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Strategic Community Empowerment Through Self-Reliance Group Education to Enhance the Sustainable Use of Indigenous Medicinal Plants

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ABSTRACT

This study examines the utilization of Family Medicinal Plants in Bangkingan Village, Surabaya City, and identifies obstacles and strategies for community empowerment based on Suharto's (2005) 5P theory: possibility, strengthening, protection, support, and maintenance. Using a descriptive qualitative approach, this research adopts a case study of the Bangkingan Herbal Corner program, a local initiative for developing Family Medicinal Plants (FMP). The findings indicate that the Bangkingan community actively uses various medicinal plants such as sung nyawa, ginger, moringa, and temulawak processed into herbal infusions and simple preparations. These practices are facilitated through training programs organized by universities and the use of digital platforms offering practical and educational resources. Strategies related to possibility and strengthening have been effectively implemented, as evidenced by the establishment of local herbal cadres and increased access to learning materials. However, significant challenges persist in terms of legal protection, institutional support, and long-term sustainability. The absence of clear regulatory frameworks, consistent funding mechanisms, and integration into formal village development planning hinder the program's scalability and resilience. Multi-stakeholder collaboration, involving government agencies, academia, private sector actors, and local communities, is essential to address these gaps and ensure sustainable outcomes. This study concludes that the FMP-based empowerment model implemented in Bangkingan holds strong potential for replication in other regions, provided that adequate policy and institutional support are secured to sustain its impact over time

INTRODUCTION

The use of medicinal plants as part of the traditional medicine system has become a valuable cultural heritage in the lives of the Indonesian people. Data from the Health Research and Development Agency (R&D) of the Ministry of Health shows that around 49% of Indonesians still rely on traditional medicine to meet their primary health needs, especially in areas with limited access to formal health services (Sakdiyah & Salahudin, 2022). Medicinal plants not only reflect local knowledge that is passed down from generation to generation, but also have great scientific and economic potential when managed systematically and sustainably (Lu et al., 2024). Traditional medicinal plants, also known as FMP, have long been an integral part of Indonesia's public health culture. Scientifically, plants such as ginger, turmeric, curmeal, lemongrass, betel leaves, and others contain active compounds that have been shown to have pharmacological benefits (Qamar et al., 2022). In this context, community empowerment through education on the use of medicinal plants is not only important in terms of health, but also has dimensions of environmental conservation, creative economy, and sustainable development.

However, in the midst of modernization and globalization, people's knowledge about medicinal plants tends to be degraded. Many individuals, especially the younger generation, no longer recognize the benefits of medicinal plants growing around them (Baliyan et al., 2022). This condition is exacerbated by the lack of integration of medicinal plant utilization materials in formal and informal education curricula. In fact, at the policy level, there are not many community empowerment programs that specifically focus on the sustainable development of herbal literacy (Prasetyo, Irawati and Satriawati, 2024). This phenomenon also occurs in urban and semi-urban areas such as Bangkingan Village, Surabaya City. This village is located in the western area of the city and has geographical potential in the form of a yard that is still relatively large compared to other urban areas (Arianto, 2020). The social composition of the community consists of local residents who still maintain traditional culture and urban residents with modern lifestyle tendencies (Setiadi and Setiaji, 2020). The knowledge gap between generations, lack of educational infrastructure, and the lack of a collective system of

local resource management have caused the potential of medicinal plants to not be optimally utilized (Andriyan et al., 2024).

A community-based approach is becoming a relevant strategy. One of the models that can be developed is the formation of Herbal Non-Governmental Groups (HNG) (Widyasanthi et al., 2024). HNG is a community group that voluntarily gathers to jointly learn, develop, and utilize Family Medicinal Plants through education, training, and hands-on practice (Moridu et al., 2023). This model prioritizes the principle of active community participation in every stage of activities ranging from plant identification, cultivation, processing, to their use for family health (Nasution, 2021). Community empowerment through HNG provides opportunities to improve herbal literacy, which includes understanding local medicinal plant types, bioactive content, clinical benefits, and hygienic and safe processing techniques. More than that, HNG activities can be directed to become a microeconomic base through the production of packaged herbal medicine, herbal drinks, and other processed medicinal plants. The innovation of local herbal products is also in line with the trend of healthy lifestyle and increasing public awareness of nature-based products with minimal side effects (Pahlevi and Fadlurrahman, 2024).

