

## **Implementation Strategy For Fishery Processing Business Based On Blue Economy**

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### **Abstract**

This study investigates the readiness and capacity of the East Fakfak district community to transform fish into micro- and small-scale business products, aiming to contribute to the development of the blue economy and enhance their welfare. Using a semi-qualitative research approach through surveys, the research team, including surveyors, conducted direct observations and conducted comprehensive interviews across all villages in East Fakfak. The objective was to assess the community's preparedness to process fish into marketable, high-quality, and uniquely organoleptic preserved products characteristic of Fakfak. The analysis revealed widespread unfamiliarity among the inhabitants of the East Fakfak district with fish-processing technologies. A traditional preference for consuming fresh fish, attributed to the ease of access to fish resources, has significantly hampered the advancement of fishery product processing in the region. This study underscores a critical need to introduce and foster fish processing knowledge and technologies within the community. By educating and equipping the local populace with the necessary skills and resources to undertake sustainable fish processing, there lies a potential to unlock a new avenue for economic development. Such initiatives would not only diversify income sources but also ensure the longevity and sustainability of fishery resources, pivotal to the prosperity of East Fakfak's blue economy.

**Keywords:** Blue economy, fishery processing business, processing, technology, Fakfak.

### **1. Introduction**

Accelerating economic development in the form of investment breakthroughs which at the same time bring in the involvement of the workforce so that the population increases. The increase in population who (mainly) come from the islands of Java or Bali (and other densely populated areas) who then want to settle with their families in the East Fakfak district is one of the strategic needs that the people of the East Fakfak district want to participate in processing on natural resource management, and turning the wheels of the economy. Research (Bachtiar, Diningrat, Kusuma, Izzati, & Diandra, 2020) states that the Government's hard efforts to level communication networks in all corners of the country must be able to be utilized as fully as possible by the community to build accelerated economic development, towards a digital economy.

The development of digitalization has been marked by the introduction of the 3G network into the East Fakfak district area which should be able to help the community open downstream programs through fishery product processing businesses. Fisheries and marine resources are a type of natural potential that is very abundant but has not been able to be enjoyed by the people of East Fakfak district themselves. According to (Bappenas, 2016), (Soedrijanto, Istiqomah, & Rizkina, 2020) and (Soedrijanto, Istiqomah, & Soeprijadi, 2021) developing a modern fish processing business is closely related to the use of information technology; because processed fish products that want to enter the global market must meet traceability requirements.

East Fakfak is one of 17 districts in Fakfak district which is on the east coast, facing the Banda Sea. According to (Fakfak, 2022) East Fakfak district with an area of 522 Km<sup>2</sup> only consists of 6 villages (villages), namely: Tunas Gain, Urat, Sangram, Weri, Kiriabisa, and Saharey; with a total population of only 1,287 people. Urat Village is located in the archipelago,

while the other villages are all on the mainland coast of Papua Island. Fakfak Regency itself is one of the areas included in the 3T category (frontier, outermost, underdeveloped). Research (Situmorang & Ayustia, 2019) states that the development of leading, outermost and underdeveloped areas in Indonesia has strategic value through managing economically valuable resources while preparing regional infrastructure that can support economic, social, cultural and defense security for the country. This is also in accordance with the research statement (Syahza & Suarman, 2013) which stated that the development of the 3T area must prioritise three aspects, namely: 1) improving the people's economy (poverty alleviation), 2) improving the intellectual quality of human resources (alleviating ignorance), and 3) more equitable infrastructure development in Indonesia.

As an area rich in potential fish resources; So it is important for the people of East Fakfak district to be able to process fish. Fish processing must grow and develop into a good and competitive micro-small scale business. The freshness of raw materials, as well as the implementation of traditional recipes into the fish preservation business should be the key to the strength of the fish processing business that can be offered as a competitive product in the global market. However, the fact that the local community does not yet understand the importance of fish processing due to limited access to knowledge, as well as the lack of proper training in fish processing skills means that the community does not yet have new economic sources from processing fishery products.

