



Environmental Management Through the Implementation of the Waste-sorting Program in Desa Kurungkambing

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Abstrak. Environmental management through implementation of a waste sorting program in Desa Kurungkambing aims to raise public awareness of environmental issues and improve environmental conditions by applying the Reduce, Reuse, and Recycle (3R) concept. The methods employed in this program include ecological awareness training for the community, enhancement of waste-sorting infrastructure, and the development of a more efficient waste-sorting system. In this activity, the Community Service (PkM) team from Universitas Terbuka conducts training sessions to enhance the community's understanding of the 3R concept while also improving infrastructure related to waste sorting. The implementation stages of this program include preparation, execution, evaluation, documentation, and dissemination. The outcomes of this PkM activity include a cleaner environment in Desa Kurung Kambing, increased awareness and active participation of the community in waste sorting, and the establishment of Desa Kurung Kambing as a positive example for neighboring villages.

1. INTRODUCTION

The implementation of waste-sorting programs is crucial in reducing environmental issues among local communities. The study by Hayati et al. (2018) demonstrates that leadership and awareness in the community are important in addressing marginalization and promoting community participation in such programs. Moreover, previous studies have highlighted new directions in pollution reduction and waste management. Lusiana and Puryantoro (2018) examined the contributions of sustainable practice to environmental pollution reduction through industrial waste utilization.

One of the local communities that has much potential is Desa Kurungkambing located in Pandeglang, Banten. The local potential in Desa Kurungkambing includes the agriculture, fisheries, and handicrafts sectors, as well as various forms of local wisdom that can be developed into additional sources of income for the residents. Based on the needs identification analysis in Desa Kurungkambing, the majority of the local community earns their livelihood as farmers (approximately 50%) and as home industry traders. Therefore,

there is a need for educational development in the village, particularly in efforts to protect the environment to achieve the goal of becoming a tourist village. It is expected that the villagers can sort waste in their surroundings, which is a crucial step in realizing Universitas Terbuka (UT)'s vision of inspiring and supporting community development.

Community service (PkM) team members from UT aim to help and educate the community to become more knowledgeable and skilled. In addition, PkM team aims to share some of the experiences and knowledge on how to optimize local resources for economic development, environmental preservation, and other purposes. It is hoped that the local potential can be maximized by utilizing the human resources available. This aligns with efforts seen in Desa Kurungkambing, where raising environmental awareness is a core element of the waste-sorting program.

Nasution et al. (2017) emphasized the importance of empowering small-scale industries and small businesses with systematic training programs. This is evident in the work of the Community Service (PkM) team in Desa Kurungkambing, which conducted training intended to raise awareness of the 3R concept among the people as well as to create waste-sorting infrastructure. Zhang et al. (2023) identified waste sorting problems in a circular economy system, including insufficient public awareness and a lack of infrastructure. The study in Desa Kurungkambing solves the problems by implementing community-level waste sorting schemes and enhancing the required facilities.

Additionally, both community involvement and education are major factors in the successful implementation of waste management programs. Fidyariska et al. (2025) showed that incorporating sustainability principles within school workshops improved awareness regarding the uptake of environment-friendly practices. The Desa Kurungkambing program also encourages learning activities aimed at embedding the principles of 3R into society. Nugraha et al. (2024) stressed the importance of educating the younger generation on the practice of waste sorting in schools, a tenet seen in the training and outreach activities implemented in Desa Kurungkambing. Moreover, Tantra et al. (2024) also underscored the importance of community empowerment in enhancing waste management, in accordance with the participatory process followed in Desa Kurungkambing to involve local stakeholders (Susmono, 2017).

The research conducted by Mashudi et al. (2024) on coastal village waste management policy emphasizes the importance of policy-based frameworks for effective implementation. Likewise, the waste segregation initiative in Desa Kurungkambing is significant in formulating effective policies and guidelines towards sustainable waste

management in the village. Last but not least, Alfaini and Pristikawati (2023) conducted an analysis of how effective recycling centers are in managing waste. The results highlight the need for infrastructure development and systematic methods, as proven through the success of Desa Kurungkambing with its 3R-based waste-sorting program.

2. METHOD

a. Approach Strategy

To achieve the objectives of the waste sorting program in Desa Kurungkambing, a participatory-based approach strategy is employed. This approach involves collaborative activities between Universitas Terbuka, students, and the local community.

b. Methods and Intervention Techniques

The methods and intervention techniques applied involve a combination of educational approaches, infrastructure development, and direct assistance.

c. Overview of the Community and Intervention Area

Desa Kurungkambing is located in Pandeglang Regency, Banten. The area and community profile includes an analysis of geographical and demographic conditions, as well as the village's potentials and challenges. Through preliminary research, the social and cultural structures of the community are mapped to understand the dynamics of social interactions.

d. Target Groups

The target groups of the waste sorting program in Desa Kurung Kambing include:

- Desa Kurung Kambing Community: The entire village community is the primary target for raising awareness and engagement in the waste-sorting program.
- Waste Sorting Groups: Formation of community groups responsible for household-level waste sorting.
- Village Government: Increasing the involvement and support of the village government in implementing the waste sorting program.

