AIJSED | This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License
Vol. 6 No. 02 (2026)

Andalasian International Journal of Social and Entrepreneurial Development (AIJSED)

ISSN: 2808-6732 (Online)

Available at: http://aijsed.lppm.unand.ac.id/index.php/aijsed

DOI: https://doi.org/10.25077/aijsed.6.02.18-25.2026

Article

Community Empowerment of Women Farmer Groups through Product Innovation of Sala Lauak with Taro Flour Substitution in Rawang Village, Pariaman

Rera Aga Salihat[1], Leffy Hermalena[1], Novi Yanti[2], Inawaty Sidabalok[1], Rera Agung Syukra[3], Nika Rahma Yanti[4*]

[1]Department of Agricultural Product Technology, Universitas Ekasakti, Padang, Indonesia
[2]Department of Management, Universitas Ekasakti, Padang, Indonesia
[3]Department of Agribusiness, Universitas Ekasakti, Padang, Indonesia
[4]Department of Agricultural and Biosystems Engineering, Universitas Andalas, Padang, Indonesia

Article Information

Received : 2026-07-19
Revised : 2026-08-10
Accepted : 2026-09-27
Published: 2026-10-19

Keywords

Empowerment, KWT, Sala lauak, Substituition, Taro flour

*Corresponding Author

nikary@ae.unand.ac.id

Abstract

The "Bohai" Women Farmers Group (KWT) in Rawang Village, Pariaman City, is a productive economic group that produces sala lauak (a traditional rice flour-based snack) which suffers from a short shelf life due to high moisture content. This community service program aimed to empower KWT Bohai by introducing taro flour as a substitute ingredient in sala lauak to enhance the product's nutritional value, while also strengthening the partners capacity regarding food safety and marketing. The activities were conducted in three stages: raising awareness about the potential of taro flour, training on the implementation of Good Manufacturing Practices (GMP), and providing guidance on marketing strategies; evaluations were carried out using pre-test and post-test questionnaires. Organoleptic test results identified an optimal formulation ratio of 85% rice flour to 15% taro flour, which maintained sensory characteristics while increasing the product's fiber and mineral content. Evaluations revealed consistent improvements in knowledge (71% to 90%), business attitudes and interest (76% to 93%), and technical skills (70% to 90%); the highest gains were observed in technical skills, demonstrating the effectiveness of hands-on, practice-based training. The program successfully enhanced the partners' cognitive, affective, and psychomotor readiness, although long-term sustainability requires further assistance in developing production Standard Operating Procedures (SOPs) and securing business legal certification.

INTRODUCTION

The women farmers group (KWT) "Bohai" in Rawang Village, Pariaman, is a creative economic group consisting of 20 women aged between 30 and 55 years. The group operates three lines of business: vegetable cultivation, organic manure production, and agricultural product processing. This composition reflects the availability of adequate human resources and potential opportunities that can be optimized through empowerment based on local product innovation. Institutionally, KWT Bohai has a legal form and a complete management structure, so this group has a strong foundation for developing business sustainability. Furthermore, KWT Bohai has experience in producing Sala Lauak, which means that fundamental skills in handling ingredients have already been developed and can be crucial for further developing this product. This condition is also supported by the geographic aspect of Rawang Village, which is a taro production center, with fish and shrimp readily available as the main ingredients of Sala Lauak.

AIJSED | This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License

Sala Lauak is a traditional food specific to West Sumatra that is highly popular, particularly in Pariaman City, and represents one of the flagship products that has long been produced by KWT Bohai. This product is made from a base of rice flour mixed with fish or shrimp and spices, shaped into small balls, and deep-fried until cooked (Ismawanti et al., 2025). However, the use of rice flour as the main raw material has a drawback, namely a water content ranging from 10–14%, which causes the product's shelf life to be relatively short (Arifin et al., 2023; Zainuddin et al., 2023). This condition represents one of the main constraints for KWT Bohai in developing Sala Lauak into a flagship product with higher selling value and competitiveness. This problem opens up opportunities for innovation through the partial substitution of rice flour with taro flour in the production of Sala Lauak. Rawang Village has abundant taro potential that has not yet been optimally utilized, so that taro flour substitution serves not only as a technical solution to improve the product's characteristics but also supports local food diversification.

