JPM
Jurnal Pengabdian Mandiri
Volume 3 Issue 1, 2026 (73-80)
ISSN (*online*) : 3089-3070
Homepage : https://jurnalunived.com/index.php/MANDIRI
Doi : https://doi.org/10.37676/mandiri

The Kkn-T Program As A Form Of Community Service: Optimizing Vacant Land Through The Planting Of Medicinal Plants In The Pematang Gubernur Subdistrict

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Received [27 Mei 2026] *Revised [02 Juni 2026]* *Accepted [04 Juni 2026]*

Abstract. Unused land in RT 25 RW 05, Pematang Gubernur Village, has the potential to be developed into a green space that benefits family health and improves the quality of the residential environment, but until now it has not been utilized optimally. This community service program aims to maximize the use of vacant land by planting medicinal plants that are easy to grow and useful for daily needs. The implementation of activities consisted of an initial survey in collaboration with local administrators, mapping the planting area, providing counseling on the benefits of medicinal plants and simple cultivation methods, land preparation and planting media practices, planting seedlings together, and periodic maintenance assistance according to the residents' picket schedule. Evaluation was carried out by comparing the level of knowledge before and after the counseling, observing plant growth, and assessing residents' active participation in the activity. The results of this activity showed an increase in residents' understanding of how to select medicinal plants, planting methods, and care; the establishment of a medicinal plant garden area on the vacant land in RT 25 RW 05; and increased community participation in maintaining cleanliness and garden maintenance. The approach of optimizing vacant land through planting medicinal plants has been proven to provide an effective participatory way to increase family health independence and create a greener and more productive residential environment..

Keywords: *Empty Land, Medicinal Plants, Community Empowerment, Residents' Gardens, Pematang Gubernur Village.*

INTRODUCTION

The cleanliness and quality of residential areas are essential factors that significantly influence the health, comfort, and productivity of the community. A clean, well-organized, and healthy living environment plays a crucial role in preventing the emergence and spread of various health problems, particularly those related to environmental sanitation, infectious diseases, and decreased quality of life. In addition, a supportive residential environment contributes to physical comfort, psychological well-being, and social harmony among community members.

Beyond its preventive function, a healthy environment also serves as a medium for fostering clean and healthy lifestyle behaviors. Through environmental-based education and active community involvement, residents are encouraged to develop awareness, responsibility, and consistent habits related to maintaining environmental hygiene. Community participation in environmental management not only strengthens individual health behaviors but also builds collective commitment to sustaining a healthy living space.

In the context of health promotion, environmental improvement is recognized as an effective and strategic approach to enhancing community health status. Efforts such as

improving sanitation, managing waste, optimizing land use, and creating green spaces contribute directly to better environmental conditions and indirectly to behavioral change. These initiatives align with the broader concept of health promotion, which emphasizes enabling communities to increase control over and improve their health, ultimately leading to an improved quality of life. (Notoatmodjo, 2014; World Health Organization, 1986)

Epidemiologically, poorly managed environments can increase the likelihood of environment-related diseases, including those related to sanitation, water, and vectors. Therefore, community-based prevention strategies are needed to reduce health risks through behavioral change and improvement of physical environmental conditions. Public health also considers a healthy environment as part of health efforts that need to be promoted across sectors. (World Health Organization, 2019; Republic of Indonesia, 2009)

The development of increasingly dense residential areas is often accompanied by a reduction in open areas and increased pressure on environmental services, such as waste management and drainage systems. Urbanization and land use changes can create unproductive areas, including vacant and abandoned land, which can reduce the beauty of the environment and pose a risk of becoming a source of hygiene problems. Strengthening the community's ability to manage these areas is important in the context of sustainable residential development. (United Nations DESA, 2019; World Health Organization, 2016)

Unused land can actually be considered an environmental resource that can be utilized through community-based activities, such as urban agriculture at the residential level. The use of vacant land to grow useful plants can increase family resilience, create green open spaces, and strengthen social relationships among residents through joint activities. This method has been widely adopted as a practical step to improve environmental quality while providing economic and social benefits. (Mougeot, 2000; Food and Agriculture Organization, 2019)

