SPEKTA
(Jurnal Pengabdian Kepada Masyarakat: Teknologi dan Aplikasi)
ISSN 2723-8016 (online) | 2723-8008 (print)
Vol 5, No. 2, pp. 123-143

Empowering Community Waste Management and Sustainable Practices in Paledang Village through the 4P, Vertical Garden, and PHBS Programs

Annisa[1,*], Ratu Aprillya Wandani[2], Aisyah Az Zahra[3], Dion Naldiza Giovano Alfi[4], Fitria Nuryantika[1], Cheren Pellycia[5], Sita Afrea Syamsiyah[6], Aldrichsyah Yoga Pratama[7], Muhamad Arham Amarulhaq[8]

[1]Departemen Ilmu Komputer, Fakultas Matematika dan Ilmu Pengetahuan Alam, IPB University, Bogor, 16680
[2]Departemen Agronomi dan Hortikultura, Fakultas Pertanian, IPB University, Bogor, 16680
[3]Departemen Ekonomi Sumberdaya Lahan dan Lingkungan, Fakultas Ekonomi dan Manajemen, IPB University, Bogor, 16680
[4]Departemen Ilmu Ekonomi, Fakultas Ekonomi dan Manajemen, IPB University, Bogor, 16680
[5]Departemen Ilmu Produksi dan Teknologi Peternakan, Fakultas Peternakan, IPB University, Bogor, 16680
[6]Departemen Statistika dan Sains Data, Fakultas Matematika dan Ilmu Pengetahuan Alam, IPB University, Bogor, 16680
[7]Departemen Ilmu dan Teknologi Pangan, Fakultas Teknologi Pertanian, IPB University, Bogor, 16680
[8] Sekolah Bisnis, IPB University, Bogor, 16680
*Corresponding Author: annisa@apps.ipb.ac.id

ARTICLE INFO

Article history
Received: June 3, 2024
Revised: October 4, 2024
Accepted: October 17, 2024

Keywords
Ecobrick;
PHBS;
vertical garden;
waste management.

ABSTRACT

Background: The population increase in Paledang has led to waste issues. Limited land forces many residents to use rivers as dumping sites, exacerbated by the distance and uphill terrain of waste disposal facilities. Indifference to cleanliness further sustains this behavior. Land scarcity also limits agricultural activities; Women Farmer Groups (KWT) can only farm on a 3x10 m plot, restricting crop variety and quantity. Economic challenges make it difficult for KWT to afford fertilizers, hindering their planting efforts.
Contribution: Through this activity, residents of Palendang can apply their knowledge of waste processing and sorting, engage in gardening in limited spaces, and collaborate independently in the further promoted activities.
Method: To address the issues mentioned above, a program called 4P (Education, Sorting, Processing, Utilization) for household waste was designed. Additionally, a vertical garden program was introduced to promote the utilization of narrow and limited spaces using walls and

vertical areas. There is also a program aimed at implementing a healthy lifestyle (PHBS).
Results: The results of these programs include the transfer of knowledge on waste sorting and processing into fertilizer and ecobricks, the expansion of KWT planting areas onto sloped land, as well as educational handbooks and videos that can be independently used by the community.
Conclusion: Feedback from the residents of Paledang indicates that the 4P Program, vertical garden, and PHBS can be considered as alternative solutions to reduce waste and river pollution, address land and fertilizer limitations for KWT, and provide a means for socializing a clean and healthy lifestyle sustainably through the creation of guidebooks and educational videos.

1. Introduction

One of the environmental issues that often occurs and requires special attention in urban areas is waste. Waste is the result of human activities and natural processes that do not yet have economic value [1]. Issues in waste management include the lack of strict legal foundations, inadequate waste disposal sites, insufficient efforts in composting, and inadequate landfill management systems [2], [3]. Mismanagement of waste, not aligned with population growth, leads to an increasing amount of waste generated [4], [5]. This is evident in the daily waste production in the city of Bogor, which can reach 2,071 m^3 [6], and is expected to rise with the growing population.

