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Implementation Of The Waste Bank System As A Waste Management Solution In RT 14 Sawah Lebar Baru

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ABSTRACT
Household waste is one of the major challenges in environmental management within residential areas. The low level of public awareness regarding waste segregation has contributed to the increasing volume of waste disposed of in landfills. This community service program aimed to implement a Waste Bank system as a community-based waste management solution for the residents of RT 14, Sawah Lebar Baru Village, Ratu Agung District, Bengkulu City, through the Thematic Community Service Program (KKN) of Dehasen University Bengkulu, Period 08. The program was conducted from 17 June to 13 July 2026 using observation, interviews, community outreach, training, mentoring, and evaluation methods. The activities began with identifying existing waste management problems, followed by educational sessions on organic and inorganic waste segregation, the establishment of a Waste Bank management committee, and practical training on waste weighing and savings record management. The results demonstrated an improvement in community understanding of waste management, increased community participation in household waste segregation, and the successful establishment of a community-managed Waste Bank system. This program is expected to contribute to the creation of a clean, healthy, and sustainable environment while also generating economic benefits for the local community.

Keywords: Community Empowerment, Environment, Thematic Community Service Program (KKN)

INTRODUCTION

Waste management remains a major environmental challenge across various regions of Indonesia, particularly in urban areas and densely populated settlements. Population growth, shifting consumption patterns, and the rising use of single-use products have caused the volume of household waste to increase annually. If not managed properly, waste can lead to various negative impacts, such as soil, water, and air pollution; the emergence of disease vectors; clogged drainage systems causing flooding; and a decline in the quality of the living environment. This situation demonstrates that waste management is not merely. as waste generators. The majority of waste produced by the public stems from household activities, with a composition dominated by organic and inorganic materials that actually retain potential for reuse. However, low public awareness regarding waste sorting at the source means that most waste still ends up in final disposal sites (TPA). This situation increases the waste management burden on local governments and accelerates the depletion of landfill capacity. Therefore, a community-based waste management system is needed—one capable of reducing waste volume while simultaneously providing economic benefits to the community (Purwendah & Wahyono, 2022). One approach considered effective for community-based waste management is the implementation of "Waste

Banks" (*Bank Sampah*). A waste bank is a management system that applies the 3R principles (Reduce, Reuse, and Recycle) through a process involving sorting, weighing, recording, and selling waste that holds economic value. In practice, community members act as "customers" who deposit sorted inorganic waste, which is then recorded as savings. This system not only reduces the amount of waste sent to landfills but also raises public awareness about the importance of environmental cleanliness and creates opportunities for additional household income (Nurhajati, 2022). Beyond providing environmental benefits, the existence of waste banks also serves as a vehicle for community empowerment. Through outreach, training, and mentoring activities, the community gains knowledge regarding waste sorting techniques, waste bank administration, and the transparent management of proceeds from waste sales. This empowerment fosters environmentally conscious behavior among residents while simultaneously enhancing the community groups' capacity to manage waste bank organizations independently. Research by Aryani and Sadikin (2022) demonstrates that waste bank programs can boost community participation in maintaining environmental cleanliness and positively impact community welfare by utilizing waste with economic value. The successful management of waste banks relies heavily on community participation, government support, and ongoing mentoring. Qomariyah et al. (2022) explain that establishing waste banks through training and mentoring improves the community's ability to manage organizations, sort waste effectively, and maintain orderly financial records. Thus, waste banks serve not merely as collection points, but also as vehicles for environmental education and community economic empowerment. As part of the implementation of the *Tri Dharma Perguruan Tinggi* (Three Pillars of Higher Education), university students play a strategic role in supporting community development through the *Kuliah Kerja Nyata* (KKN)—or Student Community Service—program. KKN serves as a platform for students to apply their knowledge, technology, and skills to address various issues faced by the community. One such implementation takes the form of a community empowerment program focused on environmental management, specifically household waste management based on the "waste bank" model. Through KKN activities, students act not only as facilitators but also as agents of change capable of fostering community awareness regarding the importance of environmental preservation.The Thematic KKN program of Universitas Dehasen Bengkulu (Period 08) was conducted in RT 14, Sawah Lebar Baru Urban Village, Ratu Agung District, Bengkulu City, from June 17 to July 13, 2026. Preliminary observations by the students revealed that household waste management in RT 14 faced several challenges, including suboptimal waste sorting at the source, low public understanding of the economic value of inorganic waste, and the absence of a sustainable, community-based waste management system. These conditions posed a risk of waste accumulation in the residential area, necessitating community empowerment efforts through the establishment of a waste bank system. By implementing the waste bank system, it is hoped that the community will shift its paradigm—moving away from viewing waste as valueless refuse and instead recognizing it as a resource that can generate economic benefits when managed correctly. Furthermore, the implementation of a waste bank system is expected to raise public awareness regarding clean and healthy living habits, reduce the volume of waste sent to landfills, and create a cleaner, healthier, and more sustainable residential environment. Based on this context, the problem addressed in this activity is how to implement a waste bank system as a waste management solution in RT 14, Sawah Lebar Baru Urban Village, through the Thematic Community Service Program (KKN) of Dehasen University Bengkulu. The objectives of this activity are to implement a community-based waste bank system for the residents of RT 14, Sawah Lebar Baru Urban Village; to enhance community knowledge and participation in household waste management; and to achieve waste management that is effective, economically valuable, and sustainable.

