

Training on Making Simple Basic Fish Feed to Improve the Skills of Fish Farmers Milkfish

Yohanes Freadyanus Kasi*, Fransiskus Jenga Lena, and Anastasia Sode

Department of Fisheries Science, Institut Nasional Flores, East Nusa Tenggara, Indonesia

*yohaneskasi@gmail.com

Article Info

Article history:

Received: July 2, 2024

Accepted: November 12, 2024

Published: February 2, 2025

Keywords:

Fish farming milkfish

Fish feed

Simple materials

This article is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/)

© 2025 Bubungan Tinggi:
Jurnal Pengabdian
Masyarakat

Abstract

The people of Aeramo village, Nagekeo Regency, who work as fish farmers, find it very difficult to provide fish feed due to the high feed price. The purpose of implementing this community service activity is to provide information about the process of making simple-based fish feed and their response. Community service was carried out in June 2023 in Dusun II, Aeramo Village, Nagekeo Regency. The activity method is Asset Based Community Development (ABCD), which aims to carry out community service based on the strengths and potential of the community. Discussions and interviews, counseling, and direct practice carried out data collection. The results obtained from this fish feed-making training activity are: 1) the community knows that the actual feed they buy so far ingredients are around them and are very simple, 2) the community is able to absorb the knowledge gained about how to make feed starting with the preparation of tools and materials, making formulations, to making feed and given directly to cultured fish. Fish farmers can easily make fish feed, and the raw materials used in making feed can be obtained in the surrounding area, making it easier for farmers to make their feed.

To cite this article: Kasi, Y. F., Lena, F.J., & Sode, A. (2025). Training on making simple basic fish feed to improve the skills of fish farmers milkfish. *Bubungan Tinggi: Jurnal Pengabdian Masyarakat*, 7 (1), 264-271.

INTRODUCTION

The fisheries sector is one of the sectors that can support economic growth in Indonesia. Aquaculture development has a great opportunity to be carried out when viewed from the strategic environment and the potential resources available ([Zubaidah et al. 2021](#)). One area that has the potential to develop aquaculture is Nagekeo Regency, East Nusa Tenggara (NTT). Aeramo village, Nagekeo-NTT Regency. Nagekeo Regency stretches between 8°26' 00" LS-8°64' 40" LS and 121°6'20" East-121°32' 00" East. Nagekeo Regency has the following geographical boundaries: East: bordered by Ende Regency; West: bordered by Ngada Regency; North: bordered by the Flores Sea; South: bordered by the Sawu Sea. Administratively, the regional government of Nagekeo Regency, until 2015 was divided into seven sub-districts and 113 villages/sub-districts, with the capital city being Mbay, which is located in Aesesa District ([Nagekeo Regency in Figures, 2021](#)).

One of the villages in the Aesesa District that has the potential for aquaculture is Aeramo village. Aeramo Village is located in the eastern part of Nagekeo Regency, at the center of the Nagekeo Regency Capital and the city point of Aesesa District. The location of Aeramo Village, Nagekeo Regency, is very strategic, namely in the center of Flores Island-NTT. The area consists of lowlands, hilly areas, and irrigation water sources from

Sutami Dam, which flow throughout the year. In addition, Aeramo village has many brackish water areas that are very suitable for milkfish cultivation. The potential of the region in Aeramo Village, Nagekeo Regency, besides agriculture and livestock, is brackish water aquaculture. Most of the community consists of farmers, ranchers, and fish farmers.

