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*Article*

# Empowering Women's Groups through Vegetable-Based Product Diversification Innovations in Aia Tajun Village

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**Abstract**

This outreach activity aims to enhance the capacity and economic self-reliance of women's groups through vegetable-based product diversification innovations in Nagari Aia Tajun, Lubuk Alung Subdistrict, Padang Pariaman Regency. The method employed was a participatory approach involving the administration of a pre-test questionnaire, educational sessions, hands-on training, and an evaluation using a post-test. The innovative product developed is a vegetable-based healthy beverage in the form of water spinach smoothies as a way to utilize local potential. The results of the activity show a significant improvement in the participants' knowledge, skills, and entrepreneurial attitudes, with the average score increasing from 2.1 to 4.26 and an N-Gain value of 0.74 (high category). Additionally, this activity successfully boosted participants' interest and self-confidence in developing businesses based on processed vegetable products. Thus, this program not only contributes to increasing the value-added of agricultural commodities but also supports the strengthening of community economies and local food security through women's empowerment.

## INTRODUCTION

Community-based development is a strategic approach to improving well-being and economic self-reliance, particularly in rural areas. In this context, women's groups play a crucial role as drivers of household economic activity and agents of social change at the local level. Recent studies indicate that women's empowerment in the agricultural sector significantly contributes to increased household income, food security, and more inclusive development (Quisumbing et al., 2021; Mohammed et al., 2025). However, women still face various structural barriers, such as limited access to resources, technology, education, and participation in decision-making (Pratiwi et al., 2025; Faizien, 2025).

Nagari Aia Tajun is an area with significant agricultural resource potential, particularly in vegetable commodities. However, the utilization of these agricultural products is still dominated by sales in fresh form, resulting in relatively low value-added and vulnerability to market price fluctuations. This situation results in suboptimal income for the community, particularly among women. In fact, strengthening the role of women's groups, such as the Women Farmers' Group (KWT), has proven effective in enhancing productivity, skills, and the economic independence of rural communities (Prajuliyanto, 2025).

As consumer patterns evolve, demand for processed food products that are convenient, healthy, and highly nutritious continues to rise. Diversifying vegetable-based products is a relevant strategy for increasing the value of agricultural commodities while expanding business opportunities for the community. This

diversification approach is also aligned with the concept of sustainable agriculture and a food system that is adaptive to market changes and global challenges (Scoones, 2021).

Furthermore, a gender-inclusive empowerment approach has been shown to have a strong association with improved food security and household well-being. Recent studies indicate that women's access to market information, credit, and technology can enhance economic capacity and strengthen food security at the local level (Winarti et al., 2025). Additionally, education and training in sustainable agriculture play a crucial role in enhancing women's capacity to manage productive enterprises based on local resources (Kurniasari & Soedarto, 2026).

Given these conditions, a targeted and sustainable empowerment effort is needed for women's groups in Nagari Aia Tajun. One approach that can be taken is through the innovation of vegetable-based product diversification combined with improvements in production skills, packaging, and marketing strategies. This approach focuses not only on enhancing individual capacity but also on strengthening the group's institutional capacity as a competitive productive business unit.

Through this outreach initiative, it is hoped that women's groups will be able to develop innovative, value-added vegetable-based processed products, thereby increasing their income and economic self-reliance. Additionally, this initiative is expected to serve as a model for sustainable community empowerment rooted in local potential and adaptable to evolving market needs. Therefore, this outreach activity aims to enhance the capacity and economic independence of women's groups through vegetable-based product diversification in Nagari Aia Tajun. Expected outcomes include improved production skills, the creation of innovative products, and the opening of new sustainable business opportunities for the community.

## METHODS

This outreach activity was carried out using a participatory approach that actively involved women's groups in Nagari Aia Tajun as partners. The methods employed aimed to enhance participants' knowledge and skills in vegetable-based product diversification. The initial phase of the activity began with the distribution of a questionnaire (pre-test) to all participants. This questionnaire was designed to identify participants' baseline knowledge, skills, and interests regarding vegetable-based product processing and diversification. Additionally, the questionnaire was used to gather information about participants' experiences in business activities, the challenges they faced, and local potential that could be developed. The data obtained from this questionnaire served as the basis for designing training materials tailored to the group's needs.

Subsequently, outreach and awareness-raising activities were conducted regarding the importance of product diversification, increasing the value of vegetable commodities, and market opportunities for processed products. The material was delivered interactively through group discussions, allowing participants to grasp the basic concepts while sharing their experiences. The next phase consists of hands-on training (demonstrations and practical exercises) in the production of vegetable-based processed foods. Participants are trained in everything from selecting raw materials and processing techniques to creating attractive and hygienic product packaging. In addition, they receive basic training on marketing strategies and product pricing.

Following the training activities, an evaluation is conducted via a questionnaire (post-test) to measure participants' increased knowledge and skills after participating in the program. The results of the pre-test and post-test are then analyzed descriptively to assess the effectiveness of the outreach activities. As a final step, mentoring and monitoring were provided to the group as they implemented the training outcomes. This mentoring aimed to ensure the sustainability of the activities, help overcome challenges faced, and encourage the formation of group-based productive enterprises.

Through this method, it is hoped that the capacity of the women's group will increase not only in terms of knowledge but also in practical skills and economic independence through vegetable-based product diversification innovations.

