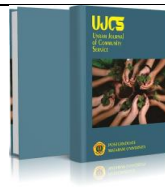
UJCS 6(1) (2025)

Unram Journal of Community Service

https://jurnalpasca.unram.ac.id/index.php/UJCS



Building Sustainability of Food Sovereignty in Lembata Regency through the MBKP Program: Cultural Approach and Field Study

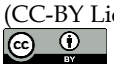
Daffa Adli Ananta[1*], Cholid Fadil[1], Niniek Imaningsih[1]

[1] Ekonomi dan Bisnis, Universitas Pembangunan Nasional Veteran Jawa Timur, Surabaya, Indonesia.

Received: January 9, 2025
Revised: March 12, 2025
Accepted: March 25, 2025
Published: March 31, 2025

Corresponding Author
Daffa Adli Ananta
daffa7762@gmail.com

DOI: 10.29303/ujcs.v6i1.844



Abstract: This service activity aims to improve food sustainability in Merdeka Village through the integration of scientific and cultural approaches. The program identifies and leverages local resources, such as cassava, corn, and coconut, to develop innovative products that address societal challenges, including the lack of utilization of organic waste, limited access to simple technology, and a lack of product diversification. Four prototypes were successfully developed, namely shredded coconut pulp, cookies made from cassava flour and titi corn, caramelized cassava cakes, and organic fertilizer from livestock waste. The demonstration and training involved active community participation with significant results: 100% of participants succeeded in producing shredded coconut pulp independently, 90% of participants succeeded in making ready-to-sell cookies, and 80% of farmers showed understanding and skills in making organic fertilizer. This program has succeeded in optimizing local resources, reducing waste, and empowering communities to produce products that are sustainable, nutritious, and have high economic value. This activity shows the importance of integrating local cultural knowledge with technological innovation to achieve food sovereignty. This initiative not only answers the needs of the community directly but also provides a replicable model to promote sustainable agricultural practices and improve local economies in similar regions.

Keywords: Food Sustainability; Local Resources; Cultural Approach; Innovation; Village Empowerment.

Introduction

Food sovereignty is the fundamental right of every nation to determine food policies that ensure the availability, accessibility, and sustainability of food sources according to local potential. In Lembata Regency, the issue of food sovereignty is an important challenge because the prevalence of food insecurity (PoU) is still at 15.85% in 2023, far above the national average of 8.53%. Although the PoU trend in Lembata shows a decrease of 3.64% in the last five years, there are still some communities that face food insecurity due to limited access and optimization of local resources. This district ranks 14th out of 22 districts/cities in NTT, signaling the need for intensive efforts to strengthen the locally-based food system.

The geographical context of Lembata with a dry climate requires an adaptive approach in food management. Like other traditional food systems in the NTT region, the diversity of local foods such as corn, sorghum, jewawut, tubers, beans, and sago has great potential to support food security. The experience of indigenous peoples such as in Boti Traditional Village shows that diverse planting patterns and the use of local seeds inherited from generation to generation are able to ensure food availability throughout the year while maintaining the sustainability of the ecosystem (Iswanto, 2021).

The Empowered Youth for Food Sovereignty Program (MBKP) is present as a strategic intervention

How to Cite:
Ananta, D. A., Fadil, C., & Imaningsih, N. (2025). Building Sustainability of Food Sovereignty in Lembata Regency through the MBKP Program: Cultural Approach and Field Study. *Unram Journal of Community Service*, *6*(1), 163–168. https://doi.org/10.29303/ujcs.v6i1.844

that combines cultural approaches and field studies to strengthen food sovereignty in Lembata. This program aims to address the main challenges of rural communities, such as the lack of optimization of local ingredients, the limitations of simple technology, and the low sustainability of food innovation. A culture-based approach is expected to strengthen community relations with local resources, support food diversification, and revive traditional practices that are in line with sustainability principles (Sostenes Konyep, 2021).