Paledang, located in Central Bogor District, is known for landmarks like the Bogor Botanical Gardens, Presidential Palace, and the Paledang Penitentiary opposite Bogor Station. Positioned around 700 meters above sea level, it receives an average annual rainfall of 3,000-4,000 mm. With a population density of 6,598 people per km^2, Paledang is densely populated, and as of December 2020, it had 11,981 residents in 3,061 households. Most residents work as daily laborers, small-scale traders, or in household industries. The area's central location makes it a popular choice for housing, contributing to its density and waste management challenges. Limited land leads many to dispose of waste in the river, exacerbated by the distance to waste disposal sites. This practice persists due to a lack of awareness about cleanliness, impacting the community's health and well-being.

Apart from waste issues, land limitations also hinder agricultural activities. Women Farmer Groups (Kelompok Wanita Tani or KWT) can only engage in planting activities on a 3x10 m plot of land, allowing for a very limited number and variety of crops. Economic constraints further

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complicate matters for KWT, making it difficult to obtain fertilizers to support their planting activities in Paledang.

Based on direct observations and discussions with local officials and residents, several issues were identified: (1) difficulties in waste disposal due to limited space and the absence of temporary disposal sites, leading residents to dump waste into the river; (2) land and fertilizer limitations affecting the productivity of KWT; and (3) unhealthy lifestyle patterns among the community.

The objective of this initiative is to address the outlined issues by designing programs suitable for the potential in Paledang, both within the community and the area. The proposed programs are as follows: (1) The 4P, stands for, Penyuluhan, Pemilahan, Pengolahan, dan Pemanfaatan (Education, Sorting, Processing, Utilization) Program [7], involving the utilization and management of household waste, with socialization activities expected to change the mindset and habits of the community in waste selection, along with demonstrations of organic waste processing into compost and inorganic waste into ecobricks; (2) The Vertical Garden Program [8], focusing on socializing the use of narrow and limited spaces using walls and vertical areas [9], along with direct demonstrations of vertical garden implementation in community areas; and (3) The Implementation of Healthy Living Behavior (PHBS) Program [10], [11], involving socialization and demonstrations aimed at raising awareness of the importance of a clean environment and a healthy lifestyle through direct community involvement.

During the implementation, in addition to the Paledang community, neighborhood officials, the village, and the Environmental Agency (DLH) of the City of Bogor contribute to providing facilities and infrastructure for the activities. The interactions are expected to create effective collaborative problem-solving by optimizing the potential for community empowerment in the region.

2. Methods

Based on the background of the problem described in the previous section, we propose several programs as shown in Figure 1.

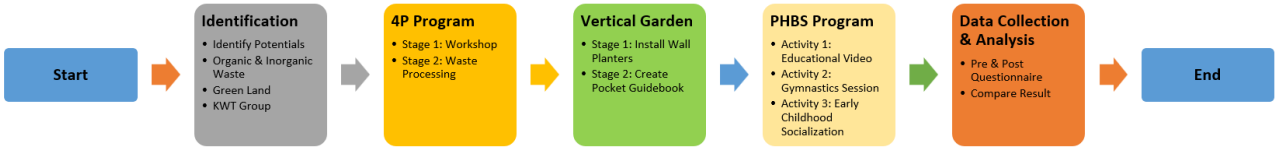

Figure 1. Proposed Programs

2.1. Place and Time of Activities

The activities are held in RW 04 in Paledang Sub-District, Central Bogor District, Bogor City, West Java Province. The program implementation period starts from June 20, 2022, to July 30, 2022. The targets of this activity are the entire community of RW 04 and the Women Farmer Group (KWT) of Kebun Raya in Paledang Sub-District, Central Bogor District, Bogor City.

Regional Potentials

Due to the high population density, household waste is abundant and diverse. Organic waste, such as fruit peels, leaves, and food remnants, is prevalent. Inorganic waste, including beverage plastic and packaging, is abundant due to numerous small stalls in Paledang.

Another potential is the presence of green land amidst the dense population in RW 04 of Paledang. This vacant land results from unused soil erosion. Although the land is not extensive, residents have initiated planting useful plants for the community, such as ginger, mustard greens, and even corn. However, the produce from KWT's land has only been used for personal consumption by the members due to limited production. The KWT land is delimited by a vast slope wall, and it has remained untapped.

The KWT Kebun Raya group, established since 2018 with 30 members, is also a potential in this area. Most of its members, predominantly housewives, strongly support all community service programs, making it easier for the planned programs to reach their families specifically and the community in general.

