

## Diversification of Tilapia into Frozen Food Products with Yellow Seasoning to Enhance the Activity and Economy

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**Abstract:** Seventy percent of Indonesia's territory consists of water. Several regions make fish farming a livelihood to optimize this potential. One of them is Ponggok Village, Klaten. Ponggok Village already has superior products made from Nile tilapia fish, but product diversification is needed to expand market segmentation and increase income. By diversifying, products will be more interesting and varied and have a higher selling value. Nile tilapia fish can be converted into frozen food products with yellow spices through village community empowerment program training using the fourth step of the ABCD method, named the Asset Based Community Development method. The first step is to "discover" by finding community groups and identifying the needs, especially the people of Ponggok Village. The second step is to "dream" to create dreams for community groups and overcome the problems in marketing Nile tilapia fish. The third step is "design" that overcome the problem of marketing Nile tilapia fish in Ponggok Village; the P2MD team collaborated with Nile tilapia MSMEs by diversifying Nile tilapia fish products into Bumbu Kuning Frozen Food. The fourth step is "destiny", with the implementation of the collaboration between the P2MD team and the Nile tilapia fish MSMEs of Ponggok Village. At this stage, the P2MD team provides training assistance. Through the ABCD method and the collaboration of the P2MD team with Nile Tilapia fish MSMEs, the result is the diversification of Bumbu Kuning Nile tilapia Frozen Food products, which can last approximately three months, so they can be marketed more widely and increase the income of Ponggok Village Nile tilapia MSMEs. Hopefully, the Bumbu Kuning Nile tilapia Fish Frozen Food Training can increase the activity and economy of the Ponggok Village community.

**Keywords:** training; nile tilapia fish; ponggok village

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## INTRODUCTION

Indonesia consists of 70% water. Some regions leverage fish farming as a livelihood to optimize this potential. One such region is Ponggok Village in Klaten. Ponggok Village is renowned for its diverse water tourism areas and abundant water resources, making tilapia a superior commodity in quantity and quality. The village requires 20 kg to 40 kg of tilapia each month for marketing (Nila Murni Ponggok – Desa Ponggok). However, marketing raw tilapia in the village is less effective; the selling price remains high, and there is a lack of innovation. The problem with raw tilapia marketing is that it can only be sold around Ponggok Village. During the pandemic, tilapia SMEs need product innovation to market outside the village. A wider market reach can yield higher profits than selling raw fish locally.

High-quality products developed by the industry become flagship items, with customers competing to purchase them, making product quality a critical factor in industrial competition (Taufiq et al., 2020). Enhancing customer satisfaction can be achieved through product variation. A diversification approach can make consumers feel catered to, impacting their satisfaction with our products (Sutrisno & Darmawan, 2022). Diversification makes products more attractive and varied, thus having higher sales value (Martina et al., 2021). Diversification involves product variation that results in unique products, distinguishing them from competitors' offerings (Khairani & Pratiwi, 2018). This led to the idea of developing tilapia products into frozen food items.

Frozen food is a half-cooked dish stored in a refrigerator and reheated before consumption (KBNI, 2021).

Frozen food products based on fish or meat are currently diverse in the market and widely consumed by the public (Santoso et al., 2018). The increasing number of frozen food consumers leads to competition among producers, driving them to market their products effectively and expand their market share (Santoso et al., 2018). Innovation in frozen food products can reach external markets, and tourists can take them home after visiting Ponggok Village's tourist attractions. Frozen food tilapia with yellow seasoning is an innovative product developed to enhance income. Fish product innovation can add value to food variety efforts (Sugito et al., 2019). This product can become a unique souvenir from Ponggok Village, taken by visitors outside the village. Product diversification ensures business continuity (Herawati et al., 2020).

The choice of frozen food products is due to several advantages, such as longer shelf life and convenience as a food stock that can be stored at cold temperatures (Putri & Tamami, 2021). Changes in lifestyle towards convenience and practicality influence food product consumption patterns (Wicaksana et al., 2021). Easy-to-cook and delicious frozen food is preferred because customers seek convenient food options for travel (Kyntani et al., 2022). Taste, cost, packaging, and brand identity influence consumer choices in frozen food products. Industrially produced frozen food will be superior, with product quality affecting industry competitiveness (Sula & Chamalinda, 2021). The target market for frozen food products includes productive workers and migrant/boarding residents due to the increasingly dynamic lifestyle resulting from professional demands (Kristiandi et al., 2022).

