

Village SDG's: Community Empowerment in Catfish Processing Innovation in Tambaksari

¹Raflian Alviki Radisha*, ¹Yulia Isnaini, ¹Anggi Febriana Pangestuti, ¹Dian Aulia Fatmawati,

¹Muhammad Riqza Aulia Fallah

¹Universitas Wahid Hasyim, Indonesia

*Corresponding author

E-mail: 22101011012@student.unwahas.ac.id

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Abstract

Purpose: This research examines the empowerment of the Tambaksari village community through innovative catfish snack processing, focusing on improving skills and knowledge, increasing catfish market value, and enhancing the village's economy and welfare in accordance with SDGs.

Method: Using Action Research (PAR) includes socialization, counseling, training, workshops, mentoring, monitoring, providing access to technology and capital, collaboration with local stakeholders, digital promotion, and marketing.

Practical Application: This program is expected to have a long-term impact on the quality of life of the community and raise awareness about the importance of SDGs in sustainable development.

Conclusion: The innovation in catfish processing in Tambaksari Village has positively impacted community empowerment and local economic development, showcasing how active participation in local resource-based small businesses creates new opportunities. Increased awareness of catfish's quality and nutritional value also enhances community health and well-being, aligning the program's success with SDGs.



Introduction

The Sustainable Development Goals (SDGs) program is a set of global goals set by the United Nations (UN) in the 2030 agenda which is a continuation of the Millennium Development Goals (MDGs) (Saxena et al., 2021; Udeagha & Muchapondwa, 2023). Although this agenda is global in scale, its implementation needs to be done at the local level, in line with the famous saying in 1999, namely "think global, act local". This principle underscores the importance of adapting global goals to local contexts to ensure sustainable development that can be implemented at the micro scale.

The SDGs themselves aim to ensure development that meets the needs of the present without compromising the capabilities of future generations (Bilderback, 2024). This includes issues such as no poverty, zero hunger, good health and well-being, education inclusiveness, gender equality, and more. Achieving the SDGs requires collaboration and synergy from various parties, including the government, private sector, non-governmental organizations (NGOs), and civil society (Park & Park, 2024). Individuals, community groups, organizations, and local governments also have an important role to play in supporting the achievement of these goals through sustainable resource management, education, and economic innovation. The young generation in particular, they can spread awareness or participate in campaigns that support the SDGs.

In the local context, Wahid Hasyim University as one of the private universities based on Ahlussunnah wal Jamaah Islamic values also participates in strengthening organizational capacity through students majoring in management to implement SDGs. This agenda was carried out in Tambaksari Village, Rowosari District, Kendal Regency. The village, which has an area of 1.38 km² with a population of 3,046 people (consisting of 1,526 men and 1,520 women), is mostly freshwater fishponds, with catfish as the leading commodity. However, the catfish harvest has so far only been sold in raw form with low selling value, without any innovation that utilizes the further potential of the commodity. Therefore, this program aims to assist the Tambaksari Village community in optimizing their resources through sustainable innovations that are in line with the SDGs goals.

Catfish (*Clarias* sp.) is a type of freshwater fish whose protein is around 22.0 - 46.6% with an elongated body shape equipped with a slippery texture. With its high protein content, catfish can be used as an alternative source of protein (Avinsha et al., 2024; Septriani et al., 2024). In addition, the thick white meat of catfish is also suitable to be used as raw material for various types of processed foods (Zhamil, 2023). Reviewed by Dr. Rizal Fadli through halodoc.com, it explains that this fish can maintain body weight, maintain cell and tissue health, improve nerve and brain health, maintain heart, eye, and mental health, maintain anemia and stroke, and increase body immunity. All, thanks to the protein, vitamin B12, and omega-3 fatty acids contained in it.

However, despite its many benefits, catfish is often less desirable to the public due to its fishy odor and unhygienic cultivation methods (Mutiarani & Kardina, 2022; Sidoretno et al., 2023). Therefore, training on catfish processing that complies with health standards becomes an urgent matter to do. In this context, the partner villages faced several challenges, including limited knowledge and skills in processing innovations. It can be seen that they felt overwhelmed when developing processed catfish products into snacks. In addition, the problem that is still striking and must be addressed immediately is the understanding of marketing strategies that are in accordance with the market segmentation for snack products. Snacks here are defined as a type of food that serves as a hunger suppressant and provides a temporary supply of energy to the body. More broadly, snacks are defined as solid foods that are usually consumed in one meal (with or without drinks) and become part of a person's dietary habits but are not intended as a substitute for the main meal because they contain far fewer calories than the main meal (Kaluku, 2023).

