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EMPOWERING HOUSEWIVES THROUGH 3R (REDUCE, REUSE, RECYCLE) TRAINING TO REALIZE AN ENVIRONMENTALLY FRIENDLY VILLAGE

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Abstract

A healthy environment is a crucial factor in supporting the optimal growth and development of children. In various regions of Indonesia, low awareness of healthy living habits remains a major issue that has not been adequately addressed. Housewives play a strategic role in maintaining environmental cleanliness; however, limited access to information and practical skills often hinders their ability to manage household waste effectively. This community service program aims to empower housewives through training in the 3R principles (Reduce, Reuse, Recycle) as an initial step toward establishing an environmentally friendly village. The methods used include counseling, practical waste management sessions, and ongoing mentoring in the application of 3R practices within households. It is expected that participants will acquire the skills to sort and process household waste and develop a collective commitment to maintaining environmental cleanliness within their communities.

Keywords: Environment, Community, Reduce, Reuse, Recycle

INTRODUCTION

A healthy environment is a key determinant in supporting children's optimal growth and development. According to the World Health Organization (2024), children who live in clean, safe, and healthy environments tend to have better health outcomes and exhibit more optimal cognitive and social development. However, in many regions, there are still challenges in creating environments that support child health, particularly concerning sanitation, waste management, and awareness of healthy lifestyles.

As noted by Yurike et al. (2024), one of the groups that play a strategic role in realizing a healthy environment is housewives. As the primary managers of the household, mothers have a significant influence in ensuring environmental hygiene, providing nutritious food, and educating their children about health. Housewives have the potential to influence waste segregation and recycling practices and their participation in waste management activities can reduce the volume of household waste (Indirawati et al., 2021). Nevertheless, many housewives still lack access to adequate information and skills related to waste management and

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environmental health practices. This condition contributes to various problems, such as increasing volumes of unmanaged domestic waste, poor sanitation, and rising risks of environmentally related diseases that directly affect child development (Mulyaningsih et al., 2023).

Cikole Village, located in Lembang District, West Bandung Regency, is known for its natural tourism potential. Its scenic pine forests, hills, and eco-tourism destinations make it a popular tourist area. Beyond tourism, most residents rely on agriculture and livestock farming for their livelihoods. However, despite its natural beauty, Cikole faces significant challenges in environmental management and family welfare, particularly for housewives and children.

One of the main problems is the ineffective management of household waste. According to Sari et al. (2024), the increasing volume of waste resulting from tourism activities and residential growth has not been matched by adequate waste management systems. Consequently, waste is often disposed of improperly or even burned. Plastic and organic waste remain major issues due to the absence of structured waste sorting and utilization systems. A lack of education about waste management in rural areas frequently leads to environmental pollution and heightened health risks (Pratama et al., 2021).

Furthermore, household sanitation and healthy living practices in Cikole still need improvement. Some households have limited access to clean water, especially during the dry season, and sanitation facilities remain inadequate in several areas. As a result, domestic waste is often disposed of directly into the surrounding environment, leading to increased risks of diseases such as diarrhea and acute respiratory infections (ARI). The WHO (2023) highlights that poor sanitation is a major factor in disease transmission, particularly in rural communities lacking proper waste management systems.

As the primary managers of households, housewives hold an essential role in maintaining family health and environmental cleanliness (Azwa et al., 2024). However, their involvement in environmental empowerment programs remains relatively low. Indirawati et al. (2021) and Sari & Wijaya (2022) note that this is largely due to limited education and training that could equip them with the skills to manage waste and promote healthy lifestyles. The absence of platforms that directly involve housewives in environmental programs also limits their participation. Empowerment initiatives for housewives must therefore adopt community-based approaches to foster ownership and sustainability of the programs.

Amid these challenges, there are significant opportunities to integrate environmental management with improving the welfare of housewives. Properly managed, the *Kampung Ramah Lingkungan* (Environmentally Friendly Village) program can not only improve environmental cleanliness but also generate additional family income. For instance, organic waste can be converted into compost for personal use or sale to local farmers, while inorganic waste such as plastic and paper can be recycled into economically valuable products. Similar empowerment models have proven effective in other regions, where communities of housewives involved in waste management activities have succeeded in increasing household income while maintaining environmental cleanliness (Purnomo et al., 2021).

Considering these problems and potentials, a systematic strategy is needed to develop Cikole Village into an environmentally friendly community based on the empowerment of housewives. Through continuous training and mentoring, housewives can acquire skills in

waste management, healthy living practices, and environmentally based entrepreneurship. Thus, this program is expected to improve not only environmental quality but also family welfare and child development outcomes. The main problems identified in Cikole Village include:

1. The persistence of waste-burning and indiscriminate dumping practices that negatively impact the environment and public health;
2. Limited understanding of the 3R concept and the benefits of recycling household waste;
3. Lack of education and training opportunities for housewives to contribute to creating healthy environments.