Educational strategies in HNG include both transformative and contextual approaches. This means that educational materials are adjusted to the local conditions of the Bangkingan community and are delivered through participatory methods such as group discussions, field practices, intensive training, and project-based learning (Meiliana et al., 2022). This allows for social transformation, where people are not only recipients of information, but also producers of knowledge and skills that are beneficial to the surrounding environment. Several previous studies have shown that systematically empowered self-help groups or local communities are able to increase the social and economic resilience of communities (Fang et al., 2021). For example, in several areas in Yogyakarta and Bali, the development of the FMP group has succeeded in lifting the family economy while increasing community health awareness. However, there is still limited literature or scientific studies that specifically examine educational strategies and empowerment of urban communities in the context of medicinal

plants, especially in the East Java region (Malta, 2023).

Thus, this research has high academic and practical urgency. Academically, this study aims to fill the literature gap related to community empowerment strategies based on herbal education. Practically, this research is expected to be a contextual, applicative, and sustainable model for HNG development in other urban areas. This is in line with the Sustainable Development Goals (SDGs) agenda, especially goal 3 (Good Health and Well-being), goal 11 (Sustainable Cities and Communities), and goal 12 (Responsible Consumption and Production) (Liberali, 2025). Furthermore, the development of HNG can also serve as part of a public health resilience system at the local level. In emergency situations such as pandemics or disasters, the availability of conventional medicines can be hampered. In these conditions, the use of Family Medicinal Plants that are managed independently by the community can be an alternative solution that supports community resilience. In addition, cross-sectoral involvement such as PKK, Youth Organization, Posyandu, and RT/RW devices can strengthen social networks in the implementation of HNG education programs (Dutton, 2004).

This research will use a qualitative descriptive approach to explore in depth the dynamics of the formation and implementation of HNG in Bangkingan Village. Through interviews, observations, and documentation, this study aims to identify the supporting factors, constraints, and results achieved from herbal education strategies (Mustamin et al., 2024). Thus, the results of the research are expected to provide evidence-based policy recommendations for the development of similar programs in other regions. In general, the focus of this research is not only limited to the aspects of education and empowerment, but also to the aspects of social change, increasing ecological awareness, and strengthening the local economy (Syomwene, 2023). Therefore, educational strategies through Herbal Non-Governmental Groups need to be understood as part of a holistic community development process, which includes social, economic, health, and environmental dimensions.

Community Empowerment

Community empowerment is a systemic process that aims to increase the capacity of individuals and communities to be able to control and manage their resources independently (Sya'rani, 2024). This process includes the transfer of social control, the improvement of knowledge, and the application of critical skills, as well as encouraging collective action that positively impacts social change (Kartika et al., 2023). According to the psychological theory of empowerment, there are three main levels: intrapersonal (self-awareness and efficacy), interactional (skill development and resource access), and behavioral (participation and real action). Empowerment at the community level encourages citizen collaboration in making strategic decisions, including in the management of local potential.

Empowerment is not only a value, but also a process and results starting from citizen participation, organizing, to the realization of control over resources and local policies. In the context of Bangkingan Village, empowerment through Herbal Non-Governmental Groups (HNG) is expected to be able to encourage the community to transform from consumers to producers of local health solutions. Thus, HNG is not only an educational forum, but also a means to activate community empowerment levels that are oriented towards real change.

Community-Based Community Education

Community-based education practices the principles of non-formal education that emphasizes participatory dialogue, local relevance, and contextual learning in line with Paulo Freire's approach that emphasizes society's critical awareness of its social realities (Purwaningtyas et al., 2021). This model is particularly relevant in designing group-based empowerment interventions. The concept of andragogy, which is the theory of adult learning, states that:

- a) Self-concept: Adults tend to be more independent in controlling the learning process.
- b) Experience: Life experience becomes the basis and main source of learning.