The research aims to determine the extent to which the people of East Fakfak district are prepared and able to process fish into sustainable micro-small-scale business products as a main part of developing a blue economy that can improve their welfare.

## **2. Methods**

Semi-qualitative research method based on a survey approach. Researchers assisted by a team of surveyors observed directly and conducted in-depth interviews to determine the level of readiness of the community in all villages in the East Fakfak district in order to process fish into preserved products that have high selling value, are of good quality, and have organoleptic values unique to Fakfak. The survey was carried out repeatedly and explored cross-information between research respondents.

### **2.1 Research Design**

Empirical research design. Researchers dig up data and observe field facts repeatedly to ensure that there are basic and important things in accordance with the research objectives. Empirical research according to (Maryani & Nasution, 2019) has the advantage of uncovering and revealing hidden facts that underlie research. In empirical research, researchers must convey existing facts honestly and in accordance with the facts that occurred even though this is considered something that is contrary to reality.

### **2.2 Participants**

Informants and research respondents were chosen deliberately. The respondent selection technique uses a set of criteria that have been determined jointly between researchers, community leaders and government elements, taking into account the credibility and integrity of potential respondents. This is adjusted to methodological considerations so that the information and data received are in accordance with the research objectives (Sagala & Pellokila, 2019); (Aryani, Werastuti, & Adiputra, 2020); and (Hanum & Suryawati, 2021).

The number of informants who were subsequently selected as research respondents was 112 people, representing various elements, especially from fishing families and women who have skills in fish processing. The interview results were first calibrated using triangulation techniques. The calibration in question is to obtain the same perception and understanding of various terms, as well as the meaning of each respondent's answer statement. According to (Sa'adah, Rahmayati, & Prasetyo, 2022) this is a stage of bringing together several respondents

in order to make mutual corrections and equalize perceptions of the answers given during the survey. At this stage, the respondent's answers themselves should not be intervened to be directed to certain answers in order to maintain the honesty of the research data.

### **2.3 Research Instruments**

Surveys and interviews use questionnaire tools specifically designed according to research objectives. In the questionnaire answer component, an answer grid is provided as a simulation reference for weighting (data quantification). Weighting is carried out simply referring to the modification of Principal Component Analysis (PCA) (Anwar, 2018); combined with the web application-based Analytical Hierarchy Process technique (Wismar, Ginardi, & Sarwosri, 2017) to determine the weight of each respondent's answers based on their competency, capability and integrity; in this case related to efforts to develop fishery product processing as one of the derivative activities of the implementation of the blue economy.

The weighting technique is used as a tool to quantify information obtained from interviews into research data. The procedure for converting answers into numbers must be structured and systematic using predetermined references based on the research objectives (Verdian, 2016); (Soedrijanto, Mas, Mauladi, & Prihartini, 2019); (Kristini et al., 2019); and (Wulandari, Setyaningsih, Wardhana, & Jumaryadi, 2021). Furthermore (Mekarisce, 2020) and (Fadli, 2021) emphasized that triangulation and various other techniques carried out by researchers on data to test its truth and determine the weight of the numbers are important validity tests for qualitative data so that it deserves to be accepted as valid research data.

### **2.4 Data Analysis**

Data analysis is carried out simply by describing the notation and magnitude of the gap numbers on the spider web diagram including the relationship between analysis factors. The strength of the research lies in the reliability and validity of the data obtained through repeated interviews and confirmation techniques, as well as triangulation and weighting. Data analysis with data input that is believed to be correct based on empirical facts in the field; will provide concrete descriptions that suit the needs of the community at the research location.

## **3. Results**

The empirical condition of community readiness with the opportunity to develop various types of fishery product processing that can be implemented in the East Fakfak district basically still requires a lot of support from various parties. The backwardness of the people who live in the 3T (frontier, outermost, underdeveloped) areas in Indonesia really needs attention and a breakthrough downstream program so that the area becomes more open in implementing a blue economy based on fishery product processing.