The study (Renard & Tilman, 2019) confirms that the diversity of food cultivation is an effective solution in increasing national and global food security. Diverse cultivation can reduce the risk of crop failure due to climate change, drought, or disease. The indigenous people's philosophy of "plant everything eats, eat everything grows" is an important inspiration in striving for food sustainability in Lembata, as well as strengthening food security through the integration of local culture and technology.

This journal aims to explore how the MBKP program can build the sustainability of food sovereignty in Lembata Regency with a cultural approach and field studies. This approach is expected to create a model that is able to empower rural communities, optimally utilize local potential, and support sustainable culture-based food independence.

Method

The Empowered Youth Program for Food Sovereignty (MBKP) was implemented in 29 villages in Lembata Regency, involving 7-8 students in each village. The participants were divided into divisions such as enumerators, agronomy, data analysts, GIS (Geographic Information Systems), and food technology. Before being deployed to the field, students receive intensive training and ethnographic modules designed to ensure cultural sensitivity and the ability to interact with local communities. This approach reflects the importance of intercultural communication as a bridge, which helps students understand and respect local symbols, languages, and traditions to create harmonious relationships (Ayuni et al., 2022).

In the data collection process, students adopt an ethnographic approach that involves in-depth interviews, household surveys, cultural observations, and geographic mapping. Interviews are conducted in stages, ranging from common questions to more sensitive topics, with the aim of maintaining public comfort and safety. Students also live with local families to learn about daily habits, value systems, and food management practices. These interactions reinforce culture as the basis of the communication system, with students adapting their communication styles to align with local norms. Participation in village activities such as meetings, posyandu, and traditional events deepens their understanding of communication patterns and the social structure of the local community (Sari et al., 2023).

The data collected is uploaded to the Sidakerta platform, which makes it easier to manage and analyze information. Data analysis is carried out using a value chain approach (Value Chain Analysis), which aims to evaluate activities that add value to local products. This approach is applied to identify the potential for the development of commodities such as corn into cookies, cassava into caramel cakes, and coconut into shredded coconut pulp. Using Porter's Value Chain Model, students evaluate opportunities to increase the competitiveness and profit margin of local products (Dewi, Ratna Christiana, 2017).

After the analysis, students develop a prototype of the product that is tested to ensure sustainability at the household level. The demonstration of making products was carried out at the Posyandu of Merdeka Village by involving TP PKK, Posyandu cadres, and village officials. In addition, counseling on making manure from livestock waste was held to support sustainable agricultural practices. A participatory approach is used to involve the community in the innovation process, creating a sense of ownership of the program outcomes. The program also integrates recognition of cultural diversity by adapting work methods to local social and cultural contexts (Ayuni et al., 2022).

The sustainability of the program is planned through the distribution of leaflets and the delivery of production equipment to the community. With a holistic approach to ethnography, the program not only studies the types of local foods, but also understands the social, cultural, economic, and environmental contexts that influence them. The MBKP program is designed to integrate data analysis, local-based innovation, and cultural interaction to build the sustainability of food sovereignty in Lembata Regency.

Result and Discussion

Local Ingredients Potential

Based on the results of data collection through in-depth interviews, observations, and household surveys in Merdeka Village, several main local materials were found that became the village's superior potential. The following is an overview of the data that has been processed and presented in the form of graphs to clarify the findings.

Leading commodities.