IMPLEMENTATION METHOD

This community service program employed the *Participatory Rural Appraisal* (PRA) approach, a set of participatory methods that enables rural communities to share, develop, and analyze their own knowledge and conditions for planning and action (Chambers, 1994). Housewives were engaged as the main actors at every stage of the program. The initiative aimed to develop Cikole Village into an *Environmentally Friendly Village* through the empowerment of housewives in household-based waste management and the promotion of a healthy environment conducive to child growth.

The target participants were housewives residing in RW 3, Cikole Village, Lembang District, West Bandung Regency. A total of 21 housewives participated, representing four neighborhood units (RT) within RW 3, selected based on recommendations from local authorities. Post-training evaluations were conducted to measure program effectiveness in enhancing participants' knowledge and understanding of eco-friendly waste management.
The assessment instrument included 13 questions covering:

1. Basic concepts of environmentally friendly waste management and its impact on health;
2. Techniques for sorting organic and inorganic waste;
3. Principles and application of 3R (Reduce, Reuse, Recycle) in daily life;
4. Methods of producing compost from household organic waste;
5. Utilization of inorganic waste into economically valuable products; and
6. The role of housewives in creating a healthy environment for child development.

RESULTS AND DISCUSSION

Table 1. Demographic of Respondent

Characteristics	Category	Frequency	Percentage (%)
Education	SD	4	19,0
	SMP/SLTP	3	14,3
	SMA/SMK/SLTA/SPG	14	66,7
	Total	**21**	**100,0**
RT/RW	02/03	7	33,3
	03/03	4	19,0
	05/03	5	23,8
	06/03	5	23,8
	Total	**21**	**100,0**
Length of Stay	5-10 year	5	23,8
	11-15 year	2	9,5
	16-20 year	3	14,3
	21-25 year	3	14,3
	26-30 year	2	9,5
	31-35 year	3	14,3
	36-40 year	0	0,0
	41-45 year	2	9,5
	46-50 year	1	4,8
	Total	**21**	**100,0**

Based on table 1. Demographic data from the 21 respondents showed that the majority had a senior high school education (66.7%), followed by elementary (19%) and junior high school graduates (14.3%). Respondents were fairly evenly distributed across RTs, with the highest concentration in RT 02/RW 03 (33.3%). The length of residence varied from 5 to 50 years, with the largest group (23.8%) having lived in the area for 5–10 years, indicating a relatively stable community structure.

Table 2. Post Training Evaluation Score

Characteristics	Category	Frequency	Percentage (%)
Post-test Score	10	1	4,8
	11	5	23,8
	12	14	66,7
	13	1	4,8
	Total	**21**	**100,0**
Post-test Category	Good (9-11)	6	28,6
	Very good (12-13)	15	71,4
	Total	**21**	**100,0**

Table 3. Descriptive Statistics of Post-Training Evaluation Scores

Statistics	Score
Minimum	10
Maximum	13
Mean	11,71
Total of Respondent	21

Post-training evaluations revealed positive outcomes, with scores ranging from 10 to 13 and an average score of 11.71. Most participants (66.7%) scored 12, while 71.4% were categorized as "Very Good" and 28.6% as "Good." This demonstrates that most respondents developed a strong understanding of the training materials.

The program's success aligns with Sari and Wijaya (2022), who found that participatory approaches in environmental management are more effective when they engage local knowledge and experiences. The PRA method enabled participants to actively share experiences and co-develop locally relevant solutions rather than passively receiving information.

Furthermore, the predominance of participants with secondary education contributed to the program's success, as education level is positively correlated with environmental awareness (Pratama et al., 2021). The even geographical distribution of participants ensured representativeness, supporting community-wide diffusion of knowledge and sustainable behavioral change (Purnomo et al., 2021).

The participants' long-term residency and emotional attachment to their village also contributed to the program's sustainability (Yurike et al., 2024). The absence of scores below 10 further indicates that all participants achieved at least the minimum comprehension level required for implementing eco-friendly waste management practices.

Although post-test results were encouraging, ongoing monitoring and mentoring are necessary to ensure that acquired knowledge translates into consistent behavioral change. Sari and Wijaya (2022) emphasize the need to bridge the knowledge–practice gap in community empowerment initiatives.

Figure 1. Training Session on Household Waste Management for Housewives

Figure 2. Overview of Waste Management and 3R (Reduce, Reuse, Recycle) Practices Presented During the Community Training Session

Overall, this program provides a solid foundation for scaling up the Environmentally Friendly Village model in Cikole. Empowered housewives, as agents of change, can play an active role in promoting household-level waste management and mobilizing family members and neighbors toward sustainable community transformation.

CONCLUSION

The Participatory Rural Appraisal (PRA)-based waste management training program in Cikole Village successfully enhanced housewives' understanding and skills in eco-friendly waste management. The program's success was supported by the participatory PRA approach suited to rural community characteristics, the predominance of participants with secondary education facilitating effective knowledge transfer, equitable participant distribution across neighborhoods ensuring community representation, and stable residency patterns that support program sustainability. This initiative effectively equipped housewives with fundamental knowledge of the 3R concept, techniques for processing organic and inorganic waste, and the importance of waste management in maintaining a healthy environment for child development. The outcomes provide a strong foundation for developing Cikole Village as a community-based *Environmentally Friendly Village*.

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