4.	Improving service and product quality for consumer satisfaction (SO1)	5,694	4

Prioritization of strategies for implementing basic processing feasibility in the pindang product quality development

The results of the QSP matrix analysis (Table 3), produce a priority order of alternative strategies based on the Total Attractive Score (TAS) value. The highest TAS value is an alternative strategy that is the priority to be taken until the alternative strategy with the TAS value below becomes the next priority.

The alternative strategy that is the priority is the optimization of assistance by fisheries extension officers, with a TAS value of 6.521. This strategy is carried out by minimizing the internal weaknesses of the pindang processing business and focusing on taking advantage of existing opportunities. According to Law No. 16/2006 on the Agricultural, Fisheries and Forestry Extension System, fisheries extension officers are individuals who have the duties, responsibilities and authority to organize learning programs for main actors and entrepreneurs in the fisheries sector. The aim is to encourage them to be willing and able to organize and access information about markets, technology, funding, and other resources to increase productivity, business efficiency, and income. In addition, the extension also aims to increase public awareness of the fisheries industry and business. Extension programs improve individuals' knowledge, skills and attitudes. Improved knowledge results in a shift from ignorance to better understanding, improved skills result in a shift from limitations to better abilities, and improved attitudes result in a shift from being unprepared to ready to take advantage of existing business opportunities.

Fisheries extension officers are a source of information and knowledge for pindang processors. Currently, much of the information provided is in the form of opportunities to access government assistance, access to capital and improve group dynamics. By their role in extension, fisheries extension officers should be more involved in developing better fishery products. According to Suheimi (2018) fisheries extension officers function as motivators, educators, counsellors, and mediators. In their role as motivators, extension officers encourage fish processors to improve product quality, such as supporting the implementation of packaging practices to extend shelf life and increase product selling value. As educators, extension officers provide knowledge about good processing procedures, cold chain practices, the risks posed using inappropriate packaging materials, and an understanding of the development of regulations applicable to fish processing. As counsellors, extension officers are always available to answer questions and provide guidance, both during field visits and through long-distance communication. Moreover, extension officers also serve as the main source of information for fish processors. In the role of mediator, extension officers assist fish processors in overcoming problems that arise, including helping them meet legal requirements, such as obtaining legality through notarial deeds needed for group institutional strengthening, as well as access to government support and assistance.

The second priority alternative strategy is Strengthening POKLAHSAR for business development and independence, with a TAS value of 6.468, this strategy utilizes all strengths to seize existing opportunities. According to Rimbawati *et al*. (2018), strengthening a group is related to the dynamics of the group. Group dynamics refer to the way of interaction and dependence between group members with one another and between group members which will determine the behavior of group members in acting and carrying out activities to achieve common group goals. The dynamics of fish processing groups are influenced by group structure, coaching and development, group atmosphere, and group effectiveness (Suheimi, 2018).

The existence of a fisheries group has a positive role, this can be seen in joint social activities that are a driving force for business cooperation and building marketing networks, fostering enthusiasm for production and business development, opening access to capital, assistance or opportunities to participate in empowerment programs and capacity building, both from government and non-government institutions (Suheimi, 2018). In active groups, there is enthusiasm and cohesiveness in carrying out group meeting activities regularly so that there is an exchange of various information such as raw material prices, marketing opportunities and business experience, as well as collaboration among group members to obtain raw materials. In addition, there is cooperation in the use of processing equipment, such as the use of freezers. Active groups also have more access to guidance and counselling from relevant officials.

Institutional strengthening of groups also needs attention. This is done by improving the completeness of administration, increasing the class of the group, and fulfilling the legality of the group's legal entity by making a notarial deed. Institutional strengthening can open access to government assistance such as fish processing unit renovation, processing equipment assistance, and capital assistance because Pekalongan Regent Regulation No. 50/2018 requires that recipients of government assistance in the marine and fisheries sector are active fisheries groups that have legal entity as evidenced by a notarial deed.