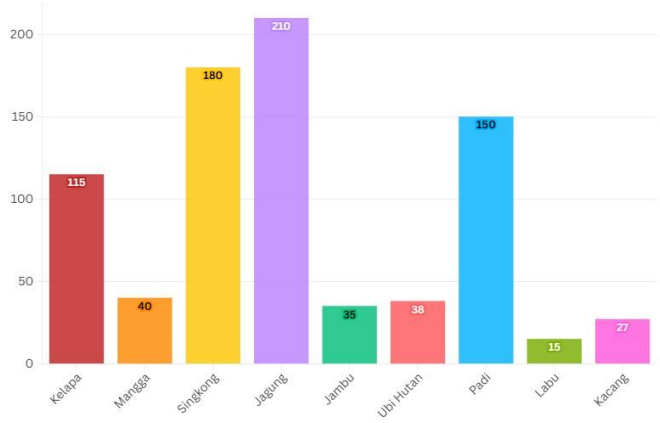


Figure 1. Graph of Merdeka Village's Leading Commodities

Based on the graph above, the potential of local ingredients in Merdeka Village greatly supports the development of product prototypes such as titi corn cookies, caramelized cassava cakes, and shredded coconut pulp. Corn is the main leading commodity with a total production of 210 kilograms. Corn is widely used as a staple food because of its ability to adapt to sandy soil conditions and tropical savannah climates. One of its traditional processed forms, titi corn, has become a popular product among the public. The prototype of titi corn cookies is designed to provide added value to corn through more modern and attractive product diversification. This innovation is expected to increase the marketability of products both in the local market and for tourists.

Cassava, total production of 180 kilograms, has an important role as a source of additional carbohydrates after corn. Cassava is able to grow well on dry soil and is the main raw material for the prototype of caramel cassava cake. This product diversification not only increases the economic value of cassava, but also provides solutions to meet the nutritional needs of the community, especially children who are vulnerable to stunting.

Coconut, production of 115 kilograms, is an important commodity in the coastal area of Merdeka Village. So far, coconut has been mostly processed into coconut oil or Virgin Coconut Oil (VCO). However, the waste in the form of coconut pulp has not been utilized optimally. The prototype of shredded coconut pulp is designed to process the waste into value-added products that are rich in fiber and protein. This innovation not only creates economical and nutritious food alternatives, but also supports the principle of zero waste in household waste management.

Mango, total production of 40 kilograms, is a seasonal local ingredient with great potential for the development of processed products in the future. Although not included in the main prototype, mangoes can be used as a raw material for products such as juices, sweets, or chips to expand the diversification of local foods.

In addition, other commodities such as guava (35 kilograms), wild yams (36 kilograms), peanuts (27 kilograms), and pumpkins (15 kilograms) also show the diversity of local foods in Merdeka Village. Although the amount is smaller than corn, cassava, and coconut, this commodity still has the opportunity to be developed into processed products in the future, especially locally-based ones.

Community Constraints

Although the potential for local ingredients in Merdeka Village is relatively high, the community faces a number of obstacles that hinder the development of local food products and innovation. One of the main obstacles is the lack of organic waste treatment, such as coconut pulp which is only used as animal feed and livestock manure which is not processed into organic fertilizer even though it has great potential to increase soil fertility naturally.

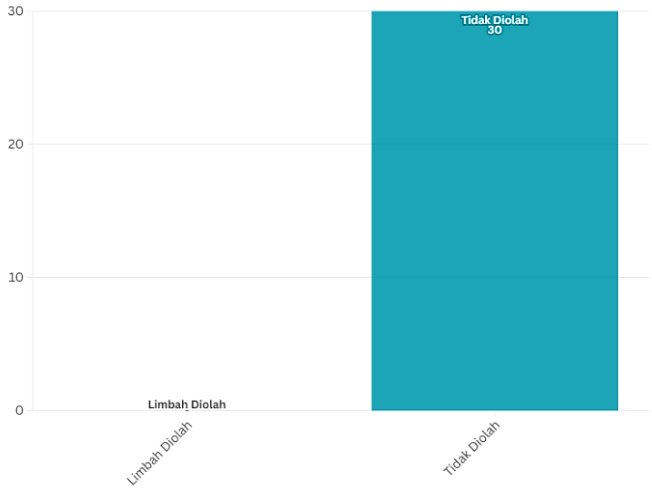


Figure 2. Waste Data of Merdeka Village

Based on data, as many as 30 residents or all of the samples we interviewed did not process their livestock waste, which shows the lack of utilization of organic waste in this village. This condition not only causes waste accumulation, but also hampers efforts to optimize local resources to support agricultural productivity. In addition, the lack of simple technology is a significant obstacle, where most crops, such as corn, cassava, and mango, are only sold in raw form with low economic value. This makes local products less competitive in the market. Another obstacle is the lack of innovation in diversifying products based on local commodities such as cassava, corn, and coconut. The lack of development of modern and innovative processed products has caused the great potential of

local ingredients to not be fully realized. This data further emphasizes the need for demonstration and extension programs, such as manure manufacturing, to increase public awareness and empower them in utilizing livestock waste. By providing education and simple technology, this program can be a solution in optimizing organic waste, increasing the marketability of local products, and creating new economic opportunities that support the sustainability of the agricultural ecosystem in Merdeka Village.