2.2. Tools and Materials

2.2.1. The 4P program

The 4P program is carried out in two stages. The first stage involves waste utilization socialization through a workshop. The waste sorting socialization activity is conducted in a hybrid manner, inviting speakers from the Department of Economic Resources and the Environment at IPB University. To ensure the smooth running of the workshop, the organizing committee has prepared supporting equipment such as an LCD and a laptop to present the materials from the speakers.

The second stage of the 4P program involves processing organic waste into fertilizer and inorganic waste into ecobricks. This activity collaborates with the Environmental Agency (DLH) of Bogor City and the owners of stalls around RW 04 in Paledang. The materials and tools needed for this activity, including used buckets with lids, stirrers, liquid fertilizer, and shredded organic waste (dry leaves, wild grass, leftover vegetables, and fruits) for compost making; used buckets with lids, tree branches as stirring sticks, river water, EM4, molasses, and rice washing water for liquid fertilizer making; and small-cut plastic waste, scissors, buckets, water, and soap for ecobrick making.

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2.2.2. Vertical Garden Program

The vertical garden program is carried out in two stages. The first stage is the installation of wall planters. Before wall planters can be installed, land cleaning, plant commodity selection, planting media design, and finally, wall planter installation are performed. The tools and materials needed for the installation include nails, hammers, polybags (wall planters), seedling trays, seeds, and water for seed germination.

Planting activities on the vertical garden are expected to continue by the community. Therefore, the second stage of the vertical garden-making activity involves the creation of a pocket guidebook for planting on wall planters, containing information about the types of plants that can be grown and how to care for them until harvest.

2.2.3. The PHBS Program

The PHBS program is carried out in three activities. The first activity is the creation of an educational video about waste. This activity collaborates with local mothers who participate as actors in the video. The video is then uploaded to YouTube for viewing by the local community and the general public.

The second activity is a healthy gymnastics session conducted with the surrounding community, especially the mothers of RW 04 and 11 in Paledang. The gymnastics are held in the field of RW 11, inviting an instructor, and snacks (bread) are distributed at the end of the event.

The third activity is early childhood PHBS socialization. This program is implemented by providing education to children about proper handwashing. The activity is carried out at nearby kindergarten schools. The program also includes playing together and distributing milk.

2.3. Data Collection, Processing, and Analysis Methods

The program will be evaluated using questionnaires given before (pre-questionnaire) and after (post-questionnaire) the activities. Each question in the questionnaire has three answer choices (closed question): strongly agree, agree, and disagree. The results obtained from the pre and post-questionnaires will be compared to measure the success of each program.

3. Results and Discussion

3.1. Waste Utilization Socialization through Workshop

The socialization activity on waste utilization and sorting invited speakers from the Department of Economic Resources and the Environment at IPB University, Dr. Meti Ekayanti, S.Hut, M.Sc, IPM, with the topic "Sort, Separate, Process: Wise Handling of Household Waste." In this activity, the people of Paledang were encouraged to handle waste wisely to address the

environmental issues in Paledang Sub-District. The presented material covered knowledge about the facts and data on household waste conditions in Indonesia, as well as its impacts on the environment and health aspects of the community. Additionally, the community was provided with knowledge on how to manage and utilize household waste to create useful items with economic value.

The socialization activity was conducted in a hybrid manner, both online through the Zoom Meeting platform. The event was attended by 21 residents who actively participated in the proceedings with enthusiasm. This was evident from the residents' responses, actively asking questions, engaging in discussions with the speakers, and enthusiastically answering quiz questions related to the presented material.

The expected impact of this activity is to foster an understanding of the importance of managing household waste to avoid polluting the environment, which ultimately harms oneself, families, and the surrounding community. Furthermore, the activity aims to provide knowledge on practical solutions that the community can easily apply in managing household waste. Thus, this socialization program is expected to enhance the community's knowledge and awareness of the environment through household waste management.

The approach used in the Waste Utilization Socialization through Workshop in Paledang, which involves educating residents about household waste management through workshops, aligns with methods applied in various international contexts, despite differences in scope and objectives. For instance, in India, a Community-Based Participatory Research (CBPR) project emphasized the importance of hands-on workshops to improve local waste management practices by engaging community members and NGOs [12]. While this project focuses on international collaboration, its core value is similar to that of the Paledang workshop: empowering local communities through direct engagement and education.

