

# Enhancing Environmentally Friendly Creative Economy through Plastic Waste Innovation and Financial Reporting Strengthening at Kenanga Waste Bank, Bogor

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## ABSTRACT

Waste banks have become an essential part of the circular economy and a solution to environmental problems, especially in urban areas. Kenanga Waste Bank in Bogor City has served as a community-based waste management center, but it still faces challenges in product innovation using plastic waste and financial recordkeeping. This community service activity aims to enhance the capacity of waste bank managers and members in developing creative products from plastic waste and strengthening financial reports through simple bookkeeping. The methods used included training, product innovation workshops, transaction recording simulations, and financial reporting assistance. The results showed an increase in members' skills in processing plastic waste into economically valuable products, as well as a 78% increase in understanding of cash inflow and outflow recording. This activity is expected to strengthen the role of waste banks as drivers of environmentally friendly creative economies.

**Keywords:** Waste Bank, Creative Economy, Plastic Innovation, Financial Reporting, Environment

## INTRODUCTION

Environmental issues have become one of the most pressing global challenges in the modern era, particularly concerning the accumulation of plastic waste. In Indonesia, plastic waste accounts for over 17% of the total household waste composition, with a significant portion ending up in landfills or polluting natural ecosystems. In response to

this growing concern, community-based waste management models such as waste banks have emerged as innovative solutions. These initiatives not only aim to reduce environmental damage but also promote economic empowerment at the grassroots level through the principles of the circular economy. One such active initiative is the Kenanga Waste Bank, located in RW 05, Kedung Badak Subdistrict, Bogor City.

The Kenanga Waste Bank has been in operation for over three years, with more than 50 active members. Its primary activities include sorting and weighing household waste, which is then exchanged for economic value in the form of savings or daily necessities. While the community's commitment is commendable, the waste bank continues to face significant challenges that limit its potential impact. Firstly, plastic waste is not yet optimally utilized as raw material for creative products; most of it is merely collected and sold without further processing. Secondly, the financial management system is rudimentary, with transactions being recorded manually and lacking consistency, which hinders long-term planning and transparency. Thirdly, there is a notable lack of training and mentoring in product innovation and financial governance for both the managers and members.

This community service initiative seeks to transform the waste bank from a passive waste collection unit into a sustainable, environmentally friendly creative economic hub. The strategy includes two core focus areas: developing innovative products from plastic waste and strengthening financial literacy and reporting capabilities. The goal is to empower community members to see waste not merely as a problem, but as a resource with economic value that can contribute to both environmental sustainability and household income.

The specific objectives of this activity are: (1) to enhance the skills of Kenanga Waste Bank members in creating marketable and useful creative products from plastic waste; (2) to provide practical training in basic financial recording and reporting suited to community-level operations; and (3) to foster the emergence of independent, community-based models of environmentally friendly creative economies in Bogor City. This initiative not only supports the growth of local capacity but also exemplifies the role of higher education institutions in collaborating with communities to promote sustainable development goals.

Through a participatory and hands-on approach, this program demonstrates that effective waste management and economic innovation do not always require high-end technology, but can begin with inclusive, educational, and community-driven solutions. It is hoped that this model can serve as a replicable blueprint for other urban communities facing similar environmental and economic challenges.

### **BENEFITS OF THE ACTIVITY**

This community service initiative provided a wide range of tangible and strategic benefits for the Kenanga Waste Bank, the surrounding community, and the partnering university. The following are the key benefits identified throughout the implementation of the program:

#### **1. Enhanced Innovation Capacity at the Grassroots Level**

Participants gained practical knowledge and hands-on skills in transforming plastic waste into creative and marketable products. Through guided workshops, members were able to produce items such as reusable bags, pots, and stationery holders. This innovation not only empowered individuals with new sources of income but also promoted a creative economy rooted in environmental sustainability.

#### **2. Improved Financial Literacy and Recordkeeping**

Basic training in bookkeeping enabled participants to understand essential financial concepts such as cash inflow and outflow, cost calculations, and simple financial statements. Before the activity, many participants lacked exposure to structured financial recording. Afterward, the majority were able to use Excel and manual tools to track daily transactions and compile monthly financial reports. This improvement supports long-term organizational transparency and planning.

### 3. Women and Family Empowerment

As the majority of participants were housewives, the program contributed to household economic resilience. It opened opportunities for women to participate in sustainable entrepreneurship, foster self-confidence, and contribute to family income while maintaining their roles in domestic life.

