

Community Empowerment in Training of Fish Preservation Processing Typical of Wetland Environment with Commercial Value

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ABSTRACT

Haruan, or cork fish (*Channa striata*), is an abundant freshwater marine wealth and is found in many rivers or swamp areas in South Kalimantan, including in the neighborhood of RT 05 Keliling Benteng Ulu Village. This fish has a high economic value and good nutritional content, especially albumin. Haruan fish is usually consumed directly by the community or made into salted fish. The problems found in the community are (a) there is no Haruan fish jerky production; (b) there is no knowledge of how to make Haruan fish jerky. The purpose of this activity is to increase economic selling value and provide nutritious alternative foods. Problem solving for partners is done by guiding the making of haruan fish jerky.

INTRODUCTION

Improving human resources and people's standard of living requires complex efforts. These activities can include education, health and economic activities. One of the contributions that can be made by universities is through community service programs. This is in line with what is stated in Law Number 20 of 2003 concerning the National Education System, Article 26 states that education in special regions and remote areas is organized by taking into account the conditions and needs of the local community. The location of Keliling Benteng Ulu Village, is an area located in West Martapura Sub-district, Banjar Regency, South Kalimantan Province which is part of a wetland area. Wetland areas are the most important natural resource, but they are vulnerable to environmental changes such as weather, climate, and others. The condition of this area must be maintained and preserved so that people who depend on this natural condition can enjoy it sustainably.

Notohadiprawiro (1997) says, wetlands are places where the place has conditions that are wet enough in a long enough period of time for the development of vegetation and other specially adapted organisms. Furthermore, according to Panghiyangani (2019) Based on the 1971 Ramsar convention, swamp areas, peatlands, both natural and artificial, permanent or temporary, stagnant or flowing water that is fresh, brackish or salty, including marinewater areas in which at low tide no more than 6 meters are called wetlands. According to Rahmi (2015) this wetland can be used as agricultural land and settlements and this land can be damaged if it is not managed properly and integrated. Keliling Benteng Ulu village is part of a wetland area and is often flooded (Fujiati, 2023, Risanty et al., 2015). This village is included in West Martapura Sub-district which has a high level of flood vulnerability. This village area routinely floods every year. On the one hand, this area also has the potential to produce freshwater fish. Because most of the settlements are located along the river and this area is often flooded when it rains.

Based on the results of the field practice report of Lambung Mangkurat University Faculty of Medicine students in May 2023, many residents of RT 05 Keliling Benteng Village who did health checks suffered from high blood pressure (hypertension). Hypertensive disease is related to the diet that has been done. The production of captured fish that is mostly made into fish and consumed can be one of the causes of hypertension. Based on an interview with the Head of RT 5 of Keliling Benteng Ulu Village, Mr. Salmani, he said that most of the community's occupations are farmers and fishers using fishing gear such as *tampirai*, *membama*, *memelangit* and fishing rods. With the condition of 60% of the community in the poor category. So this is the reason why community service program activities are carried out here with a focus on increasing the economic value of the fish production obtained.

The condition of the community facing these various problems requires breakthroughs made by both local governments and higher education institutions. Either through educational activities, training or assistance with facilities and infrastructure. The role that can be played by higher education institutions is through community service programs so that the problems faced by the community can be reduced or even eliminated if necessary. In carrying out this responsibility, universities can participate and be involved through counseling activities, sharing knowledge and skills. It is hoped that the community can maximize the existing potential by reading the opportunities available, so that this activity can contribute as much as possible to village development. This is in line with the development of science and the mardeka campus and mardeka belajar programs. Through community service, universities are expected to contribute to the development of the whole person. The community in Keliling Benteng Hulu Village is no exception, which must be fostered and given knowledge in various aspects of their lives, such as health, economy, culture and religion.

Women and men have the same rights and obligations in all areas of development. However, this community service activity is more directed towards the active role of women, because women have an important role in helping family finances. Therefore, this community service activity in Keliling Benteng Ulu Village, West Martapura Sub-district, Banjar Regency is more focused on the role of women. Women are given the freedom to develop in all areas of their lives. Whether as a companion to her husband, educator of children, manager of the household, additional breadwinner, or as a member of the community, a woman's role greatly influences family life. To fulfill her duties as a household manager, one of the most important things to consider is how to manage her time so that she can perform her duties in family and community life in a balanced manner. To perform other roles well, it is important to manage time well. According to Herien (2014) As a housewife, women must be able to utilize all family resources and regional potential. It is possible to improve the family's standard of living and economy if these resources can be used properly. West Martapura Sub-district has 13 villages, one of the villages is Keliling Benteng Ulu, this village has an area of 22.57 km or 14.99% of the total area of this Sub-district (2970.43 km) The following is a map of Keliling Benteng Village, West Martapura Sub-district. Banjar Regency, South Kalimantan Province.



Figure 1. Map of Village Areas in Martapura Barat Sub-District

The village around Benteng Ulu has an area of 22.51 km and consists of 9 RT with a total of 710 households and a population of 2076 people consisting of 1052 men and 1024 women. The results of Risanty's research (2015) stated that this village has a high level of flood vulnerability. This is because flooding occurs almost every year and if rain occurs continuously, it will result in an increase in water discharge. Residents' settlements in the village will be vulnerable to flooding because most of the settlements are located near the river. Unlike the other RTs, RT 05 is located quite far away and the road is quite long with only one lane. In addition, the road conditions are also quite extreme and cannot be passed by cars. RT 05 of Keliling Benteng Ulu Village consists of 61 households consisting of 97 men and 74 women with a total population of 171 people. The neighborhood condition of RT 05 Keliling Benteng Ulu Village is limited by a river in the middle that separates the community housing on the left and right lanes. Thus, accommodation is required to reach this distance by boat (sampan) or klotok. However, a bridge access has now been built, making it easier for the community to carry out activities.