The author's belief is in line with the opinion of the Ministry of Maritime Affairs and

Fisheries of the Republic of Indonesia through the website knp.go.id which reports, on March 31, 2023, catfish is one of the fish that is favored by the public. The proof is that in 2020, BPS (Central Bureau of Statistics) recorded that the consumption rate of catfish reached 85,490 tons, especially if it becomes a processed snack product. Market segmentation will be wider and the need for this fish will also increase.

Along with the growth of human resources and increasingly fierce competition in the business world in Indonesia, it is important for every business actor to continue to improve their positive image and brand awareness for their business continuity. The rapid growth of the Food and Beverage (F&B) sector in Indonesia creates complexity in complex business competition. In this case, students as part of the agent of change in national development, together with the local government, have a shared responsibility to achieve regional development goals which in this context focus on the sustainability of catfish farmer businesses. This catfish innovation and processing training not only aims to increase the knowledge of the local community or village, but also to have a positive impact on their income. Thus, the results of catfish farming are not only and should not be sold in raw form, but also developed into processed snack products that can be enjoyed by various groups so that it can have a high economic value because there is a lot of demand.

This service program aims to provide guidance and training to groups of pond farmers in Tambaksari Village to optimally utilize the results of catfish ponds into snacks that can be sold with high economic value in the hope of supporting the economy of the village community. Through technical steps such as counseling, practice, training, and partnerships with pond farmers, it is expected to increase entrepreneurial knowledge and skills by utilizing the potential of catfish ponds that are widely cultivated by the local community. The expected results of this processing innovation are shredded catfish, catfish crackers, and catfish sticks which can later be continuously developed by the Tambaksari Village community as a superior product of village MSMEs in implementing SDGs.

The long-term impact of this program is the improvement of the local economy through diversification of income sources and the development of MSMEs. In addition to improving the quality of life in the community by providing access to better nutrition and encouraging social welfare, skills and economic independence will also occur that can trigger sustainable innovation in processed products. Awareness of the SDGs goals will also increase by encouraging community engagement in sustainable development and participation in community activities with the aim of poverty eradication and innovation towards local products. Finally, wider marketing opportunities for processed catfish products can also improve the positive image of Tambaksari Village and make it a quality product producing area in the hope of attracting investors and tourists. Therefore, we feel it is important to discuss it further through this article.

Method

This activity was carried out from June to October 2024, taking place in Tambaksari Village, Rowosari District, Kendal Regency. This activity was carried out by students in the Management Department Student Association Organization (HMJ) Management Wahid Hasyim University Semarang. Based on an initial survey, there is an urgent need to empower the people of Tambaksari Village through innovation in the utilization of catfish, given the potential of ponds managed by some villagers.

The method used to achieve the objectives of this service is Participatory Action Research (PAR). PAR is a research model that focuses on the active involvement of the community in the research process and social change (Rahmat, 2020). The details of the PAR method carried out are:

1. Socialization and Counseling: This activity aims to provide information regarding the importance of innovating in the utilization of catfish to MSME players in Tambaksari Village. This counseling covers economic aspects, market opportunities, and

techniques for processing catfish into value-added products. In this context, social entrepreneurship theory is applied to emphasize the importance of utilizing local resources and developing sustainable innovations.

2. **Training and Workshop:** This activity was designed to provide technical training on processing catfish into innovative products, such as shredded catfish, catfish chips, and other catfish-based products. The workshop also includes training in packaging and marketing aimed at improving product competitiveness in the market. This approach adopts a “learning by doing” model, where participants are directly involved in the learning process that can enhance their practical skills in the context of entrepreneurship.
3. **Mentoring and Monitoring:** Students from HMJ Management of Wahid Hasyim University Semarang directly provide assistance to MSMEs from the business planning stage to production and distribution. The monitoring process is conducted to ensure the sustainability of the program and evaluation of the results achieved. This method attempts to integrate project management principles that allow for periodic assessment of the achievement of program objectives and necessary strategy adjustments.
4. **Providing Access to Technology and Capital:** This activity is being carried out to assist MSMEs in gaining access to modern processing technology and more efficient production tools. In addition, the program also connects them to sources of capital, both from government programs and local investors. In this case, the Resource-Based View approach is used to show how access to resources can improve the performance and competitiveness of MSMEs.
5. **Cooperation with Local Stakeholders:** HMJ Management of Wahid Hasyim University Semarang also collaborates with village governments, related agencies, and capital institutions to facilitate MSME players in their business development. This collaboration includes the creation of a marketing network that connects MSMEs with a wider market. The application of network theory in this context is also aimed at building strategic relationships that can strengthen the bargaining position of MSMEs.
6. **Digital Promotion and Marketing:** HMJ Management provided training on digital marketing, including the utilization of social media and other digital platforms to promote innovative catfish products. This activity aims to enable MSME products to reach a wider range of consumers so as to strengthen their position in an increasingly competitive market. The approach focuses on content marketing to build brands and increase product visibility in the digital market.

