



## Empowerment of Medicinal Plant Gardens and Training on Herbal Tea Making based on Medicinal Plants in Wage Permai-Sidoarjo.

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**Abstract:** The Wage Permai Housing Complex in Sidoarjo Regency has a potential vacant land of approximately 1800 m<sup>2</sup>. Based on this potential, a community engagement program conducted by the University of Surabaya in collaboration with the Community Group (POKMAS) and the PKK cadre of Wage Permai was carried out to empower the land into a Medicinal Plant Garden (TOGA). The aim of this activity is to improve the health and economic productivity of the residents of Wage Permai. The program includes the establishment and empowerment of the TOGA garden, as well as training on herbal tea making. The methods applied in this program are participatory rural appraisal, community development, education, and participatory technology development. The results of this activity include the establishment of the Wage Permai Medicinal Plant Garden, which consists of around 23 medicinal plants. There was a significant increase in knowledge and skills of the PKK cadre of Wage Permai in herbal tea processing, as evidenced by the significant improvement in post-test results ( $p < 0.05$ ). The outputs of the herbal tea making training are two herbal tea product formulas and a book on herbal tea blending. These outputs are intended to support household-scale production to enhance the economic productivity of the residents.

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## Introduction

The residents of Wage Permai Housing in Wage Village, Taman Sub-district, Sidoarjo Regency, have a potential vacant land of 1800 m<sup>2</sup>. This land is located in the RT 06/RW 04 area within the Wage Permai housing complex. The land is situated on the edge of a toll road and needs to be properly managed, making it a breeding ground for mosquitoes and wild animals. The existence of this vacant land poses several problems for the residents of Wage Permai, including the risk of becoming a source of diseases, disrupting the order and beauty of the environment, and potentially becoming an access point for thieves. The land in Wage Permai Housing is classified as abandoned land as it has yet to be used or utilized according to its function and has the potential for development.<sup>1</sup> The condition of the vacant land in Wage Permai Housing is shown in Figure 1. Previous studies have shown that vacant land in residential areas has the potential to be developed into urban farming facilities for the community. Efforts to empower vacant land as urban farming facilities for urban communities have been carried out in Jatinangor.<sup>2</sup> Based on this potential, the Wage Permai Community Group (POKMAS) and the PKK management are making efforts to raise awareness among the community to utilize the vacant land for productive purposes to benefit the health of the residents.



Figure 1. Vacant Land Area in Wage Permai Housing (A) Land Condition (B) Land Position from Aerial Imaging

The Community Engagement Team from the University of Surabaya, consisting of experts in Pharmacy, Medicine, and Engineering, synergizes with the Wage Permai Community Group (POKMAS) and the PKK (Family Welfare Movement) to explore problems, plan solutions, and empower the vacant land based on the community's

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<sup>1</sup> Marthin Gunardhy, Ngakan Ketut Acwin Dwijendra, and Ni Made Yudiantini, "Eksistensi Lahan Terlantar Di Kawasan Renon Denpasar," *RUANG-SPACE, Jurnal Lingkungan Binaan (Space: Journal of teh Built Environment)* 6, no. 1 (2019): 71.

<sup>2</sup> Zaenal Muttaqin, Deasy Silvy Sari, and Ratih Purbasari, "Pemanfaatan Lahan Kosong: Mengupayakan Ketahanan Pangan Global Dalam Keseharian Masyarakat Lokal Di Rw 12, Desa Sayang, Jatinangor, Sumedang," *Prosiding Penelitian dan Pengabdian kepada Masyarakat* 5, no. 3 (2019): 237.

potential. Through a focus group discussion between the Community Engagement Team from the University of Surabaya and the partners, two main problems are identified for resolution: (1) the existence of abandoned vacant land that becomes a breeding ground for mosquitoes and wild animals, posing a threat to public health, and (2) the 1800 m<sup>2</sup> vacant land, which has productive potential, but its purpose has not been formulated.