Similarly, studies on waste management education in developing countries highlight the importance of integrating environmental awareness into formal school curricula [13]. This approach differs from the direct engagement with residents in Paledang, but it still emphasizes the importance of early education in fostering environmental awareness.

Other initiatives, such as community-based efforts to encourage recycling within the framework of a circular economy, emphasize long-term strategies for waste reduction [14]. While these projects focus on broader economic goals, they share a commitment with the Paledang initiative to educate communities on practical waste management methods.

Across these various contexts, a common theme emerges: the importance of providing initial scientific explanations to communities to raise awareness about the significance of proper waste management. This foundational education acts as a catalyst for behavioral change and sustainable solutions.

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3.2. Processing Organic Waste into Fertilizer and Inorganic Waste into Ecobrick

This activity collaborated with the Environmental Agency of Bogor City and the owners of stalls around RW 04 in Paledang Sub-District. The community was engaged in discussions with the Environmental Agency about the production of fertilizer and ecobricks. A demonstration on the production of fertilizer and ecobricks was then conducted, allowing participants to directly practice the processing methods. The community was directly involved in the collection, sorting, and processing of waste, providing a real-life experience that can be independently practiced later on.

Trash bags were distributed to local stalls to collect waste. After the collection, the community was guided through the sorting process and the initial steps of fertilizer and ecobrick production. Household organic waste was processed into compost fertilizer, while inorganic waste was turned into ecobrick cushions.

This waste management activity benefited the community by enhancing their knowledge and skills in waste processing [15]. Through these skills, the community can contribute to reducing household waste in the surrounding environment. Moreover, applying these skills in daily life can make the community more productive, enabling them to produce processed waste products for daily use or sale [16], [17].

This program can encourage the community to use products derived from processed waste, simultaneously changing the mindset of seeing waste as useless to viewing it positively as a resource for producing beneficial products [18]. Liquid organic fertilizer is directly used on plants in the KWT, and ecobrick cushions are provided to the RT chairperson as an example of a product that can be replicated by the community. Ultimately, the program's results are expected to help address the waste issues faced by the community. Figure 2a and 2b shows the waste processing demonstration conducted with the residents.

(a)

(b)

Figure 2. Household Waste Processing Demonstration

This method finds parallels in various studies, although there are differences in scale, regional focus, and objectives. For example, research on vermicomposting and microbial techniques emphasizes the use of microorganisms and earthworms to enhance soil quality through composting, focusing more on biological processes rather than direct community involvement [19]. Another study on community-based waste management programs in rural areas highlights training residents in creating organic fertilizers and ecobricks, often using incentives like waste exchange programs. This differs from Paledang's focus on skill-building through direct practice [20], [21]. Furthermore, some studies focus on technological innovations in composting, such as using in-vessel systems to optimize the process for larger-scale applications, which contrasts with Paledang's simpler, grassroots approach [22]. Additionally, a review on sustainable agriculture through biofertilizers discusses advanced formulations for enhancing soil fertility, aimed at more technically sophisticated methods [23], compared to the straightforward composting techniques applied in Paledang.

Despite these variations, a shared theme is evident across all approaches: the emphasis on educating communities about viewing waste as a resource rather than a problem. This aligns with the goal of the Paledang program, which seeks to transform community perceptions, encouraging them to see waste as an opportunity to produce useful products. Through this shared focus on awareness and education, the Paledang initiative is reinforced by international practices, showing that community-based waste management can be effective in various contexts.

3.3. Installation of Wall Planters

Creating a vertical garden is one solution for planting in limited spaces [24], [25], [26]. The installation of wall planters begins with preparing tools and materials, such as nails, hammers, and polybags. Besides preparing tools and materials for installing wall planters, preparations are made for sowing seeds that will be planted.

The first step in sowing is soaking the seeds in water to sort out the seeds for sowing. Seeds that sink will be used, while seeds floating on the water surface indicate poor quality. While waiting for seed soaking, the planting medium is transferred to a seed tray, and then soaked seeds are sown. The ready seedbed is then evenly watered.

Land cleaning is performed to facilitate wall planter installation. This involves using a hoe, spade or sickle, scissors, and a broom. After cleaning the land, it is measured to ensure the accuracy of the wall planter installation. Several points are marked and then nailed to become wall planter supports. Wall planters are installed by adjusting to the marked points. Figure 3a shows the seed preparation activity, while Figure 3b shows the installed wall planter on the KWT wall.

