Jurnal Pengabdian Mandiri
e-ISSN 3089-3070 | https://jurnalunived.com/index.php/MANDIRI
Publisher: Universitas Dehasen Bengkulu
Vol. 3, No.2, Desember 2026, pp. [115-120]
DOI: https://doi.org/10.70963/mandiri

Transforming Waste into Economic Value through a Community Waste Bank in Sawah Lebar Baru

Rina Trisna Yanti [1], Putri Nadila Sandy [2], Intan Dwi Rahma [3], Cindi Apriyani Natasya [4], Despian Khadar [5], Selin Okta Lestari [6], Ida Ayu Made Er Meytha Gayatri [7], Karona Cahya Susena [8]

[123456] Universitas Dehasen Bengkulu, Bengkulu, Indonesia
*Corresponding author: rinatrisnayanti@rocketmail.com

Received [30/09/2026] ***Revised [20/11/2026]*** ***Accepted [25/11/2026]***

ABSTRACT

The Bengkulu City Government continues to encourage greater public concern for environmental cleanliness and health. One practical response is a waste-management system that is environmentally responsible while also creating economic value for residents. This community-service activity was implemented in RT 10, Sawah Lebar Baru Subdistrict, Ratu Agung District, a densely populated area with potential for community-based waste management. The programme aimed to support residents in handling household waste, strengthen awareness of source separation, and introduce the economic potential of recyclable plastic waste. Implementation focused on preparation and coordination with local leaders, provision and installation of waste-bank facilities, and the establishment of collection points where residents could deposit plastic waste. Programme documentation shows that waste-bank facilities were handed over and installed at several accessible locations on 28 June 2026. The activity provided an initial community infrastructure for separating and collecting recyclable waste and created an opportunity for residents to obtain value from materials that had previously been discarded. Continued mentoring, broader participation, and collaboration among neighbourhood leaders, waste-bank managers, residents, and local government are needed to maintain consistent operation.

Keywords: Community Empowerment; Economic Value; Recycling; Waste Bank; Waste Management.

INTRODUCTION

Another important aspect of community-based waste management is the development of environmental responsibility at the household level. Household waste is generated continuously through daily consumption activities, making households one of the most important starting points for waste reduction and separation. When waste is separated directly at its source, recyclable materials can be recovered more effectively and are less likely to be mixed with organic waste or other residual materials. This practice can improve the quality of recyclable materials collected through a waste bank and facilitate their subsequent handling. Therefore, household participation is essential for ensuring that a waste-bank programme functions not merely as a physical collection facility but as part of a broader change in everyday waste-management practices.

The establishment of a waste bank can also serve as a practical form of environmental education. Through repeated involvement in sorting, storing, and depositing recyclable materials, community members can gradually become more familiar with different categories of waste and their potential uses. This learning process is particularly relevant in densely populated residential areas, where individual waste-disposal practices can collectively influence neighbourhood cleanliness. Environmental education delivered through direct community practice may be more applicable to everyday life because residents

are not only provided with information but are also given an accessible mechanism through which environmentally responsible behaviour can be implemented.

Community organization is equally important in maintaining the continuity of a waste-bank programme. The availability of collection facilities needs to be accompanied by clear responsibilities for managing collection points, recording deposited materials, coordinating the sale or transfer of recyclables, and communicating operational information to residents. Previous studies emphasize that participation, institutional arrangements, and community involvement are closely related to the sustainability of community-based waste-management initiatives (Rahmawati & Fiorentina, 2021; Fauziah et al., 2022; Sari et al., 2022). Accordingly, cooperation among residents, neighbourhood administrators, waste-bank managers, and local government can help transform an initially facilitated activity into a programme that can increasingly be managed by the community itself.

In addition, the economic dimension of waste management can provide an additional motivation for community participation. Recyclable plastic materials that are commonly discarded may acquire exchange value when they are properly separated, collected, and channelled through an organized waste-bank system. Although the amount of economic benefit may vary depending on the type and quantity of waste collected and prevailing recyclable-material prices, the concept demonstrates that waste has potential value when it is managed appropriately. This approach supports the principle that environmental improvement and community economic empowerment do not necessarily need to be treated as separate objectives. Instead, both can be integrated through locally organized waste-management activities.

