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BUDIKDAMBER TRAINING FOR WOMEN FARMER GROUPS AS AN EFFORT TO IMPROVE COMMUNITY FOOD SECURITY

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ABSTRACT

Food security is a global issue that continues to become a challenge for communities, especially in areas with limited land and household economic constraints. One effort that can be implemented to support family food security is the application of Budikdamber (fish cultivation in buckets), which integrates fish and vegetable cultivation on a household scale. This community service activity aimed to improve the knowledge and skills of the Tunas Makmur Women Farmer Group (KWT) in utilizing yard land through Budikdamber training and mentoring. The activity was carried out using a participatory educational approach involving 30 members of KWT Tunas Makmur in Tanggul Angin Village, Punggur District. The implementation stages included partner problem identification, program planning, training and mentoring, and monitoring and evaluation. The training activities included assistance in making the Budikdamber system, selecting catfish seeds, and managing Budikdamber cultivation. The results showed that the training had a positive impact on participants' knowledge, skills, and sustainability aspects, with average scores of 4.53, 4.23, and 4.00, respectively. Participants demonstrated increased understanding of Budikdamber management, fish seed selection, and water quality maintenance to optimize catfish growth. In addition, the program encouraged productive utilization of yard land and strengthened community awareness regarding household food security. Therefore, Budikdamber training and mentoring can become an effective strategy to support sustainable family food security and community economic empowerment.

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INTRODUCTION

Food is a basic necessity for human survival (Lepiyanto et al., 2022), and has become an important issue in society (Rahim et al., 2025). Food security is one of the priorities in the Sustainable Development Goals (SDGs) (Mwalupaso et al., 2025). Almost no SDGs can be achieved without adequate and sustainable food (Balan et al., 2025). Efforts to maintain food security must involve various stakeholders, including the government, the community, and academics, who can collaborate to realize food security.

Food insecurity is a complex problem caused by various interrelated factors (Tembo et al., 2025). Household income can limit access to production inputs, which has an impact on the lack

of food availability (Tembo et al., 2025). Economic factors play an important role in shaping food security. Underprivileged people have difficulty meeting the availability of food at home (Setiyaningsih et al., 2020; Tembo et al., 2025). The strategy to improve the community's economy needs to be carried out in line with strengthening food security. Households that are increasingly economically strong can provide sufficient and nutritious food.

Increase in population growth has an impact on reducing cultivation land (Haidiputri & Elmas, 2021). The increase in population causes agricultural land to decrease due to a change in function. Food needs are increasing along with the increase in the population, which is inversely proportional to increasingly limited agricultural production. Reduced agricultural land can have an impact on people's food security. Fulfilling food security requires the size and ease of land access (Thamaga-Chitja et al., 2025). The problem of limited land and limited access is the main issue for people in densely populated areas (Anggraini et al., 2026).

Climate change is an obstacle to achieving food security (Saleem et al., 2025; Simane et al., 2025). An environment that continues to experience a decline in quality becomes less functional according to its intended purpose (Irawan & Amran, 2016). Efforts to increase product productivity to meet food security often lead to increased greenhouse gas emissions (Mwalupaso et al., 2025). Environmental and food issues need to be addressed as an alternative as an effort to increase family food security. One of the efforts that can be made is to develop fish cultivation in buckets.

The results of observations on the partner, namely KWT Tunas Makmur, showed that the yard land was still not widely utilized. The yard of the house owned by most families has not been used optimally (Anggraini et al., 2026). Yard land needs to be used to meet family food security (Lepiyanto et al., 2022). Budikdamber allows the simultaneous production of fish and vegetables with simple and easy-to-apply means (Suryadi et al., 2026). Budikdamber is an environmentally friendly fish farming technique and has profit opportunities in its implementation (Andhikawati et al., 2021; Andriani et al., 2023).

Budikdamber is a technique of fish culture in buckets combined with vegetable cultivation (Andriani et al., 2023). Budikdamber provides opportunities for fish and vegetable cultivation on a scale of stairs (Rahim et al., 2025). The Budikdamber system is an integration of fish and vegetable cultivation that can save land use and increase the efficiency of the use of harsh elements (Tanody & Tasik, 2023). Fish farming in buckets, known as Budikdamber, is a method of fish farming that combines bucket containers with plants through an aquaponic system (Riswanto et al., 2026). Budikdamber is one of the solutions in providing both protein and animal food for families (Andriani et al., 2023; Rahim et al., 2025). The application of Budikdamber technology has been proven to be able to produce independent food products in the form of catfish and kale vegetables (Anggraini et al., 2026). The impact of the implementation of Budikdamber is very significant on food security and improving the quality of family nutrition (Rahim et al., 2025).