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(a) (b)

Figure 3. Seed Preparation Activity (a), Installed Wall Planter on KWT Wall (b)

This method of using vertical space to grow plants is particularly effective in areas with limited land, offering a sustainable solution for urban agriculture. Similar initiatives have been implemented worldwide, each with its unique focus. For instance, studies on vertical greenery systems emphasize their role in improving air quality and reducing urban heat through the use of climbing plants and modular green walls. These systems often incorporate more advanced technologies like automated irrigation and are applied in larger urban settings [27], contrasting with the hands-on, community-driven approach of the Paledang project, which focuses more on direct involvement and skill-building for residents.

Additionally, community projects like vertical allotments aim to empower urban dwellers to grow their own food by utilizing limited vertical space, such as balconies or walls [28]. This approach is similar in spirit to the wall planter installations in Paledang but often involves more structured setups, such as pre-made planters or hydroponic systems, to facilitate plant growth. While these approaches often differ in their technological sophistication and scale, they share a common emphasis on using vertical gardening as a means to bring greenery into densely populated areas and engage communities in sustainable practices. This is consistent with the Paledang initiative's goal of transforming limited spaces into productive, green areas while empowering local residents to actively participate in the gardening process. Through these various implementations, it becomes clear that vertical gardening can be adapted to different contexts, from high-tech urban projects to community-driven grassroots efforts.

3.4. Creation of Guidebook

The guidebook not only contains guidelines for planting on the vertical garden but also provides guidance on processing organic waste into fertilizer and inorganic waste into ecobricks. This is aimed at ensuring that the community always has a guide when applying these practices in their daily lives, even after the activity period has ended. Figure 4 shows the

pocket guidebook that has been created.

Figure 4. Pocket guide for the vertical garden program and waste processing

The importance of structured materials, such as guidebooks, lies in ensuring consistent knowledge transfer within communities. For instance, study in [29] and [30] highlights how guidebooks can support sustainable practices like composting and the use of organic fertilizers, helping residents apply these methods effectively in their daily lives.

Additionally, research emphasizes the role of educational materials in promoting eco-friendly practices, such as converting organic waste into fertilizer and utilizing ecobricks for managing inorganic waste. These materials serve as a reliable reference for the community even after the initial training period ends [31]. By providing accessible guidance on these practices, guidebooks help empower community members to maintain the benefits of waste management projects over the long term.

3.5. Creation of Educational Videos on disposing of trash in its place

This activity involves practical education based on community participation in providing education to other community members [32]. The program includes socialization through an educational video about the proper disposal of waste. The concept of the video scenario is society-based learning, involving residents as the main characters. Eight residents were selected to play roles as individuals who neglect waste sorting, while others played roles as environmentally conscious individuals, especially regarding waste issues. The educational message is then delivered through dialogue scenarios among residents.

The video creation process involves three main stages. First, the shooting process records scenes where characters interact and ends with residents' calls to sort and dispose of waste properly based on categories. Second, the editing process involves adding subtitles, cutting or combining video segments, and enhancing the quality of the produced video. Third, the sharing process is done by posting the educational video on YouTube at the following address:

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https://www.youtube.com/watch?v=axz0V3hfsTs.The video link is then shared through community WhatsApp groups. The resulting educational video has a duration of 2 minutes and 51 seconds. Figure 5 shows one scene from the created educational video.

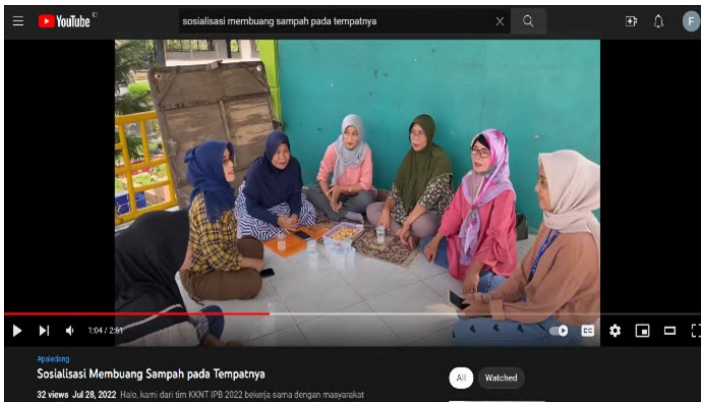

Figure 5. Educational video on disposing of trash in its place

The educational video project on waste disposal in Paledang has a concept similar to studies conducted in [33] that involve the community through participatory video creation. Both emphasize the importance of locally produced videos to address specific issues in the community, such as waste management or social challenges. The video creation process offers many benefits to the community, including fostering dialogue, increasing local participation, and allowing community members to shape the narrative of their own content.

