

WASTE MANAGEMENT EDUCATION WITH STUDENTS AND KANGBURMA

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ABSTRACT

Waste management is a problem in the city of Bandung, with the landfill Sarimukti accommodating waste that exceeds the capacity of the site. A solution is needed to overcome the accumulation of waste, with the KangBurMa program with students providing education to the community to be able to sort organic and non-organic waste, establish maggot houses, carry out the concept of Buruan Sae as a habit of caring for cleanliness and greening in the KangPisman concept. This Community Service Program activity is beneficial for students, indirectly having practical knowledge and being able to understand the importance of maintaining cleanliness with good waste management and becoming a facilitator in the community, to create a waste-free environment.

Keywords: waste management; education; students

INTRODUCTION

Waste management in the city of Bandung is experiencing problems in the storage location and waste processing process (Irmawartini, et al., 2023).

This includes the Sarimukti landfill, which experiences an annual increase in waste. The problem of poorly managed waste leads to environmental pollution, increased management costs, and negative impacts on public health and ecosystem sustainability (Kurniawati, et al, 2024).

An education program is needed to address the growing waste problem, that by educating the public to sort, recycle, and utilize organic waste will have a positive impact on environmental sustainability and food security (Alfani, et al., 2024). Sarimukti landfill is overcapacity, causing a waste emergency in Greater Bandung (Winursita, et al., 2024).

The Bandung City Government is tackling the waste problem by creating the *KangPisman*, *Buruan Sae*, and *Rumah Maggot* programs.

In addition to these three programs, the government also needs

to build a new landfill and routinely provide socialization about good waste management.

KangBurMa is present as a social organization that educates the community in managing waste with maggot and composting technology. The role of educational institutions in providing this education is very important, by carrying out community service activities (Qamal, et al., 2024), students can participate in launching the KangBurMa program.

Students have the ability to utilize the scientific knowledge gained during their studies, by contributing to the community in overcoming the increasing waste problem (Aziz, et al., 2020), and there is an imbalance in resource management, students need to realize that the consequences of poor waste management will have a direct impact on our quality of life and future generations.

IMPLEMENTATION METHOD

This community service activity carries an educational program on the theme of waste management using observation, survey and interview techniques, so that qualitatively the right steps can be found to be able to

provide education for forming a clean and healthy environment in the community (Sairah, et al., 2023).

The method of implementing this Community Service Program collaboration between students and KangBurMa can use a combination of the following three elements:

Table 1 Elements in the implementation of Community Service Program

Elements	Explanation
Virtual-Digital	Communication and program management using software/internet.
Online (Daring)	Internet-based activities, such as online marketing or surveys.
Offline (Luring)	Hands-on activities in the field with physical interaction, observing health protocols.

RESULT AND DISCUSSION

This waste management education program is carried out by developing concepts and methodologies to build a mindset to understand 'why the community needs to do this program

(Parmawati, et al., 2022), which aims to handle waste management at landfill Sarimukti.

Table 2. Stages of waste management education

Functional	Emotional	Social
Organizing Socialization and Education activities:	Building Awareness & Concern	Involve cooperation with neighborhood
1. Educate the community about the <i>KangPisman</i> concept to reduce, sort, and utilize waste.	Instilling a sense of responsibility that waste management is a shared obligation. Help people realize the adverse effects of waste on the environment and health.	officials, namely RT / RW, community residents, schools, Islamic boarding schools, and environmental organizations to collaborate in waste management. Build a team of volunteers who are tasked with assisting residents in sorting waste and utilizing it.
2. Maggot Cultivation Training: Provide training to the community on how to raise maggot to process organic waste.		Building maggot breeder groups at the village level so that organic waste management is
3. Utilization of Organic Waste: Using compost and maggot from the <i>KangPisman</i> program.		

Functional	Emotional	Social
		more structured.

KangBurMa waste management is a term in the local language (especially in some areas in Indonesia, such as West Java) that refers to the person or party responsible for managing waste, either at the community level or a specific neighborhood (Sekarningrum, et al., 2020). In the context of waste management in general in Indonesia, waste management is a series of systematic, comprehensive, and sustainable activities that include waste reduction and handling (Adriansyah, et al., 2023).

Waste management includes two main aspects: (1). Waste Reduction: Includes limiting waste generation, reuse, and recycle (Bartl, 2014). (2). Waste Handling: Includes waste segregation, collection, transport, processing, and final processing (Bernat, 2023).

Principles of Waste Management, modern waste management refers to the 3R principles (Fatimah, 2024) : (1). Reduce, reduce the amount of waste generated at the source. (2). Reuse, reusing items that are still fit for use.

(3). Recycle, recycling waste into new useful products.

In addition to the 3Rs, it is necessary to develop the concept of circular economy, where waste is seen as a resource that can be reused, either as raw material, energy, or other products with economic value. The results of this Community Service Program Implementation found the following conditions: (1). Describes the low level of public awareness in sorting waste. Due to old daily habits, it is difficult to change the behavior of littering. (2). Limited supporting facilities, such as waste banks and TPS (Waste Disposal Sites).

Waste management socialization programs have previously been delivered to the community but have not been effective. The lack of community awareness and participation is evidenced by the fact that many residents still consider sorting waste to be a hassle and do not feel responsible for the waste they produce. Educational efforts have been made, but the results are still slow and uneven.