From a nutritional standpoint, the addition of taro flour has the potential to increase the fiber and mineral content of Sala Lauak, thereby providing added nutritional value as well as economic value for the taro commodity, which has so far been underutilized (Fitriyansyah & Sofyaningsih, 2023; Siletty et al., 2022). Previous studies have also shown that blending rice flour and taro flour can produce products with sensory characteristics that are organoleptically acceptable, indicating that this innovation is feasible to implement at the business-group scale (Ismail et al., 2023).

Based on the above description, an empowerment program is needed for KWT Bohai that not only introduces the innovation of taro flour substitution in Sala Lauak but also enhances members' understanding of nutritional aspects, production process hygiene, and economic feasibility analysis of the product. Through this approach, it is expected that KWT Bohai will be able to produce a Sala Lauak product that is nutritionally superior, has a longer shelf life, and is economically competitive, thereby strengthening the independence and welfare of the women farmers group in Rawang Village, Pariaman City. Documentation of the PKM (Community Service) team together with members of KWT Bohai can be seen in Figure 1.



Figure 1. Documentation of the community service team with members of KWT Bohai

METHOD

A. Time and Place of Implementation

The socialization, mentoring, and training activities on Sala Lauak innovation with taro flour substitution were conducted at the Balairung (Village Hall) of Rawang Village, Central Pariaman Subdistrict, Pariaman City, on Monday, 13 July 2026, from 10:00 to 13:00 WIB

B. Activity approach

The activity was carried out using a participatory approach, combining socialization (delivery of material) with hands-on training in the practical production of Sala Lauak with taro flour substitution using semi-automatic tools (Hermalena et al., 2025). This approach was chosen so that the partner group could not only acquire theoretical knowledge but also directly practice the production process according to the standards taught.

C. Socialization on the Potential of Taro Flour as a Substitute for Rice Flour in Sala Lauak Production

The first stage consisted of socialization to members of KWT "Bohai" regarding the potential of taro tubers as a local food source with high nutritional value that can potentially be substituted in the production of Sala Lauak. The material presented covered the nutritional content of taro, its health benefits, and a comparison of the characteristics of taro flour with rice flour, which is commonly used as the main raw material for Sala Lauak. It was explained that taro flour has a glycemic index more favorable for blood sugar control, a high fiber content, and superior calcium and phosphorus mineral content, while rice flour is superior in iron and vitamin B complex content (Ismawanti et al., 2025).

D. Training on the Implementation of Good Manufacturing Practices (GMP) in the Taro Flour Sala Lauak Industry

The second stage consisted of training on the implementation of Good Manufacturing Practices (GMP), known locally as Cara Produksi Pangan Olahan yang Baik (CPPOB), which is a food safety guideline for household-scale industries to ensure that the products generated are of good quality, safe, and fit for consumption (Anshari et al., 2022). This training was provided to ensure that the Sala Lauak products produced by the partner group are safe for consumption and suitable for broader marketing.

Based on preliminary information gathering, it was found that approximately 30% of KWT Bohai members were already familiar with the term GMP, but had not yet fully understood the concept. The production process had generally been carried out based on practices passed down through generations, without reference to written standards related to hygiene, sanitation, or quality control. In addition, it was found that the taro flour Sala Lauak business of KWT Bohai did not yet possess any form of business legality, whether in the form of a Business Identification Number (NIB), a Home Industry Food Product Distribution Permit (P-IRT), or halal certification. These findings served as the basis for developing training materials that were more targeted and applicable to the partner group's needs.

Analysis and Marketing Strategy for Sala Lauak

The third stage consisted of a simple market analysis of KWT Bohai's taro flour Sala Lauak product, conducted by the community service team as a preliminary basis for formulating future marketing strategy directions. This analysis identified a number of challenges faced by Sala Lauak micro, small, and medium enterprises (MSMEs), including dependence on stagnant traditional production methods without accompanying innovation, a negative product image resulting from inadequate hygiene and unattractive packaging, and a decline in Sala Lauak sellers' income of up to 70% during periods of economic crisis. The results of this analysis served as the basis for the community service team in formulating more adaptive and competitive marketing strategy recommendations for the partner group. Documentation of socialization and training is shown in Figure 2.