Frozen food tilapia with yellow seasoning aims to increase the income of tilapia SMEs through innovative products. These products can be marketed anytime and anywhere through online stores like Shopee, Lazada, Tokopedia, and other marketplaces, reaching a broader consumer base, especially outside Ponggok Village. Tilapia SMEs must innovate to achieve wider market reach and higher profits than selling raw fish locally. Diversifying tilapia into frozen food with yellow seasoning can expand market segmentation and boost the income and economy of Ponggok

Village residents. The frozen food tilapia with yellow seasoning training program by the P2MD team is expected to support the creation of sustainable products that Ponggok Village residents can independently produce.

**METHOD**

The potential of tilapia fish ponds in Ponggok Village can be leveraged by processing the fish into frozen food through diversification training. The P2MD HIMAMA SV UNS team conducted the diversification training for tilapia into yellow-spiced frozen food on Monday, October 3, 2022, at the Ponggok Village Hall, Polanharjo, Klaten.

Table 1 Training participant data

Data	Category	Number
Age	<30 years	6
	30-40 years	10
	>40 years	14
Gender	Female	30
Organization	SMEs Umbul Sighedhang	9
	SMEs Umbul Ponggok	12
	SMEs Umbul Besuki	9

The target of the product diversification training for tilapia was 30 participants, consisting of members of the TP PKK and Nila Murni SMEs of Ponggok Village, using the ABCD method (Asset Based Community Development). The ABCD method is a procedure used in community development, focusing on identifying various assets within the community that are considered to support their empowerment efforts (Chamidi dkk., 2023). The diversification training by the P2MD HIMAMA SV UNS team and partners was conducted on Monday, October 3, 2022, using a community development approach. According to Shoffa et al., (2020) this approach is carried out using the procedures presented in Figure 1.

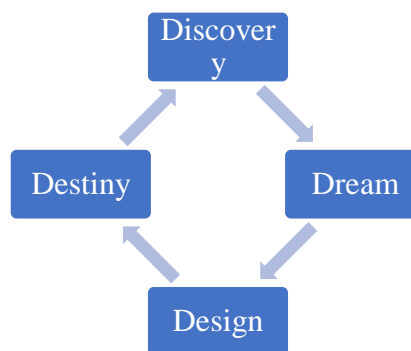


Figure 1 Stages of the ABCD method

1. Discovery: This step is used to identify community groups and assess the specific needs of Ponggok Village and its surroundings, including the problems and obstacles faced while marketing tilapia in Ponggok Village, Klaten.

2. Dream: To realize the community groups' dreams and address the problems in tilapia marketing, the P2MD team conducted a Focus Group Discussion (FGD) to explain the program to the partners and discuss the solutions proposed by the team, including product diversification.
3. Design: To realize the dreams and solve the marketing problems of tilapia in Ponggok Village, the P2MD team collaborated with tilapia SMEs to diversify tilapia products into yellow-spiced frozen food.
4. Destiny: This step involves implementing the collaboration between the P2MD team and the tilapia SMEs of Ponggok Village. At this stage, the P2MD team provided mentoring. Mentoring is a strategy that can ensure the success of community empowerment programs (Nurkholida et al., 2018). Through this mentoring, making yellow-spiced tilapia can be directly monitored and assisted.

Training is conducted directly using the following methods.

- a. Presentation method to provide insights into product diversification and the benefits of the training.
- b. Demonstration method to illustrate the steps in processing tilapia into yellow-spiced frozen food.
- c. A practice method was used to implement the material and participants' understanding. Thirty participants from TP PKK Women and SMEs Nila Murni of Ponggok Village practiced

processing tilapia into yellow-spiced frozen food using equipment provided by the team to ensure maximum learning and results.

- d. Evaluation method to assess the knowledge improvement of TP PKK Women and SME Nila Murni of Ponggok Village after training on processing tilapia into yellow-spiced frozen food.

The following freezers for frozen food and vacuum sealers are used as shown in Figures 2 and 3.



Figure 2 Freezer for frozen food



Figure 3 Vacuum sealer

## RESULTS AND DISCUSSION

Training involves efficient, structured, practical procedures (Sumantri, 2000). The Village Empowerment Program (P2MD) conducted offline visits to Ponggok Village to socialize the series of activities planned by the team. During this visit, some partners would collaborate to ensure the success of the P2MD program, including

the Family Welfare and Empowerment Team (TP PKK) of Ponggok Village. TP PKK of Ponggok Village is a community partner organization that functions as a provider, designer, implementer, and driver for various village programs, especially in Ponggok.