Based on the discussion results, the University of Surabaya team formulates the need for organizing the vacant land as a system to enhance economic productivity and community health. According to the theory of vacant land utilization, focusing on developing human and natural resources will trigger economic growth.<sup>3</sup>

The Community Engagement Team holds discussions with POKMAS Wage Sejahtera, RT and RW (Neighborhood and Community Unit) administrators, and PKK executives to find a solution for utilizing the vacant land. The activities of this discussion are presented in Figure 2. Based on the discussion outcomes and mapping conducted by the Community Engagement Team from the University of Surabaya on the land location, it is planned to develop the land into a Family Medicinal Plant Garden (TOGA). TOGA is a medicinal plant cultivated in the yard and managed by families. The planting of TOGA is aimed to fulfill the family's needs for traditional medicines that can be made at home. The function of the proposed TOGA garden is expected to serve as a preventive, promotive, and curative means for addressing health problems experienced by the community<sup>4</sup>. Empowering the TOGA garden is also in line with the current healthy lifestyle trend of consuming medicines from natural ingredients (back to nature)<sup>5</sup>. Cultivating TOGA can stimulate small and medium enterprises to produce herbal products either individually or as a group<sup>6</sup>. The program initiated by the Community Engagement Team from the University of Surabaya, together with POKMAS and PKK partners, concerning the empowerment of the TOGA garden includes revitalizing the vacant land into the TOGA garden (land preparation, infrastructure setup, planting, and maintenance), and training on utilizing TOGA to create herbal tea products.

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<sup>3</sup> Ekonomi Pembangunan et al., "Jurnal Ilmiah Mahasiswa (JIM) Ekonomi Pembangunan Fakultas Ekonomi Dan Bisnis Unsyiah" 2, no. 2 (2017): 265–275, Jurnal Bisnis Administrasi Volume 07, Nomor 02, 2018, 65-70.

<sup>4</sup> Muttaqin, Sari, and Purbasari, "Pemanfaatan Lahan Kosong: Mengupayakan Ketahanan Pangan Global Dalam Keseharian Masyarakat Lokal Di Rw 12, Desa Sayang, Jatinangor, Sumedang."

<sup>5</sup> Mirza, Siti Amanah, and Dwi Sadono, "Tingkat Kedinamisan Kelompok Wanita Tani Dalam Mendukung Keberlanjutan Usaha Tanaman Obat Keluarga Di Kabupaten Bogor, Jawa Barat" 13, no. 2 (2017): 181–193.

<sup>6</sup> Jumriana et al., "Pemanfaatan Lahan Pekarangan Untuk Tanaman Obat Keluarga Di Kelurahan Batu Persediaan Obat Herbal Keluarga," *Jurnal Lepa-lepa Open* 1, no. 3 (2021): 471–479, <http://jurnalnasional.ump.ac.id/index.php/JPPM/article/view/4554>.



*Figure 2. Community Engagement Team Discussion with Partners in Wage Permai*

The implementation of the TOGA garden empowerment program involves the participation of the Wage Sejahtera Community Group (POKMAS) in the process of land improvement, land clearance, land processing, TOGA inventory according to the recommendations of the Community Engagement Team, TOGA planting, and TOGA garden maintenance. Meanwhile, the PKK Wage Permai partner plays a role in planting, TOGA garden maintenance, post-harvest processing of TOGA, and producing functional beverages in herbal tea.

The Community Engagement Team provides technology transfer to the partners, including recommendations on types of TOGA and their benefits, TOGA garden maintenance methods, post-harvest processing of TOGA, and formulation of TOGA-based herbal tea. The technology transfer conducted by the Community Engagement Team includes a catalog of Family Medicinal Plants (TOGA) and their benefits, TOGA planting methods, post-harvest processing of TOGA, and formulation of TOGA-based herbal tea.

The expectation of this mentoring program is the improvement of community health through the presence of the TOGA garden and the enhancement of community capacity to process TOGA into marketable products in the form of herbal tea. The sale of these products is expected to have an economic impact, such as increasing the income of Wage Permai residents through the utilization of TOGA.