As a result of the interview, the majority of KWT Tunas Makmur members have limited yard land and have not been optimally utilized. The results of the interview show that KWT Tunas Makmur has received training related to Budikdamber, but the results are not optimal, there are still many dead fish, and vegetable growth is not optimal. This condition needs to be overcome with training and mentoring of Budikdamber in an intentional and sustainable manner. As a result of the interview with KWT Tunas Makmur, information was obtained that the majority of members work as housewives. The Farmer Women Group is a group of housewives who have many activities to increase knowledge and insight about food diversification, entrepreneurship can increase income for family welfare (Mulyani et al., 2024). The Farmer Women Group is one of the potential solutions to overcome government problems in providing new jobs (Rusli et al., 2022). Housewives have the potential to upskill with counseling, training, and education (Harianti et al., 2023).

With potential and tenacity, women can be crucial in efforts to increase productivity and independence (Rusli et al., 2022). This potential will certainly be the initial capital to develop Budikdamber. Budikdamber training and assistance are expected to be a solution to maintain family food security, and can be an alternative to increase family income. The Women Farmers Group is expected to be able to improve the family economy by managing yard land as a source of

nutritional fulfillment for their families as well as an example for the community (Alpandari & Prakoso, 2022). The application of Budikdamber in KWT Tunas Makmur not only contributes to the fulfillment of nutritious food but also has the potential for economic improvement. This activity is expected to be a program that can increase knowledge and skills that can strengthen the role of women in realizing food security.

IMPLEMENTATION METHOD

Community service is carried out with an educational participation approach. Community service activities will be carried out in February-March 2026. The community service implementation involved 30 members of the Tunas Makmur Farmer Women group in Tanggul Angin Village, Punggur District. The selection of the Tunas Makmur farmer women group as a partner because they have the characteristics of a productive age and have the motivation to learn. The stages of community service can be seen in Figure 1.

Figure 1. Stages of Community Service

Figure 1 shows the stages of implementing community service. The stages are detailed as follows.

1. Partner Problem Identification Stage. This stage is a survey to identify problems experienced by partners. This activity was carried out by conducting observations and interviews with partners.
2. Program Planning Stage. This stage involves developing a program to address partner issues. Training and Mentoring Stage. This stage is the stage of mentoring and training partners related to Budikdamber. Training and mentoring were carried out in 3 activities: details of training and assistance in making Budikdamber, the selection of catfish seeds, and training and assistance in Budikdamber management. This stage also measures were also carried out related to the response of KWT Tunas Makmur members to the Budikdamber training. The measurement of the response of KWT members was carried out using questionnaires. The scale used in the instrument is the Likert scale

3. Monitoring and Evaluation Stage. This stage is a periodic monitoring stage after training. This activity was carried out to find out the development of Budikdamber and identify obstacles experienced by partners.

RESULTS AND DISCUSSION

1. Partner problem identification stage

   The results of observations show that the yard land of KWT Tunas Makmur members has not been optimally utilized. Housewives can use yard land more productively so that it can become a side business (Sasora et al., 2022). The majority of the yard land is still empty, and some has been used for chili cultivation, which is used for daily cooking needs. This unused yard land certainly has the potential to fulfill family food. The use of yard land can reduce daily basic needs (Sasora et al., 2022). Settlements with limited open space make it difficult to carry out conventional farming and fish farming activities (Nadiro et al., 2026). The use of the yard of the house can be optimized to meet the family's food needs. Another obstacle in fulfilling food security is the availability of funds. As a result of the interview, information was obtained that KWT Tunas Makmur had received Budikdamber assistance from the government. As a result of cultivation, there were many dead catfish. The large number of dead fish is due to a lack of knowledge and skills in fish farming in buckets.

2. Program Planning Stage

   This stage is the stage of preparing a program as a solution to problems found in partners. The programs that will be carried out during the process of community service activities are:

   a. Budikdamber making training
   b. Assistance in the selection of catfish seeds
   c. Training and Mentoring Budikdamber

3. Training and mentoring stage

   a. Budikdamber making training

      The making of Budikdamber is carried out by providing training on how to prepare a bucket (Figure 1) that can optimize catfish growth. The buckets used in Budikdamber are given water drainage.

Figure 2. Manufacture of Budikdamber

Figure 2 is the result of assistance in preparing the Budikdamber container bucket. The bucket is provided with a water faucet to facilitate water change. Water quality is one of the things that determines the success of Budikdamber. Water that is

maintained in quality can provide better opportunities for fish growth. The growth rate of catfish is affected by water quality; poor water quality can cause a large number of fish to die (Purwanti et al., 2024). Water quality can lead to a decrease in the survival rate of catfish (Setyani et al., 2021). Water quality is a factor that can affect the metabolic process of dumbo catfish (Liswahyuni et al., 2021). Residue accumulation in Budikdamber is faster and requires water quality management at a density of 150 fish (Riswanto et al., 2026). Pollutants contained in dissolved feed residues can poison fish (Harahap et al., 2023). Water quality, feeding, density, and inconsistent water turnover harm catfish and plant growth (Riswanto et al., 2026).

b. Assistance in the selection of catfish seeds

One of the protein-rich fish that can be cultivated in Budikdamber is catfish (Andriani et al., 2023). Catfish cultivation is a business that continues to develop, is easy to market and does not require large capital (Harahap et al., 2023). Data on increased production and stable catfish prices are a cultivation business that has opportunities to improve people's welfare (Natalia et al., 2020; Purwanti et al., 2024). Assistance in the selection of catfish seeds is carried out by providing information related to the size of catfish seedlings that have a higher chance of survival. Catfish seedlings that are too small have a greater chance of death if Budikdamber care is not carried out optimally. The low survival rate of catfish in Budikdamber is due to the quality of the seeds, the size of the seeds, and the density of the fish (Setyani et al., 2021). Catfish is a fishery commodity that is already very popular among the community. Catfish seeds for Budikdamber usually use a size of 7-8 cm (Nadiro et al., 2026).

c. Training and Mentoring Budikdamber.

