



Warta Pengabdian Andalas

Jurnal Ilmiah Pengembangan dan Penerapan Ipteks

ISSN (Print) 0854-655X | ISSN (Online) 2797-1600

Community Empowerment of Nagari Salimpek in Developing a Herbal Cosmetic Village Based on Family Medicinal Plants (TOGA)

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Submitted: December 5, 2025

Accepted: February 25, 2026

Published: March 25, 2026

ABSTRACT

Nagari Salimpek in Alahan Panjang, West Sumatra, has a potential for wellness tourism due to its rich biodiversity, especially medicinal and cosmetic plants. However, community awareness in managing Family Medicinal Gardens (TOGA) remain limited, with only three of twenty household groups actively cultivating herbal plants. This condition emphasizes the need for community empowerment to optimize health and economic benefits from local resources. This community service program aimed to enhance local capacity in cultivating and processing TOGA as the basis for developing a Herbal Cosmetic Village. The programme began on 19 July 2025 and was evaluated over six months. Activities included educational sessions on TOGA utilization, training on herbal and cosmetic plant processing, distribution and planting of herbal seeds, and the signing of a Memorandum of Agreement (MoA) with local stakeholders. A pre-test and post-test evaluation involving 31 participants showed significant improvement in knowledge, with understanding of the "herbal center village" concept rising from 29% to 55% and awareness of Nagari Salimpek's potential increasing from 32% to 77%. Overall, participants gained broader insights into the role of TOGA in health, cosmetics, and economic development. These results highlight the importance of continued education, mentorship, and government support to establish Nagari Salimpek as a model Herbal Cosmetic Village for wellness tourism.

Keywords: cultivation, organic, wellness, tourism

INTRODUCTION

Medicinal plants are rich in secondary metabolites, particularly phenolic compounds, which are known to provide significant antioxidant benefits. When formulated as topical products, such compounds can play an important role in protecting the skin from oxidative damage, enhancing its health and appearance (Batubara et.al, 2023; Yenny et.al, 2020). Recognizing this potential, the Ministry of Health (2022) has encouraged the integration of evidence-based traditional medicine into health facilities, while the Ministry of Tourism

and Creative Economy has promoted wellness tourism as a pathway to strengthen the creative economy. These national policies highlight the urgency of mobilizing communities to develop local herbal resources as both health-supporting and economically valuable assets (Yanhendri & Yenny, 2012; Oktaviana & Yenny, 2019; Prabowo et.al, 2023).

Nagari Salimpek, located in the highlands of Alahan Panjang, West Sumatra, is a community with considerable agricultural potential and rich biodiversity. The area is particularly known for its production of *Talinum paniculatum* (Javanese ginseng), a medicinal plant with high antioxidant, antibacterial, and collagen-stimulating activity. Traditionally, the plant has been used in decoctions and home remedies, yet its potential as a raw material for herbal cosmetics and wellness products has not been fully realized. Previous studies have shown that Javanese ginseng leaf extract exhibits notable antioxidant activity, while formulation trials have demonstrated its feasibility in cosmetic preparations such as creams. Despite these scientific findings, the community's ability to cultivate, process, and market herbal plants remains limited (Dini et.al, 2024; Farida et.al, 2022; Ardiningtyas et.al, 2023).

Currently, Nagari Salimpek consists of seven jorong (sub-villages) and 20 dasawisma (community groups), all of which are incorporated under the Women Farmers Group (Kelompok Wanita Tani—KWT) Berkah Sinergi. In principle, each dasawisma should maintain a Family Medicinal Garden (TOGA), yet only three remain active. This reflects broader challenges faced by the community, including limited access to training, declining collective participation (gotong royong), and insufficient integration of local herbal knowledge into sustainable economic practices. Moreover, existing agricultural products are largely sold in raw form for daily consumption, with minimal value-added processing. This situation not only constrains household income but also overlooks the broader potential of herbal resources to support health, tourism, and cultural preservation (Dini et.al, 2024).

At the same time, global trends show increasing interest in natural lifestyles that combine health, beauty, and tourism. Wellness tourism, which integrates herbal use into relaxation and health services such as spas and natural skincare, represents a promising opportunity for rural communities. Herbal-based products, including soaps, scrubs, and facial masks, are examples of value-added commodities that can support this sector (Widyastuti et.al, 2024; Nazifah & Yenny, 2023; Ariani et.al 2025). The concept of developing a “Herbal Cosmetic Nagari” aligns with the Sustainable Development Goals (SDGs), particularly Goal 3 (Good Health and Well-being), Goal 8 (Decent Work and Economic Growth), and Goal 12 (Responsible Consumption and Production). It also supports the national research agenda and higher education performance indicators through community engagement, research dissemination, and cross-sector collaboration.