Fish farming activities require sustainable development, so their empowerment must be prioritized, including through training in fish feed making. Feed is one of the main components that has an important function in supporting the success of fish farming. Feed occupies the highest position, around 60-80% of the total production cost requirements in intensive fish farming ([Mulia et al. 2015](#)). Feed availability in sufficient quantity and quality can ensure the sustainability of the fish farming cycle. Fish feed sold in the market usually has a fairly expensive price ([Andriani et al. 2021](#)). Even though the raw materials for making fish feed can still be obtained from the environment around fish farmers ([Tell et al., 2021](#)). For example, research on training in making catfish feed from coconut meal for the wives of catfish farmers in Muaro Jambi district ([Metha et al., 2024](#)). Fish feed-making training activities are important because the price of fish feed produced by the company is currently getting more expensive, not followed by an adequate selling price of fish, farmers find it difficult to make a profit, many sources of local raw materials have not been utilized, and efforts to create cheaper feed based on simple ingredients are still constrained by the provision of facilities that are easy to operate ([Andriani et al. 2021](#); [Satoto et al. 2021](#)).

Based on initial observations, most milkfish farmers in Aeramo Village only rely on fish feed from stores imported from outside. Meanwhile, the community's economic condition is still in the middle to lower category. The community still does not know that the fish feed they buy is simple to make and available around them. If this condition continues for a long time, fish farmers will be reduced because the production count exceeds the sales results. The challenge faced by the community is that they do not have a complex understanding of how to make fish feed using the ingredients around them. Under these conditions, transferring knowledge about making fish feed with simple ingredients around farmers is important.

This community service activity aims to assist milkfish farmers in meeting feed availability during cultivation to reduce production costs (purchase of feed), which is expensive and can utilize simple local raw materials around as feed materials. This is in line with Law Number 12 of 2012 concerning Higher Education Article 45, which emphasizes that research in higher education is directed at developing science and technology, as well as improving the welfare of society and the competitiveness of the nation.

METHODS

This community service was carried out using Asset Based Community Development (ABCD), which is to carry out community service based on the strengths and potential of the community. Data is collected through discussions, interviews, counseling, and direct practice. This community service activity was carried out in June 2023 in Dusun II Aeramo village, Nagekeo Regency, by involving representatives of the milkfish farming community and students of the Fisheries Science study program. The steps taken are as follows: 1) discussions and interviews with the community related to cultivation constraints so far and information on simple ingredients for making fish feed, 2) counseling on the distribution of training modules on how to make fish feed, 3) training by practicing directly how to make fish feed made from sederhana. The tools and materials used in this community service activity are described in Tables 1 and 2.

Table 1 Fish feed manufacturing equipment

No.	Tool Name	Quantity (pieces)	Usability
1	Basin	4	As a container for storing raw materials
2	Bucket	1	A place to store water
3	Feed molding tool	1	To print feed
4	Trays	2	As a feed molding and drying container
5	Sieve	1	To sift raw materials
6	Scales	1	To weigh the ingredients
7	Cutter	1	Tool for cutting feed

Table 2 Materials for making fish feed

No.	Material Name	Usability
1	Fish meal	Feed ingredients
2	Corn flour	Feed ingredients
3	Fish oil	Feed ingredients
4	Soy flour	Feed ingredients
5	Bran	Feed ingredients
6	Water	As a feed mixer

The stages in the implementation of community service activities are as follows:

1. The community service team of the Fisheries Science study program, Institut Nasional Flores, conducted a site survey in January 2021 in Dusun II of Aeramo village.
2. The community service team of the Fisheries Science study program, Institut Nasional Flores, made an activity plan that included time, material, and technical implementation of activities.
3. Coordination with the Aeramo Village government as a place to implement activities regarding the technical implementation of activities, venues, facilities, and participants.
4. After the village government confirmed the time and place of implementation, the community service team of the Fisheries Science study program at Flores National University invited the community to become training participants.
5. The training activities used a discussion method to motivate the participants to understand the importance of fish feed production.
6. Furthermore, this counseling was conducted to increase the community's knowledge of making fish feed using simple materials around them.
7. Practice making fish feed.

RESULTS AND DISCUSSION

Artificial fish feed is feed made from food ingredients, both vegetable and animal, by considering the nutritional content, nature, and size of the fish. By being given artificial fish feed, the nutritional needs of fish can be met at any time without depending on the natural feed available. In this community service activity, the focus is on several processes, namely: 1) understanding the theory of formulations in fish feed, simple ingredients for making fish feed, and methods of making feed, which are explained directly by the resource person, in this case, a lecturer in the Fisheries Science study program, 2) introduction of feed raw materials that have been prepared to make feed, 3) mixing feed ingredients, 4) making feed into dough, 5) molding feed, and 6) drying feed.