The results of calculating the weight values between the various factors studied are displayed in a gap analysis spider web diagram as shown in the figure below;

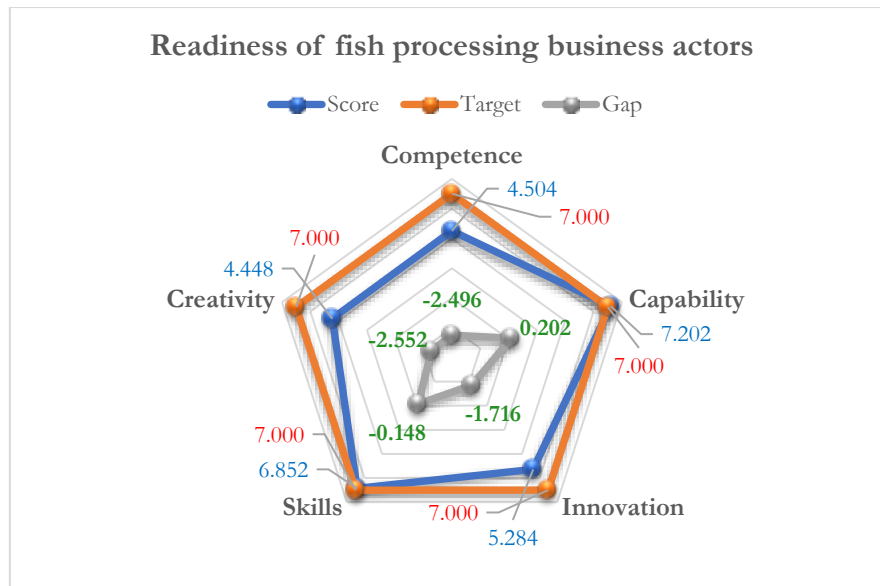


Figure 1 Readiness of fish processing business actors

The competency of fish processors in general is still low. Many community members who can process fish apparently do not have sufficient educational provision. Although basically processing fish does not absolutely have to be done by highly educated members of society; However, a set of competencies remains the main requirement for the processing process to run correctly. Knowledge of applied heat transfer techniques is sufficient to understand drying-based processing processes. According to (Ismail, Arbakala, Jumadi, & Soedrijanto, 2023) the people of Fakfak district are generally only used to consuming fresh products, because the availability of raw materials is abundant. This fact hampers the development of product processing competence, as a reluctant attitude stems from low interest in the essence of processing itself.

Fish processing capabilities; concerns matters relating to mastery of a set of abilities to do two things, namely: processing, as well as understanding marketing. This is very common for micro and small scale business actors whose business organizational structure is still simple. Research (Abdillah & Yudhi, 2020) shows that the limited availability of infrastructure that supports fish processing in the regions is still an obstacle to increasing the capability of fish processing businesses to produce quality products.

Concern from many parties is needed to help foster innovation in the fish processing process. Regional apparatus organizations which technically have duties and responsibilities for coaching and assisting micro and small business actors to innovate must be at the forefront in providing assistance in collaboration with academics and practitioners. According to (Anggraini, Sugiyanto, & Cahyono, 2022), and (Putra, Windah, & Tarisa, 2022) building process innovation to encourage people to be able to produce; needs to be carried out simultaneously with digital innovation. Providing lessons for the public to adopt various examples of desired production processes from social media needs to be made a habit so that the products produced are always market-oriented.

The majority of people in the East Fakfak district are only able to process fish for their own consumption. Therefore, it is necessary to provide skills through training, comparative studies, and collaboration with various parties who already have better products. This is important so that the products produced are better and fit to enter market competition. According to (Ramlawati & Ramli, 2018), and (Cicilia & Nofrida, 2020) processing skills training must be given repeatedly. This is important to ensure that the products produced have

gone through an effective and efficient work process. Effectiveness and efficiency are requirements to ensure that products are fit to enter market competition.