The waste-bank approach is also relevant to the broader transition from a linear pattern of consumption and disposal toward more circular resource use. In a conventional linear system, materials are consumed and subsequently discarded, whereas a circular approach seeks to keep useful materials within productive cycles for as long as possible. Waste separation and recycling at the community level represent practical entry points for this transition because they allow recyclable materials to be recovered before becoming mixed residual waste. International discussions on sustainable waste management similarly emphasize waste prevention, material recovery, recycling, and community involvement as important components of more resource-efficient systems (Kaza et al., 2018; UNEP & ISWA, 2024).

For RT 10 Sawah Lebar Baru, these considerations are particularly relevant because the area is characterized by relatively dense residential activity and therefore requires waste-management practices that are accessible at the neighbourhood level. The placement of waste-bank facilities within the community can reduce practical barriers to participation by providing residents with identifiable locations for depositing recyclable plastic waste. Nevertheless, physical accessibility alone cannot guarantee continuous participation. Regular communication, clear operational procedures, community encouragement, and transparent management are also required so that residents understand how the waste bank operates and why their participation is important.

Consequently, the establishment of the waste bank should be understood as the beginning of a longer community-empowerment process rather than as the completion of waste-management intervention. The initial provision of facilities creates the infrastructure required for collective action, while subsequent community participation determines whether the facilities remain functional and beneficial. Continuous monitoring can also help local managers identify changes in participation, operational constraints, quantities of recyclable materials collected, and opportunities for programme improvement. Such monitoring is important for ensuring that future assessments distinguish between immediate programme outputs, such as installed waste-bank facilities, and longer-term outcomes, such as sustained waste-sorting behaviour, reduced disposal of recyclable materials, and economic benefits for participating households.

Based on these considerations, the community-service activity in RT 10 was designed as an initial, locally accessible intervention through the establishment of a waste bank and the placement of collection facilities. The programme objective was to help residents manage household plastic waste, strengthen awareness of waste separation, and create an opportunity for recyclable waste to generate economic value. The practical success criterion at this initial stage was the establishment, handover, and installation of usable waste-bank facilities at agreed community locations, followed by continued involvement of neighbourhood leaders and residents in their operation.

COMMUNITY-SERVICE METHODS

Partners, setting, and period.

This community-service activity was carried out in RT 10, Sawah Lebar Baru Subdistrict, Ratu Agung District, Bengkulu City. The core implementation documented in the programme took place on 28 June 2026. Coordination involved the neighbourhood administration and local community figures to align perceptions, secure local support, and determine accessible locations for the waste-bank facilities.

Implementation and shared roles.

The method used in the programme consisted of waste separation and the establishment of a waste bank. The waste bank functions as a place where residents can deposit plastic waste. The implementation steps included: (1) preparation through coordination with the subdistrict/neighbourhood government and local community leaders so that the programme objectives and operational arrangements were mutually understood; and (2) provision of facilities and infrastructure, particularly locations and containers for waste-bank activities. The facilities were then handed over and installed at community-accessible points, including the neighbourhood security post and a three-way intersection.

Evaluation and participant protection.

Evaluation in the original programme was primarily implementation-based and documented whether the planned waste-bank facilities were delivered and installed. The available programme records do not report a participant count, pre-test/post-test scores, measured waste tonnage, or verified income changes; therefore, this article does not present such outcomes as measured effects. Activity documentation was used as evidence of implementation. Community participation was voluntary and programme documentation was limited to the service activity; future monitoring should record participation, quantities of separated recyclable waste, collection frequency, and proceeds from sales while protecting residents' personal information.

RESULTS AND DISCUSSION

Implementation, outputs, and outcomes

The establishment of the waste bank provided a positive starting point for waste management in RT 10. Its presence created a practical facility that can help residents develop the habit of separating waste by type before disposal. Such a habit can reduce the amount of recyclable material sent directly to final disposal sites and can contribute to maintaining neighbourhood cleanliness.

In addition to environmental benefits, the programme creates an economic opportunity for residents. Plastic waste that was previously considered to have no value can be collected and sold. In this way, the waste bank links a cleaner environment with the possibility of obtaining economic value from recyclable materials.

Several constraints remain. Community understanding of the importance of waste separation is not yet evenly distributed, and continued assistance is required so that the programme can operate consistently. Sustainable use therefore requires ongoing cooperation among the subdistrict government, RT administrators, waste-bank managers, and residents.

Overall, the planned establishment and placement of waste-bank facilities in RT 10, Sawah Lebar Baru, were completed. The available documentation supports the conclusion that the programme delivered the intended initial infrastructure and introduced a community mechanism for managing plastic waste. Claims about long-term reductions in landfill disposal, sustained behaviour change, or increases in household income should be evaluated through subsequent monitoring rather than inferred from the installation activity alone.