The Training to improve the competence of processors in fulfilling GMP and SSOP is the third priority strategy alternative with a TAS value of 5.802. This strategy is a W-T

type strategy designed to minimize internal weaknesses and avoid threats from the external environment of the pindang processing business. Currently, the condition of human resources (HR) can pose obstacles to improving the quality of pindang. These conditions include low education, processing knowledge that is still based on hereditary traditions and customs, and a lack of awareness about the importance of implementing GMP and SSOP, thus creating obstacles that can hinder the improvement of the quality of pindang in the Pekalongan Regency. Challenges become more complex due to external threats such as the lack of socialization on the importance of having an SKP, complex Processing Feasibility requirements, and the number of better alternative food products that can encourage consumers to switch to other food products.

The lack of competency improvement training on the implementation of GMP and SSOP has resulted in low competence, so processors do not have sufficient skills to produce good quality pindang. Limited knowledge is also evident from the inadequate packaging of products, as well as the continued use of hazardous packaging materials. In addition, low knowledge and inappropriate processing habits that have become routine affect behavior in the practice of processing activities, making it far from compliance with basic processing feasibility and not oriented to produce pindang that meets applicable quality and safety standards. According to Sucipto *et al.* (2020) inadequate education and training on food safety is one of the important causes of the low safety of food products produced. Training is a form of intervention to change knowledge and attitudes about hygiene and good production practices, and in the long term will result in improved food safety and business productivity in dairy producers in India (Lindahl *et al.*, 2018).

The training obtained by pindang processors in the Pekalongan Regency is mostly training to diversify the products produced. Training on good processing methods, including how to apply GMP and SSOP, is rarely organized, so the understanding of pindang processing group members on the application of basic processing feasibility, and the quality of pindang fish according to Indonesian national standards (SNI) is still low. This is reflected in the low level of compliance with the basic processing feasibility requirements that have been required in SKP. There are still many conditions where managers of fish processing units do not understand that the application of basic processing feasibility is a must in the pindang processing processing.

The fourth priority strategy is to improve service and product quality for customer satisfaction, with a TAS value of 5.694. This strategy is designed to optimize all the strengths of the pindang processing business, to capture and take advantage of existing opportunities. With low labour wages and simple production processes, pindang processors can control production costs, resulting in pindang at competitive prices. A workforce that is always ready to work and raw materials that are always available will ensure the continuity of production so that the availability of pindang in the market will be maintained. The long business experience and perseverance of pindang processors are expected to encourage commitment to improving the service and quality of pindang.

Being an active member of a fish processing group provides a great opportunity to obtain government support to improve the ability to provide quality services and superior products. Good service and quality products are expected to satisfy customers who have become loyal customers, and even attract new customers, especially when there is an increasing trend in fish consumption. Satisfaction is an evaluation made by customers based on feelings that arise because of comparing perceived product performance with their expectations about the product purchased. The feeling of satisfaction will arise if the product can meet or exceed expectations. Customer expectations or expectations of products are based on information gathered from previous purchasing experiences, information from people around them who have bought these items, and information provided by sellers or competitors. Some of the factors that influence the level of customer satisfaction are product quality, price, and services provided (Kotler & Keller, 2009).

The next priority sequence of alternative strategies is the provision of cold storage in processing centers to make it easier for processors to obtain and store raw materials and maintain the cold chain of fish, with a TAS value of 5.467. This strategy utilizes internal strengths to overcome threats from the external environment. Fish is the most important raw material that determines the operation of pindang processing businesses in Pekalongan Regency. Fish raw materials are obtained at a high price from traders in Pekalongan Municipality. Traders will buy fish in bulk at auctions when prices are low and keep the stock in their cold storage, which allows them to control the price of fish. Pindang processors cannot do this as there are no cold warehouses that pindang processors can use to store fish, and entrusting fish to cold storage services is considered impractical as it adds to production costs. In addition, the lack of self-managed cold storage facilities prevents pindang processors from ensuring the traceability of the fish and ensures adequate handling of the fish during storage. This makes it difficult for pindang processors to produce quality products at competitive prices due to their dependence on traders.