Figure 2. Socialization and training by the resource persons

AIJSED | This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License

RESULT AND DISCUSSION

1. Socialization on the Potential of Taro for Sala Lauak Substitution

The first activity carried out in this community service program was socialization to members of KWT "Bohai" regarding the potential of taro tubers as a local food ingredient with high nutritional value that can potentially be substituted in the production of Sala Lauak. The socialization material covered the nutritional content of taro, its health benefits, and a comparison of the characteristics of taro flour with rice flour, which is commonly used as the main raw material for Sala Lauak in general. Taro flour tends to have a glycemic index more favorable for blood sugar control and a high fiber content, and is superior in calcium and phosphorus mineral content, while rice flour contains iron and vitamin B complex (Hasnelly et al., 2020)

Prior to conducting the socialization, the community service team first carried out trials to determine the most preferred and most suitable ratio of rice flour to taro flour for Sala Lauak production. Based on the results of the trials and organoleptic testing, a ratio of 85% rice flour to 15% taro flour was obtained as the optimal composition. The appearance of Sala Lauak with taro flour substitution can be seen in Figure 3. Visually, the taro flour substitution did not have a noticeable effect on the appearance of Sala Lauak, although it did result in differences in nutritional content.



Figure 3. Appearance of sala lauak before (A) and after frying (B)

The selection of taro as a substitute ingredient was not without reason. As a commodity that grows and is easily obtained in the environment surrounding Rawang Village, taro represents a local resource that has not yet been optimally utilized by KWT Bohai. The use of taro as a raw material in Sala Lauak production is intended to introduce an alternative for food processing diversification and to encourage the utilization of local resources with higher added value, compared to selling them only as raw tubers. This approach is in line with the spirit of asset-based community development, in which interventions are built upon what the partner group already possesses, rather than merely introducing something entirely new and unfamiliar.

2. GMP

Good Manufacturing Practices (GMP), commonly referred to as Cara Produksi Pangan Olahan yang Baik (CPPOB), is a guideline that outlines food safety aspects for household-scale industries in producing food that is of good quality, safe, and fit for consumption. Based on Law Number 36 of 2009 concerning Health, Article 111 Paragraph (1) states that food and beverages used by the public must be based on health standards or requirements (Heru, 2016).

This training was provided to the partner group so that the Sala Lauak products produced are safe for consumption and suitable for wider marketing. During the preliminary information gathering, approximately 30% of KWT Bohai members were already familiar with the term GMP, but had not yet fully understood the concept of GMP. Generally, the production process had been carried out according to practices passed down through generations, without regard to written standard references concerning hygiene, sanitation, or quality control. In addition, it was found that the taro flour Sala Lauak business run by KWT Bohai did not yet possess any form of business legality whatsoever, whether a Business Identification Number (NIB), a Home Industry Food Product Distribution Permit

(P-IRT), or halal certification. This condition formed the basis for the consideration that the most relevant and urgent first step was to build the partner group's basic understanding of GMP and the importance of business legality, before proceeding to the stage of implementation mentoring and official document processing. There are several forms of business legality that MSMEs must possess, particularly as a means of promotion, which can certainly increase public trust in consuming Sala Lauak products. An overview of the GMP training evaluation results in Rawang Village is presented in Table 1.