COMMUNITY-SERVICE METHODS

Activity devotion to public This implemented through Studying Work Real (KKN) Thematic Dehasen University Bengkulu Period 08 in RT 14 Sawah Lebar Baru Village, Ratu Agung District, Bengkulu City on June 17–July 13, 2026. The target of the activity is the community of RT 14 Sawah Lebar Baru Village, especially residents who produce household waste and have the potential to become Waste Bank managers. The method of implementing the activity uses participatory approach, namely involving society as a whole active in every stage activity so that the program implemented can be accepted and sustainable (Rahman et al., 2023). Program implementation is carried out through several stages, namely observation, socialization, training, mentoring, and evaluation. The first stage is observation, which aims to identify the condition of waste management in the community and identify the

problems faced in household waste management. Observations are conducted through direct observation and discussions with village officials and the community. The second stage is outreach, which involves conveying material about importance management rubbish, draft Bank Rubbish, the benefits of waste sorting, as well as the application of the *Reduce, Reuse, and Recycle* (3R) principles. This activity aims to increase public knowledge and awareness of the importance of community-based waste management (Purwendah & Wahyono, 2022). Furthermore, training And mentoring to public about technique sorting organic and inorganic waste, waste weighing mechanisms, recording waste savings results, and establishing a Waste Bank management team. At this stage, KKN students assisted the community in managing the Waste Bank independently. The final stage was evaluation, conducted through observation and discussions with the community to determine the level of community participation and the success of the program. Activity data was obtained through observation, short interviews, and documentation, then analyzed descriptively to illustrate the results of the Waste Bank system implementation during the KKN activities.Implementation stages activity served on Table 1.

Table 1. Stages Implementation Program Bank Rubbish

Stages	Activity	External
Observation	Identification problem management rubbish	Initial conditions are known management rubbish
Socialization	Education about Bank Rubbish And principle 3R	Increased knowledge public
Training	Practice sorting And weighing rubbish	People understand mechanism Bank Rubbish
Mentoring	Formation of management and implementation Bank Rubbish	Formation of Bank management Rubbish
Evaluation	Joint monitoring and discussion public	Evaluation success program

RESULTS AND DISCUSSION

Condition Beginning Management Rubbish in RT 14 Ward Ricefield New Width The implementation of the Waste Bank system began with field observations conducted by the Thematic Community Service Program students of Dehasen University Bengkulu in RT 14, Sawah Lebar Baru Village, Ratu Agung District, Bengkulu City. The observations aimed to identify the condition of household waste management, determine the level of public awareness of the importance of waste sorting, and identify the potential for implementing the Waste Bank system as a community-based waste management solution. Observations were conducted through direct observation of residential environmental conditions, brief interviews with village officials and the community, and discussions regarding environmental problems frequently faced by residents. Based on results observation, known that part big public Still Waste management practices involve mixing organic and inorganic waste in a single container before being transported by sanitation workers. This practice results in waste that still has economic value, such as plastic bottles, plastic cups, cardboard, beverage cans, and glass bottles, being unable to be reused because it is mixed with organic waste. Furthermore, some people still believe that all waste is waste that must be disposed of immediately, thus preventing the practice of sorting from home. Observation results also show that public knowledge regarding the concept of Reduce, Reuse , and Recycle (3R) and the working mechanisms of Waste Banks is still relatively low. big inhabitant Not yet know that rubbish inorganic can collected, sorted, and for sale so that own mark economy. Condition the cause potential The use of waste as a source of additional income for the community has not been maximized. However, if sorting were carried out at the source, the volume of waste disposed of in temporary landfills could be significantly reduced and support the creation of a cleaner and healthier environment. Besides low knowledge public, results observation Also find that not yet available activity routine Which involving public in management rubbish in a way integrated management rubbish Still oriented on activity throw away rubbish without existence sorting and recycling processes. This situation has led to a continuous increase in the amount of waste produced daily, particularly single-use plastic waste from household