- c) Readiness to learn: Learning readiness is directly related to social roles and real needs.
- d) Orientation to learning: A problem-centric approach, not just material consumption.
- e) Motivation: Learning motivation is intrinsic

This principle is embodied in community-based education through community involvement in planning, implementation, and evaluation of programs. Such participation not only increases the relevance of the material, but also triggers a sense of ownership, which in turn strengthens the sustainability of the program.

The HNG education module will be designed according to the principles of andragogy: involving residents in identifying needs, utilizing local experiences (for example from elderly residents who understand medicinal plants), and applying hands-on methods such as cultivation training, case discussions, and herbal processing simulations. Thus, learning becomes meaningful, applicative, and rooted in the context of daily life in Bangkingan.

Family Medicinal Plants as Health Resources

Family Medicinal Plants include traditional flora that has been used for generations in medicine and is now receiving scientific attention for its existence. The World Health Organization (WHO) has recognized the potential of safe and sustainable phytopharmaceutical therapies. In Indonesia, the Family Medicine Park (FMP) program was launched to promote the use of medicinal plants in every home through education, planting activities, and the use of household products (Triyanti et al., 2017). People who know and manage medicinal plants independently report a decrease in spending on health costs and improving the quality of family life.

However, some studies have noted gaps in community literacy in terms of plant identification, dosage, safety of use, and processing methods. This causes the potential of medicinal plants not to be utilized optimally, and even has the potential to have a negative impact if not done correctly. Bangkingan Village has ecological capital in the form of yards

and potential for a diversity of medicinal plants such as ginger, turmeric, temulawak, and sambiloto. However, in the absence of systematic education and structured groups, this potential only stops as sporadic knowledge. With the educational strategy in HNG, it is hoped that the community will not only recognize and plant, but also be able to process (for example, into herbal medicine or ointment), as well as understand the aspects of quality and hygiene.

METHODS

Research Approach

This study employs a descriptive qualitative approach with a Participatory Action Research (PAR) design. The qualitative approach was selected because it provides a comprehensive framework for exploring social phenomena in depth, particularly the processes of empowerment, participation, and behavioral change within communities. Unlike quantitative methods, qualitative research emphasizes contextual interpretation, lived experiences, and the construction of meaning by actors involved.

The choice of PAR is grounded in its dual orientation toward knowledge production and social transformation. PAR positions the researcher not as a detached observer but as an active participant and facilitator of change. In this paradigm, the research process involves cycles of reflection, planning, action, and evaluation conducted collaboratively with community members (Purwaningtyas, 2023). This makes PAR especially relevant for empowerment-based initiatives, where the community is expected to be both the subject and the agent of change.

Research Setting and Context

The research was conducted in Bangkingan Village, Lakarsantri District, Surabaya City, an area with rich potential in local medicinal plants but facing limitations in terms of knowledge dissemination, organizational capacity, and market access. This site was deliberately chosen because it represents both a challenge and opportunity in terms of grassroots empowerment. On one hand, there is a wealth of natural resources and traditional knowledge related to herbal plants; on the other hand, there is a lack of structured programs that could institutionalize these assets into sustainable community-based initiatives.

Informants and Participants

The primary informants in this research are members of the Bangkingan Village community who are directly or indirectly involved in the formation of Herbal Non-Profit Groups (HNG). Participants include local leaders, women's groups, youth representatives, and elderly community members who still preserve traditional herbal knowledge. Purposive sampling was applied to ensure diversity of perspectives while maintaining relevance to the research objectives. The number of participants was not predetermined but followed the principle of theoretical saturation, meaning data collection was continued until no new insights emerged.