Table 1. General overview of GMP evaluation

No	Aspect Assessed	Before Training	After Training
1	Knowledge of what GMP is	Not yet known	Known
2	Understanding of basic hygiene and sanitation principles	Limited	Understood
3	Knowledge of types of food business legality (NIB, P-IRT, halal)	Not yet known	Known
4	Awareness of the importance of legality for market access	Not yet realized	Realized

Based on Table 1, an overall increase in the partner group's knowledge regarding the importance of GMP in running a business was observed. Going forward, as a follow-up plan, specific mentoring will be provided to KWT Bohai in the implementation of GMP and the processing of business legality, including:

1. Jointly developing SOP documents for production, sanitation, and packaging as a continuation of the conceptual understanding that has been provided.
2. Technical and administrative mentoring to initiate the business legality application process, starting with the Business Identification Number (NIB), followed by the P-IRT distribution permit, and halal certification.
3. Mentoring on packaging and product label improvements to comply with food labeling regulations, as part of the partner group's readiness to meet P-IRT requirements.
4. Periodic monitoring and evaluation to ensure that the understanding gained by the partner group from the training activities is genuinely and gradually applied in daily production practices.

3. Marketing strategy

As part of efforts to enhance product competitiveness, the community service team also conducted a simple market analysis of KWT Bohai's taro flour Sala Lauak product, serving as a preliminary basis for formulating future marketing strategy directions. Sala Lauak MSMEs currently face a number of serious challenges that need to be addressed promptly. The dependence of business operators on stagnant traditional production methods, without accompanying innovation, makes this business increasingly difficult to compete amid an increasingly modern market landscape. This condition is further exacerbated by the negative image attached to the product, resulting from inadequate hygiene, unattractive packaging, and a lack of innovation, thereby reducing consumer trust. In addition, economic instability has also affected the sustainability of this business, as reflected in the decline in Sala Lauak sellers' income of up to 70% during periods of crisis — a figure that underscores just how fragile the conventional business model that has long been employed truly is (MS, 2020).

In identifying the potential customers for this product, the market analysis points to three main promising segments.

a. The first segment is religious tourists, namely visitors to the Tomb of Syekh Burhanuddin and the Pariaman coastal area, a potential market that has not yet been optimally tapped.
b. The second segment is the younger generation, whose preferences have now shifted toward demanding comfort, quality, and an "Instagrammable" culinary experience.
c. The third segment arises from the heavy traffic conditions along the Padang–Pariaman route, which in fact opens up significant opportunities for strategically located outlets along this route.

The digitalization of marketing is also an important element in bridging the gap between KWT Bohai's local-scale production capacity and the actually much broader market potential. To date, Sala Lauak marketing has generally relied on direct sales around the production area, resulting in a

relatively limited market reach that is highly dependent on the physical mobility of both sellers and buyers. Through the introduction of social media and digital platforms, KWT Bohai gains new marketing channels that are not constrained by distance or conventional operating hours, thereby opening up opportunities to reach a broader consumer segment, including consumers outside Pariaman.

4. Quantitative Analysis of the Increase in the Partner Group's Empowerment Level

To measure the overall impact of the series of activities on enhancing the partner group's capacity, an evaluation was conducted using pre-test and post-test questionnaires covering three aspects, namely Part 1 (cognitive knowledge), Part 2 (attitudes and interests), and Part 3 (skills). The percentage of change was calculated based on the difference between scores before and after the program relative to the initial condition (Yanti et al., 2025). The evaluation results show a consistent increase across all three aspects, as shown in Figure 4.

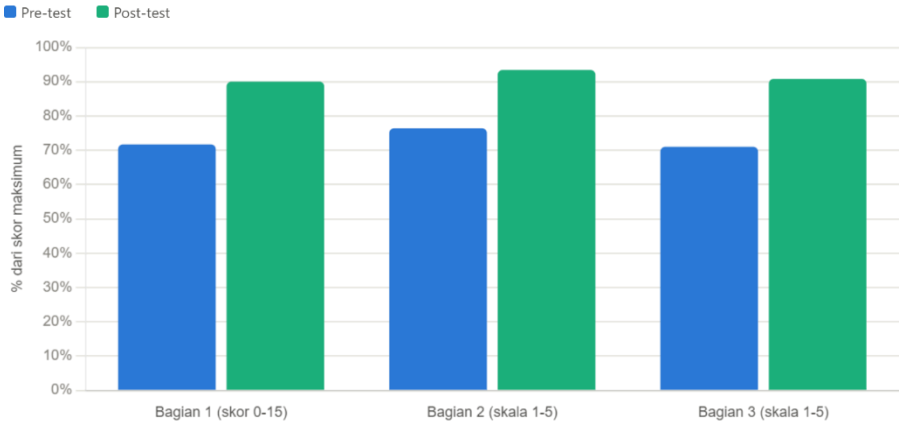


Figure 4. Diagram of the evaluation results on the increase in the partner group's empowerment level