## Method

The community engagement activities in the Wage Permai housing area involve two partner groups, namely the Wage Sejahtera Community Group (POKMAS) and the PKK Wage Permai team. Two main programs are initiated in the implementation of this program, namely the empowerment of TOGA gardens and training on the processing of TOGA-based herbal products. The program is conducted from the fourth week of September to November 2022 in the form of training and mentoring.

The method applied for the TOGA garden empowerment program consists of two strategies, namely participatory rural appraisal and community development. Participatory rural appraisal is a set of approaches that enable communities to share, develop, and analyze their own knowledge of life and conditions for planning and action.<sup>7</sup> The method applied through this strategy includes participatory planning, budgeting, implementation, and monitoring in the establishment of TOGA gardens. Through this method, partners are involved in designing and creating the TOGA gardens, determining the types of TOGA plants to be cultivated, and deciding the management model for the TOGA gardens. The second strategy applied in the TOGA garden empowerment is community development<sup>8</sup>. The community development strategy emphasizes efforts to fulfill the needs by the community itself, with the main idea of sustainability in meeting livelihood needs and implementing community self-reliance. Through this strategy, all residents of Wage Permai are directly involved in the processing and planting of TOGA plants in the TOGA gardens, including the management of the gardens. Activities conducted by the residents include land preparation and fertilization, procurement of TOGA plants, planting, and tending to the TOGA gardens.

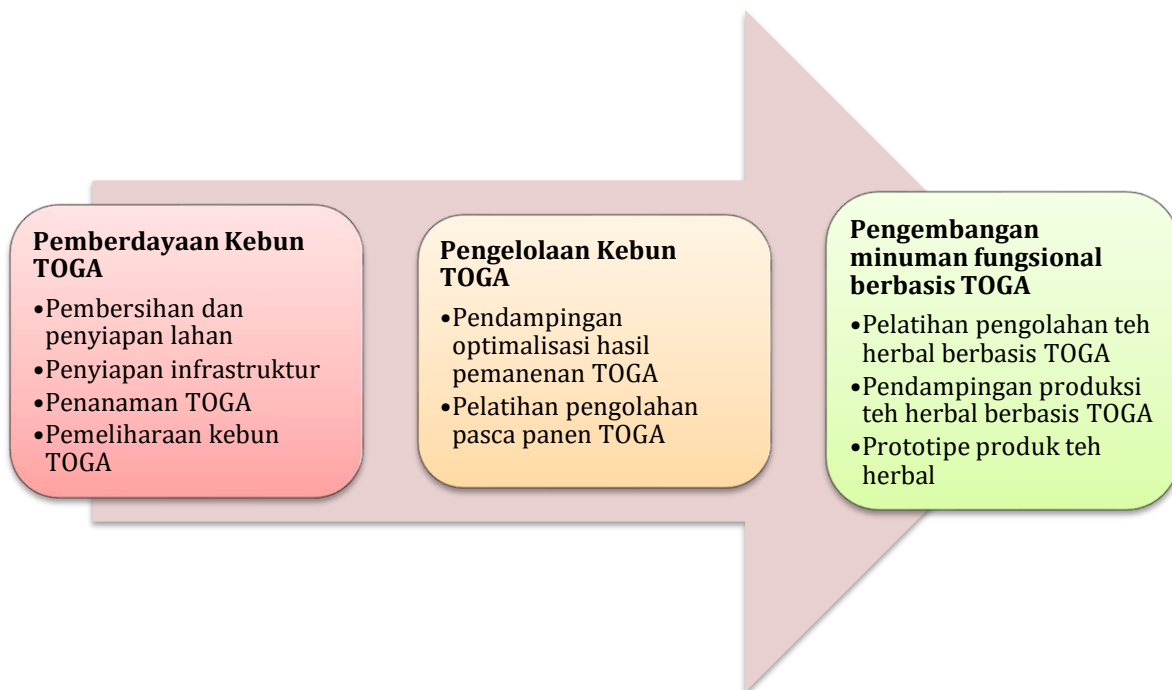


Figure 3. Flowchart of the Implementation of TOGA Garden Empowerment and TOGA Processing

<sup>7</sup> Bambang Hidayana et al., “Participatory Rural Appraisal (PRA) Untuk Pengembangan Desa Wisata Di Pedukuhan Pucung, Desa Wukirsari, Bantul,” *Bakti Budaya* 2, no. 2 (2019): 3.