Resulting Innovations

Based on the results of analysis and collaboration with the community, four product innovations were successfully developed to utilize the potential of local ingredients and overcome various obstacles in Merdeka Village.

The first innovation is shredded coconut pulp, which utilizes coconut pulp waste from the coconut oil manufacturing process or Virgin Coconut Oil (VCO). Coconut pulp, which has only been used as animal feed, turns out to have high nutritional content, such as protein (5.78%), fat (38.24%), crude fiber (15.07%), galaktomanan (61%), manan (26%), cellulose (16%), carbohydrates (93%), and water (6.02%) (Pravitasari & Nisworo, 2017). With this content, coconut pulp is processed into shredded fish that is rich in fiber and protein, making it an alternative value-added food. This process not only helps reduce organic waste but also provides new economic opportunities for the people of Merdeka Village. Shredded coconut pulp is designed as a highly nutritious and economical complementary food product, which can be easily produced by the local community.

The second innovation is the titi corn, which are a combination of cassava flour and titi corn. These cookies utilize titi corn, one of the popular traditional preparations in Merdeka Village, which is made from white glutinous corn which is processed by being ground on a stone to produce a crispy texture. By combining cassava flour, titi corn cookies are designed to provide a unique texture while enriching the nutritional content, such as carbohydrates and fiber. This product aims to increase the selling value of local commodities and attract the interest of a wider market, including tourists. This diversification is expected to support food sovereignty while strengthening the culinary identity of Merdeka Village.

The third innovation is caramelized cassava cake, which utilizes cassava as the main ingredient. Cassava, which is known as a drought-resistant commodity, has generally only been consumed directly or sold raw. With this innovation, cassava is processed into a sweet caramel cake that is rich in carbohydrates, fiber, and vitamins. This cake not only provides a variety of local foods but also offers nutritious food solutions that can help overcome the problem of stunting among children. In addition, caramel cassava cake also has the potential to become a local specialty dish at special moments, such as Christmas celebrations, which further strengthens the cultural identity of the people of Merdeka Village.

The fourth innovation is manure from cow feces, which is designed to utilize organic waste from livestock that many people in Merdeka Village have. So far, cow, goat, and pig manure waste has not been utilized to the fullest, even though it has great potential as a basic ingredient for organic fertilizers. The manure produced can increase the nutrient content of the soil, support the fertility of dry and sandy soils, and reduce dependence on chemical fertilizers. The program is also designed to support sustainable farming practices, reduce production costs, and increase agricultural productivity. As part of the implementation, counseling was held to the community regarding the techniques for making and applying manure.

These four innovations, shredded coconut pulp, cassava flour-based corn cookies, caramelized cassava cakes, and manure—not only provide solutions to the challenges faced by the people of Merdeka Village, but also encourage the sustainability of food sovereignty and the improvement of the local economy. This innovation is designed to make optimal use of local resources, reduce waste, and create products that have high added value, both in terms of economy and environmental sustainability.

Quantitative Data

Based on the quantitative data obtained, the survey was conducted on 30 households in Merdeka Village to identify local food consumption and production, including key commodities such as corn, cassava, and coconut. In addition, in-depth interviews were conducted with three additional respondents, who were specifically selected to dig up information about local history and culture. This interview provides a deeper insight into cultural values related to local food processing practices.