Table 1. Waste-bank activities in RT 10 Sawah Lebar Baru

Date	Programme	Description	Documentation
28 June 2026	Waste bank	Handover of the waste bank to the RT 10 representative in Sawah Lebar Baru	
28 June 2026	Waste bank	Installation of the waste bank at the neighbourhood security post	
28 June 2026	Waste bank	Installation of the waste bank at the three-way intersection	

Source: community-service programme documentation, 28 June 2026.

Interpretation, limitations, and sustainability

The approach is practical because it places a visible collection mechanism close to residents and connects environmental action with the economic value of recyclables. This is consistent with studies showing that waste banks can strengthen waste-sorting behaviour and community participation when facilities are supported by information, skills, and local organization (Choirrunnisa & Ngatindriatun, 2021; Fauziah et al., 2022). Nevertheless, the present activity has an important limitation: the available records document implementation but do not provide baseline and follow-up measurements of knowledge, participation, waste volume, or income. Consequently, the strongest evidence concerns programme delivery rather than quantified community impact.

For sustainability, responsibility should progressively shift to RT administrators, local waste-bank managers, and participating residents, with support from the local government when needed. A simple monitoring log can record the number of active depositors, kilograms of recyclable material collected, collection frequency, sale proceeds, and operational problems. Periodic community education and transparent recording of transactions can help maintain trust and participation. Follow-up evaluation should distinguish immediate outputs, such as operational collection points, from longer-term outcomes, such as sustained sorting behaviour, reduced residual waste, and household economic benefits.

CONCLUSION AND RECOMMENDATIONS

The waste-bank programme in RT 10, Sawah Lebar Baru Subdistrict, represents a community-based effort to address household waste by involving residents directly. Through the programme, residents were encouraged to separate waste and make use of recyclable materials that still have market value, supporting a cleaner and healthier environment. The waste bank also provides a mechanism through which plastic waste can be collected for sale and thereby acquire economic value.

The main limitation is that the available programme documentation does not include quantitative baseline and follow-up indicators, so long-term environmental and economic effects cannot yet be confirmed. Continued collaboration among the local government, RT administrators, waste-bank managers, and residents is recommended. Future follow-up should routinely record participation, recyclable-waste quantities, collection frequency, and proceeds, accompanied by repeated education on source separation and transparent waste-bank administration.

ACKNOWLEDGEMENTS

The authors thank the RT 10 community of Sawah Lebar Baru, local community leaders, and Universitas Dehasen Bengkulu for their support during the community-service activity.

DECLARATIONS

1. **Statement on the Use of Artificial Intelligence.** Generative AI was used to assist with English-language translation, structural adaptation to the journal template, and language editing. The authors are responsible for verifying the accuracy of the final manuscript, programme facts, citations, and references.
2. **Author Contribution**. **RTY:** Conceptualization, Supervision, Methodology, Writing – review & editing; **PNS:** Investigation, Data curation, Community engagement, Writing – original draft; **IDR:** Investigation, Data curation, Community engagement, Documentation; **CAN:** Investigation, Community engagement, Documentation, Writing – original draft; **DK:** Investigation, Programme implementation, Data curation, Documentation; **SOL:** Investigation, Programme implementation, Community engagement, Documentation; **IAMEMG:** Supervision, Methodology, Validation, Writing – review & editing; **KCS:** Supervision, Conceptualization, Validation, Writing – review & editing. All authors have read and approved the final manuscript.
3. **Funding Statement.** No external grant funding was reported in the source manuscript. The activity was implemented as a community-service programme with institutional and partner support.
4. **Conflict of Interest.** The authors declare no conflict of interest.
5. **Ethics and Participant Consent.** This was a low-risk community-service activity involving environmental education and installation of waste-bank facilities. Permission and coordination were undertaken with local community authorities. No sensitive personal data or experimental intervention was reported in the source manuscript. Any identifiable activity photographs should be published only with appropriate permission from the persons shown.

REFERENCES

Astuti, R. D., Linarti, U., & Sa'ban, D. M. (2021). Supporting factors for community participation in the waste bank program: A study in Sleman Regency of Indonesia. Jurnal Optimasi Sistem Industri.