In the realm of family health, growing medicinal plants provides additional benefits because it supports safe and accessible self-care practices. The use of medicinal plants as part of community health traditions is internationally recognized as a way to utilize local resources that can strengthen complementary health services, especially in prevention and health promotion efforts. By choosing the right types and methods of processing, medicinal plants can serve as a practical source of health education in the household environment. (World Health Organization, 2013; World Health Organization, 2019)

Success in utilizing unused land depends heavily on the community's understanding, attitudes, and abilities in farming and caring for plants. Changes in health behavior generally require planned actions, including education, strengthening social support, and providing appropriate facilities. Therefore, community service programs must be designed systematically, starting from identifying needs, providing education, conducting hands-on practice, to providing assistance so that garden management can be carried out sustainably. (Notoatmodjo, 2014; Green and Kreuter, 2005)

In addition to individual aspects, the level of community involvement is an important factor because collective land management requires agreement, division of tasks, and a sense of ownership. Meaningful involvement is not limited to attendance at activities, but also extends to participation in decision-making and sustainable management. An empowerment framework that focuses on community assets highlights the importance of utilizing local potential so that programs are not entirely dependent on outside parties. (Arnstein, 1969; Kretzmann and McKnight, 1993)

The sustainability of herbal gardens is also influenced by the local environment and policies, such as support from community leaders, norms of cooperation, and access to resources such as seeds, planting media, and water. In the context of health promotion, the ecological approach views behavior as the result of interactions between individuals, social relationships, and the physical environment, so successful interventions need to target several

aspects at once. Social learning through examples and shared practices also plays a role in accelerating the adoption of garden care behaviors.

In RT 25 RW 05, Pematang Gubernur Village, unused vacant land can be turned into medicinal gardens managed by residents to improve environmental health and add green space to the neighborhood. This initiative is in line with the principles of environmental protection and management, which emphasize pollution and damage prevention and involve community participation. In addition, it also supports the strengthening of clean environmental practices by reducing the potential for slum formation. Therefore, this activity does not only focus on plants, but also on better environmental management. (Republic of Indonesia, 2009; Republic of Indonesia, 2008)

Based on this explanation, the community service activity entitled “Optimization of Vacant Land through the Planting of Medicinal Plants in RT 25 RW 05, Pematang Gubernur Village” aims to increase understanding and skills in cultivation, build community participation and a sense of ownership, and create well-maintained medicinal plant gardens. This program is expected to create a greener environment, support family health self-reliance, and strengthen community-based health promotion practices through concrete actions at the neighborhood level. (World Health Organization, 1986; Green and Kreuter, 2005)

RESEARCH METHODS

This study employed a community service implementation method with the theme of utilizing surplus land through the planting of medicinal plants in RT 25 RW 05, Pematang Gubernur Village. The method used was a qualitative participatory approach that emphasizes active community involvement throughout the stages of planning, implementation, and maintenance of the medicinal plant garden. This approach was chosen to gain an in-depth understanding of environmental conditions and community habits, while also fostering a sense of ownership to ensure the sustainability of the program.

The community service activities were conducted on vacant land located in RT 25 RW 05, Pematang Gubernur Village, with the land area determined based on agreement with local authorities. The subjects involved in this program included residents of RT 25 RW 05 (representatives of heads of families, housewives, and youth), RT/RW officials, community leaders, and the community service implementation team.

Data collection techniques consisted of field observations, interviews, and focus group discussions (FGD). Field observations were carried out through direct assessment of land conditions, including cleanliness, land area, lighting, water access, potential disturbances such as waste accumulation and flooding, as well as residents’ habits related to land utilization. Interviews were conducted with RT/RW administrators and selected residents to explore community needs, interest in medicinal plant cultivation, perceived obstacles, and willingness to participate in routine maintenance activities. In addition, focus group discussions were held with residents to determine priority types of medicinal plants, division of roles, maintenance schedules, and rules regarding the utilization of garden produce.

The program implementation phase included coordination and land allocation, as well as education and socialization activities. Coordination was conducted with RT/RW officials and residents to determine land locations, planting area boundaries, and division of responsibilities. Educational and socialization activities were carried out by providing information on the benefits of medicinal plants, selection of suitable plant types based on land conditions, simple cultivation techniques (including land preparation, planting media, and planting distance), and maintenance practices such as watering, fertilization, and basic pest control.

