

Empowerment of Women's Groups in The Penajam Paser Utara River Through Oyster Mushroom Cultivation to Improve The Economy

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Abstract

The public currently demands oyster mushrooms to meet food needs. This can be seen from demand, which continues to increase every year. The high demand for oyster mushrooms is still not met. Many are still imported from outside the region. The price of oyster mushrooms is relatively lower than other protein sources, so the demand for consumption is quite high, but this has not been balanced with balanced production. This activity was carried out at the Korpri housing complex, Sungai Parit, North Penajam Paser, a residential area with the majority of residents working as civil servants and private employees, mostly by the head of the family. With this incident, mothers in the area have more time to do other activities outside of work as housewives. The problem was the lack of knowledge among mothers in this area about oyster mushroom cultivation, which can help increase family income. This community service activity was carried out in four stages: field observation, socialization of oyster mushroom cultivation, cultivation training, harvesting techniques, and marketing of oyster mushroom cultivation results. The results of the activity were in the form of making a mushroom house that produces 2-4 kilos of oyster mushrooms daily.

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INTRODUCTION

Indonesia is an agricultural country, and most people work as farmers, supported by fertile agricultural land and large forest areas. They are famous for their agricultural products. However, most farmers and people in Indonesia lack knowledge of agriculture, especially oyster mushroom cultivation. Oyster mushroom cultivation activities in Indonesia are still relatively low compared to the needs or demands of consumers every day (Hartono, 2022; Restuati et al., 2021; Susilawati et al., 2017). This can be seen from the increase in demand for oyster mushrooms, which increases yearly.

Some of the reasons underlying the importance of mushroom cultivation in Indonesia include the potential of its large and diverse natural resources, the large population that depends on this sector for their livelihoods, and mushroom cultivation as a basis for growth in rural areas (Arifatin et al., 2021).

Oyster mushrooms are one of the commodities that are currently in demand by the community to meet food needs. This can be seen from the demand that continues to

increase every year. The demand for oyster mushrooms is high, but many are still imported from outside the region. The price of oyster mushrooms is relatively lower when compared to other protein sources, so the demand for consumption is quite high, but has not been balanced with balanced production ([Anggraeni et al., 2023](#)).

This activity was carried out in the Korpri housing complex, Sungai Parit, Penajam Paser Utara, a residential area with most residents working as civil servants and private employees, mostly heads of families. Therefore, mothers in the area have more time to do other activities outside of working as housewives. This is a potential for housewives to earn additional income to support household needs and improve the economy or family welfare ([Setiawati & Rozinah, 2020](#)).

The problem was mothers' lack of knowledge related to MSMEs or other activities in their free time that can help increase their family income. This project aims to help housewives learn how to grow oyster mushrooms by offering them entrepreneurial support. The second objective is to enhance food security programs by turning partner-owned vacant land into economically valuable assets through mushroom cultivation activities and turning mushroom harvests into various processed foods.

To make oyster mushroom cultivation a profitable enterprise that will boost household income and enable mushroom cultivation to continue sustainably, community service focuses on offering advice and training on mushroom cultivation, including technical and economic calculations ([Prihatiningsih et al., 2025](#)). In conclusion, community empowerment programs are processes aimed at creating communities with better control over their environment, carried out to improve their well-being ([Pangestuti et al., 2022](#)). These activities are expected to increase public interest in farming and similar occupations.