<sup>8</sup> i Wayan Edi Arsawan, Ni Made Kariati, and I Wayan Sukarta, “Pemberdayaan Masyarakat Berbasis Community Development (Studi Eksploratif Di Kawasan Wisata Sangeh),” *Soshum Jurnal Sosial Dan Humaniora* 6, no. 3 (2016): 238–248.

The implementation of the training on TOGA-based herbal product processing is carried out using the strategies of education and participatory technology development. The education strategy involves training the partners on the technical aspects of formulating TOGA-based herbal tea and the benefits of the product for health. The education is conducted through a combination of lectures and interactive Q&A sessions. Lectures involve providing information through oral explanations, while the Q&A method allows the facilitator to ask interactive questions to the training participants<sup>9</sup>. The participatory technology development strategy is applied during the practical activities of herbal tea making. This strategy facilitates the transfer of science and technology in post-harvest processing of TOGA and the tea-making process. The technology transfer includes processes such as washing, optimal drying conditions for TOGA raw materials, particle size reduction of raw materials, standardization of particle size, and packaging techniques to create market-ready herbal tea. This activity results in producing a prototype product and a guidebook for formulating TOGA-based herbal tea. The participants' understanding is monitored through pre-test and post-test results. In the subsequent stage, the participants are supported in the production of TOGA-based herbal tea to initiate the process of obtaining product P-IRT (the Indonesian Health Ministry's license for processed food products).

## Result

Program pemberdayaan kebun TOGA is coordinated by the Community Engagement Team of Universitas Surabaya in collaboration with POKMAS Wage Sejahtera. POKMAS Wage Sejahtera initiates the involvement of all residents of RW 07 in the cleaning and preparation process of the land in Perumahan Wage Permai. The land clearing involves the removal of wild plants, shrubs, and rubbish from the empty land. After the clearing process, the land is prepared by lifting and turning the soil to increase its porosity, and plowing the land to break up compacted soil clumps. The plowing process aims to create a soil structure that is easy for planting. Subsequently, compost is added to the land, and fertilization is carried out to enhance the nutrient content in the soil. The preparation of the land also includes the allocation of plots based on the planned number of plants and the conditioning of boundaries for each plant group. Once the land is ready, the TOGA seedlings are prepared based on the analysis conducted by the Community Engagement Team and the partners in Wage Permai. The selection of TOGA plant categories and types to be grown is decided through discussions between the team

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<sup>9</sup> Kamsinah Kamsinah, "Metode Dalam Proses Pembelajaran: Studi Tentang Ragam Dan Implementasinya," *Lentera Pendidikan : Jurnal Ilmu Tarbiyah dan Keguruan* 11, no. 1 (2008): 101-114.

and the partners. Various types of TOGA seedlings, including rhizome plants, shrubs, and trees, are prepared. The selected TOGA categories include plants known for their antioxidant, antiseptic, immunostimulant, carminative, lactagogue, and herbal properties for treating cough and cold. A total of 23 types of TOGA seedlings are prepared by the partners and are ready for the planting process. The steps of land clearing, land preparation, infrastructure preparation, and TOGA seedling preparation are depicted in Figure 4.