Creativity in creating and developing processed food products is something that is still being discussed. Practicing creativity also needs to be balanced with providing working capital from productive grants by the government so that business actors are braver in trying to develop new processed products following the dynamics of market demand. According to (Adriati, 2021) women have the advantage of creativity in the process of creating food products. These advantages must be utilized as an effort to build a household-scale business which can ultimately continue to grow bigger.

The results of the analysis regarding potential processed fishery products that the people of East Fakfak district would be able and suitable to develop are presented in the following figure;

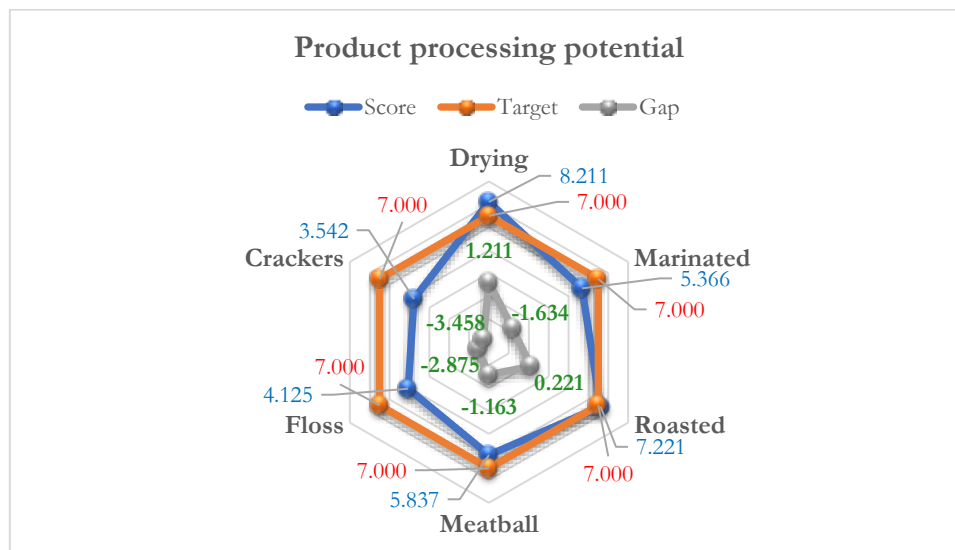


Figure 2. Product processing potential

The results of the analysis of drying and roasting values are positive because it is commonly done but does not yet represent a business-feasible processing capability. Marination is unknown; Meanwhile, making meatballs, shredded meatballs and crackers requires additional ingredients and equipment that are not easy to obtain for people living in the East Fakfak district.

#### 4. Discussion

Processed fishery products that can be produced; is a key indicator of the success of empowering coastal communities and fishermen in the East Fakfak district. As an area rich in fish resources; So people have only been used to consuming and selling fresh fish. This causes large fish potential to often be explored by fishermen from other areas who come to local waters to catch fish, then process them elsewhere. In this way, local communities not only lose the opportunity to exploit fish resources economically, but also lose the opportunity to gain added value and create new job opportunities.

Drying fish is the simplest and cheapest preservation technique (Istiqomah & Soedrijanto, 2018), and (Swastawati, Wijayanti, Riyadi, & Syakur, 2020). Sun drying is the simplest fish drying technique, but to be applied and developed on a business scale in the East Fakfak district, it can be introduced using drying equipment made by the community itself using environmentally friendly energy sources, to save production costs in the long term.

Marinating is ideal for fresh fish. The freshness of the fish gives a good specific taste to the marinated results. This technology can be applied in various fishing centers far from city centers to preserve fish and improve its taste (Gokoglu & Ucak, 2020). For the people of East Fakfak district, getting fresh fish every day is a necessity. Likewise, if people know well and are able to make fish marinades with typical Papuan spices; it is believed that it will be able to produce a unique fish marinade with a high selling value. In fact; People still don't know about fish marinating and there hasn't been any assistance to teach people how to create fish marinated products.