The increase in Part 1 shows that the counseling and training provided successfully and significantly improved participants' cognitive understanding, particularly regarding the benefits of taro flour substitution, correct processing procedures, and the economic added value of processed products based on local ingredients. The increase in Part 2 indicates that this community service activity not only added to participants' knowledge but also successfully built their motivation, business interest, and self-confidence regarding the potential of nutritious Sala Lauak products. The high post-test score on this aspect (93%) reflects a highly positive attitude toward the sustainability of the program, such as willingness to jointly develop the business and to share knowledge with other KWT Bohai members.

The largest increase in terms of percentage points, however, occurred in Part 3 (20 points), which measures participants' technical skills. This finding indicates that hands-on training in this community service activity was effective in improving participants' confidence in technical skills, ranging from raw material processing to simple entrepreneurial aspects such as selling price calculation. This magnitude of increase aligns with the principles of adult learning (andragogy), in which direct involvement in practice tends to produce higher retention and confidence compared to one-way learning. Given that technical skill is the indicator with the most direct impact on the sustainability of the KWT's business, the 90% achievement in this aspect serves as strong evidence that participants are ready to independently practice the production of nutritious Sala Lauak.

Overall, the consistent increase across all three aspects — knowledge, attitude, and skills — demonstrates that the participatory approach combining socialization, GMP training, and marketing strategy mentoring successfully built the partner group's readiness comprehensively, not only at the cognitive level but also at the affective and psychomotor levels. These three dimensions are mutually complementary prerequisites for the sustainability of KWT Bohai's business: knowledge serves as the basis for decision-making, attitude serves as the driver of sustained business motivation, while skills serve as the technical capital for independent production execution

CONCLUSION

The empowerment program for KWT "Bohai" in Rawang Village, Pariaman City, through socialization, GMP training, and marketing mentoring, successfully produced an optimal formulation for Sala Lauak with taro flour substitution at a ratio of 85% rice flour : 15% taro flour, which maintained sensory characteristics while enhancing the product's nutritional value. The evaluation results show a consistent increase in the partner group's knowledge, attitude, and skills, with the highest achievement in the skills aspect, rising from 70% to 90%. These findings demonstrate that an empowerment program based on local potential is able to enhance the partner group's cognitive, affective, and psychomotor readiness to independently produce nutritious Sala Lauak. The sustainability of the program going forward still requires further mentoring, particularly in the development of production SOPs, business legality processing, and periodic monitoring and evaluation.

ACKNOWLEDGEMENTS

We would like to thank the Directorate of Research and Community Service (DPPM) under the Ministry of Higher Education, Science, and Technology (Kemdiktisaintek) of the Republic of Indonesia as the funder based on contract numbers: 213/C3/DT.05.00/PM/2026; 03/DST/LL10/AL.04.03/PM/2026 and KPb/002/LPPM-UNES/IV/2026. We would also like to thank the Chair of the Institute for Research and Community Service at Ekasakti University, our team and students who have provided contributions related to this community service.

REFERENCES

Anshari, A., Wahyudin, W., & Herwanto, D. (2022). Penerapan Good Manufacturing Practices (GMP) pada Pengendalian Kualitas Pangan Produk Nugget Ayam Tempe di UMKM Haiyuu Indonesia. *SITEKIN: Jurnal Sains, Teknologi Dan Industri*, *20*(1), 138–146. https://doi.org/10.24014/sitekin.v20i1.19873

Arifin, B. N., Suhartatik, N., & Mustofa, A. (2023). Antioxidant Activity of Colored Rice Flour with Drying Temperature Variations. *Jurnal Teknologi Dan Industri Pangan UNISRI*, *8*(2), 195–202. https://doi.org/10.33061/jitipari.v8i2.7250