Data analysis was conducted using qualitative descriptive methods. Data obtained from observations, interviews, and discussions were analyzed to describe initial conditions, levels of resident participation, obstacles encountered, and supporting factors of the program. Furthermore, the results of plant growth monitoring and resident feedback were used as the basis for evaluating the effectiveness of the activities and formulating recommendations for the sustainability of the medicinal plant garden in RT 25 RW 05.

Table 1. KKN-T Activities Group 15 Rt.23 Pematang Gubernur

Date	Program	Description	Documentation
26 December 2025	Clearing Vacant Land	Clearing vacant land in RT.25, Pematang Gubernur Village, to start a medicinal plant cultivation program.	
27 December 2025	Purchasing and Installing Fences for Medicinal Plant Cultivation Land	Purchasing and Installing Fences for Land Cultivated with Medicinal Plants in RT.25, Pematang Gubernur Village.	
28 December 2025	Purchasing Medicinal Plant Seeds and Planting Medicinal Plants	Purchasing and Planting Medicinal Plant Seeds to be Planted on Land that has been Cleared and Fenced in RT.25, Pematang Gubernur Village.	
29 December 2025	Installing Banners on Medicinal Plant Land	Installing banners on medicinal plant land so that residents of RT.25, Pematang Gubernur Village are aware of the existence of Medicinal Plant Land.	

Source: Primary data processed in 2026.

RESULTS AND DISCUSSION

Following the post-implementation assessment of the community service program entitled Optimizing Vacant Land through Medicinal Plant Cultivation in RT 25 RW 05, Pematang Gubernur Village, several outcomes indicating positive impacts were identified.

Improvement in Community Knowledge and Awareness. An increase in residents' understanding of the benefits of medicinal plants, appropriate plant selection, as well as planting and maintenance techniques was observed. This improvement was reflected in simple pre- and post-education evaluations, which showed an increase in comprehension levels of approximately ±80%. The most significant improvements were found in knowledge related to planting media, watering schedules, and maintenance practices to prevent plants from wilting or dying.

Increased Community Participation in Land Management. Community involvement in land management activities showed a noticeable increase. Residents actively participated in collective work activities, including land cleaning, preparation of planting media, seedling planting, and routine maintenance. Active participation increased by approximately ±65%, as indicated by the establishment of role distribution (watering, weeding, light fertilization) and residents' willingness to adhere to mutually agreed maintenance schedules.

Transformation of Vacant Land into a Greener and More Productive Area. The previously underutilized and poorly maintained vacant land gradually transformed into a productive green area. The land became cleaner, more organized, and no longer functioned as a site for waste accumulation or uncontrolled weed growth. Overall plant growth showed positive results, with a plant survival rate of approximately ±85%. These results indicate that the medicinal plant garden has strong potential to be maintained sustainably and utilized continuously by the community.

Effectiveness of Participatory and Hands-on Approaches. The success of this program demonstrates that a method combining educational activities with direct field practice is effective in encouraging behavioral change and strengthening residents' sense of ownership. Educational sessions provided foundational knowledge, while hands-on activities such as land preparation and planting enabled residents to directly apply cultivation techniques. This experiential learning increased residents' confidence and reinforced collective responsibility, which is crucial for preventing the land from becoming neglected again.

Problem Resolution through Cultivation and Maintenance Education. One of the main challenges in utilizing vacant land is the limited knowledge of residents regarding simple techniques for cultivating and maintaining medicinal plants. Through socialization activities, residents gained an understanding that plant selection must be adjusted to land conditions, including light exposure, humidity, and water availability, as well as the importance of appropriate planting media. With continuous guidance, residents also learned proper maintenance practices such as watering frequency, weed control, and light organic fertilization, thereby reducing the risk of plant failure.

Enhancing Sustainability through Role Distribution and Maintenance Scheduling. To ensure long-term sustainability, the program emphasized the establishment of a clear maintenance system. The implementation of duty schedules and role distribution proved to be an effective strategy for maintaining consistency in garden care. Routine activities such as watering and cleaning not only supported plant growth but also strengthened mutual cooperation and environmental awareness among residents. Through this management pattern, the medicinal plant garden can function as a sustainable learning medium and a tool for promoting family health within RT 25 RW 05.