Despite these opportunities, several gaps persist. These include limited scientific research dissemination to the community, low awareness of safety and toxicology aspects of herbal processing, weak product competitiveness, and restricted access to digital markets (Sukkai et.al, 2023). Addressing these gaps requires structured, collaborative interventions that combine local wisdom with modern scientific knowledge. Community empowerment must focus not only on cultivation and processing but also on education regarding safe use, hygienic practices, proper dosing, and innovative product development as reported by Sugiarti (2022). By involving farmer groups, women's organizations, youth associations, and health services, Nagari Salimpek can transform its herbal resources into sustainable household enterprises and community-based industries.

The primary objective of this community service initiative is to strengthen the capacity of Nagari Salimpek residents in cultivating and processing medicinal plants. The program emphasizes education on herbal safety and toxicology, training in cultivation and processing techniques, and guidance in developing small-scale enterprises based on Family Medicinal Gardens. By doing so, the initiative seeks to increase household income, enhance local employment opportunities, and position Nagari Salimpek as a model destination for wellness tourism. Importantly, the program also contributes to cultural preservation, environmental sustainability, and academic engagement through the transfer of scientific knowledge to rural communities.

METHOD

The programme was implemented on 19 July 2025 and was followed by periodic evaluations up to December 2025. The community service activity was carried out at the Women Farmers Group (Kelompok Wanita Tani—KWT) Berkah Sinergi, Tanjung Balit in Nagari Salimpek, Alahan Panjang, West Sumatra. The event was attended by representatives from the local government, health services, agricultural agencies, and community leaders. The activities were conducted in three stages. First, health education sessions were delivered to raise awareness of drug toxicology and the potential of herbal plants for safe development into medicines and cosmetics. The achievement indicator was set at 80% of participants demonstrating understanding, measured through pre- and post-test questionnaires, with a minimum of 70% correct responses. Second, a Memorandum of Agreement (MoA) was signed between Universitas Andalas and Nagari Salimpek to establish the concept and roadmap of a “Herbal Cosmetic Nagari.” Third, practical training on Family Medicinal Gardens (TOGA) was conducted. Javanese ginseng (*Talinum paniculatum*) seedlings and other herbal plants were distributed, with the target outcome of establishing seven active TOGA groups across Nagari Salimpek.

The sessions included lectures, video presentations, and discussions led by academic experts, followed by group interactions and evaluations. Data collection was performed through questionnaires administered before and after the intervention, assessing changes in knowledge and awareness. The results were analyzed descriptively to evaluate participant comprehension and the effectiveness of the program.

RESULTS AND DISCUSSION

A total of 31 participants joined the community service program and completed the pre-test and post-test questionnaires. The majority were women (90.32%) and most were over 50 years old (45.16%). In terms of education, participants came from diverse backgrounds, with high school graduates being the largest group (32.26%). More than half (51%) were housewives, and 51% owned agricultural land, reflecting the potential for integrating medicinal plant cultivation into household economies. Before the intervention, most respondents (27 of 31; 87%) had already heard of Family Medicinal Gardens (TOGA) and recognized them as medicinal plants that could be cultivated at home. Commonly known species included ginger, betel, moringa, turmeric, and Javanese ginseng (*Talinum paniculatum*). Respondents also acknowledged the usefulness of TOGA for first aid in minor illnesses and cosmetic purposes. Importantly, 25 of 31 respondents (80%) were aware that improper or excessive use of TOGA could cause side effects (table 1).

Table 1. Questionnaire items for pre-test and post-test evaluation

No	Question	Pretest			Post Test		
		n	Yes	No	n	Yes	No
1	Have you ever heard the term <i>TOGA</i> (Family Medicinal Garden)?	31	27	31	31	31	0
2	Do you know that <i>TOGA</i> refers to medicinal plants that can be cultivated at home?	31	28	31	31	29	2
3	Do you know examples of <i>TOGA</i> plants?	31	28	31	31	31	0
4	Have you planted medicinal plants at home?	31	28	31	31	28	3
5	Can <i>TOGA</i> be used as first aid for minor illnesses?	31	31	31	31	31	0
6	Can <i>TOGA</i> be used for cosmetic purposes?	31	31	31	31	31	
7	Do you know how to process <i>TOGA</i> plants?	31	25	31	31	27	4
8	Do you know that medicinal plants may cause side effects if used excessively or improperly?	31	25	31	31	27	4
9	Do you use pesticides in farming?	31	27	31	31	27	4
10	Do you know the health hazards of pesticides?	31	27	31	31	29	2
11	Do you know what is meant by a “herbal center village”?	31	9	31	31	17	14
12	Do you know that Nagari Salimpek, Alahan Panjang, has the potential to become a herbal center village?	31	10	31	31	24	7
13	Do you know of any farmer groups or communities in your nagari that manage medicinal plants?	31	18	31	31	24	7

However, despite this awareness, 27 of 31 respondents (87%) of respondents still reported using pesticides in farming, demonstrating a gap between knowledge and practice. However, awareness of pesticide-related health hazards increased from 87.1% to 93.5%. As shown in Table 1, only 9 of 31 respondents (29%) were aware of the concept of a herbal center village before the program. Following the educational sessions, all participants understood the concept and recognized the potential of Nagari Salimpek to become an herbal cosmetic center. Moreover, 27 of 31 respondents (87%) acknowledged that all community members share responsibility in promoting herbal-based economic development, with 18 of 31 respondents (57%) aware of existing farmer groups managing herbal plants. Although these groups are primarily oriented toward cultivation activities, they emphasized that their main needs include capacity-building through training and education (18 of 31; 58%) as well as the provision of seedlings (13 of 31; 42%).