Data Collection Techniques

Data were collected using multiple techniques to increase the validity and richness of the findings:

1. In-depth Interviews: Conducted with key community members and facilitators to capture their perceptions, expectations, and experiences regarding empowerment and herbal plant utilization.
2. Focus Group Discussions (FGDs): Organized to encourage dialogue, collective problem identification, and shared solutions, in line with PAR principles.
3. Participant Observation: Researchers engaged in community meetings, workshops, and training sessions, taking field notes to record social dynamics and contextual interactions.

Data Analysis

The data analysis followed a thematic coding strategy (Braun & Clarke, 2006), which included several iterative steps:

1. Data Familiarization: Transcribing interviews, reviewing notes, and repeatedly reading data to gain an overall understanding.
2. Initial Coding: Identifying key concepts, recurring issues, and meaningful phrases related to empowerment, participation, and obstacles.
3. Theme Development: Grouping codes into broader categories such as "strengthening knowledge," "social barriers," and "support mechanisms."
4. Interpretation: Connecting the emerging themes with the theoretical framework (Suharto, 2005: 5P Empowerment Model) and the context of local empowerment practices.

Throughout the analysis, the constant comparative method was employed, whereby new

data were continuously compared with previously collected data to refine categories and ensure internal consistency.

Theoretical Framework Application

The research is anchored in Suharto's (2005) empowerment theory, which articulates the 5P dimensions possibility, strengthening, protection, support, and maintenance as the pillars of empowerment. These five elements served as an analytical lens for coding and interpreting the data:

1. Possibility: Observing how the community creates enabling conditions to maximize potential.
2. Strengthening: Identifying strategies to build knowledge, skills, and collective capacity.
3. Protection: Examining mechanisms that shield vulnerable groups from marginalization.
4. Support: Assessing the role of external and internal resources in sustaining empowerment.
5. Maintenance: Analyzing how empowerment outcomes are preserved and institutionalized.

Research Validity and Reliability

To enhance the credibility of the study, several strategies were employed:

- Triangulation across data sources (interviews, FGDs, observations, documents).
- Member Checking, where preliminary findings were shared with participants to verify accuracy and resonance with their lived experiences.
- Reflexivity, where researchers continuously reflected on their positionality, potential biases, and influence on the research process.

Meanwhile, transferability was addressed by providing thick descriptions of the research setting and context, allowing readers to judge applicability to other cases. Dependability and confirmability were ensured through audit trails, including systematic documentation of field notes, coding decisions, and analytical memos.

RESULTS AND DISCUSSION

Conditions of Utilization of Family Medicinal Plants

Based on the results of initial observations and surveys, the use of Family Medicinal Plants in Bangkingan Village is still relatively low. Although this region has the potential to grow various types of herbal plants such as ginger, turmeric, temulawak, lemongrass, betel leaves, and pegago, only about 40% of households plant and use it regularly. Use is also limited to household scale, especially to treat minor illnesses or maintain body stamina. Elderly people tend to be more active in using medicinal plants because they inherit knowledge from previous generations. However, the younger generation shows a lack of interest in the use of herbal plants, on the grounds that they are less practical and not modern. This indicates that local potential has not been maximized optimally. Education and community empowerment are needed so that this knowledge is not lost in the midst of changing times. In addition, the absence of organized activities that direct the community to develop medicinal plants as economic potential is also the cause of low utilization. Therefore, there is a need for a systematic strategy through community education and group-based mentoring so that the use of Family Medicinal Plants can increase significantly and sustainably.

Bangkingan Village in Surabaya has recorded encouraging developments in efforts to utilize Family Medicinal Plants through education and community empowerment programs. One of the main initiatives is the establishment of Herbal Corner Bangkingan, which functions as a center for information and public education about family medicinal plants (FMP) and their benefits for family health. This educational program was carried out by a team from Nahdlatul Ulama University Surabaya (Unusa), which involved three lecturers who provided direct training to 23 Surabaya Hebat cadres

at RW 3 Bangkingan on September 30, 2024. The training is designed to educate the public on how to grow, care for, and use herbal plants as home remedies and increase the body's immunity.