Choirrunnisa, D., & Ngatindriatun. (2021). The impact of waste bank on waste processing behavior and income. Efficient: Indonesian Journal of Development Economics, 4(2), 1201–1216. https://doi.org/10.15294/efficient.v4i2.46061

Farida, A., Arifin, Z., Rahmawati, R., & Iwannudin, I. (2022). Pemberdayaan ekonomi masyarakat melalui pengelolaan Bank Sampah Berkah di Sekampung Kabupaten Lampung Timur. Wisanggeni: Jurnal Pengabdian Masyarakat, 1(2), 36–51. https://doi.org/10.25217/wisanggeni.v1i2.1874

Fauziah, Y. E., Wardiyanto, B., & Mardiyanta, A. (2022). Community participation in the implementation of waste management policies in Surabaya Main Waste Bank. Jurnal Ilmiah Ilmu Administrasi Publik, 12(2). https://doi.org/10.26858/jiap.v12i2.42953

Firmantyo, A. C., Khofifah, S. N., Millenio, M. F., & Sulistyawan, V. N. (2023). Bank sampah: Strategi alternatif pengelolaan sampah dan penambah penghasilan desa di masa pandemi. Jurnal Puruhita, 5(1). https://doi.org/10.15294/puruhita.v5i1.50877

Ismiraj, M. R., Wulansari, A., Setiadi, Y., Pratama, A., & Mayasari, N. (2023). Perceptions of community-based waste bank operators and customers on its establishment and operationalization: Cases in Pangandaran, Indonesia. Sustainability, 15(14), 11052. https://doi.org/10.3390/su151411052

Kaza, S., Yao, L., Bhada-Tata, P., & Van Woerden, F. (2018). What a waste 2.0: A global snapshot of solid waste management to 2050. World Bank.

Khaira, M., Hasanah, U., & Hayati, I. (2020). Peran bank sampah dalam meningkatkan pendapatan ibu rumah tangga di Desa Sait Buttu Kecamatan Pematang Sidamanik. IHSAN: Jurnal Pengabdian Masyarakat, 2(2), 187–195.

Ministry of Environment and Forestry of the Republic of Indonesia. (2021). Regulation of the Minister of Environment and Forestry Number 14 of 2021 concerning waste management at waste banks.

Putra, M. A. H., Mutiani, M., Jumriani, J., & Handy, M. R. N. (2020). The development of a waste bank as a form of community participation in waste management. The Kalimantan Social Studies Journal, 2(1).

Rachman, I., Komalasari, N., & Hutagalung, I. R. (2021). Community participation on waste bank to facilitate sustainable solid waste management in a village. Journal of Environmental Science and Sustainable Development, 4(2).

Rahmawati, A., & Fiorentina, P. (2021). Pengelolaan bank sampah berbasis pemberdayaan masyarakat. Jurnal Bina Desa, 3(1). https://doi.org/10.15294/jbd.v3i1.23743

Republic of Indonesia. (2008). Law Number 18 of 2008 concerning waste management.

Republic of Indonesia. (2017). Presidential Regulation Number 97 of 2017 concerning national policy and strategy for household waste and household-like waste management.

Safitri, N., Myrna, R., & Ismanto, S. U. (2022). Partisipasi masyarakat dalam pengelolaan bank sampah di Kecamatan Jatiasih Kota Bekasi. JANE (Jurnal Administrasi Negara), 14(1).

Sari, D. A. A., Suryanto, S., Sudarwanto, A. S., Nugraha, S., & Utomowati, R. (2022). Pengelolaan bank sampah mandiri secara berkelanjutan di Kelurahan Mojosongo Surakarta. ENVIRO: Journal of Tropical Environmental Research, 24(2).

Saputro, Y. E., Kismartini, & Syafrudin. (2015). Pengelolaan sampah berbasis masyarakat melalui bank sampah. Indonesian Journal of Conservation, 4(1), 83–94.

Sunendra, S., Listiani, R., Faseha, D., & Laksono, B. A. (2022). Pengaruh keaktifan masyarakat dalam program bank sampah terhadap tingkat kesejahteraan. Jurnal Pemberdayaan Masyarakat, 10(2).

United Nations Environment Programme, & International Solid Waste Association. (2024). Global waste management outlook 2024: Beyond an age of waste—Turning rubbish into a resource. United Nations Environment Programme.

Wijayanti, D. R., & Suryani, S. (2015). Waste bank as community-based environmental governance: A lesson learned from Surabaya. Procedia - Social and Behavioral Sciences, 184, 171–179. https://doi.org/10.1016/j.sbspro.2015.05.077