Smoking and grilling fish for the people of East Fakfak district is a daily activity. Fish is the main side dish in this area. In order to apply fish smoking and grilling techniques for business; So it is very necessary to make efforts to provide understanding to the public not just to eat it alone, but how the product is durable and creates a better taste, texture and organoleptic appearance. In this way, smoked or grilled fish products can last longer, be packaged properly, and become products that are worthy of competing in a wider market. The results of research (Andhikawati & Pratiwi, 2021), and (Linus-chibuezeh, Ndife, Adindu-linus, & Nwodo, 2022) show that the technique of smoking fish can produce a high level of preservation, with a distinctive taste.

Fish meatballs are a simple fish processing technique. Mixing flour mixture, spices, fish stock and fish meat will give a certain taste according to the type of fish used as the base for the meatballs. The high diversity of fish species in the waters of the East Fakfak district; It should be a great opportunity to create meatball products from economically important types of fish that provide a specific taste. It is believed that this kind of product will have its own market segment and last a long time on the market. According to (Ramlawati & Ramli, 2018) the technique of making meatballs is also a basic technique that can be developed to make other processed products such as: fish sausages, fish nuggets, and so on.

Fish floss is a processing technique, as well as a technique for saving fish meat due to the rapid quality deterioration process. Fish floss gives the fish a distinctive aroma and taste. This product is very simple, concise, and easy to carry anywhere and easy to consume. All types of fish can be made into shredded fish. In the modern floss processing process, the fish bones can also be processed in such a way that they are crushed and mixed into the meat to improve the taste and enrich the nutrition of the fish floss. According to (Kusumayanti, Astuti, & Broto, 2011) fish floss that is processed properly and stored properly is very durable. It has a long storage period and can be consumed with various other foods. Shredded meat is also an additional side dish that can increase appetite.

Fish crackers are also a product that is not popular among the people of East Fakfak district. The fact that people are used to eating crackers is true. However, making crackers is something that is not popular and not many people know how to do it. The use of flour as one of the main ingredients for crackers is also an obstacle for people who live far from the city center. However, it is still possible for the East Fakfak district to obtain flour from Fakfak city because it can be reached by four-wheeled motorized vehicles. According to (Khotimah & Dwi, 2017), (Ngginak, Semangun, Mangimbulude, & Rondonuwu, 2020), and (Akbar, Riyadi, & Jaya, 2017) crackers are a product that is very easy to develop and has many fans from various groups. Furthermore (Miftakhuljanah, Priatna, & Suharno, 2016), and (Niswah & Panorama, 2022) emphasized that women have a work ethic, innovation and creativity that develop very quickly in the process of making crackers. This is important so that the crackers produced can suit the tastes of consumers.

Other processed fish products such as “pemindangan”; was not part of the observations of this research. Pemindangan is not recommended to be developed into a product of business value for the people of East Fakfak district, because its nature as semi-wet with still high water content, will be quite susceptible to quality deterioration. Dry processed products, or products

mixed with other additives, are products that are recommended to be developed in coastal areas and small islands far from city centers, where access is still difficult to reach.

## 5. Conclusion

Based on the results of the analysis, it is known that the people of East Fakfak district are generally not familiar with fish processing technology. People's habit of consuming fresh fish is because fish is easy to obtain; this has resulted in the development of fishery processing not yet occurring.

It is recommended that the Fakfak Regency Government start seriously developing fishery product processing. Community efforts and production independence to produce processed products will produce new superior products that can help accelerate the acceleration of economic development in the region. The processing of fishery products that is developing in traditional communities such as in the East Fakfak district is part of the implementation of the blue economy which can ensure the sustainability of resources while increasing community economic empowerment.

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