In the training, the community was introduced to several types of medicinal plants that are generally grown in the yard, such as *Gynura procumbens* known as a diabetes control herb, as well as other common plants such as ginger, turmeric, curcuma and lemongrass. Continuous life is emphasized because of its potential as a plant that is easy to grow and has significant health benefits. The use of this plant is not only limited to planting; The community is also taught to process it in the form of daily herbal herbs. The goal is for medicinal plants to be made part of a healthy lifestyle, especially to increase immunity naturally.

Herbal Corner Bangkingan was initiated as a digital platform to document and share knowledge from cadre training. Through the herbalcornerbangkingan.com website, cadres are trained to record the types of plants, how to use them, and process herbs so that this knowledge can be accessed by other residents. This makes Herbal Corner an online information center as well as a public education trail. The training succeeded in arousing the interest of residents, especially community health care cadres (HNG), who then became the driving force in the community to plant herbs in the yard of the house and share knowledge to their families. Based on the report, the cadre seeks to disseminate the use of herbal plants to the residents of RW 3 and its surroundings, so that there is a mutual awareness about the long-term health benefits of Family Medicinal Plants.

However, so far, the utilization is still on a community scale: the number of cadres is limited (23 people), planting is carried out per household on a limited basis (on small yard land), and there is no structured cultivation in the village area en masse.

Table 1. Utilization Conditions

Aspects	Actual Details in Bangkingan
Program Initiator	Unusa Team (lecturers and students), RW 3 Bangkingan
Number of Cadres	23 Surabaya Hebat cadres who have been trained since Sept 30, 2024.
Main Plant Types	Connect, ginger, turmeric, temulawak, lemongrass
Form of Utilization	Education on planting and processing into herbal herbs for immunity and blood sugar control
Online Education Platform	The Herbal Corner Bangkingan website as a documentation and information center.
Scale Access Information	Limited to cadre groups, it has not reached all village residents
Citizen Participation	It is carried out by cadres, then disseminated to families; Not yet the participation of the wider community
Supporting Facilities	Yard land for FMP, Herbal Corner Bangkingan as a digital record

Source: Researcher 2025

The use of Family Medicinal Plants in Bangkingan Village has taken place as a positive first step. The approach is more community-based based on local cadres, which is directed to build locally-based health awareness and harness the potential of FMP as a family medicine. The Herbal Corner platform is a pioneer in documenting this knowledge, making information more accessible and shared more widely. However, so far there are also some limitations in implementation: the location does not have a community-scale medicinal plant center garden or a public education park; utilization is still individual and sporadic; and there has been no mass cultivation initiative or integration with local herbal MSMEs that is more systematic. Bangkingan Village, Surabaya, has started the use of Family Medicinal Plants through community-based initiatives and cadre education. This program includes training, digital documentation through Herbal Corner, as well as awareness of the benefits of plants such as life extensions and other rhizomes. Although it is only now reaching the small community learning stage, this step is very strategic to mobilize locally-based health awareness and create a family herbal ecosystem.

Obstacles and Challenges in Utilization

The results of focus group discussions and in-depth interviews revealed a number of obstacles that hinder the optimization of the use of Family Medicinal Plants in Bangkingan Village. First, there

is a limited knowledge and skills of the community in identifying, planting, and processing medicinal plants correctly. Many residents do not understand the scientific benefits of the herbal plants they grow, including the proper dosage and processing methods. Second, the lack of supporting facilities such as dryers, grinders, and simple production spaces makes it difficult for people to process plants into ready-to-use products. Third, negative perceptions, especially among the younger generation, who consider the use of herbal plants as something traditional, non-modern, and inefficient, also weakens their interest. Fourth, the lack of visible economic value from this activity causes low motivation for residents to develop medicinal plants more widely. Fifth, the lack of integration of the herbal empowerment program with the policies of the village and the health office makes this activity not yet receive strong institutional support. All of these challenges require systematic solutions through educational interventions and community empowerment so that the use of medicinal plants not only increases, but also has an impact on community welfare.