At this stage, KWT Tunas Makmur members receive training and assistance on how to manage Budikdamber (Figure 3). This assistance is carried out so that Budikdamber's production can be more optimal. The activity was carried out by a participatory method. The members of KWT immediately practiced how to manage Budikdamber.

Figure 3. Training and mentoring stage

Figure 3 is a training and assistance activity in Budikdamber in determining the number of catfish for each bucket. This activity is carried out so that KWT Tunas Makmur members have knowledge for more optimal fish growth and how to reduce the potential number of dead fish. KWT members were given information on how many fish were in each bucket, and how to change water properly so that catfish can live healthier and more optimally. The results of the research show that the ideal density of catfish in Budikdamber in an 80-liter bucket is 55-70 fish, with the ideal time for water change to be carried out every 4-5 days, which is carried out in the range of 17.30-19.00 (Riswanto et al., 2026). Water replacement is intended to reduce stress on fish as a result of declining

water quality due to the accumulation of dirt and debris (feed residue) (Mojiono et al., 2020). Feeding in this training was carried out 2 times. Catfish feeding can be done 2 times a day, namely in the morning and evening (Ramazan et al., 2023).
The results of the analysis of the responses of KWT Tunas Makmur members during the process of community service activities are shown in Table 1.

Table 1. Response of KWT Tunas Makmur Members to Budikdamber Training

Aspects	Average Score
Knowledge	4,53
Skills	4,23
Sustainability	4,00

Table 1 shows how KWT Tunas Makmur members responded to the Budikdamber training. The analysis shows that all aspects are excellent. The analysis also showed that Budikdamber training had a positive impact on KWT Tunas Makmur members. The knowledge aspect received the highest average score of 4.53. These results show that Budikdamber training can increase the knowledge of KWT Tunas Makmur members. These results also show that the training went well and was easy to understand. The skill aspect gets an average score of 4.23. These results show that Budikdamber's training and mentoring have improved the skills of KWT Tunas Makmur members. The skills gained during the training include the creation of the Budikdamber system, the selection of seeds, and the management of Budikdamber. The sustainability aspect shows an average score of 4.00. The sustainability aspect shows the lowest value compared to other aspects. The sustainability aspect requires further assistance so that KWT Tunas Makmur members can continue to cultivate catfish with the Budikdamber pattern. These results show that Budikdamber training can improve the knowledge and skills of KWT Tunas Makmur members. Training can increase enthusiasm and motivation to develop yourself (Andhikawati et al., 2021).

KWT Tunas Makmur has strategic potential because it is located in the center of the sub-district and close to the traditional market, which is the economic center of the community. This strategic location has the potential for ease of production and marketing of Budikdamber products. The results of Budikdamber's training show that there is an increase in skills in Budikdamber management. This condition shows that there is great potential to develop the cultivation business. Efforts that can be made are increasing production, diversifying processing, and strengthening business management. Further development can be done by increasing production capacity with a home-scale integrated agricultural system. This integrated agricultural system requires further assistance because it not only covers fish and plants, but also how household waste is used as organic matter. The existence of this system is expected to further increase sustainable family food security and provide opportunities for improving the family economy.

4. Monitoring and evaluation stage.

This stage is monitored periodically. The service team monitors both coming to partner locations and using communication media. Periodic monitoring is carried out so that when partners experience problems, further assistance can be immediately provided.

CONCLUSIONS AND SUGGESTIONS

Community service activities related to Budikdamber training and mentoring benefit KWT Tunas Makmur members. Budikdamber's training and mentoring have succeeded in improving Budikdamber's knowledge, skills, and sustainability. Through the existence of Budikdamber

training and assistance, the community has insight into how to use narrow land for food security. Budikdamber assistance must be provided on an ongoing basis so that every obstacle partners face can be quickly resolved. Training and mentoring of Budikdamber. To increase food security, Budikdamber can be integrated into an integrated home farming system, so that it can provide a more diverse source of food. For long-term economic improvement in fish cultivation in buckets, service activities at KWT Tunas Makmur can be continued with a facilitation program made from catfish and organic vegetables. Budikdamber at KWT Tunas Makmur is currently still carried out centrally in one house, so it is necessary to increase the number of buckets for each KWT member so that it can increase catfish production. To increase the success of Budikdamber, community groups must pay attention to the number of lel fish in each bucket, feeding time, and water change time. People who will do Budikdamber can start with a smaller number of buckets as a first step in adjusting skills, resources, management time, and venue conditions.

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