Following this visit, the P2MD team conducted surveys and directly analyzed the activities carried out by TP PKK and the conditions of SMEs Nila Murni. The survey and analysis indicated that TP PKK is quite active in various activities such as Ponggok Wani Sinau, webinars, training sessions, and many other activities. According to Hendriani and Nulhaqim (2008), training and development with mentoring methods significantly impact fostering entrepreneurship spirit. Despite the numerous trainings conducted, SMEs Nila Murni was still affected by COVID-19, where the income of sellers/agents remained challenging, and some experienced losses.

From the survey, the P2MD team obtained data on processed tilapia products already produced by SMEs Nila Murni. These products include shredded fish, meatballs, fish cakes, chips, nuggets, dumplings, and minced fish. Sales are distributed through offline and online platforms, such as local cooperatives, tourist attractions, and e-commerce platforms. With this data, the P2MD team innovated products with high market value, namely frozen tilapia with yellow-spiced seasoning. Innovation refers to transforming creativity into something executable

that enhances the value of existing resources. Innovation is creating and applying new combinations (Suryana, 2008).

According to Krismiyati (2017), human resources development (HRD) is a series of regularly and structured activities intentionally designed to provide a company's employees with the necessary skills to meet job requirements, both in current and future conditions. With the training on yellow-spiced frozen tilapia, the utilization and management of SMEs Nila Murni can be optimized to benefit both producers and consumers.

The comparison between selling raw fish and selling processed yellow-spiced frozen tilapia shows that the selling price is less economical when sold raw but experiences an increase in value when marketed as a different processed product. This training program positively impacts fostering a proactive entrepreneurial attitude, such as mindset, skills, and position in the entrepreneurial world (Christanti, 2016). The success indicators of the training on diversifying frozen tilapia into yellow-spiced products can be seen in Table 2.

Table 2 Pretest and post-test scores were obtained from the training on yellow-spiced frozen tilapia (n=25)

Indicator	Average Score	
	Pretest	Posttest
Understanding of tilapia processing	60	90
Innovation in tilapia products	50	100
Production of souvenirs	25	100
Income of SMEs	30	90

The sticker design and product of frozen yellow spiced tilapia fish are shown in Figure 3.

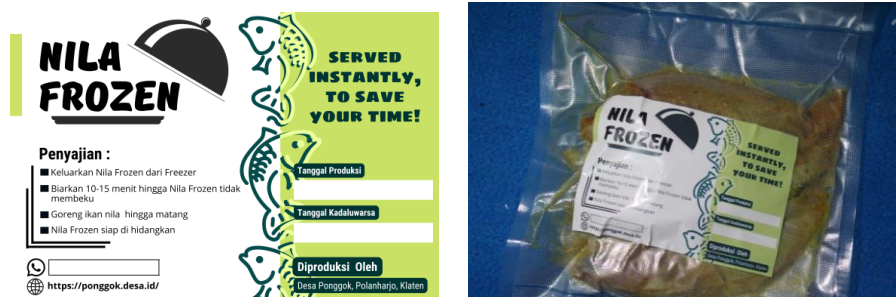


Figure 3 (a) Design of yellow-spiced frozen tilapia product sticker and (b) Yellow-spiced frozen tilapia product

Human resource development is believed to be a productive investment (Anwar, 2006). The training on yellow-spiced frozen tilapia supports the provision of equipment such as a vacuum sealer and freezer for storing products after vacuuming, which can be used to create sustainable products that can be independently done by the community of Ponggok Village. Participants in the yellow spiced frozen tilapia training are shown in Figure 4.



Figure 4 Participants in yellow-spiced frozen tilapia training

## CONCLUSION

The community utilizes the abundant water resources in Ponggok Village for tilapia aquaculture. Tilapia can be processed into various innovative food products, including frozen tilapia with yellow-spiced seasoning, also known as yellow-spiced tilapia. Yellow-spiced seasoning enhances the flavour of tilapia dishes, making

them more enjoyable for many people. Frozen food opportunities are currently more popular and have significant potential for improvement because processed foods can have longer storage durability, high portability, and ease and speed in serving. The training on Yellow-Spiced Frozen Tilapia is expected to increase further the income of SMEs Nila Murni in Ponggok Village.

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