Educational activities through the training of Great Surabaya Cadres were successfully carried out by the Unusa University team in RW 3 Bangkingan with 23 cadres trained on **September 30, 2024**, the scale of this program is still relatively small and does not reach all residents of other Surabaya villages or

areas. Learning and practice of using family medicinal plants (FMP) is still limited to a small group of cadres. As a result, the understanding and habits of planting and processing herbal plants only occur sporadically, without penetration to the level of the wider community. Without expanding insight and training to non-cadre citizens, the FMP campaign only supports a small number of families, so it does not grow as an inclusive and broad family health movement in Bangkingan. The training facilitated by Unusa provides basic insights on planting and processing plants such as life sausage, ginger, turmeric, and curcuma mushrooms. However, this activity only lasted once and was not systematically continued by Ibrahim et.al (2021). The knowledge gained is still technically simple and does not include aspects such as herbal dosage, plant interactions, or more professional processed products.

The younger generation or residents who have not been involved as cadres tend to be less interested in understanding ethnobotanical science and the health benefits of plant-based plants. Without a sustainable literacy strategy, such as online modules, advanced workshops, or school education, the acceptance and implementation of FMP only occurs in a small number of cadres, not as a habit of the wider community. Herbal Corner Bangkingan acts as a digital platform for documentation and information about FMP including plant catalogs, planting guides, and herbal processing [of the Herbal Corner Bangkingan](#) family. However, this website has not been integrated through a wider channel, such as active social media, video tutorial modules, or community smartphone applications. So that the reach of information remains limited to cadres who already have access to the platform.

In addition, there are no community physical facilities such as community herbal gardens, local medicinal plant education parks, or FMP demonstration centers that can be accessed by the general public. This lack of physical space reduces the visibility and real access of the community to learn and participate directly through field visits or practices.

FMP planting in Bangkingan is still an additional activity in the yard of the planting house planted individually by the cadre family. There is a social gap between citizens who care more about the environment and health versus those who are not involved. Without integration into the family routine or complementary to a healthy diet, FMP is only passive knowledge and has not yet become a family health lifestyle. In addition, there has been no processing of plant products into structured products such as ready-to-consume raw herbal medicine, herbal capsules, or processed products that are processed collectively. Without added value of community herbal production or cooperatives, FMP is only used domestically, not as a potential source of family economics. Training and education are organized by Unusa independently, without any financial support from the Surabaya city government or other adequate institutions of UNUSA. There are no revolving funds, subsidies for planting materials, or long-term technical assistance. As a result, cadres are often hampered by the lack of cost to buy quality seeds, small business tools (processors, processors), or packaging of herbal products if they want to be developed into micro businesses.

Partnerships are also still informal. There is no collaboration with the Family Welfare Empowerment Program, Community Health Center, NGOs, or other higher education institutions other than the Unusa team which is a one-time project. Without strong institutional partnerships, FMP programs also lack an institutional pathway to sustainability. The Herbal Corner website records plant information and basic guidelines, but does not include quantitative and evaluative documentation such as the number of houses planted, the frequency of herbal consumption, or the health impact of residents (e.g., increased citizens' immune index). Without evaluative data, it is difficult to assess the success of the program objectively and it is difficult to attract the attention of stakeholders to support the further scale or replication of the program. Social, health and economic impact evaluations are not available. Do people feel any real benefits to their immune system? Is there a reduction in the

expenditure of traditional medicine? This question is not answered systematically, so the opportunities for funding support or program scalability are limited.

The phenomenon of modernization and the ease of access to modern medicines make people, especially the younger generation, prefer to go to pharmacies or clinics rather than using traditional Family Medicinal Plants. Long-term effects such as

the prevention of chronic diseases are considered more difficult than the instant solution of ready-to-use drugs. The pandemic COVID19 had increased interest in herbs, but since the situation subsided, enthusiasm has diminished again. Without a community narrative or ongoing local value campaign, the spirit of using FMP easily fades over time.