(A)



(B)



(C)



(D)

*Figure 4.* Process of Establishing the TOGA Garden

(A) Land Clearing, (B) Land Preparation, (C) TOGA Garden Infrastructure Preparation, (D) TOGA Seedlings Preparation

The process of planting the TOGA Garden involves an approach through the strategy of community development. The leaders of POKMAS and PKK, accompanied by the Community Engagement Team, conduct socialization and encourage the direct involvement of all residents in planting TOGA on the available land. During the planting of TOGA, all residents, including men, women, and teenagers from RW 07, actively participate in the planting process. Additionally, the Community Engagement Team and the participating university students assist in the inventorying of TOGA and grouping them according to the designated areas. Through this activity, students have the opportunity to directly practice and interact with the community to address the challenges faced by the residents of Perumahan Wage Permai. The outcome of this

activity is the establishment of the TOGA Garden, which includes a catalog of 23 different types of plants. The TOGA are grouped within the available land based on their morphological types, including rhizome plants, shrubs, and trees. Identification plaques for each type of TOGA have also been installed in the designated areas. The Community Engagement Team and the students have also compiled a catalog of information about the benefits and properties of each planted TOGA. The residents of Perumahan Wage Permai show great enthusiasm for the development of the TOGA Garden and its independent utilization for disease prevention and improving health quality. The process of planting TOGA in the Wage Permai TOGA Garden is shown in Figure 5.



*Figure 5.* The Process of Planting Medicinal Plant Garden (TOGA) at Wage Permai Garden (A) Layout Plan of TOGA (B) Planting Process by Residents of RW 07 Wage Permai

The established TOGA Garden is managed and maintained by the residents themselves through voluntary and scheduled efforts. The maintenance activities are rotated among the PKK team (Kelompok Dasa Wisma) every 2 days. The PKK team's maintenance activities include watering and cleaning the area around the plants. On the other hand, the management and technical care related to TOGA growth, garden facilities, and infrastructure are undertaken by POKMAS Wage Sejahtera. Monitoring and analysis are conducted by POKMAS on a weekly basis, and regular discussions are held every month in POKMAS meetings. The process of TOGA Garden maintenance is depicted in Figure 6.



*Figure 6.* TOGA Garden Maintenance Process by the PKK Team Wage Permai

The potential of the planted TOGA plants in the Wage Permai TOGA Garden needs to be further developed into a product that can continuously contribute to community health. Currently, residents only consume TOGA as needed with simple processing techniques, such as boiling. However, these limitations prompt the need to harness the potential of TOGA to create standardized products with economic value for marketing. The training on herbal tea processing, initiated by the Community Engagement Team of Universitas Surabaya, is one such product to ensure the continuity and utility of TOGA in Wage Permai. Herbal tea is a beverage that does not come from the *Camellia sinensis* plant used to produce regular tea. Instead, herbal tea is a mixture made from leaves, seeds, and roots of various plants.<sup>10</sup> Herbal tea is often referred to as "tisane".

The training on herbal tea-making begins with an explanation of the preparation of TOGA simplisia, which will be processed into herbal tea. The preparation process involves wet sorting, washing, draining, cutting, drying, dry sorting, particle reduction, sieving, packaging, and storage. Through this training, the PKK mothers are also taught how to make herbal tea and serve it. Two variants of herbal tea are included in the technology transfer during the training, namely, telang-lemon-citronella herbal tea and moringa-ginger herbal tea. The outputs of these two products are supported by a two-week mentoring process by the Community Engagement Team, allowing the partners to independently produce herbal tea. These herbal tea products are expected to be developed into Wage Permai's flagship products and can be marketed to support increased household income. The process of herbal tea-making training and its practice is depicted in Figure 7.