This approach enables residents to actively participate in creating videos to educate others about proper waste disposal practices. The use of scenarios involving residents playing various roles makes the videos more relatable and encourages behavioral changes, aligning with the principles of community empowerment and ownership. This demonstrates that involving community members in the production process can lead to more effective and meaningful educational content that is tailored to local needs and contexts.

3.6. Healthy Gymnastics and Early Childhood PHBS Socialization

Gymnastics activities are conducted with the local community, especially the mothers of RW 04 and 11 in Paledang. The gymnastics session is held in the field of RW 11, inviting instructors, and at the end of the event, snacks (bread and mineral water) are distributed. This morning gymnastics event was attended by 20 local residents, the majority being housewives, and guided by three gymnastics instructors. Figure 6 shows some of the mothers participating in the healthy gymnastics activity.

Figure 6. The healthy gymnastics activity.

The PHBS socialization program from an early age is important to implement [34], [35], [36], [37]. One way is to provide education to children in the local area about the correct way to wash hands and the benefits of using masks for health. The activity is carried out at RA Wahdatul Ummah in RW 04 and attended by 20 students from TK A and TK B classes, along with four teaching staff. The activity also includes gymnastics, playing together, and milk distribution. Figure 7 shows some of the PHBS activities at RA Wahdatul Ummah.

Figure 7. Socialization of PHBS Program for Children

This program focuses on community engagement through physical activities and health education for children. Studies show that incorporating physical exercises like gymnastics into community programs can enhance participants' overall well-being and foster social cohesion, especially among mothers and children [38], [39]. Initiatives in various regions use educational interventions, including role-playing and interactive sessions, to teach hygiene practices to preschool children [40]. This is consistent with the activities at RA Wahdatul Ummah, where children learn through engaging and practical methods.

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3.7. Feedback and Activity Sustainability

To evaluate the effectiveness of the community empowerment programs, we used a pre-test and post-test design with questionnaires distributed to the participants before and after the activities. The residents who filled out the questionnaire are members of the KWT in RW 04, who have been involved in various activities from the start. The members of the KWT, who are mostly housewives, have a strong influence within their families and the community. They can act as agents of change in terms of clean and healthy living practices as well as environmental management. The participation of the KWT in this program is expected to help disseminate knowledge and good practices to other community members, thereby amplifying the impact of the implemented program.

Each questionnaire consisted of closed-ended questions with three possible responses: "strongly agree," "agree," and "disagree." This approach allowed us to quantitatively measure changes in participants' knowledge, attitudes, and behaviors resulting from the programs.

The analysis involved comparing the frequency distribution of responses from the pre- and post-questionnaires. We calculated the percentage of respondents selecting each answer option to determine shifts in awareness and behavior regarding waste management, organic waste processing, vertical gardening, and healthy living practices. This descriptive statistical analysis enabled us to identify trends in increased community engagement and understanding.

Additionally, we analyzed the consistency of the responses to validate the reliability of the findings. By ensuring that the same set of participants answered both pre- and post-questionnaires, we aimed to reduce biases and ensure that observed changes could be attributed to the program interventions. This method provides a replicable approach to assessing the impact of similar community-based initiatives.

The proposed programs received a very positive response from the community. Figures 8-12 show examples of questionnaire responses that illustrate the enthusiasm and support of the community for each implemented program.