The availability of raw materials is a key factor in the fish processing process. Therefore, the quality of raw materials determines the result in fish processing production. Ease of obtaining fish, fish quality, fish price, and Supplier support (fishermen, collectors, retailers) are factors that determine the availability of raw materials for the fish processing industry (Suheimi, 2018). The price of raw materials is the main consideration for processors in setting the selling price of pindang because the cost of purchasing fish raw materials is the largest component of pindang processing production costs. This is in line with Setiyorini *et al.*, (2018) research which states that the pricing of pindang fish is based on the price of raw materials, processing wages, operational costs, and profit margins adjusted to the price of competing products. However, the price of fish raw materials is the main factor in determining the selling price of pindang fish. According to Apriyeni & Wati (2022), the presence of cold storage in the capture fisheries centre area can control the price of fish in the market. Cold storage owners will buy fish caught by fishermen at low prices and resell them at high prices. Although this independent cold storage takes a large profit margin, on the other hand, it has a role in maintaining the availability of fish stocks in the market.

The last alternative strategy priority is to build collabo-

ration with various parties to increase the capacity of processors, with a TAS value of 5.257. The pindang processing business in Pekalongan Regency is one of the fish processing businesses that have the potential to be developed because the product produced is quite popular and is one of the food sources that the community relies on. However, due to internal weaknesses and external threats, the ability of pindang processors to produce quality products and maintain business sustainability in the future is a major challenge. Overcoming this requires the intervention of various parties such as government agencies, universities, state-owned enterprises and the private sector, which work together to increase the capacity of pindang processors in Pekalongan Regency.

Within a community group, capacity building is conducted at three levels: human (individual), organizational and social. Individual capacity building is by improving skills, knowledge and performance through training, apprenticeships, incentives and motivation. Organizational capacity building involves improving the group's organizational performance through strengthening the system, building a sense of community and encouraging member participation. At the social level, it relates to an environment that supports organizational development through the preparation of favorable policies, the provision of infrastructure, the development of partnerships and social networks. This capacity-building process can be achieved through collaboration and synergy from various parties, such as government agencies, educational institutions, the industrial world, community organizations, and these community groups (Putri & Eriyanti, 2020; Piabuo *et al*., 2023).

CONCLUSION AND RECOMMENDATION

Conclusion

Internal factors that are the most influential strengths for the application of basic processing feasibility for pindang quality development are joining POKLAHSAR as a collaborative platform in business, while the biggest weakness factor is the facilities and infrastructure that do not meet the requirements for the Assessment of SKP. The external factor that becomes the most promising opportunity to be utilized is assistance from fisheries extension officers, while the factor that becomes the biggest threat is Raw material cost continues to rise.

Six alternative strategies can be used to encourage the implementation of basic feasibility for pindang quality development in Pekalongan Regency based on the following priorities: (1) the optimization of assistance by fisheries extension officers, (2) Strengthening POKLAHSAR for business development and independence, (3) Training to improve the competence of processors in fulfilling GMP and SSOP, (4) Improve service and product quality for consumer satisfaction, (5) provision of cold storage in processing centers is to make it easier for processors to obtain and store raw materials and maintain the cold chain of fish, and (6) Building collaboration with various parties to increase the capacity of processors.

Recommendation

The Pekalongan Regency Government cooperates with fisheries extension officers to intensify guidance, socialization and training activities for pindang processing groups, especially those related to the fulfilment of the basic processing feasibility requirements, as well as other fishery product quality and safety provisions. In addition, supervision from various parties to the application of basic processing feasibility to provide quality assurance and safety of fishery products marketed to the public, as well as to provide incentives to POKLAHSAR who have made improvements towards the application of basic processing feasibility, to encourage the spirit to produce quality products following SNI. POKLAHSAR, the Pekalongan government and fisheries extension officers work together to build good relationships with various parties: the central government, universities and the business world to help develop the ability to apply basic processing feasibility to develop the quality of pindang fish products in Pekalongan Regency by the priority alternative strategies that have been formulated.

AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration between all authors. Author MR designed the study, performed the SWOT and QSPM analysis, the literature searches and the first draft of the manuscript. Co-authors FS and PHR managed the analyses of the study, managed the literature searches and revised the final draft of the manuscript. All authors read and approved of the final manuscript.

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