*Figure 7. Herbal Tea-Making Training Process*

The understanding of the PKK mothers participating in the herbal tea-making training is measured through a pre-test and post-test. The average pre-test score is 66.19, while the average post-test score is 82.38. The pre-test and post-test results of the herbal tea-making training participants are shown in Figure 8. The results indicate an increase

<sup>10</sup> Karakteristik Fisik et al., "Bambang Sigit Amanto, Tiara Ni'mah Aprilia, Asri Nursiwi" XII, no. 1 (2020): 1-11.

in understanding among the training participants regarding the preparation of herbal tea based on TOGA. The improved understanding and skills in producing TOGA herbal tea by the training participants are expected to be implemented as a continuous and standardized production activity. The mentoring process has also resulted in an improvement in the developed product, with two herbal tea variants now available, as opposed to the residents previously lacking flagship products. This has significant potential for further development, enabling the residents to have a valuable and economically viable product to be proud of in their village.

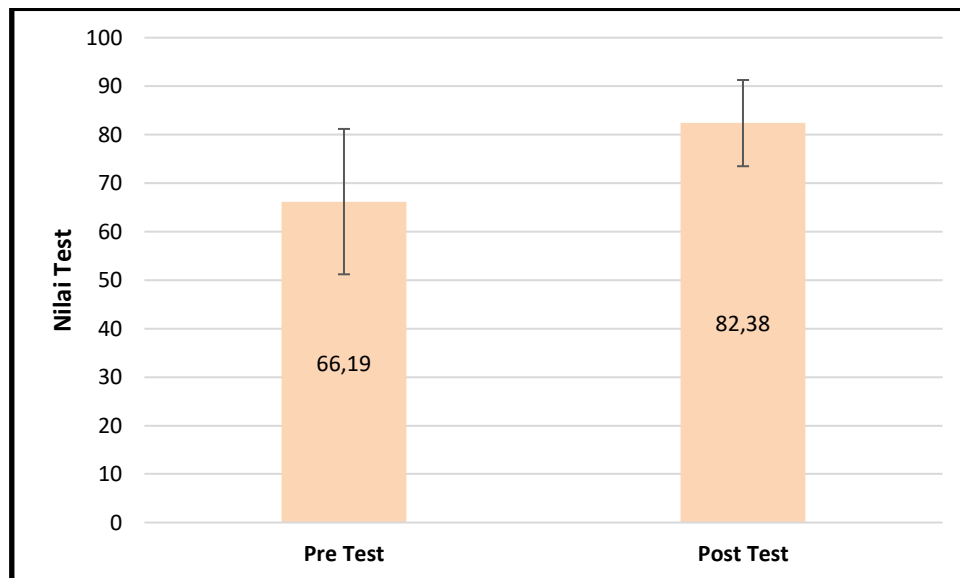


Figure 8. Pre-Test and Post-Test Results of Herbal Tea-Making Training Participants

## Discussion

Currently, there is a trend among communities to revert to using natural ingredients to maintain their health<sup>11</sup>. Medicinal plants are vital in meeting the community's need for beneficial natural health resources<sup>12</sup>. Empowering vacant lands in the RW 07 area of Wage Permai Housing is one of the efforts towards sustainable regional development to support this trend of utilizing natural resources for health benefits. Land use in the form of a Medicinal Plant Garden (TOGA) is a crucial part of sustainable regional development planning, especially in terms of health and economic aspects.<sup>13</sup> The strategies of participatory rural appraisal and community development implemented by the Community Service Team have successfully mobilized POKMAS partners and PKK

<sup>11</sup> Nurbaeti Bebet and Susi Mindarti, *Tanaman Obat Keluarga (TOGA)*, Isbn: 978-979-3595-49-8, vol. 1-24, 2015.

<sup>12</sup> Mirza, Amanah, and Sadono, "Tingkat Kedinamisan Kelompok Wanita Tani Dalam Mendukung Keberlanjutan Usaha Tanaman Obat Keluarga Di Kabupaten Bogor, Jawa Barat."