The intervention also emphasized community identity, as all respondents agreed that herbal plants should represent a cultural symbol of the nagari. This aligns with previous literature highlighting the role of medicinal plants not only as economic commodities but also as part of intangible cultural heritage. Community involvement in *TOGA* cultivation, combined with government support, was seen as essential for sustainability. The program concluded with a planting of herbal seedlings, involving community leaders, farmer group

representatives, and partner organizations (as shown in figure 1). This practical step reinforced collective ownership of the initiative and served as a starting point for establishing seven active TOGA groups in the nagari.



Figure 1. A. Signing of the Memorandum of Agreement (MoA). B. Group photo with participants, community service (KKN) students, and international students. C & D. Educational sessions delivered by speakers from the Department of Dermatology, Venereology and Aesthetics (DVE) and the Department of Pharmacology. E & F. Distribution and planting of herbal seedlings to representatives of seven dasawisma (community household groups). G & H. Evaluation Results of TOGA Plants Managed by Farmer Groups.

Overall, the educational intervention, as one of the community-based herbal garden programme activities implemented in this community service, improved knowledge related to TOGA. Awareness of the TOGA concept increased from 87.1% to 100%, while knowledge of TOGA plant examples increased from 90.3% to 100%. Understanding of

TOGA processing methods and awareness of potential side effects from improper use both increased from 80.6% to 87.1%. These findings are consistent with earlier studies reporting that community-based herbal garden programs improve knowledge, strengthen local health resilience, and provide alternative sources of income. Widayati et al. (2024) highlight how community-based herbal garden initiatives can enhance local knowledge and augment rural health and economic resilience via agritourism models. Similarly, Sugiarti et al. (2022) and Sukkai et al. (2023) reinforce the value of cultivating herbal culture within communities to support health tourism, noting the importance of participatory guideline development. Susanti et al. (2022) illustrate the vital role of capacity building and digital innovation in transforming villages into sustainable wellness destinations. Collectively, these studies align with the findings that community education, mentorship, and structured interventions are crucial for sustainable TOGA-based development in wellness tourism.

Nevertheless, the reliance on pesticides and the limited initial awareness of herbal centers represents challenges that require continuous education and monitoring. Liang et al. (2022) demonstrates that organic cultivation of medicinal plants enhances biodiversity, reduces pesticide dependency, and improves economic returns that supporting the argument for organic farming as a sustainable alternative. The establishment of a Memorandum of Agreement (MoA) between the Faculty of Medicine, Andalas University (FK UNAND) and KWT Berkah Sinergi has received recognition from the Kawasan Rumah Pangan Lestari (KRPL) program, an initiative by the West Sumatra Provincial Food Agency that promotes the intensive and environmentally friendly utilization of home gardens to sustainably meet household food and nutritional needs. Future community service should include hands-on training in organic farming, structured mentorship for farmer groups, and collaboration with local government to integrate TOGA development into regional economic plans. In summary, the program successfully increased community knowledge and awareness, fostered collaboration, and laid the foundation for Nagari Salimpek to develop as an Herbal Cosmetic Village. Sustaining these efforts will require ongoing capacity-building, government engagement, and the promotion of herbal plants as both cultural assets and drivers of wellness tourism.

CONCLUSION

The community empowerment program in Nagari Salimpek demonstrated the potential of Family Medicinal Gardens (TOGA) as a means to enhance local knowledge, promote safe use of medicinal plants, and develop herbal cosmetics as part of wellness tourism. The objectives of strengthening community capacity, fostering collaboration, and establishing herbal-based initiatives were achieved through education, training, and the formation of active TOGA groups. These activities not only contributed to improving household livelihoods but also supported the preservation of cultural identity and the development of a sustainable local economy. The program highlighted the importance of continuous guidance, innovation, and strong partnerships between the community, academics, and local government. To ensure sustainability, policy support and structured interventions are needed, particularly in providing training, resources, and market access for herbal products. The experience in Nagari Salimpek may serve as a model for other regions to develop herbal-based villages that integrate health, culture, and tourism while contributing to long-term community resilience.

ACKNOWLEDGEMENTS

We would like to thank Faculty of Medicine for funding this community service (100/UN16.02/PM.03.03/FK-PkM/2025).

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