



## Diversification of Nila Fish Products in the Mina Mandiri Bokesan, Sindumartani, Ngeplak

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### ABSTRACT

Bokesan hamlet, Sindumartani, Ngeplak, Sleman is known as Kampung Nila. There is the Mina Mandiri group, which consists of mothers whose main production is Nila floss. In order to increase income, product diversification is required. Therefore, participatory action research was carried out aimed at creating productive economic activities in the Mina Mandiri group to increase household income, by providing training in processing Nila into crackers, nuggets and meatballs. To support production activities, equipment assistance in the form of a cake pan, food processor, meat grinder, vacuum sealer and pressure cooker was provided to the Mina Mandiri group in Bokesan, Sindumartani, Ngeplak, Sleman. After empowerment activities, the Mina Mandiri group has been able to produce fish crackers, fish nuggets and fish balls, thereby increasing the diversification of processed fish products.

**Keywords:** nila fish, Mina Mandiri, participatory action research, product diversification

**JEL Classification Code:** D24, L25, Q22

## INTRODUCTION

Nila fish is one type of fish that is popular among the public. Therefore, Nila fish has promising business prospects. Nila fish is a type of fish that has a fast growth rate and can reach a much larger bodyweight with a high level of productivity. Nila fish has a distinctive meat taste, clean white flesh color. This fish is often used as a source of protein that is cheap and easy to obtain and has a selling price that is affordable to the community (Aliyas et al, 2016). Nila fish is one type of freshwater fish that is widely cultivated because it is easy to adapt to a less favorable environment and is easy to breed, so its distribution in nature is very wide (Yanti et al, 2013).

Nila fish is widely cultivated by the community in Sindumartani Village, Ngemplak, Sleman. One of them is in Bokesan Hamlet. People in this village keep Nila fish in the fields and in the yard. After dozens of hamlets were known as fishing areas, this hamlet was later transformed into Kampung Nila fish because of the large number of Nila fish that are cultivated in this area. There is a Mino Ngremboko group consisting of 60 Nila fish farmers in Bokesan Hamlet.

Sindumartani village is flanked by two large rivers, namely Kali Opak and Gendol. The water from these two water sources is clean and rich in mineral resources which are the resources for Nila

fish cultivation in this region. A number of technological innovations have been implemented by this group, for example, hatchery of red Nila fish using superior broodstock Nila fish satriya, pond bottom treatment with tractors, pond fertilization, and the use of probiotics.

Over time, Bokesan Hamlet was pioneered as an integrated fisheries area with animal husbandry, agriculture, tourism, and training. There is a Mina Mandiri group consisting of women who process the production of the Mina Ngremboko Group. The Mina Mandiri group has produced several dry products, namely sticks, shredded, and Nila fish chips. Products from this group are marketed in group production units and outside the group, for example at SME product exhibitions.

This study aims to create productive economic activities through product diversification in the Mina Mandiri group in order to increase household income, by providing training on processing Nila fish into products that have not been produced by the Mina Mandiri group, namely crackers, nuggets, and fish balls. In addition, the facilities for packaging and storage management of fish products are also provided.

## METHODOLOGY

This participatory action research (PAR) research activity was carried out at the Mina Mandiri Group, Sindumartani



**Figure 1.**  
**Nila Fish Pond in Bokesan Hamlet**



**Figure 2.**  
**Nila Fish Pond in Bokesan Village Residents' Yard**

Village, Ngemplak District, and Sleman Regency (Tadsiwach, 2010). In this study, researchers and community partners collaborate in analyzing the problems and needs faced by the Mina Mandiri Group by carrying out 4 stages of activities, namely: 1) data collection, 2) problem and needs analysis, 3) determining problems and needs, and 4) determining implementation. to solve problems and needs by using. The four stages of the research were carried out using a participatory action research process (Ruechakul et al, 2015). Participatory action research (PAR) is very suitable to be carried out for the productive economic development of the Mina Mandiri Group because there is interaction and democratic decision-making that leads to the beneficial empowerment of partner groups. As PAR emphasizes collaboration through a participatory process, community members become empowered to define problems and seek solutions. Group members are considered the main actors and play an active role together during the entire PAR process to achieve a common goal (Greenwood et al, 1993; MacDonald, 2012). This activity is carried out by: (1) providing training on the processing of Nila fish fish into fish crackers, tie nuggets, and fish balls; (2) facilitating product packaging; (3) providing storage manage-

ment training. The process of processing Nila fish into crackers, nuggets, and meatballs was adopted by Antriyandari and Ani (2017).