<sup>13</sup> Pembangunan et al., "Jurnal Ilmiah Mahasiswa (JIM) Ekonomi Pembangunan Fakultas Ekonomi Dan Bisnis Unsyiah."

cadres to establish, organize, and maintain the TOGA. The existence of the TOGA is expected to serve as a herbal medicine source for families. The types of TOGA planted in the TOGA Garden have benefits such as carminative, immunostimulant, herbal remedy for cough and cold, and a lactagogue for breastfeeding. These medicinal plants can be the community's first reference for preventive and promotive measures. Education about the benefits of the TOGA planted in Wage Permai's TOGA Garden is conducted through communication, information, and education methods with the partners. This method effectively positively impacts the community, encouraging them to utilize TOGA in their daily needs<sup>14</sup>. The information provided is also documented in a catalog for the partners to review later.

The empowerment of the TOGA Garden in Wage Permai aligns with the government's policy regarding traditional health services. The government's policy encourages communities to be able to take care of their health independently and correctly by utilizing TOGA<sup>15</sup>. The establishment of the TOGA Garden brings numerous benefits in terms of health, environment, socio-culture, and economy. In terms of health, TOGA can be used for maintenance, disease treatment, and improvement of nutritional status. The existence of the TOGA Garden in Wage Permai's residential area significantly impacts the environment by providing greening and aesthetic functions, as well as helping to conserve plant-based natural resources. Indirectly, the establishment of the TOGA Garden also preserves ancestral culture in utilizing medicinal plants, influencing the socio-cultural aspect of the community. An essential aspect that needs to be planned for its sustainability is the economic impact of the TOGA Garden on the community<sup>16</sup>.

Medicinal plants grown in the TOGA Garden need to be further utilized and processed into standardized products ready for consumption by the community. The development of standardized TOGA-based products is expected to be sold to increase the income of Wage Permai's residents. Various processed products based on TOGA have been developed to enhance the acceptance and market value of TOGA, such as ready-to-drink herbal jamu, powdered jamu, and herbal syrup<sup>17,18</sup>. In this community service activity, there is an innovative development of TOGA into herbal tea products. Herbal tea can contain dried flowers, leaves, seeds, roots, or fruits used as a beverage to support

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<sup>14</sup> Siska Mayang Sari, Ennimay, and Abdur Rasyid Tengku, "Pemanfaatan Tanaman Obat Keluarga (TOGA) Pada Masyarakat," *Dinamisia : Jurnal Pengabdian Kepada Masyarakat* 3 (2019): 1-7.

<sup>15</sup> Menteri Kesehatan Republik Indonesia, "Peraturan Menteri Kesehatan Republik Indonesia Nomor 9 Tahun 2016 Tentang Upaya Pengembangan Kesehatan Tradisional Melalui Asuhan Mandiri Pemanfaatan Taman Obat Keluarga Dan Keterampilan," *Kementerian Kesehatan Republik Indonesia*, 2016.

<sup>16</sup> Yanti Harjono, Hany Yusmaini, and Meiskha Bahar, "Counselings teh Utilization of Medicinal Plants and Planting of Medicinal Plants in Kampung Mekar Bakti 01/01, Desa Mekar Bakti Kabupaten Tangerang," *JPM (Jurnal Pengabdian Masyarakat) Ruwa Jurai* 3, no. 1 (2017): 16-22.

<sup>17</sup> Djoko Rahardjo et al., "Percontohan Taman Toga Serta Produksi Jamu Berbasis Tanaman Berkhasiat Untuk Peningkatan Kesehatan Dan Ekonomi Masyarakat," *Jurnal Inovasi Hasil Pengabdian Masyarakat (JIPEMAS)* 5, no. 2 (2022): 318.

<sup>18</sup> Ririn Suharsanti, Dian Advistasari, and Rika Sebtiana, "Pembuatan Olahan Toga Sirup Herbal Masyarakat Di Kelurahan Colo Kecamatan Dawe Kudus" 4, no. 1 (n.d.): 11-14.

health and does not contain caffeine<sup>19</sup>. Herbal tea falls under the category of functional beverages due to its content of flavonoids, phenolic compounds, and tannins beneficial to health.<sup>20</sup>