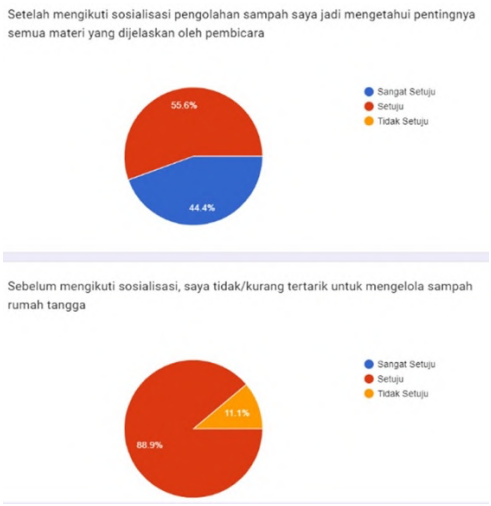

Figure 8. Feedback on waste management socialization activity

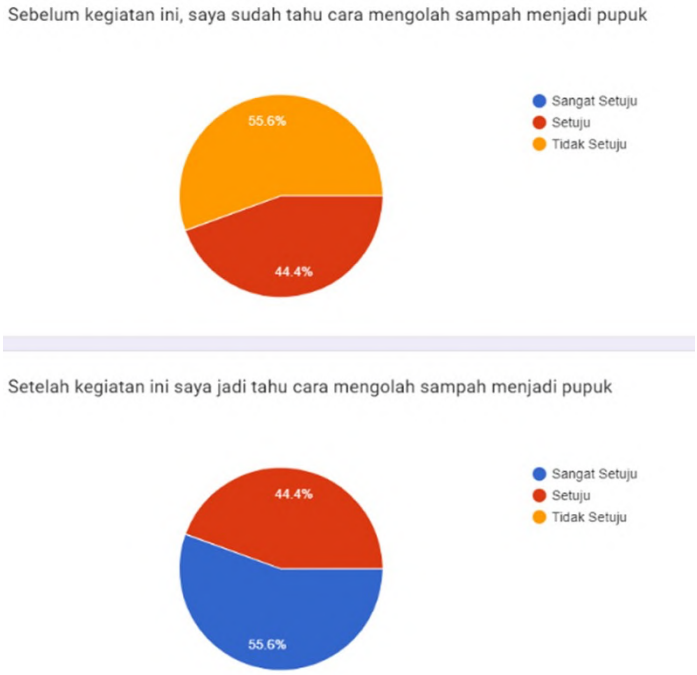

Figure 9. Feedback on processing organic waste into fertilizer activity

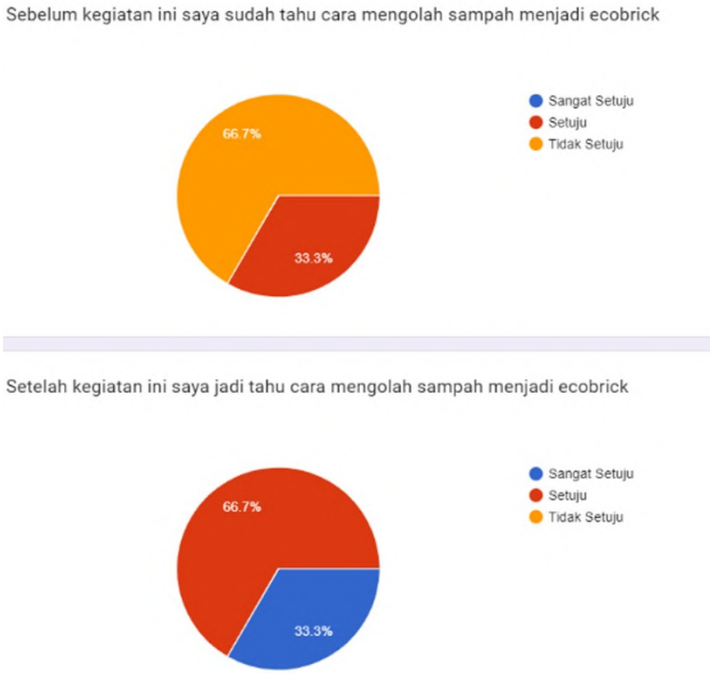

Figure 10. Feedback on processing inorganic waste into ecobricks activity

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Figure 11. Feedback on vertical garden activity

Figure 12. Feedback on gymnastic and educational video activity

Furthermore, the questionnaire results also revealed that the proposed activities could be a solution to the problems in Paledang, as seen in Figures 13-15.