In the product processing demonstration, the achievements achieved are quite significant. In the demonstration of shredded coconut pulp, as many as 20 participants took part in the training, and all participants (100%) succeeded in producing shredded coconut pulp independently in the second trial. These results show that coconut pulp-based product innovations can be applied well by the people of Merdeka Village.

The demonstration of making cassava and corn cookies involved 30 participants, with a success rate of 90% in packaging products that are ready to be sold. This cookie product combines local ingredients such as

cassava flour and titi corn, which received a positive response from participants and has great potential to be marketed, both at the local and non-regional levels.

Meanwhile, counseling on making manure from livestock waste was attended by 15 members of farmer groups. The results of the counseling showed that 80% of the participants were able to understand and apply the organic fertilizer processing process well. This counseling is an important first step in increasing public awareness about the benefits of livestock waste and how to optimize local resources to support sustainable agriculture.

Significance of Results and Implications

The Empowered Youth for Food Sovereignty Program (Muda Berdaya untuk Kedaulatan Pangan/MBKP) has successfully shown that the cultural approach through ethnographic methods has a significant role in facilitating public trust and supporting their participation in food innovation activities. Living with a local family allows students to understand the norms, values, and practices of the community in depth, as it is emphasized that cultural sensitivity is a bridge in building harmonious communication. This intense interaction results in a closer relationship between students and the community, strengthens a sense of belonging to program outcomes, and creates a collaborative environment that supports the sustainability of innovation (Lestari, 2024).

This approach allows for more accurate data collection through in-depth interviews, household surveys, and cultural observations. By applying a value chain analysis approach (Dewi, Ratna Christiana, 2017), local potentials such as maize, cassava, and coconut are identified as the main commodities that can be processed into value-added products. The implications of this analysis are not only on the development of product prototypes such as shredded coconut pulp or titi corn cookies, but also on the diversification of the local economy and the strengthening of cultural identity through typical village foods.

The impact of innovation on the local economy, cultural preservation, and food sustainability is significant. For example, shredded coconut pulp utilizes organic waste that was not previously treated, reducing environmental impacts, as well as opening up new economic opportunities for the people of Merdeka Village. Cassava flour-based corn cookies not only enrich the variety of local foods but also attract a wider market, including tourists. Caramel cassava cake contributes to food diversification and increases nutritional value, which is relevant to overcome stunting in the area. Meanwhile, manure from livestock manure supports sustainable agricultural practices, improves soil fertility, and reduces dependence on chemical fertilizers (Paramita et al., 2018).

From the perspective of food sovereignty, this program shows how local resources can be optimized to achieve food sustainability based on local wisdom. This is in line with the principle of food sovereignty which emphasizes the empowerment of people to produce, distribute, and consume food independently. By blending a simple cultural approach and technological innovation, the program not only provides solutions to local challenges but also creates a sustainability model that can be replicated in other regions.

Overall, the holistic approach implemented in the MBKP program shows that food sustainability does not only depend on product innovation but also on cultural, economic, and environmental integration. The long-term implications involve empowering communities to continue innovating independently and ensuring sustainable economic and ecological benefits. This program is clear evidence that the sustainability of food sovereignty can be achieved through the synergy between scientific analysis, cultural interaction, and local community empowerment (Dasfordate, 2023).

Conclusion

This study successfully identified the potential of local ingredients in Merdeka Village, including cassava, corn, coconut, and mango, which have a great opportunity to be developed into high-value processed products. The main obstacles faced by the community, such as the lack of utilization of organic waste, the limitations of simple technology, and the lack of innovation in product diversification, have been overcome through the development of four innovation prototypes: shredded coconut pulp, cassava flour-based titi corn cookies, caramelized cassava cakes, and manure from livestock waste.

The demonstrations and counseling carried out showed positive achievements, with a significant success rate in all activities. The results of the survey and training show that the community has great potential to implement these innovations independently, so that they can increase the economic value of local commodities, support sustainable agriculture, and help overcome nutritional problems, such as stunting.

Overall, this study not only provides solutions to the challenges of local resource management in Merdeka Village, but also shows the importance of a culture-based approach and field studies in promoting sustainable food sovereignty. This result is expected to be a model that can be applied in other regions with similar conditions.

