



INNOVATION OF SEA FISH PUDDING AS A SOLUTION TO PREVENT STUNTING AND A NUTRITIOUS FOOD IN PANGGUNGREJO VILLAGE PASURUAN CITY

Eni Erwantiningsih^{1*}, Richadatul Aisy², Erlina Eka Febrianti³

^{1,2,3}Management Study Program, Faculty of Economics, Universitas Merdeka Pasuruan, Indonesia
Corresponden Email: enierwanti232@gmail.com¹

Abstract

This community service program was initiated in response to the limited variety and low nutritional quality of children's snacks in the coastal area of Panggungrejo, Pasuruan. Many available snacks are inexpensive but lack essential nutrients needed for children's growth and development. Therefore, this activity focuses on improving community awareness of nutrition by utilizing abundant local natural resources, especially sea fish, as the main ingredient for innovative food products. Sea fish was processed into fish pudding, a unique, nutritious, affordable, and child-friendly snack alternative. The implementation method included counseling sessions, interactive discussions, and hands-on assistance in product preparation. Participants were introduced to the nutritional benefits of fish and practical techniques for transforming it into attractive snacks with better market value. Through this program, the community is expected to gain new skills and knowledge in food processing, improve family nutrition, and develop creative business opportunities based on local marine resources, thereby supporting household income and coastal economic empowerment.

Keywords: nutritious snacks, fish pudding, coastal communities

INTRODUCTION

MHealthy, nutritious food is a factor that influences the quality of life of the community and addresses stunting in children and toddlers. Nutritious food impacts students' physical and mental health, thus supporting academic achievement and mental health (Dedy Kasingku, 2023). The implementation of a healthy diet requires cooperation from all parties, including teachers and parental support, through the habit of eating healthy, balanced, nutritious food in the daily menu or as part of students' school supplies.(Endang Jatmikowati et al., 2023)However, people, especially those in coastal areas, still need to improve their literacy regarding healthy, nutritious, and balanced food. Balanced nutrition is a daily diet that includes the types and quantities needed to meet the body's needs (Wulandari Panjaitan et al., 2022).

Healthy, nutritious food doesn't have to be made from expensive ingredients; it can also be processed seafood, such as fish. Coastal communities still mostly consume fish as side dishes. The fishy odor of marine and fishery products contributes to the low fish consumption in Indonesia. Therefore, it is necessary to diversify marine and fishery products so that children and the general public can easily accept and increase fish consumption. Creative fish processing can be used as snacks or light meals because fish is not only high in protein but also rich in omega-3 fatty acids, vitamins, and minerals. Therefore, fish has significant health benefits in supporting nutritional balance, improving public health, and food security (Aulia Rahma et al., 2024). Coastal communities residing in the Panggungrejo sub-district are the target of community service activities aimed at increasing literacy and improving family nutrition through innovative fish processing as a local natural resource for food self-sufficiency.

Mackerel is popular not only for its high nutritional value, tender meat, easy availability, affordability, and non-allergenic nature, but also for its protein content of 25.32% (Nur et al., 2017). The nutritional benefits of mackerel are also demonstrated in community service activities as an effort to meet nutritional needs after exclusive breastfeeding (Purno Yudanti et al., 2023). The benefits of mackerel have become an innovative alternative healthy food to reduce stunting rates in children in the form of processed fish pudding. Fish is a source of animal protein that is higher than other protein sources such as chicken, beef, goat, and so on. In addition to the high benefits of processed foods, the sweet and delicious taste of processed foods is easily accepted by all groups, including children. Diversification of processed fish will change the taste and shape, making it easy to attract consumption by all groups, including children. This high consumption interest can increase nutrient absorption in early childhood (DKP JatimProv, 2025).

METHOD AND PROSEDURES

The community service implementation method used was training and mentoring for the Panggunrejo sub-district community, represented by PKK cadres, Karang Taruna, and MSMEs, with the theme of improving nutrition and preventing stunting through mackerel innovation. This service to coastal communities is necessary because many children still suffer from stunting, despite the abundant catch of mackerel by fishermen. The solution, which can be provided through training and mentoring, is the diversification of mackerel processing into fish pudding, which is carried out in two stages:

1. Providing material about the importance of consuming fish and making healthy snacks in the form of mackerel pudding.

This activity aims to provide literacy on the importance of balancing a nutritious diet for families through innovative fish processing.