Figure 1. Coordination Of Student Activities with The KangBurMa Team

Based on these findings, a way to overcome this is needed: Repeated and Innovative Education. Using social media, short videos, infographics, and interactive workshops.

KangBurMa (*KangPisman, Rumah Maggot, and Buruan Sae*) is committed to creating sustainable solutions in waste management and urban agriculture. In collaboration with educational institutions, students and lecturers can participate in developing programs that aim to reduce waste, empower communities, and promote environmentally friendly practices (Zunaidi, 2024). Involves the process of reducing, reusing, recycling, and handling waste systematically, which aims to reduce the negative impact of waste on the environment and increase

the economic value of the waste itself (Widiyasari, et al., 2021).



Figure 2. Organic Waste Processing for Maggot Houses



Figure 3. Harvest Results from The Buruan Sae Program

CONCLUSION

KangBurMa is an important part of the waste management system, especially at the community level, as one of the waste management programs at Landfill Sarimukti, Bandung City. Recycle is one of the main principles in waste management that emphasizes the process of recycling waste into new useful products. This principle not only focuses on waste reduction, but also opens economic opportunities,

especially for people with weak economic conditions. Effective waste management, which is supported by the whole community, including students, involves the process of reducing, reusing, recycling, and handling waste systematically. The goal of this process is to reduce the negative impact of waste on the environment and increase the economic value of waste. With the knowledge and experience gained from This Community Service Program activity, students indirectly play a role in educating people in their neighborhood to maintain cleanliness.

REFERENCES

- Adriansyah, E., Susanti, M., Viareco, H., Sufra, R., & Syaiful, M. (2023). *Teknologi Pengolahan dan Pengelolaan Sampah*. Tasikmalaya: Edu Publisher.
- Alfani, M., Ichwan, A. A., Rahmayani, D., Ulumuddin, I., Purwanto, S. R. P. U., & Lusiana, N. (2024). Analisis Tingkat Kepedulian Masyarakat Desa Jeladri Winongan Kabupaten Pasuruan Terhadap Kesehatan Lingkungan. *Jurnal Kesehatan Lingkungan Mandiri*, 3(1), 17–31.
- Aziz, R. M., & Ilham, P. G. A. (2020). Determinan Internal, Eksternal dan Refleksivitas Kesejahteraan Dusun Rabak. *JCES (Journal Of Character Education Society)*, 3(3), 501–521.

- Bartl, A. (2014). Moving from Recycling to Waste Prevention: A Review of Barriers and Enables. *Waste Management & Research: The Journal for a Sustainable Circular Economy*, 32(9), 3–18.
- Bernat, K. (2023). Post-Consumer Plastic Waste Management: From Collection and Sortation to Mechanical Recycling. *Energies*, 16(8).
- Fatimah, I. Y. A. (2024). *Monograf: Key Performance Indicators untuk Pengelolaan dan Pemilahan Sampah yang Berkelanjutan*. Bekasi: Penerbit Mikro Media Teknologi.
- Irmawartini, Mulyati, S. S., & Pujiono. (2023). Pengelolaan Sampah Dari Hulu Ke Hilir di Kota Bandung. *Jurnal Kesehatan Lingkungan Indonesia*, 22(2), 229–236.
- Kurniawati, D., Kholidah, F., Negarawati, R. G. M., Febriyanti, V. D., & Radianto, D. O. (2024). Pengelolaan Limbah Sampah Rumah Tangga Sebagai Upaya Pelestarian Lingkungan Hidup. *Jurnal Wilayah, Kota Dan Lingkungan Berkelanjutan*, 3(1), 72–83.
- Parmawati, R., Fadli, M., Semedi, B., & Handawijaya, G. K. (2022). Ecobricks and Ecopreneurship as Effort Plastic Waste Management in the Kampung Wisata Warna Warni Jodipan, Malang City. *Soeropati: Journal of Community Service*, 5(1), 1–12.
- Qamal, Gani, K., Susilawaty, Tambawang, L., Pongtuluran, R., Juli, L., ... Merauje, R. M. (2024). Optimalisasi Kesehatan Lingkungan: Program Pengelolaan Sampah Berbasis Komunitas di Perkotaan. *Jurnal Pelayanan Masyarakat Intelektual*, 1(1), 41–48.
- Sairah, Nurcahyani, M., & Chandra, A. (2023). Analisis Penyebab Kejadian Stunting Pada Anak Usia Dini. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 7(3), 3840–3849.
- Sekarningrum, B., Suprayogi, Y., & Yunita, D. (2020). Penerapan Model Pengelolaan Sampah “PojoK KangPisman”. *Kumawula: Jurnal Pengabdian Kepada Masyarakat*, 3(3), 548–560.
- Widiyasari, R., Zulfitria, & Fakhirah, S. (2021). Pemanfaatan Sampah Plastik Dengan Metode Ecobrick Sebagai Upaya Mengurangi Limbah Plastik. *Prosiding Seminar Nasional Pengabdian Masyarakat LPPM UMJ*, 1(1).
- Winursita, W., & Johan, R. C. (2024). Strategi Literasi Sampah Dalam Penanggulangan Masa Tanggap Darurat Sampah. *Jurnal Kesehatan Lingkungan Indonesia*, 23(2), 249–256.
- Zunaidi, A. (2024). *Metodologi Pengabdian Kepada Masyarakat Pendekatan Praktis Untuk Memberdayakan Komunitas*. Bekasi: Yayasan Putra Adi Dharma.