Acknowledgments
The author would like to thank all the people of Merdeka Village for their extraordinary participation and cooperation in supporting the implementation of this research. His deepest gratitude was also conveyed to the village government, TP PKK, farmer groups, and posyandu cadres who have provided full support during the survey, demonstration, and counseling process.
The author also thanked the MBKP Program for the training, modules, and technical support provided in preparing for this activity. This research would not have been successful without the help of fellow MBKP students who have worked hard in identifying the potential of local ingredients and developing product innovations based on local resources.
A special award was also presented to the Directorate of Belief in God Almighty and Indigenous Peoples, which has provided research grants to support the financing of this program. The grant allows the procurement of equipment, materials, and the implementation of demonstrations, including the processing of shredded coconut bagasse, titi corn cookies, caramelized cassava cakes, and manure.
Finally, the author is grateful to all parties who have provided input and support during this research process. Hopefully, the results of this research can provide real benefits for the people of Merdeka Village and become a reference in efforts to realize sustainable food sovereignty in other regions.

References

Ayuni, P., Syafrida Hasibuan, A. Z., & Suhairi, S. (2022). Komunikasi Antar Budaya Dalam Perspektif Antropologi Islam. *Dakwatussifa: Journal of Da'wah and Communication*, *1*(2), 94–104. https://doi.org/10.56146/dakwatussifa.v1i2.10

Dasfordate, A. (2023). *Studi Etnografi Holistik Terhadap Tradisi Duan²lolat Masyarakat Tanimbar Aksilas Dasfordate* Eureka media aksara.

Dewi, Ratna Christiana, B. (2017). Analisis Value Chain Dalam Upaya Peningkatan Competitive Advantage. *Jurnal Ekonomi Dan Bisnis Airlangga*, *27 (2)*(Juni-November), 238–253. https://doi.org/10.20473/jeba.V27I22017.238

Iswanto, I. (2021). Ume Kbubu Sebagai Wujud Kearifan Lokal Masyarakat Boti Dalam Menjaga Ketahanan Pangan Dan Bencana. *Handep: Jurnal Sejarah Dan Budaya*, *4*(2), 199–220. https://doi.org/10.33652/handep.v4i2.144

Lestari, E. (2024). Eskalasi Tata Kelola Kebijakan Pemerintah Daerah Terhadap Pertanian Berkelanjutan: Upaya Mewujudkan Kedaulatan Pangan Berbasis Kearifan Lokal. *Jurnal Hukum Mimbar Justitia*, *10*(1), 141. https://doi.org/10.35194/jhmj.v10i1.4154

Paramita, M., Muhlisin, S., & Palawa, I. (2018). Peningkatan Ekonomi Masyarakat Melalui Pemanfaatan Sumber Daya Lokal. *Qardhul Hasan: Media Pengabdian Kepada Masyarakat*, *4*(1), 19. https://doi.org/10.30997/qh.v4i1.1186

Pravitasari, D., & Nisworo, S. (2017). New and renewable energy: A review and perspectives. *2017 International Conference on Sustainable Information Engineering and Technology (SIET)*, 284–287. https://doi.org/10.1109/SIET.2017.8304149

Renard, D., & Tilman, D. (2019). National food production stabilized by crop diversity. *Nature*, *571*(7764), 257–260. https://doi.org/10.1038/s41586-019-1316-y

Sari, M. P., Wijaya, A. K., Hidayatullah, B., Sirodj, R. A., & Afgani, M. W. (2023). Penggunaan Metode Etnografi dalam Penelitian Sosial. *Jurnal Pendidikan Sains Dan Komputer*, *3*(01), 84–90. https://doi.org/10.47709/jpsk.v3i01.1956

Sostenes Konyep. (2021). Mempersiapkan Petani Muda dalam Mencapai Kedaulatan Pangan. *Jurnal Triton*, *12*(1), 78–88. https://doi.org/10.47687/jt.v12i1.157