Discussion and Counseling

The community service program (PkM) for Aeramo Village, Nagekeo Regency, through training in making simple fish feed, is carried out in a structured manner by directly involving the community. This PkM activity began with a team visit to Aeramo Village to submit an administrative letter and meet with the Village Head. This activity was carried out on June 23, 2023, at the house of one of the people in Dusun II, Aeramo Village. The training participants were 10 people from the milkfish farmers group and the community of Dusun II. This training also involved six students of the fisheries science study program of the Institut Nasional Flores, who acted as facilitators.

The training materials presented used discussion and counseling methods with the instrument as a guide, namely the Simple Fish Feed Making Module. The initial material of this training was directed at introducing and understanding the participants about fish feed and its formula. Furthermore, the second material is the stages in making simple basic fish feed. After completing the material presentation, a discussion and question and answer session followed. In this session, the community that attended was very enthusiastic and asked various questions. The community admitted to getting a lot of new information and knowledge about how to make fish feed. This result is in accordance with research by ([Swandayani et al., 2023](#)), which revealed that community service activities can increase the understanding and skills of partners/communities regarding manufacturing fish feed. Many things interest participants, one is that simple materials around them can also be used to make fish feed. Figure 1 shows the process of post-discussion, counseling, and interviews with the community about the resources of feed-making materials in the community and how the process is made.



Figure 1 Discussion and counseling

Fish Feed-Making Practice

The following process in this PkM activity was direct practice with the milkfish farming community. In this practice, the PkM team used tools and materials, some provided by the team and other materials by the community, such as morning bran and fishmeal, which they had been informed of before the training activities were held. The stages in the practice of making fish feed are,

1. Introduction of fish feed ingredients

The feed raw materials used are generally easily available and relatively cheap, such as fishmeal, rice bran, cornmeal, fish oil, soybean meal, and water. Fishmeal is obtained from fish waste in the market, which is dried and pulverized. Rice bran is obtained from the community because most of them have irrigated rice fields. Corn flour is purchased from the community's corn farm and then finely ground. Likewise, the other ingredients are not difficult to obtain, and raw materials are always available. In addition to the rich nutritional content, considerations for the selection of raw materials include the fact that the availability of raw materials does not compete with human needs, and the feed price is

relatively cheap and affordable. Using simple and relatively inexpensive/easy fish feed ingredients meets the requirements from an economic point of view. Reducing the manufacturer can increase profits because the substitute ingredients are relatively cheap. ([Andriani et al. 2021](#)). The materials used in making simple-based fish feed are presented in Figure 2.



Figure 2 Materials for making fish feed

Mixing of fish feed ingredients

Mixing feed ingredients is carried out after all ingredients are measured according to the formulation. The ingredients that have been formulated are then combined based on the calculation of their needs ([Patria et al., 2022](#)). All ingredients are mixed evenly and homogeneously so that all parts of the resulting feed have an even nutrient composition and are in accordance with the formulation. This process is carried out in a container as a basin; the stirring process is done by hand. The tools are also traditional, and the capacity is still classified as household-scale production.



Figure 3 Mixing process of fish feed ingredients

Fish feed ingredients molding and cutting

This activity uses a pellet machine owned by the Fisheries Science study program, INF, for the feed printing process. The feed size can be adjusted using a razor cutter or knife according to the size of the milkfish's mouth. The size of the feed made in this activity is 1 x 2 mm crumbles.