3. RESULT

The program of community service, conducted by the team from the Faculty of Teacher Training and Education (FKIP) Universitas Terbuka is intended to provide a real contribution to making Desa Kurungkambing a sustainable and independent community. Through strong collective determination, Desa Kurungkambing will become an example of an environmentally conscious and independent community, setting a precedent for

sustainable rural development.



Figure 1. Location of Desa Kurungkambing

This initiative proves that small and steady efforts toward environmental preservation, when undertaken by all, can lead to significant and lasting positive changes. According to research, community-driven waste management efforts like the one executed in Desa Kurungkambing make a major contribution to the environment. Furthermore, the success of this program emphasizes the value of education and public participation in promoting sustainable practices.

Before the training, the team conducted a location survey in Desa Kurungkambing and carried out a needs analysis to ensure that the support provided matched the needs of the local community. The PkM team also supported funding for the construction of a village gate (gapura) in Desa Kurungkambing. The inauguration event was attended by village officials and the PkM UT team.



Figure 2. Construction of Village Gate (Gapura)

On September 13, 2024, the Community Service (PkM) team conducted waste management training for the community in Desa Kurungkambing. The materials presented included topics on 3R waste sorting, and the training was attended by 25 participants consisting of village officials and residents. The trainer from UT explained about environmental ethics and why it is important. Environmental ethics is about how we behave

toward nature and our efforts to protect and care for it. It includes our actions to keep the environment healthy and sustainable, as well as awareness of the impacts we have on natural ecosystems. Environmental ethics is crucial because the world is currently facing a global environmental crisis. This includes pollution (both organic and inorganic), global warming that causes temperature changes, climate change that disrupts seasonal patterns, extreme weather events like heatwaves, extreme cold, heavy rains, and floods, as well as natural disasters such as tornadoes, cyclones, and forest fires.

The proposed solutions include environmental awareness training, waste management based on the 3R principle (Reduce, Reuse, Recycle), infrastructure improvements, and ongoing education for the community. Improperly managed waste reduces environmental aesthetics, causes pollution of land, water, and air, and leads to disease. On the other hand, properly managed waste helps reduce pollution, enhances beauty, and can even generate economic benefits. Therefore, it is essential for all of us to manage waste responsibly as part of our commitment to environmental stewardship.



Figure 3. Waste-sorting Program training to the Local Community



Figure 4. Training Materials

The UT PkM team also provided assistance in the form of 20 trash bins, which were distributed to locations designated by the village officials.



Figure 5. Team with Local Community and UT students

The donated trash bins consisted of 20 sets, with each set containing 3 bins. They were placed in various locations, including schools, the village office yard, in front of mosques, and residents' homes as can be seen on the table below.

Table 1. Locations List of Donated Trash Bin

No	Location
1	MI DH KURUNG KAMBING
2	RUMAH WARGA KP. TAMAN JAYA
3	MASJID JAMAL NURUL IMAM KP. TAMAN JAYA
4	KANTOR DESA KURUNGKAMBING
5	RUMAH WARGA KP. TAMAN JAYA
6	PAUD PESONA ANNUR KP. TAMAN JAYA
7	RA AL HUDA KALANGSARI
8	MAJLIS TAKLIM KAMPUNG NUMPI
9	SDN KURUNG KAMBING 3
10	SDN KURUNG KAMBING 3
11	TEMPAT PANGAOSAN IBU EMBEN BAENI
12	PK LURAH JJ
13	MAJLIS TAKLIM KP KALANG SARI
14	MAJLIS TAKLIM KP KEBON
15	MAJLIS TAKLIM H SINGGIH
16	GEDUNG POSYANDU KP KALANG SARI TULIP 2
17	MI
18	PAUD TAMANJAYA
19	RA CIHIDEUNG
20	SD CIHIDEUNG



Figure 6. Donated Trash Bin at PAUD Taman Jaya



Figure 7. Donated Trash Bin at Masjid Jamal Nurul Imam, Taman Jaya

4. CONCLUSION

To summarize, the adoption of a waste sorting program based on the 3R (Reduce, Reuse, Recycle) principles in Desa Kurungkambing has shown to be an effective method for enhancing environmental management and developing public awareness. The participative strategy used in this initiative, which included active collaboration among the community, local government, and Universitas Terbuka, resulted in a cleaner environment and increased community engagement.

Furthermore, the success of this program serves as a model for other villages, indicating waste sorting's potential as a significant component of local environmental management strategies. To summarize, the Desa Kurungkambing garbage sorting program is an excellent example of community-based environmental management that not only improves local environmental conditions but also enables the community to actively contribute to sustainable development.

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