Fitriyansyah, A. R., & Sofyaningsih, M. (2023). Utilization of Beneng Taro Flour (Xanthosoma undipes K. koch) in the Production of Fiber Source Cheese Sticks. *Jurnal Teknologi Pangan Dan Gizi*, *22*(2), 128–136. https://doi.org/10.33508/jtpg.v22i2.4937

Hasnelly, Nurminabari, I. S., & Meiliawati, A. (2020). Pengaruh Perbandingan Tepung Talas Bogor (Colocasia esculenta L. Schott) dengan Tepung Ubi Jalar Oranye (Ipomea batatas L) dan Waktu Fermentasi Terhadap Karakteristik Crackers Sayuran. *Pasundan Food Technology Journal*, *7*(2), 44–56. https://doi.org/10.23969/pftj.v7i2.2979

Hermalena, L., Sidabalok, I., Yessirita, N., Gusriati, Gusvita, H., Salihat, R. A., Yanti, N., Adawiyah, D., Pratama, F. S., & Febrinova, R. (2025). Pemanfaatan Limbah Organik Dapur Rumah Tangga Untuk Produksi Ekoenzim Di Kelurahan Rawang, Kota Padang. *Journal of Community Service*, *7*(1), 157–166. https://doi.org/10.56670/jcs.v7i1.350

Heru, R. (2016). The Study of Good Manufacturing Practices (GMP) and Good Quality Wingko Based on SNI-01-4311-1996. *Jurnal Kesehatan Lingkungan*, *8*(II), 148–157.

Ismail, N. M., Bait, Y., & Kasim, R. (2023). The Effect Of The Ratio Of Taro Flour And Tapioca Flour On The Chemical And Organoleptic Characteristics Of Gluten-Free Biscuits. *Jambura Journal of Food Technology*, *5*(1), 32–44. https://doi.org/10.37905/jjft.v5i01.17203

Ismawanti, Z., Prihatin, S., Supadi, J., Permatasari, A. D. W., Muhlishoh, A., Setyaningsih, A., Permatasari, O., & Semedi, P. (2025). Analysis of Nutritional Value and Physical Characteristics of Modified Talas Flour as an Alternative Functional Food Ingredient. *Jurnal Teknologi Pangan Dan Gizi*, *24*(1), 8–13. https://doi.org/10.33508/jtpg.v24i1.5646

MS, A. (2020). *Pedagang Sala Lauak Pariaman alami penurunan omzet pasca-mewabahnya COVID-19*. ANTARA Sumbar. https://sumbar.antaranews.com/berita/339626/pedagang-sala-lauak-pariaman-alami-penurunan-omzet-pasca-mewabahnya-covid-19

Siletty, L., Polnaya, F. J., Moniharapon, E., Studi, P., Hasil, T., Pertanian, F., Pattimura, U., & Putuhena, J. I. M. (2022). The Effect of Fermentation Time on Chemical Characteristics of Taro Bulb Flour (Colocasia esculenta) Tanimbar Cultivars. *AGRITEKNO: Jurnal Teknologi Pertanian*, *11*(1), 48–53. https://doi.org/10.30598/jagritekno.2022.11.1.48

Yanti, N. R., Sari, S. P., Juliandri, I., & Salihat, R. A. (2025). Utilization of Organic Waste to Improve Land Productivity Sustainably in Nagari Kudu Gantiang. *Andalasian International Journal of Social and Entrepreneurial Development*, *5*(02), 26–31. https://doi.org/10.25077/aijsed.5.02.26-31.2025

Zainuddin, A., Laboko, A. I., Asia, F. C., & Inayah, A. N. (2023). Karakteristik Fisikokimia Tepung Beras Premium dan Medium dengan Pengaplikasian Microwave A Physical Chemical Characteristic of Premium and Medium. *Gorontalo Agriculture Technology Journal*, *6*(2), 86–94. https://doi.org/10.32662/gatj.v0i0.3225

© Rera Aga Salihat, Leffy Hermalena, Novi Yanti, Inawaty Sidabalok, Rera Agung Syukra, Nika Rahma Yanti (2026)