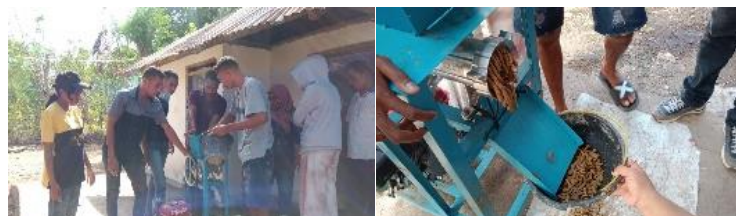


Figure 4 Fish feed molding process using pellet machine

Based on the results of the interviews, the Aeramo village community, which is training participants in this community service activity, admits that they are happy because they have gained a lot of knowledge, especially about how to make fish feed. The same results were expressed that the fish feed-making training activities made the trainees already know how to make fish feed made from local raw materials, starting from

concocting and making feed dough to molding and drying feed ([Sayuti & Saidin, 2021](#); [Suwarsito et al., 2018](#)).

Drying fish feed

The drying process is traditionally done with sunlight, so the fish feed cut according to the size of the milkfish's mouth is dried using a container. The drying process lasts approximately one day until the fish feed completely dries. Figure 5 shows the process of drying the feed after it has been cut into small pieces according to the size of the fish's mouth.



Figure 5 Drying process of fish feed

Based on the results above, it can be explained that this community service process can provide information, experience, and new skills for the community, especially in making simple-based fish feed. The results are in accordance with what is revealed that community service activities can increase community knowledge and skills ([Jubaedah et al., 2023](#); [Rasdi et al., 2023](#)) and a new understanding for participants related to the material provided ([Labobar et al., 2023](#)).

CONCLUSION

With this community service activity on training in making simple-based fish feed, it is hoped that milkfish farmers can make their feed so that they do not depend on store feed. The results can also be used as a business opportunity in producing feed to increase family income. Making fish feed can be done by fish farmers easily; the raw materials used in making feed can be obtained in the surrounding area, making it easier for farmers to make their feed without depending on factory feed; this can help reduce production costs, which have been a problem for farmers.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

AUTHOR CONTRIBUTIONS STATEMENT

YFK took the lead in writing the manuscript. All authors, YFK, FJL, and AS, provided critical feedback and helped shape the research, analysis, and manuscript. YFK, FJL, and AS conceived of the presented idea. YFK wrote the manuscript with support from FJL and AS. YFK encouraged FJL and AS to investigate and supervise the findings of this work. All authors discussed the results and contributed to the final manuscript.

ACKNOWLEDGMENTS

The community service team of the Fisheries Science study program at Flores National University would like to thank the village head and the community of Aeramo village (Dusun II) for their support and participation during this community service activity.