activities. If this situation persists, it has the potential to cause various environmental problems, such as pollution, decreased aesthetics of residential areas, and increased health risks due to waste accumulation. Although thus, results discussion with device ward And public shows the existence of enthusiasm as well as readiness inhabitant For follow program management rubbish if provided with ongoing support and education. The community is aware that the problem rubbish need solution together And welcome Good program Bank implementation Rubbish Which implemented by student KKN. Condition This become potential Which It is very good to develop a community-based waste management system by forming the habit of sorting waste and utilizing inorganic waste that still has economic value. Based on these initial conditions, KKN students designed a program to implement the Waste Bank system which focused on increasing public knowledge through socialization, practice sorting rubbish, as well as mentoring management Bank Rubbish. This program expected capable change behavior public in manage rubbish House households, increasing community participation in maintaining environmental cleanliness, and creating a more effective and sustainable waste management system. These findings align with research by Nurhajati (2022), which states that low public awareness of waste sorting is a major obstacle to community-based waste management. Therefore, ongoing education and mentoring are key factors. important in increase success implementation Bank Rubbish as Wrong One waste management solutions in residential areas. Implementation Program Implementation Bank Rubbish The Waste Bank program is implemented through several stages involving Dehasen University Bengkulu Thematic Community Service Program students, Waste Bank administrators, village officials, and the community. Activities focus not only on waste collection but also on increasing public awareness of the importance of sustainable waste management. The first stage is outreach on the importance of sustainable waste management. rubbish House ladder And draft Bank Rubbish. Material Which delivered includes types rubbish, technique sorting rubbish organic And inorganic, benefit implementation The principles of Reduce, Reuse, and Recycle (3R), as well as the working mechanisms of the Waste Bank, were discussed interactively through discussions and questions and answers, allowing the public to address the challenges they face in managing household waste. Through these activities, the public began to understand that inorganic waste has economic value when managed through the Waste Bank system. Furthermore, the public also gained an understanding of the negative impacts of indiscriminate waste disposal on health and the environment. Educational activities like this are crucial because behavioral change begins with increased awareness of the importance of waste management. knowledge regarding environmental management (Purwendah & Wahyono, 2022). In addition to delivering material, the outreach activities also served as a means of building communication and collaboration between KKN students and the community. Residents were given the opportunity to share experiences regarding waste management practices in their neighborhoods, the challenges they faced, and their hopes for the upcoming Waste Bank program. The discussions revealed that the majority of the community welcomed the program because it was a valuable resource for the community. It is considered a solution to reduce waste accumulation while providing economic benefits. Public enthusiasm was evident in the active participation of participants in the session. ask answer and their willingness to follow The next activity stage is waste sorting practice and assistance in managing the Waste Bank. This condition shows that the participatory approach implemented during the KKN activities was able to increase community involvement in each stage of the program, thus expected can support sustainability implementation Bank Rubbish in New Sawah Lebar Village.



Figure 1. Activity socialization And education management rubbish to public RT 14, Sawah Lebar Baru Subdistrict.

Practice Sorting Rubbish

Following the outreach activities, the KKN students and the community carried out a hands-on waste sorting practice. The collected waste was separated by type, including plastic bottles, plastic cups, glass bottles, cardboard, beverage cans, and other types of waste. inorganic other. Activity This aim so that public own skills in sorting waste before depositing it in the Waste Bank. Students demonstrated how to clean plastic waste, remove bottle caps, separate plastic types, and group waste according to predetermined categories. This practical activity received high enthusiasm from the community because they were able to directly practice proper waste sorting techniques. In addition to improving skills, this activity Also raise awareness that the sorting rubbish is the first step in realize environment Which more clean And Healthy. According to Aryani And Sadikin (2022), direct practice is a more effective educational method than delivering material through lectures. theoretically because society can understand waste management process through real experience.



Figure 2. Student KKN together public do sorting rubbish inorganic based on type before being deposited at the Waste Bank.