## RESULT AND DISCUSSION

### *Processing of Nila fish into fish crackers.*

Processing is one way to maintain durability and increase the economic value of fish. Nila fish has a savory and delicious meat taste. It has many thorns on its body. The results of processing Nila fish into crackers are shown in Figure 3.

How to make Nila fish crackers as follows. The fish can be steamed or pressurized so that the fish meat that is still attached to the bones/thorns is soft enough and can be easily separated from the bones/thorns. Then grind it. Don't throw away the fish broth. The steamed fish is transferred to a bowl, plus the eggs and spices that have been mashed (shallots, garlic, sugar, salt, powdered broth, baking soda). Stir until smooth. The sago flour is added little by little while continuing to stir so that it is evenly mixed. Dough texture settings. If the dough is too stiff, you can add broth as needed, until the texture of the dough is soft but not runny. The dough is formed, then steamed for about 1 hour, removed, and then cooled. Cut the dough or slice it using a knife. Fish crackers are



**Figure 3.**  
**Processing Results of Fish into Nila fish Fish Crackers**



**Figure 4. Processing of Nila fish into Nila fish Nugget**

dried in the sun until completely dry. Crackers ready to fry

***Processing of Nila fish into fish nuggets.***

Nuggets are processed foods made from flour, mackerel fish meat and other complementary ingredients. Nuggets are very popular with the public because they are very practical for daily consumption, so nugget products are very prospective in the market. Nila fish can be used as raw material for making fish nuggets. The following is the result of Nila fish nuggets (Figure 4).

How to make Nila fish nuggets as follows: 2 beaten eggs. Finely ground fish meat is mixed with flour, beaten eggs, shallots, garlic, ground pepper, sugar, salt and flavoring. Put the dough into a baking sheet that has been greased with oil so it doesn't stick, then flatten. Steamed dough for 1 or until cooked and not pale, removed and let stand until cool. The dough is removed from the tin and then cut into desired pieces. Beat eggs in 1 bowl. Dip the nuggets in the beaten egg, then roll them in the breadcrumbs until the surface is tightly covered. For good results, you should leave it in the refrigerator overnight. Nuggets are ready to be fried over medium heat until cooked while flipping, lifting and draining.

***Processing of Nila fish into fish balls.***

Fish balls are one of the variations of meatballs that are quite attractive to the public. Fish balls have high nutrition and a savory taste, no less delicious than meat balls. Fish balls are often a mixture of soup dishes, or can also be served with a mixture of noodles, tofu and vegetables. How to make Nila fish fish balls as follows: Fish meat is ground. Egg whites and ice water are put into the ground fish meat. The dough is mixed until completely blended. Add salt, pepper and stock powder. Then add the sago flour / cornstarch / tapioca until well blended and smooth. The dough is formed by using your hands or a spoon into small balls. Immediately put the dough balls into the boiling water, until the meat-

balls float to the surface. The meatballs that have floated are removed and put in ice water. Drain the meatballs and store in the refrigerator.

To support and support the production of processed Nila fish products, equipment assistance in the form of cake pans, food processors, meat grinders, vacuum sealers and pressure cookers was provided to the Mina Mandiri group in Bokesan, Sindumartani, Ngemplak, Sleman. This equipment assistance can also motivate the enthusiasm of Mina Mandiri Group members to practice on their own and find the right formula for production standards. After training in processing, product packaging and storage management, the Mina Mandiri Group has been able to produce continuously and sell to the market. Sales are made offline in group-owned stores as well as online. Group income increased significantly with the diversification of Nila fish processing products. This diversification of Nila fish products can be a strategy for the sustainability of small industrial businesses such as the Mina Mandiri Group as stated by Vogl (2018).

**CONCLUSIONS**

This activity involves members of the Mina Mandiri Group to actively participate using the Participatory Rural Appraisal (PRA) method. The activity, which was carried out by providing training on making crackers, nuggets and Nila fish fish balls, succeeded in increasing product diversification and increasing the income of the Mina Mandiri Group. In order for the business to continue to grow, the Mina Mandiri Group is advised to increase production economies of scale and expand the market.

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