Table 2. Obstacles and Challenges in Utilizing Medicinal Plants in Bangkingan

Obstacle Aspects	Specific Descriptions in Bangkingan
Limited program scale	Education was carried out only on 23 cadres; Not Comprehensive Outreach in Urban Villages
Literacy is not even	Knowledge is limited to cadres; No advanced training or digital modules for the general public
Minimal infrastructure	No community gardens, educational parks, or FMP practice centers; Digital platforms are not yet full-pioneering
Limited family adoption	Planting is still sporadic, not yet a family routine or a healthy lifestyle
Funding and partnerships are weak	Lack of financial support, limited institutional partnerships; only supported by Unusa once
Less documentation and evaluation	There is no social/economic impact data; not quantitatively measurable for program evaluation and development
Attitudes towards conventional medicine	Citizens' choices are more inclined towards modern medicine; Local herbal culture is not systematically revived

Source: Researcher 2025

These barriers are small-scale interrelationships that lead to limited literacy, which has implications for low adoption and is difficult to measure the impact. Without institutional support and evaluation, programs do not last. Coupled with the culture of choosing modern medical solutions, the use of FMP in Bangkingan is stagnant as a sporadic activity rather than an independent and sustainable community movement. To break these barriers, a strategy is needed that targets access, literacy, institutionality, funding, documentation, and a systematic local cultural value base, all of these points will be more focused through Suharto's (2005) 5P Theory approach in the next section.

Implementation of Empowerment Strategy (Suharto's 5P Theory, 2005)

The empowerment strategy in this study is implemented based on Suharto's (2005) 5P theory, which consists of possibility, strengthening,

protection, support, and maintenance. In the "possibility" aspect, non-governmental groups were formed that were given basic training and facilities, such as herbal plant seeds and planting media, to create a conducive climate in developing their potential. "Reinforcement" is carried out through technical training, educational modules, and hands-on practice regarding the processing of herbal crops, which significantly improves the knowledge and skills of the community. "Protection" is provided in the form of legal assistance and facilitation of group organizing so that there is no domination by certain individuals. The "support" aspect is implemented through ongoing technical support from research teams and partners such as health offices and local farm shops. Finally, "maintenance" is carried out by establishing a continuous group organizational structure and regular monitoring to ensure the sustainability of activities. The comprehensive

implementation of this strategy has proven effective in increasing the capacity and participation of the people of Bangkingan in the use of Family Medicinal Plants, as well as creating collective awareness of the importance of community-based health security.

Enabling

At *the feasibility stage*, the core of empowerment is to create a conducive environment for the community to access information and resources about medicinal plants. In Bangkingan, this program is realized through:

- a. Herbal Corner Bangkingan: a digital platform that provides complete information about herbal plant cultivation, processing guides, and community education documentation. The website contains guidelines for plant cultivation such as life connection and the process of crystallizing herbs from the Herban Bangkingan.
- b. Great Surabaya Cadre Training: 23 cadres were trained by the Unusa University team on September 30, 2024, covering how to plant, care for plants, and process basic herbal products such as herbs to increase immunity [Herbal Corner Bangkingan](#).

With access to digital platforms and initial training, residents have a basic foundation of knowledge as well as an open source of information. However, so far there are no physical facilities such as community gardens or herbal education parks that can be accessed directly by the public so access is still limited to internal cadres.

Empowering

The *strengthening stage* focuses on providing skills and improving community knowledge to be able to manage and utilize medicinal plants independently:

- a. Cadres were given training in planting beneficial crops such as life extension, ginger, turmeric, and temulawak. They are equipped with how to plant, care, and process into health herbs for [the Herbal Corner Bangkingan](#).
- b. The training material includes hands-on guidance on cultivation practices and

learning how to make simple herbal drinks such as Milky Moringa which is popular at the FMP

This strengthening effort is important, but the implementation is still on an initial scale with simple materials and does not include advanced training such as digital literacy, product packaging, or marketing to the wider market.