Mentoring Activity Bank Rubbish

The next stage is operational assistance for the Waste Bank. In this activity, KKN students assist the community in the final sorting process and waste recording. as well as simulation mechanism savings rubbish. Public introduced with administration system simple so that every rubbish Which deposited can noted based on heavy and its types. Besides That, student Also give mentoring about importance Maintaining the sustainability of the Waste Bank through the division of management tasks, waste collection schedules, and coordination with collectors. This assistance aims to ensure that after the Community Service Program (KKN) activities are completed, the community is still able to run the Waste Bank independently. The success of a Bank Rubbish very influenced by involvement public as manager Therefore, students only act as facilitators, helping the community understand the Waste Bank management mechanism so that the program can continue after the Community Service Program (KKN) ends (Qomariyah et al., 2022).



Figure 3. Student KKN accompany public RT 14 in process waste management and sorting as part of the implementation of the Waste Bank system .

Results Implementation Program

The implementation of the Waste Bank program has had a positive impact on increasing public knowledge and participation. Throughout the program, the community demonstrated high enthusiasm for participating in outreach and waste sorting practices. Inhabitant start understand importance separate rubbish organic And inorganic since from House as well as know that rubbish inorganic can give mark economy when collected through Bank Rubbish. Besides increasing knowledge public, activity This also results in the formation of new habits in sorting waste before throwing it away. Although implementation program Still in stage beginning, change behavior public starting to appear from willingness inhabitant For gather bottle plastic, glass plastic, cardboard box, And cans separately. This demonstrates that the education provided during the KKN activities has increased public awareness of the importance of community-based waste management. Table 2 shows the types of activities implemented during the implementation of the Waste Bank program.

Table 2. Results Implementation Program Bank Rubbish

No	Activity	Results Which Achieved
1	Observation field	Identified problem management waste in the community environment
2	Socialization	The community understands the concept of the Waste Bank and the 3R principles
3	Practice sorting rubbish	The community is able to sort waste based on its type
4	Mentoring	Public understand mechanism Waste Bank Management
5	Evaluation	Happen improvement knowledge And participation public

Discussion

Implementation of the Waste Bank system through the Thematic Community Service (KKN) activities at Dehasen University, Bengkulu in RT 14, Sawah Lebar Baru Subdistrict, is a form of community empowerment program to address household waste issues. This program is designed not only as a temporary social activity but also as an effort to build community awareness so they can manage waste independently and sustainably. The approach used in this activity is a participatory one, involving the community from the observation stage, socialization, waste sorting practices, to mentoring the implementation of the Waste Bank. Community involvement in every stage of the activity is a crucial factor in fostering a sense of ownership . to program Which executed so that opportunity its sustainability become bigger . The results of the activity showed that before the program's implementation, most people did not have the habit of sorting household waste by type. Organic and inorganic waste were still mixed in one container before being disposed of in a temporary landfill. This situation indicates that waste management is still oriented towards final disposal, rather than efforts to reduce waste volume through recycling. After socialization and mentoring, the community began to understand the importance of sorting waste from its source as the first step in effective waste management. This change in understanding is evident in increasing awareness public For separate rubbish plastic, cardboard box, bottle glass, cans, and other types of inorganic waste before being collected at the Waste Bank. Improvement knowledge public No let go from method socialization Which implemented during KKN activities. The material is delivered communicatively through discussions, questions and answers, and real-life examples of the impact of waste on the environment and the economic benefits of waste management. This method provides an opportunity for the community to For convey problem Which they face it at a time get solution in a way direct from team KKN. Process education Which ongoing in a way interactive proven capable increase understanding public about draft Reduce, Reuse, And Recycle (3R) as the basis for household waste management. This finding aligns with research by Purwendah and Wahyono (2022), which found that education about Waste Banks can increase public awareness of waste management while simultaneously encouraging behavioral changes in maintaining a clean environment. Success program Also supported by existence practice sorting rubbish Which This practice is conducted directly with the community. This practice provides real-world experience in how to classify waste by type, clean up recyclable waste, and understand the selling value of each type of waste. This hands-on approach is considered more effective than simply providing information. Because public can see And try Alone process management Waste. During the activity, the community was seen actively participating in