Figure 13. Vertical garden as a solution to the limited land of KWT

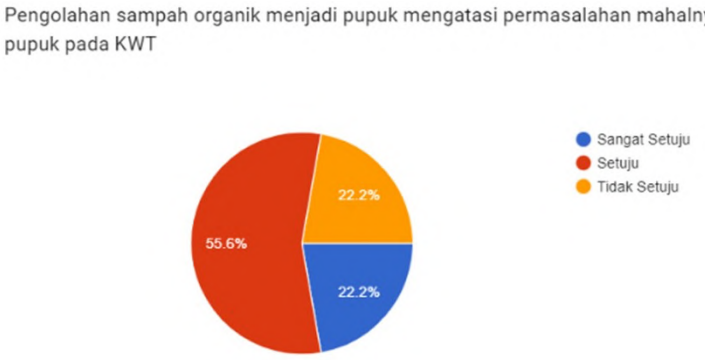

Figure 14. Processing organic waste into fertilizer as a solution to the high cost of fertilizers

Figure 15. The 4P program as a solution to reduce waste and river pollution

The 4P Program (Education, Sorting, Processing, Utilization) and the vertical garden initiative are designed to empower the community with skills and knowledge on waste management and gardening in limited spaces. The questionnaire results indicate that, in general, the community perceives these implemented programs as beneficial alternative solutions for the issues in Paledang. Residents who were previously unaware have gained knowledge about how to process and sort waste, and those who were not interested have become engaged in utilizing this knowledge. The KWT members, which previously could only cultivate on limited land, can now use the KWT wall to expand the planting area. Fertilizer

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scarcity in KWT can also be addressed through the processing of organic waste into compost, while river pollution, especially from inorganic waste, can be reduced by transforming it into ecobricks.

In the long term, these programs have the potential to promote sustainable waste management practices, reduce river pollution, and enhance community food security through improved gardening practices. The distribution of guidebooks and the creation of educational videos aim to ensure that knowledge is retained and disseminated even after the initial

implementation phase, fostering sustainable independent practices. These materials serve as constant references and reminders for future community activities, potentially leading to long-term behavioral changes in waste management and gardening practices.

Furthermore, the program's focus on collaboration between residents, local authorities, and environmental agencies creates a foundation for sustained support and the expansion of these initiatives to other areas facing similar challenges. While immediate results are evident in increased community engagement and knowledge, the long-term success of these programs will depend on continuous efforts and cooperation from all stakeholders.

While the results indicate positive changes in community knowledge and behavior regarding waste management and gardening practices, we have addressed the limitations of the study. The study primarily relies on pre-test and post-test questionnaires to evaluate the impact of the community empowerment programs. While this method allows us to measure changes in awareness and behavior, it has limitations, as participants might provide answers they believe align with the program's objectives rather than reflecting their actual practices.

The study was conducted in a specific community (RW 04 in Paledang) with a focus on members of the KWT. The selection of this group may introduce selection bias, as these participants might be more motivated to engage in activities compared to other community members. Additionally, the small sample size may limit the ability to generalize the findings to a broader population.

While the study results show positive changes in waste management practices and gardening skills within the community, the generalizability of these findings to other regions or communities may be limited. The unique characteristics of Paledang, such as its high population density, limited land availability, and specific socio-economic conditions, may not be found in other areas. Therefore, similar interventions in different locations may require adjustments to align with local needs and challenges.

We acknowledge these limitations and suggest that future research can address them by expanding the sample size, using additional quantitative measures such as waste reduction metrics, and implementing the program in multiple communities to enhance the strength and generalizability of the findings.

4. Conclusion

The community empowerment programs implemented in Paledang Subdistrict include the 4P Program, the utilization of the KWT wall for vertical garden cultivation, and PHBS activities. The products generated from the 4P Program are organic fertilizer and ecobrick products. Feedback from the residents of Paledang indicates that the 4P Program, vertical garden, and PHBS can be considered alternative solutions to reduce waste and river pollution, address land and fertilizer limitations in the Women Farmer Group (KWT), and provide a means of socialization for a clean and healthy lifestyle sustainably through the creation of guidebooks and educational videos. The success of these programs cannot be instantly assessed. It takes a long time for the initiated programs to be implemented sustainably. Therefore, strong cooperation is needed among all stakeholders in the Paledang Subdistrict as well as the surrounding community to continue these programs so that the existing issues in the Paledang area can be resolved.

Acknowledgement

The author expresses the utmost gratitude for the support and assistance received from LPPM IPB, DLH Bogor City, the Head of Paledang Subdistrict and its officials, especially RW04, the management of KWT, and all the residents of Paledang who have supported and contributed to this activity, enabling it to run successfully and smoothly.

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