REFERENCES

- Andriani, R., Muchdar, F., Ahmad, K., & Juharni. (2021). Pemanfaatan bahan baku lokal sebagai pakan ikan untuk kelompok budidaya ikan di kota ternate. *Indonesian Journal of Fisheries Community Empowerment*, 1(3), 231–239. <https://doi.org/10.29303/jppi.v1i3.455>
- Jubaedah, D., Amin, M., Fitrani, M., Yulisman, Y., Mukti, R. C., & Rarassari, M. A. (2023). Pelatihan manajemen budidaya ikan hias di upr mitra mina sejahtera, indralaya utara, ogan ilir. *Bubungan Tinggi: Jurnal Pengabdian Masyarakat*, 5(2), 653. <https://doi.org/10.20527/btjpm.v5i2.6810>
- Labobar, J., Malatuny, Y. G., Butu, D., Layan, S., & Banga, N. (2023). Pelatihan penulisan artikel ilmiah dan ptk terhadap guru pendidikan agama kristen di kecamatan sentani. *Bubungan Tinggi: Jurnal Pengabdian Masyarakat*, 5(3), 1173–1180.
- Metha, M., Hajar, S., Suryanto, & Mukhsin. (2024). Pelatihan pembuatan pakan ikan lele dari bungkil kelapa pada istri petani ikan lele di desa pudak kecamatan kumpeh ulu kabupaten muaro jambi. *Jurnal PEDAMAS (Pengabdian Kepada Masyarakat)*, 2(1), 235–241.
- Mulia, D. S., Yulyanti, E., Maryanto, H., & Purbomartono, C. (2015). Peningkatan kualitas ampas tahu sebagai bahan baku pakan ikan dengan fermentasi rhizopus oligosporus. *Sainteks, XII*, 10–20.
- Nagekeo, B. P. S. K. (2021). *Kabupaten Nagekeo Dalam Angka Tahun 2021*.
- Patria, D. G., Prayitno, S. A., & Salsabila, N. (2022). Sosialisasi teknologi pembuatan pakan ikan lele pada umkm cangkul di kota malang - jawa timur. *DedikasiMU (Journal of Community Service)*, 4(2), 6–13.
- Rasdi, R., Askar, H., Irawati, A., Muslimin, I., Mustari, M. A., Putri, T., & Ilham, M. (2023). Pemberdayaan masyarakat melalui program ketahanan pangan budidaya ikan lele dengan sistem bioflok di kota makassar. *Bubungan Tinggi: Jurnal Pengabdian Masyarakat*, 5(4), 1443. <https://doi.org/10.20527/btjpm.v5i4.9279>
- Satoto, I., Fitriadi, R., Palupi, M., & Dadiono, M. S. (2021). Pembuatan pakan ikan lele di kelompok pembudidaya ikan mina semboja, desa pasinggangan. *Jurnal Pendidikan Dan Pengabdian Masyarakat*, 4(2).
- Sayuti, M., & Saidin, S. (2021). Peningkatan keterampilan melalui pelatihan pengolahan tepung ikan dan pembuatan pakan ikan/ternak bagi masyarakat pesisir pulau doom kota sorong. *JMM (Jurnal Masyarakat Mandiri)*, 5(2), 374–384.
- Suwarsito, S., Mustafidah, H., & Kartikawati, R. (2018). Pengembangan pembuatan pakan ikan berbahan baku lokal di desa limpakuwus, kecamatan sumbang, kabupaten banyumas. *The 8th University Research Colloquium 2018 Universitas Muhammadiyah Purwokerto*, 244–248.
- Swandayani, R. E., Andini, A. S., Basri, H., & Juniawan, A. (2023). Pemberdayaan kelompok budidaya ikan melalui pembuatan pakan ikan gabus bernilai ekonomis. *Jurnal Pengabdian UNDIKMA*, 4(2), 404. <https://doi.org/10.33394/jpu.v4i2.7284>
- Tell, Y., Mautuka, Z. A., Kolimon, M., & Lande, D. (2021). Pelatihan pembuatan pakan ikan bagi pemuda dan pembudidaya ikan pada masa pandemi covid-19 di kabupaten alor. *LOGISTA - Jurnal Ilmiah Pengabdian Kepada Masyarakat*, 5(1), 272. <https://doi.org/10.25077/logista.5.1.272-279.2021>
- Zubaidah, A., Sutarjo, G. A., Amir, N. O., & Firmandhaka, R. (2021). Peningkatan minat budi daya melalui pelatihan produksi pakan ikan mandiri dan akuaponik. *Jurnal Pengabdian Kepada Masyarakat (Indonesian Journal of Community Engagement)*, 6(2), 112. <https://doi.org/10.22146/jpkkm.50379>

AUTHOR PROFILES



Full Name : Yohanes Freadyanus Kasi

Email : yohaneskasi@gmail.com

Expertise : Science

Affiliation : Department of Fisheries Science, Institut Nasional Flores

Google Scholar : Yohanes Kasi

Sinta ID : 6722758

Orcid ID : <https://orcid.org/0000-0003-0170-7481>

Scopus ID : 57216740693



Full Name : Fransiskus Jenga Lena

Email : Franslena1710@gmail.com

Expertise : Fisheries Science

Affiliation : Department of Fisheries Science, Institut Nasional Flores



Full Name : Anastasia Sode

Email : anatasiasode@gmail.com

Expertise : Fisheries Science

Affiliation : Department of Fisheries Science, Institut Nasional Flores