Protecting

The *protection approach* aims to ensure social inclusion, fair access, and protection against potential exploitation:

- a. In Bangkingan, there are no formal regulations or local policies to ensure that all residents, including women, the elderly, or people with disabilities, can access FMP training and information.
- b. There is also no guarantee of the legality of herbal products produced by residents, for example halal certification or micro-production permits. Without legal protection, small communities are prone to facing obstacles when they want to sell their herbal products widely.

Supporting

Sustainable empowerment requires *technical, institutional, and financial support*:

- a. Currently, the main supporters are Unusa University and local cadres through the Herbal Corner platform. However, this is on an incidental scale with no regular assistance or partnership with the Surabaya City Government, Community Health Center, or the local PKK.
- b. No source of revolving funds, planting equipment subsidies, or long-term training facilities to develop the scale of herbal businesses in the community was found.
- c. There is no formal institutional cooperation that allows for continuous assistance or integration into village/sub-district programs in a systemic manner.

Fostering

For empowerment to be sustainable, *a program and value maintenance* strategy is needed:

- a. **Herbal Corner** provides digital documentation and knowledge references, but there is no record of a citizens' forum, evaluation group, or village regulation that stipulates the development of FMP as part of a routine program to strengthen public health.
- b. There is no annual calendar of activities, public gardens, or educational centers that function as a tool for maintaining values and habits.
- c. Information is not integrated in village planning such as the Urban Village Medium-Term Development Plan (RPJMKel), making it difficult to ensure long-term sustainability.

Table 3. Evaluation of the 5P Strategy in Bangkingan

The 5P Approach	Real Implementation	Strengthening Needs
Possibilities	Herbal Corner information platform; Basic training for cadres	Integration into social media, video modules, community gardens; access to the wider community
Strengthening	Training in planting & processing medicinal plants for cadres	Advanced training (digital marketing, packaging, product processing)
Protection	Basic education has started but without inclusive regulations or product legality	Access policy for the rights of all citizens; Community Herbal Product Certification
Support	Education by Unusa; cadre community initiatives; No official funding source/support team	Technical assistance & revolving funds; Partnerships with related agencies & institutions
Maintenance	Herbal Corner as a record of knowledge and education	Periodic citizen forums, village regulations for FMP, public herbal gardens, integration into RPJMKel

Source: Researcher 2025

Overall, the implementation of the community empowerment strategy in Bangkingan shows promising initial initiatives, especially in the first two steps: enablement and strengthening, through the establishment of Herbal Corners and cadre training. However, for empowerment to be more sustainable and have a broad impact, the other three approaches of protection, support, and maintenance need to be systematically strengthened. There is an urgent need to expand access to the FMP program to all village residents, strengthen the literacy of local medicinal plant production and business, build an adequate institutional framework and funding, and revive regulations and citizens' forums to maintain the sustainability of the program. With Suharto's (2005)

5P approach, Bangkingan Village has a strong foothold to develop the potential of FMP not only as a healthy habit, but as part of the transformation of an independent society that has access to local-based health and herbal-based economic opportunities.

CONCLUSION

The *Bangkingan Herbal Corner* program demonstrates the potential of community-based initiatives to strengthen local health resilience through the utilization of FMP. By introducing residents to diverse medicinal plants such as *sambung nyawa*, moringa, ginger, and *temulawak* and providing basic herbal processing skills, the program has advanced the empowerment dimensions

of enablement and strengthening. However, gaps remain in legal protection, institutional and financial support, and program sustainability, with the absence of regulatory frameworks and integration into village development planning constraining its scalability. Strengthening collaboration among government agencies, academic institutions, non-governmental organizations, and the community is essential to ensure broader reach and long-term viability. Future research should evaluate the long-term socio-economic and health impacts of FMP initiatives through longitudinal studies, compare

implementation across varied socio-cultural and ecological contexts to identify transferable practices, investigate policy and governance integration mechanisms, assess the effectiveness of multi-stakeholder partnerships, and explore the role of digital platforms in expanding knowledge dissemination. Addressing these areas comprehensively will position Bangkingan Village as a replicable model of a smart village grounded in local health self-reliance and aligned with sustainable development principles.

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