The indicators of the success of community service activities in the MSME empowerment program through innovation in the utilization of catfish in Tambaksari Village can be seen from the following points:

1. There is a significant increase in the income of MSMEs involved in catfish processing after participating in the program which can be measured through monthly or annual turnover increase reports. Quantitative evaluation methods can be used to objectively measure economic impacts.
2. Local communities and MSMEs are able to adopt new techniques in catfish processing, such as the production of derivative products (shredded catfish or catfish chips), as well as more effective use of simple technology. Qualitative measurements through interviews and questionnaires can be conducted to assess this level of adoption.
3. There is an increase in the number of new MSMEs formed or managed by local residents as a positive impact of this activity. The data collected will be analyzed using a statistical approach to identify growth trends.
4. This activity contributes to the reduction of unemployment in the village, with many residents involved in the production to marketing process. The empowered MSMEs

can operate independently without relying on external assistance and are able to create sustainable innovations in their products. There is also an increase in economic welfare for the families of MSME players, which has a positive impact on their social life. Social impact evaluation can be conducted through case studies to gain a deeper understanding of the changes that occur in the community.

Result

Following the implementation of a comprehensive empowerment program in Tambaksari Village, which encompassed various critical components such as socialization, catfish harvesting, product development, marketing training, product standardization through halal certification, and targeted marketing efforts, significant improvements have been observed in the income levels of Micro, Small, and Medium Enterprises (MSMEs) within the community. This is evidenced by a notable increase in revenue generated by these enterprises, indicating that the program has made a tangible and meaningful contribution to enhancing the local economy.

The empowerment program has facilitated the local community's successful adoption of more modern technologies and innovative techniques for processing catfish. As a result, there has been a marked increase in the variety and quality of products available on the market. This transformation reflects a significant enhancement in the capacity and skills of community members, enabling them to manage their businesses more effectively and efficiently. The training provided has equipped them with the necessary tools to navigate the complexities of the market, leading to improved product offerings that meet consumer demands.

Moreover, the program has successfully stimulated the growth of new MSMEs in the village, showcasing a rising interest and enthusiasm among community members for entrepreneurship. This entrepreneurial spirit has not only fostered a culture of innovation and self-reliance but has also led to the creation of new business opportunities. As a direct consequence, there has been a notable increase in job opportunities within the village, contributing to a reduction in unemployment rates. This shift towards entrepreneurship and job creation is vital for the long-term sustainability of the local economy.

Beyond the economic impacts, the empowerment program has had a profound influence on the social welfare of the community. The rise in income levels among MSMEs has translated into an improved quality of life for the families involved in these enterprises. Increased financial stability has allowed families to invest in better education, healthcare, and overall living conditions, thereby enhancing their well-being. The program has not only uplifted individual businesses but has also fostered a sense of community pride and cohesion, as residents work together towards common goals and shared successes.

In summary, the empowerment program in Tambaksari Village has proven to be a catalyst for positive change, driving economic growth, fostering entrepreneurship, creating job opportunities, and enhancing the overall quality of life for community members. The multifaceted approach of the program has not only strengthened the local economy but has also laid the groundwork for sustainable development and social progress in the region.

Discussion

The socialization stage is the first step in the implementation of the empowerment program which aims to comprehensively convey the objectives and activity plans to partners. Based on the initial survey, Tambaksari Village has significant local economic potential through freshwater fishponds, especially catfish that have been certified in Good Fish Cultivation Methods (CBIB). However, the utilization of pond products is still not optimal because catfish are only sold in raw form with relatively low selling value. This shows the need for innovation in product processing to increase added value.

Therefore, this program tries to present innovations in processed products from catfish

in the form of shredded sticks, and crackers with the aim of increasing product added value and market competitiveness. Product innovation not only increases selling value but also opens up new opportunities for business actors to reach a wider market (creation of competitive products). (Lukman Khakim, Nur Afiatul Khusna, Ratih Pratiwi, M Ricza Irhamni, 2024). Thus, this program can collaborate between increasing creativity and innovation of business actors in processing catfish to compete in a wider arena. The documentation of socialization is as follows:

Figure 1. Documentation of Socialization Empowerment



The harvesting process is an important step after socialization. Harvesting is done selectively by choosing catfish whose size exceeds the standard which will then be used as raw material for product innovation. This process is carried out by the team together with a pilot group of pond farmers with the hope of obtaining catfish that meet certain criteria. The success of this harvesting is very important to increase the value of income for the pond farmer group, so as to optimize the potential of catfish in Tambaksari Village.