This community service activity is focused on making freshwater fish preserves in the form of jerky, because fish contains many compounds that are good for health, such as protein, fat with omega3, taurine, vitamins, and minerals, among others. Peptides from fish digestive organs are good for health, such as vitamins and minerals. Proteins containing amino acids have high digestibility and high quality. Haruan fish/Cork fish was chosen because it has advantages, according to Rahayu et al (2021) Haruan fish/Cork fish (*Channa striata*) is a fish that lives in fresh waters. This fish is able to survive during the dry season by digging mud in lakes, canals and swamps. Making haruan fish jerky was chosen because this fish has better nutritional value when compared to other fish, this fish contains a protein value of around 25.5%. This amount is higher when compared to the protein content of goldfish (16%), milkfish (20%), snapper (20%), or sardines (21.1%) as the results of research from Pariyanto et al., (2021) and Tungadi's research, (2020).

In line with the pre-survey conducted, it is necessary to make efforts to increase the income of the people of this village through the activities of mothers by making souvenirs from abundant freshwater fish. Many fish preparations made today are salted fish, and of course if consumed continuously it is not good for health. Freshwater fish obtained during this time is sold of course when their catch is abundant need certain treatment so that their catch does not become rotten. (Panghiyangani 2019). This community service activity is expected to increase their knowledge and skills so as to provide opportunities for them to increase the selling value of the processed freshwater fish they have made so far. To increase their income, they can make Haruan fish jerky and this fish jerky will be more durable and they can reach wider marketing to other areas. The results of observations that have been made show some lack of skills of mothers in processing freshwater fish preserves. Lack of knowledge about how to produce processed fish into fish jerky. lack of application of business management. Therefore, it is important for mothers in this village to be educated and trained in this fish preservation processing skill so that it has better economic value.

From the results of the explanation of the problems above and the data obtained, and analyzed, problems can be identified in this service:

1. Lack of knowledge/technology in processing freshwater fish preserves so that fish production has been mostly sold directly and if excess is made into salted fish. So, there needs to be a transfer of knowledge/technology for processing Haruan fish preserves that are safe, healthy, and hygienic. This activity is important because the results of the community health check show that many of the women whose health was checked by the students had hypertension.
2. Villagers believe that freshwater fish do not have many food processing options because they can only be used as daily side dishes such as fried, grilled or dipepes. Lack of experience in fish preservation food processing as well as the process of packaging the preserved products can provide added economic value.
3. The diversification of freshwater fish processing is expected to increase the volume of fish sold and increase family income.
4. The need for production management so that the marketing process of processed freshwater fish preserves can be more organized, sustainable because the production factors are available.
5. The low level of education/knowledge of existing human resources needs to be improved by changing mindsets and transferring knowledge/technology through community service.

This is the problem faced by the community of RT 5 Keliling Benteng Ulu Village, Martapura Barat Sub-district, Banjar District.

IMPLEMENTATION AND METHODS

It is very important to improve the knowledge and skills of mothers so that they are more creative and productive. To achieve the objectives of this community service more optimally, the following methods are carried out in this training activity:

1. Lectures. trainees are provided with materials on the following topics:
 - a. Freshwater fish, as a local food, is a raw material for a variety of food products and has health benefits.
 - b. Appropriate methods of selecting raw materials, producing and wrapping fish preserves in accordance with hygiene and sanitation standards.
 - c. Basic management of calculating production costs and selling prices and optimizing participants' time, effort, and finances
 - d. Provide motivation for mothers to play an active role in improving the family economy.
1. Discussion about the material provided.
2. Practice. In this activity, participants were trained in the following skills:
 - a. The practice of selecting high-quality raw materials for processing into freshwater fish preserves.
 - b. Practice in material selection, processing, and packaging.
 - c. Making product packaging in a more attractive way so that it is attractive to consumers and ultimately increases the sales quantity.



Figure 2. Materials in the Process of Making Freshwater Fish Preserves

Ingredients required in the processing of Haruan fish jerky

1. Freshwater fish (Haruan fish)
2. Tamarind
3. Salt
4. Coriander
5. Galangal
6. Brown Sugar
7. Shallots
8. Garlic
9. Ginger



Figure 3. Haruan Fish Selection and Cleaning Process



Figure 4. Drying the Fish After the Seasoning Process



Figure 5. Leaflet on the Process of Making Fish Jerky

The training also included a leaflet on how to make Haruan fish jerky, starting with preparation, cutting, and drying. The preparation process starts with cleaning the fish, then the fish is cut from the head to the tail and unbroken at the belly so that the fish becomes thinner and wider. The fish can also be made into filets according to the desired size, with the intention of making the chopping process effective. After the fish is cleaned and cut into pieces as desired, it is mixed with spices until evenly distributed and stored overnight, the fish is dried in the sun for 2-4 days until dry, after drying the fish can be fried or packaged for marketing.



Figure 6. Training Activity on Freshwater Fish Preservation Processing

The implementation outputs of this activity can be as follows:

1. The community gained knowledge in making Haruan fish preserves that have economic value.
2. The community has the ability to process other freshwater fish preserves that meet the requirements of health, food safety and public interest.
3. The community (mothers) are no longer dependent on their husband's income because they have a new source of income. This can gradually improve the community's economy and reduce unemployment.
4. The community (mothers) can become cadres and help others.

CONCLUSIONS AND RECOMMENDATIONS

This community service has conducted education and training activities on processing freshwater fish into fish preserves / jerky that are of high quality and economic value. They have also learned how to package and market the products produced. This mentoring activity must continue to be carried out between the participants both directly and indirectly. This process is done to ensure that education and training in this village continues in accordance with the objectives of the community service activities.

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