METHODS

This community service activity is carried out in collaboration with a partner group, the women's group from the Korpro Sungai Parit housing area, Penajam Paser Utara. The activity began in February and will continue until May 2024 as the initial phase of a planned ongoing community service program. The community service program is implemented using the Asset-Based Community Development (ABCD) method. ABCD is built on principles proposed by John McKnight and Jody Kretzmann, who are also the founders of The ABCD Institute. The asset-based approach helps communities understand the realities of their internal conditions and the possibilities for change. This approach focuses on transformation, emphasizing what the community wants to achieve and assisting them in realizing their vision ([Rinawati et al., 2022](#)). The activities are carried out in four stages, including:

- a. The initial stage involves a preliminary study through field observations of the conditions where the mushroom house will be established. This activity includes coordinating with the neighborhood head (RT) to determine the site for building the mushroom house, considering land availability, environmental conditions, and proper air circulation ([Prihatiningsih et al., 2025](#)). Observation documents the actions' impact ([Arifatin et al., 2021](#)).
- b. The second stage involves the initial socialization, aimed at introducing and providing an understanding of oyster mushroom cultivation. This activity is conducted during the routine meetings of the women's group at their weekly religious gatherings ([Masruron & Rosidi, 2021](#)).
- c. The third stage includes hands-on training for creating the tools and materials needed for constructing the mushroom house and learning the proper cultivation methods. This activity has two sub-stages: daily care and weekly care. Assistance is provided

to enhance skills in production management, marketing, and financial management ([Wijoyo et al., 2021](#))

- d. The final stage is training in packaging and marketing the harvested oyster mushrooms. This includes proper harvesting techniques, selecting suitable packaging, and appropriate storage methods ([Anggraeni et al., 2023](#))

The evaluation results are obtained through a questionnaire containing questions about evaluating the produced goods, focusing on consumer acceptance and the usefulness of the activities carried out.

RESULTS AND DISCUSSION

Community services that directly engage with the main partners, namely the community. This community service program is implemented using the ABCD method. The asset-based approach helps communities understand the realities of their internal conditions and the potential changes they can implement. This approach is directed toward transformation, focusing on what the community aims to achieve, and assists them in realizing their vision ([Rinawati et al., 2022](#)). This activity is designed to help solve the problems the community faces. It aims to add value by enhancing the community's knowledge of oyster mushroom cultivation and the marketing of its products. The activity comprises several stages, namely:

Field Observation

The initial stage of this activity involves conducting field observations to map and analyze the environmental conditions of the activity site. This is done in coordination with the local neighborhood head (RT) to determine the most suitable location for building a mushroom house for oyster mushroom cultivation. As a result of the coordination, the chosen location is next to the neighborhood watch post (Figure 1). This location was selected based on its open environment, which ensures better airflow, and the availability of sufficient land for oyster mushroom cultivation.



Figure 1 Mushroom house location

Socialization on Oyster Mushroom Cultivation

The second activity is socializing about oyster mushroom cultivation. This is necessary because the partner group, the women's group from Sungai Parit, lacks knowledge about oyster mushroom cultivation (Figure 2). The activity includes presenting material on cultivation techniques, care, and harvesting methods.

Additionally, an experienced oyster mushroom farmer participated in a sharing session. The farmer discussed the challenges that may arise during the cultivation process and provided recommendations for ensuring that the cultivation activity is carried out sustainably ([Khusnul, 2020](#)).

Oyster mushroom cultivation is a form of appropriate technology that requires low costs and is simple to implement, making it suitable for the local community. Oyster mushrooms can be harvested in about 1.5 months, require no fertilizer, can be cultivated

in any season, and are suitable for home-industry-scale operations and various individuals. Moreover, the by-products of oyster mushrooms can be used as compost, fish feed, or as a medium for worm breeding ([Susanti & Oktafia, 2023](#))



Figure 2 Socialization on oyster mushroom cultivation

After the socialization, the next activity was constructing the mushroom house with the assistance of local residents, particularly the men. The mushroom house was built at the pre-determined location next to the neighborhood watch post. It was constructed using ulin wood for the poles, leaf material for the roof, and paranet for the walls, categorizing it as a semi-permanent structure (Figure 3). These materials were selected to adapt to the surrounding environmental conditions and to create an optimal setting for oyster mushroom cultivation ([Wijoyo et al., 2021](#)).