Previously, harvesting was only done to obtain catfish that were ready for sale or consumption. However, by choosing a much larger size, it is expected to improve the quality of the processed products produced. This is due to the potential of catfish that can be processed into point foods whose processed remains can be used or utilized as crackers or shredded catfish (Nela Safelia, Nurulfa, Santa Monica Br. Siringo Ringo, Elisa Danuarta Lumban Tungkup, Meiyluli, Muhammad Agung Pratama, 2023). The documentation of socialization is as follows:

Figure 2. Documentation on Catfish Harvesting



After harvesting the catfish, the PPK-O team then proceeded to the stage of making processed snack products from catfish which included sticks, crackers, and shredded with the help of Mrs. Fitria and Mrs. Kharis. This activity was attended by a number of community members who were directly involved in the product manufacturing practice. Documentation of the product manufacturing activity is presented below:

Figure 3. Documentation on Product Manufacturing



The making of these processed snack products aims to provide a concrete picture and practical examples of catfish processing methods. This activity is expected to provide significant benefits to the community so that they are able to process catfish into products with higher selling value. Although catfish are rich in nutrients that are beneficial for health, there are still a lot of stigmas among the community regarding its fishy smell and the perception of its cultivation practices that are considered less hygienic. Therefore, product innovation is a strategic alternative to increase public interest in catfish as a healthy and nutritious food.

The PPK-O team organized marketing training for all business start-ups in marketing processed snack products from catfish, consisting of sticks, crackers, and shredded. The training covered online marketing through social media and marketplaces, as well as traditional or conventional marketing. Introduction to online marketing is important because digital platforms make it easier for consumers to fulfill their needs, while businesses can also spread their products quickly, efficiently, and more widely (Riki Fitriana, Umar Chadhiq, 2022). Training by marketing products online can be implemented through increasing the knowledge and skills of business startups. The hope of this product marketing training is to be able to become a motivation and solution for the community to utilize digital technology better, especially for business startups in Tambaksari Village. Documentation that has been done is as follows:

Figure 4. Documentation of Marketing Training



After the marketing training, we applied for halal certification. Determination of halal standards is needed by a product because business actors must think about the rights of

consumers who buy and consume these products because they need safety assurance and certainty of the ingredients used. (Dewi Hastuti, Farikha Maharani, Asma'ul Husna, Andi Purwono, 2023) to make snacks from processed catfish. Halal certification is important to provide consumer confidence in accordance with the appeal of the Halal Product Guarantee Agency (BPJPH) which on October 17, 2024, all food or beverage products must be halal certified.

Figure 5. Documentation of Application for Halal certification



Marketing is the last stage of this empowerment program. Before launching the products, we prepare packaging that appeals to consumers. The marketing strategy implemented includes digital marketing through various channels, including social media, websites, and collaboration with influencers. In addition to utilizing digital platforms, sales are also conducted offline to reach a wider audience. To support the distribution of innovative processed catfish snacks, we are trying to establish outlets for product display. This step aims to increase product visibility in the market and become part of the sustainability efforts of the PPK Ormawa HMJM service program at Wahid Hasyim University Semarang.

Figure 6. Documentation of Marketing



Conclusion

Based on the results of the research and discussion that has been conducted, it can be concluded that innovation in catfish processing in Tambaksari Village has had a significant positive impact on community empowerment and local economic improvement. Through training and the introduction of creative and innovative processing techniques, the community is not only able to produce various catfish-based products, but also successfully increase their income in a sustainable manner.

The implementation of this program demonstrates that active community participation in local resource-based small business development can create new economic opportunities.

In addition, the increased awareness of the importance of product quality and nutritional value of catfish also contributes to the health and welfare of the community so that the success of this program is aligned with the goals of the SDGs. Therefore, the author suggests that the catfish processing innovation program can be continued and expanded, and can be supported by various parties, to achieve a wider and sustainable impact in other villages. In the sustainability of the program, several suggestions are needed including:

1. To increase the effectiveness of the program, it is recommended that training for the community be conducted regularly and involve experts in the field of product processing.
2. Conduct workshops on online marketing strategies on a regular basis so that business actors can make the most of digital marketing.

Cooperate with capital institutions to provide better access for MSMEs in obtaining modern processing equipment to improve efficiency and product quality.

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