2. Providing assistance in the practice of making mackerel pudding

To maximize the practice of making pudding, participants were first shown a video on how to make pudding, prepare equipment, and were given the opportunity for discussion.

After viewing the instructions together, the community service team provided a live tutorial that all participants followed at each stage of the preparation. The method of preparation is divided into two stages, namely making mackerel dough and then making fish pudding. In the stage of making fish dough, first clean the mackerel and take only 30 grams of meat, then rinse the mackerel and add lime and salt to taste to remove the fishy smell, let stand for 5 minutes and rinse with running water and immediately boil the mackerel over medium heat until foamy. After draining the mackerel and rinse with running water and boil the mackerel again over medium heat and mix 2 tablespoons of cocoa powder for 10-15 minutes. Then remove and drain the mackerel and clean the remaining skin from the mackerel.

As for the next step is to make pudding, namely put the drained mackerel into a blender and add 250ml of milk then blend until smooth. Once smooth, strain the mackerel from the blender into a saucepan and add 250ml of milk and 400ml of water. Turn on the stove over medium heat and pour in agar agar, vanilla, 3.5 eros sugar or to taste and 2 tbsp of cocoa powder. Stir until cooked and the fish agar agar is ready to eat.

Through hands-on practice and mentoring, it is hoped that the community will understand and remember each step and method for making mackerel pudding perfectly. This method will increase knowledge and skills in processing mackerel into a healthy, previously unknown alternative snack.

DISCUSSION RESULTS

The rise of snacks and instant foods in society provides children with numerous options to meet their needs. The convenience and practicality of these food alternatives also impact children's health and nutritional balance. Fast food can increase the risk of several diseases, such as obesity, diabetes, hypertension, and blood lipid disorders or dyslipidemia. Furthermore, prolonged consumption of fast food can also affect dental health. Fast food with a high sugar content can cause dental caries or cavities (Kalbarprov Health Office, 2024).

Excessive fast food consumption negatively impacts the immune system. One of the main reasons is because fast food is high in unhealthy fats, sugar, and preservatives. The immune system is the body's defense against harmful pathogens such as viruses and bacteria and plays a vital role in maintaining health. Several studies support this, including Dr. Mark Hyman's study of immunity and Dr. Michael Greger's study of diet and disease (Fifin Ervina, 2024).

Based on this data, it's clear that the widespread availability of ready-to-eat and packaged snacks isn't the best choice. It's crucial for every family to innovate and create their own healthy meals from natural, readily available ingredients. The following community service activities involve outreach and mentoring for mackerel pudding production in the coastal community of Panggungrejo Village, Pasuruan City.



Figure 1. Socialization process and manufacturing practices



Figure 2. Manufacturing process by the community



Figure 3. Results of mackerel pudding products

The goal of the community service was achieved by comparing the community's knowledge and skills before and after the activity. After the activity, the community's literacy regarding nutritious and balanced diets and the impact of consuming unhealthy ready-to-eat foods or snacks increased. Furthermore, the community learned how to make healthy pudding using mackerel, a well-known fish. The community even expressed interest in developing other food innovations that incorporate other fish.

Food innovations combining seafood are a promising breakthrough and can boost the creativity of coastal communities. The advantages of this innovative fish pudding product are particularly relevant given that the majority of the community's livelihood is fishing. Furthermore, this innovation offers a solution to address the problem of unused fish leftovers sold in markets. This community service activity should be continued by the participants, given its benefits and ease of preparation. Cooperation from the village government, especially PKK (Family Welfare Movement) and Karang Taruna (Youth Organization) cadres, is needed to develop this as a community entrepreneurial idea by helping market it online.

CONCLUSION

The coastal residents of Panggungrejo Village are very grateful and have felt the tangible benefits of the community service activities. Through these activities, they have gained greater knowledge about the importance of maintaining balanced nutrition for families, especially children, and the impact of fast food consumption. Several areas of concern for all parties moving forward include:

1. Active support from the sub-district through PKK cadres, Karang Taruna and other organizations to facilitate the development of innovative fish processed products in the sub-district area.
2. Providing education from both the Health Department and MSME assistants to maintain the sustainability of the development of community creativity.
3. Providing assistance and marketing solutions for community entrepreneurial products through social media by activating active collaboration between Karang Taruna youth.

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