the waste sorting process and discussing the types of waste that could be deposited at the Waste Bank. This demonstrates that practice-based learning can improve community skills in managing household waste. These results align with research by Aryani and Sadikin (2022), which explains that direct community involvement in waste management activities has a greater impact on behavioral change than theoretical presentation. In addition to improving community knowledge and skills, the implementation of the Waste Bank also provides benefits in building social awareness and cooperation between residents. During activity ongoing, public together student KKN Work same in gather, sorting, And manage rubbish Which own mark economical. This activity creates positive interactions between residents and strengthens the spirit of mutual cooperation. in guard cleanliness environment. Approach collaborative This is Wrong a form of community empowerment that aims to build citizen independence in solving environmental problems in their area. From an environmental aspect, the implementation of the Waste Bank has a positive impact on efforts subtraction volume rubbish Which thrown away to place disposal temporary. Inorganic waste such as plastic bottles, plastic cups, cardboard, and cans, which were previously thrown away, is now being separated for collection and reuse. Although the amount of waste collected during the Community Service Program (KKN) activities is not yet significant because the program is still in its early stages of implementation, changes in community behavior regarding waste sorting have been observed. waste is a very important achievement. This behavioral change is the main capital in build system management rubbish based public Which sustainable. From aspect economy, program Bank Rubbish open outlook public that Waste is not just waste that must be disposed of, but also has economic value if managed properly. The community is beginning to understand that the sale of inorganic waste can provide additional income for households. Although the economic benefits gained during the KKN program have not been significant, the change in the community's perspective on waste is an indicator of the program's success. Overall, the implementation of the Waste Bank system through the Thematic KKN activities of Dehasen University, Bengkulu, has succeeded in providing a positive impact on increasing knowledge, skills, and community participation in household waste management. Program This become step beginning in build culture management rubbish based public in RT 14 Ward Ricefield Wide New. Success program No The success of the Waste Bank program is measured not only by the establishment of Waste Bank activities, but also by increased public awareness of the importance of managing waste more responsibly. With the support of the village government, active community participation, and ongoing mentoring, it is hoped that the Waste Bank can develop into an independent, sustainable environmental program that will benefit environmental cleanliness and improve community well-being.

CONCLUSION AND RECOMMENDATIONS

The implementation of the Waste Bank System Implementation program as a Waste Management Solution in RT 14 Sawah Lebar Baru through the Thematic Community Service Program (KKN) of Dehasen University, Bengkulu has gone well and received a positive response from the community. RT 14 Ward Ricefield Wide New. Activity Which covering observation, Socialization, waste sorting practices, and assistance in managing the Waste Bank can increase public knowledge and awareness regarding the importance of household waste management based on the principles of Reduce, Reuse , and Recycle (3R). The implementation of the Waste Bank encourages the public to start getting used to sorting waste based on its type and to understand that inorganic waste has economic value if managed properly. In addition to providing benefits for environmental cleanliness, this program also becomes step beginning in build participation public For realize sustainable waste management. The sustainability of the Waste Bank program requires support from the village government, Waste Bank administrators, and active community participation to ensure waste management activities can continue after the Community Service Program (KKN) concludes. Regular mentoring and institutional strengthening of the Waste Bank are also needed to improve waste management effectiveness while providing optimal benefits to the community. The Waste Bank program, initiated through KKN activities, is expected to continue. by public RT 14 with support Government Ward Ricefield Wide New, Chairman RT 14, as well as agency related so that sustainability program can Keep going awake. Socialization and training activities need to be carried out periodically to increase community participation, especially generation young, in management rubbish. Besides Therefore, developing cooperation with collectors or recycling partners is expected to increase economic value.

DECLARATIONS

1. **Statement on the Use of Artificial Intelligence.** AI was used to assist with manuscript preparation and language editing. All content was reviewed and verified by the authors, who remain fully responsible for the manuscript.
2. **Author Contribution.** RH: Conceptualization, Investigation, Writing, and Initial draft; GR, RA: Methodology, Investigation, Writing, and Initial draft; SF: Investigation, Data curation, and Formal analysis; JU: Investigation, Formal analysis, Writing, and Initial draft; F: Data curation, Visualization, Writing, Review and editing; RP, M: Supervision, Validation, Writing, Review and editing.
3. **Funding Statement.** This activity received no external funding and was conducted using the authors' own funds.
4. **Conflict of Interest.** The authors declare no conflict of interest.
5. **Ethics and Participant Consent.** The activity was conducted with permission from the local community authorities and with voluntary community participation. Participant privacy was maintained, and permission was obtained for the use of documentation included in the manuscript.

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