Herbal tea products that underwent IPTES transfer by the Community Service Team to the partners include Telang-Lemongrass-Lemon herbal tea and Moringa-Ginger herbal tea. Telang flowers have benefits as a source of antioxidants, antidiabetic, analgesic, and anti-inflammatory properties<sup>21</sup>. The combination of Telang flowers, lemongrass, and lemon is beneficial for maintaining oral health, digestion, and refreshing breath. Moringa leaves are part of the Moringa plant rich in vitamins, flavonoids, sterols, terpenoids, and anti-cancer compounds<sup>22</sup>. Meanwhile, ginger contains gingerol, shagaol, and zingerone, which are antioxidants, anti-inflammatory agents, and analgesics. Ginger also contains essential oils that provide its distinct aroma and flavor. The addition of ginger powder to moringa leaf powder enhances the antioxidant activity of the product and imparts a unique flavor<sup>23</sup>. The outcome of this activity is an increase in the partners' knowledge and skills in processing TOGA-based herbal tea. A guidebook on making herbal tea was produced as a reference for the partners in independently producing the product. Based on the analysis of participants' understanding using pre-test and post-test scores, there was a significant improvement ( $p < 0.05$ ) in participants' understanding after the training. The average post-test score increased to 82.38 from the pre-test score of 66.19, indicating that the IPTEK transfer process from the team to the partners was successful. In the next stage, the partners will receive support to produce standardized prototype products ready for continuous production. The next period's development plan includes facilitating a moringa herbal tea production house, preparing standard operating procedures, and initiating the P-IRT permit application process. The development of TOGA-based businesses in Wage Permai is expected to improve the local community's economic and health conditions<sup>24</sup>.

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<sup>19</sup> Annisa Rhahmah, "Optimasi Pembuatan Teh Herbal Daun Murbei (*Morus Alba*)," *Jurnal Teknologi Agro-Industri* 2, no. 2 (2016): 14–18.

<sup>20</sup> Fransixkus Jamadin Saragih S., I Ketut Suter, and Ni Luh Ari Yusasrini, "Aktivitas Antioksidan Dan Sifat Sensoris Teh Herbal Celup Kulit Anggur (*Vitis Vinifera L.*) Pada Suhu Dan Waktu Pengerangan," *Jurnal Ilmu dan Teknologi Pangan (ITEPA)* 10, no. 3 (2021): 424.

<sup>21</sup> Abdullah Muzi Marpaung, "Tinjauan Manfaat Bunga Telang (*Clitoria Ternatea l.*) Bagi Kesehatan Manusia," *Journal of Functional Food and Nutraceutical* 1, no. 2 (2020): 63–85.

<sup>22</sup> Lakshmipriya Gopalakrishnan, Kruthi Doriya, and Devarai Santhosh Kumar, "Moringa Oleifera: A Review on Nutritive Importance and Its Medicinal Application," *Food Science and Human Wellness* 5, no. 2 (2016): 49–56, <http://linkinghub.elsevier.com/retrieve/pii/S2213453016300362>.

<sup>23</sup> Siti Fatima, Masriani, and Idrus, "Pengaruh Penambahan Bubuk Jahe Merah Terhadap Organoleptik Teh Celup Daun Kelor (*Moringa Oleifera*)," *Jurnal Pengolahan Pangan* 5, no. 2 (2020): 42–47.

<sup>24</sup> Rahardjo et al., "Percontohan Taman Toga Serta Produksi Jamu Berbasis Tanaman Berkhasiat Untuk Peningkatan Kesehatan Dan Ekonomi Masyarakat."

## Conclusion

Empowering the TOGA Garden in the vacant land of Wage Permai Housing has provided benefits to the residents in terms of health, environment, socio-culture, and economy. TOGA-based herbal tea products were developed to provide standardized, acceptable, and marketable products in the community. Two variants of herbal tea were produced through training and assistance, namely Telang-Lemongrass-Lemon herbal tea and Moringa-Ginger herbal tea. The next steps for further development and strengthening to ensure the business's sustainability include providing production facilities and equipment and obtaining the P-IRT permit.

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