Figure 3 Mushroom house building process

During the material presentation, participants were introduced to mushrooms in general, including their characteristics, reproduction methods, cultivation techniques, and the processes of harvesting and marketing. Participant enthusiasm became evident during this session, as they actively responded by asking various questions throughout the presentation ([Khusnul, 2020](#))

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Maintaining oyster mushrooms involves creating and maintaining an environment that meets the growth requirements of the mushrooms. To achieve this, mushroom cultivators typically build a mushroom house or *kumbung*. A good *kumbung* provides adequate air circulation and maintains the necessary humidity and temperature for mushroom development. Racks or multi-layered shelves are arranged inside the *kumbung*, supported by two poles. The growing media can be positioned horizontally or vertically on these racks ([Suwito & Yusuf, 2020](#)).

Training in Oyster Mushroom Cultivation

After constructing the mushroom house, the next step was filling it with oyster mushroom spawn placed in *baglogs*. This training was conducted collaboratively, from selecting the raw materials for mushroom spawn, choosing the appropriate growing medium, and installing the *baglogs* onto the supporting poles (Figure 4). The aim was to provide skills to the women's group in Sungai Parit so they could independently care for and maintain the mushrooms and build new mushroom houses for business expansion.

Oyster mushroom cultivation enhances knowledge of proper cultivation techniques, including log preparation, packaging, steaming and cooling, mushroom seeding, and harvesting ([Sabana et al., 2023](#)).

The training also covered two essential stages of oyster mushroom cultivation:

a. Daily Maintenance

Proper watering of the *baglogs* by sprinkling water evenly, ensuring they are moist but not overly wet. Second, harvesting mushrooms that are ready for picking, identified by the fully expanded and large mushroom caps. Third, immediate packaging of harvested mushrooms to reduce evaporation and maintain freshness.

b. Weekly Maintenance

Every week we need to do regular observation of mushroom growth to identify "mature" *baglogs* (those filled with mycelium). Transferring mature *baglogs* onto the shelves. Removing paper covers and "rings" from the *baglogs*. Adding fertilizer as needed. Maintaining the *Kumbung* environment to prevent pests and ensure optimal conditions. Training on cultivation tools and materials is shown in Figure 4.



Figure 4 Training on cultivation materials and tools

Training on Harvesting Techniques and Marketing of Harvested Products

The fourth activity is training on proper harvesting techniques and choosing the right packaging before marketing the cultivated products (Figure 5). The harvesting stage is the final phase of oyster mushroom cultivation; however, this stage is critical if the process continues into the marketing phase. Mushrooms ready for harvest have a short shelf life of one day at room temperature and two days if stored in the refrigerator. Proper packaging techniques are crucial at harvesting because mushrooms have a delicate structure and can wilt easily.



Figure 5 Training on harvesting and marketing

Oyster mushroom cultivation in Indonesia is still not optimal, so the goal of this training is to motivate the community to start mushroom cultivation businesses, process them into superior products, and help improve the local economy ([Suwito & Yusuf, 2018](#)).

Regarding promotion, the most important aspect of running a business is maintaining product quality consistently. Without maintaining quality, products are generally abandoned by customers ([Pangestuti et al., 2022](#))

An indicator of this marketing aspect is that the partner group creates or develops a brand or name for their business ([Setiawati & Rozinah, 2020](#))

CONCLUSION

This community service activity was carried out in four stages: field observation, socialization of oyster mushroom cultivation, cultivation training, and training on harvesting techniques and marketing the cultivated products. The cultivation process is carried out continuously, with harvesting taking place every day.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

AUTHOR CONTRIBUTIONS STATEMENT

Conceptualization, NS and FDS; methodology, NS; formal analysis, NS; investigation, FDS; resources, FDS; data curation, FDS; writing—original draft preparation, NS; writing—review and editing, FDS; supervision, NS; project administration, NS and FDS. All authors have read and agreed to the published version of the manuscript.

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