CONCLUSION

The KKN-T Program conducted by Group 23 in RT 25 RW 05, Pematang Gubernur Village, focusing on the optimization of vacant land through medicinal plant cultivation, demonstrated satisfactory results and generated positive impacts on both the community and the surrounding environment. Post-implementation evaluation indicated an increase in community knowledge regarding the benefits and cultivation methods of medicinal plants of

approximately 80%, along with an increase in community involvement in cleaning activities, planting, and garden maintenance of around 65%. These improvements were reflected in the transformation of previously poorly maintained land into a cleaner, more organized, greener, and more productive area, with a plant growth success rate of approximately 85%. This transformation also contributed to improved environmental aesthetics and reduced the potential for land misuse, such as waste accumulation and uncontrolled weed growth. In addition, the presence of a managed green space created a more comfortable and functional communal area for residents.

The success of this initiative indicates that approaches emphasizing participation and education are effective in enhancing community involvement and fostering a sense of ownership toward shared public spaces. Educational activities followed by hands-on practice in land preparation and planting were able to improve residents' gardening skills, while guidance in maintenance practices and task distribution ensured the sustainability of garden management. The collaborative nature of the activities encouraged social interaction and collective responsibility, which are important elements in maintaining long-term community-based environmental programs. Overall, this initiative not only optimized the use of vacant land in the short term but also established a foundation for environmentally responsible habits and strengthened family health self-reliance based on local potential in RT 25 RW 05.

Based on the results of the KKN-T program implementation, several recommendations can be considered to maintain sustainability and expand the program's impact. The continuity of garden maintenance should be ensured through the continuation and periodic evaluation of duty schedules so that activities such as watering, weeding, and light fertilization are carried out consistently. Assigning specific individuals responsible for each planting area may facilitate better control, strengthen accountability, and reduce the risk of the garden becoming neglected over time.

In addition, it is recommended to establish or strengthen a small management team for the medicinal plant garden consisting of community representatives, RT/RW administrators, and local community members. This team would play a key role in organizing routine activities, identifying facility and material needs, coordinating improvements in cases of plant damage or mortality, and serving as a communication bridge among residents to ensure smooth implementation of garden management activities.

To further improve cultivation success, gradual provision of supporting facilities is also recommended. These may include basic gardening tools, hoses or watering equipment, compost, additional pots or planting containers, and plant name labels. The availability of adequate facilities can support more efficient maintenance and reduce technical obstacles faced by residents. Such facilities can be provided incrementally through voluntary community contributions, support from RT/RW authorities, or collaboration with the village administration, thereby strengthening shared responsibility for garden sustainability.

Further education on the safe use of medicinal plants is also necessary. Beyond cultivation practices, residents should receive continued guidance on appropriate harvesting methods, proper storage, and safe utilization of medicinal plants, including usage limitations and precautions for vulnerable groups such as children, pregnant women, and the elderly. This educational component would enhance residents' understanding and strengthen the function of the garden as a medium for family-based health promotion.

Finally, routine monitoring of plant growth and garden cleanliness should be conducted, for example on a monthly basis, accompanied by systematic documentation of developments and challenges as evaluation materials. Regular monitoring can help detect problems at an early stage and support timely corrective actions. If stable and positive results are consistently achieved, the program may be replicated in other vacant land locations within RW 05 through brief mentoring and knowledge sharing facilitated by the garden management team of RT 25.

In addition to replication efforts, documentation of the program process and outcomes may also serve as a reference for future community-based environmental and health initiatives. Written records, photographs, and simple progress reports can help preserve institutional memory, support accountability, and provide practical examples for other communities interested in adopting similar programs. This documentation can further strengthen learning processes and encourage broader community engagement.

Moreover, the continuity of interaction among residents, garden managers, and local authorities is important to maintain program momentum. Ongoing communication can help align expectations, address emerging challenges, and reinforce collective commitment to environmental stewardship. Through sustained collaboration, the medicinal plant garden can remain a functional communal asset that supports environmental quality and family health in a consistent and long-term manner within RW 05.

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