## IMPLEMENTATION OF ACTIVITIES

The entire series of activities was held at the KWT Sinar Pagi Community Hall in Aia Tajun Village, Lubuk Alung Subdistrict, Padang Pariaman Regency, on Monday, April 20, 2026. Participants in the event consisted of women farmers' groups and members of the Aia Tajun Village PKK. Through collaboration

between the outreach team and the community, this event is expected to have a tangible impact on improving the well-being of the village community. This collaboration aims to increase the value of local agricultural products through more innovative processing methods that yield high economic value. Additionally, this activity is expected to foster new entrepreneurship based on processed vegetable products, such as water spinach, thereby creating job opportunities and strengthening the community's economic self-reliance. Furthermore, this program supports the realization of a food-self-sufficient village and the development of a creative economy based on halal agriculture, serving as a strategic step toward building food security while reinforcing a competitive local identity.

## RESULT AND DISCUSSION

The results of the outreach activity indicate that the empowerment intervention through vegetable-based product diversification innovations had a significant impact on enhancing the capacity of women's groups in Nagari Aia Tajun. This is reflected in the increase in questionnaire scores from the pre-test to the post-test in the areas of knowledge, skills, and entrepreneurial attitudes. Quantitatively, the increase in the average score from 2.1 to 4.26 and an N-Gain value of 0.74 indicate the intervention's effectiveness falls into the high category. These findings suggest that the approach used effectively addresses the community's real needs, particularly in enhancing agricultural product processing capacity.

More deeply, the low initial knowledge level of participants was not only due to a lack of information but also because of the absence of direct experience in processing vegetable-based products. This condition indicates a gap between the potential of local resources and the capacity to utilize them. In this context, training that integrates theoretical and practical aspects is key to bridging this gap. This aligns with Quisumbing et al. (2021), who emphasize that enhancing women's capacity in the agricultural sector requires access to practical knowledge and applicable technologies.

The hands-on training approach used in this activity has proven effective in improving participants' skills. Participants did not merely receive information passively but were actively involved in every stage of the production process. This engagement created a more meaningful learning experience, making the knowledge gained easier to understand and retain. Mohammed et al. (2025) state that an experiential learning approach has a significant impact on enhancing individuals' capacity in productive economic activities, particularly among community groups with limited educational backgrounds.

The implementation of product innovation in the form of healthy water spinach smoothies was a key factor in the success of this initiative. The product selection was based on principles of alignment with local potential, ease of production, and relevance to market trends. Water spinach, as a raw material, offers advantages in terms of availability, affordability, and high nutritional content, such as fiber, vitamin A, and iron. Processing water spinach into smoothies is an innovation that enhances value while changing public perceptions regarding vegetable consumption, particularly in a more practical and appealing form.

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**Figure 1**. Healthy Smoothies

From an economic perspective, this product diversification opens up opportunities for increased revenue through the creation of products with higher market value compared to fresh produce. Additionally, smoothies offer flexibility in developing flavor variations and packaging, thereby potentially reaching a broader market segment. Scoones (2021) emphasizes that innovation based on local resources is a crucial strategy in building an adaptive and sustainable food system, particularly in addressing market dynamics and shifts in consumer behavior.

Furthermore, a significant improvement in entrepreneurial attitudes indicates a shift in participants' mindset from being mere consumers or raw material producers to becoming productive business operators. The increased interest and self-confidence in entrepreneurship indicate that this initiative impacts not only technical aspects but also psychological and social dimensions. Pratiwi et al. (2025) state that skill-based empowerment, coupled with improved access to business opportunities, can strengthen women's positions within household and community economies.

In addition, group dynamics during the activities also revealed increased interaction, cooperation, and solidarity among members. This serves as important social capital in supporting the sustainability of group-based business activities. Prajuliyanto (2025) emphasizes that women farmers' groups (KWT) play a strategic role as a platform for collective learning and community-based economic empowerment.



**Figure 2.** Participants in the Vegetable Processing Activity

However, there are several challenges that need to be addressed to ensure the program's sustainability, including limited market access, production consistency, and the development of further product innovations. Therefore, ongoing support is required, particularly in the areas of digital marketing, business management, and product legal compliance (such as PIRT and halal certification) to ensure the products can compete in broader markets.

Overall, this initiative has not only successfully enhanced the individual capacities of participants but has also contributed to building a business ecosystem rooted in local potential. Product diversification through the creation of healthy water spinach smoothies has proven to be an effective entry point in driving the economic transformation of women's groups toward sustainable self-reliance. With strengthened production, marketing, and institutional aspects, this empowerment model has the potential to be replicated in other regions with similar characteristics.

## CONCLUSION

Outreach activities through the empowerment of women's groups in Nagari Aia Tajun, based on vegetable product diversification innovations, have proven effective in enhancing participants' capacities. This is evidenced by significant improvements in knowledge, skills, and entrepreneurial attitudes, with the average questionnaire score rising from 2.1 to 4.26 and an N-Gain score of 0.74 (high category). The implementation of product innovation in the form of healthy kangkung smoothies serves as concrete evidence that local potential can be transformed into value-added products through a hands-on training approach.

Furthermore, this initiative successfully boosted participants' motivation and self-confidence in entrepreneurship, thereby encouraging women's active participation in productive economic activities and supporting local food security. Overall, this program holds potential to be developed as a model for sustainable community empowerment. Consequently, ongoing mentoring, strengthened market access, and enhanced business management capacity are necessary to ensure the produced goods can expand and compete more broadly.

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