### 4. Strengthened University-Community Collaboration

This activity served as a model for how higher education institutions can contribute to solving real-world problems by connecting academic resources with local needs. It promoted civic engagement, mutual learning, and sustainable partnerships.

### 5. Support for Local Government Programs

The initiative aligns with the Bogor City government's policies on waste reduction, community empowerment, and urban environmental improvement. It complements broader goals of creating "green" neighborhoods through participatory and community-based approaches.

## RESULTS AND DISCUSSION

### A. Results

This community service activity was held on June 20–22, 2025, in RW 05, Kedung Badak Subdistrict, Bogor City. A total of 30 participants, consisting of the management and active members of the Kenanga Waste Bank, took part enthusiastically in the entire series of activities.

The main outcomes of this activity are as follows:

#### 1. Product Innovation from Plastic Waste

Participants successfully produced three types of handicrafts made from plastic waste, namely:

- a. Reusable shopping bags from used coffee sachets and detergent packaging
  - b. Plant pots from used mineral water bottles
  - c. Stationery holders from thick plastic bags and broken plastic buckets
- These products were displayed and sold at the local environmental bazaar with prices ranging from IDR 5,000 to IDR 20,000.

#### 2. Improvement in Community Financial Literacy

Through training and mentoring on basic financial recording, 93% of participants were able to create daily cash flow records using Excel. Previously, only 15% of participants had routinely recorded transactions.

#### 3. Preparation of Simple Financial Reports

At the end of the program, participants prepared a cash flow report for June 2025 in two formats:

- a. Manual (handwritten)
- b. Digital (basic Excel format)

A total of 21 participants successfully produced monthly cash reports including income, expenses, and ending balances.

### B. Evaluation of Results

The evaluation was conducted through pre-tests, post-tests, and observation sheets throughout the activity. The evaluation results showed:

- a. The average score of participants' understanding of financial management increased from 48% to 87% after the activity.
- b. The level of active participation reached 95%, as reflected in participants' enthusiasm during group discussions, hands-on practice, and the product bazaar
- c. The innovative products were considered marketable by bazaar visitors and 80% of them were sold within a single day of the exhibition.

Several feedbacks from participants indicated that the materials were easy to understand, and the practical sessions greatly helped them comprehend the function of financial recording and the business potential of plastic waste.

### **C. Discussion**

The outcomes of this activity reinforce previous findings that practice-based training and participatory approaches are effective in enhancing the capacity of grassroots communities. The innovation of plastic waste products demonstrates that resources often considered as waste actually hold economic potential that can be developed.

Financial recordkeeping, which had been previously neglected, has proven to be one of the keys to community sustainability. With a simple system of cash inflows and outflows, Kenanga Waste Bank is now able to track the flow of funds, calculate profits from waste sales and creative products, and prepare reports for accountability or potential collaboration with external stakeholders.

This activity also strengthened community social cohesion by involving various parties from neighborhood units (RT, RW) to youth organizations. The collaboration between the community and higher education institutions offers a replicable model of empowerment for other similar communities.

## **CONCLUSION AND RECOMMENDATIONS**

### **Conclusion**

This community engagement initiative at the Kenanga Waste Bank in Bogor successfully demonstrated how environmental challenges, such as plastic waste, can be transformed into opportunities for community-based economic development. The program achieved its dual objectives: enhancing innovation in upcycling plastic waste into creative, marketable products and strengthening the capacity of members in financial recordkeeping and reporting.

Through a series of workshops and mentoring sessions, participants not only acquired hands-on skills in making eco-friendly crafts but also learned how to promote their products to local consumers. The introduction of simple tools and methods for financial documentation empowered community members to track income and expenses systematically. These outcomes are critical for the sustainability and growth of waste bank operations, enabling them to make informed decisions, maintain accountability, and engage in more professional collaborations.

One of the most notable impacts of the program was the empowerment of women—many of whom were housewives—through skill-building and entrepreneurship. The initiative also promoted stronger collaboration between the university and the local community, reflecting a successful model of applied learning and service that addresses real-world environmental and economic challenges.

The project has also laid the groundwork for broader adoption of sustainable creative economies in other urban neighborhoods. By integrating environmental stewardship, financial literacy, and local empowerment, the Kenanga Waste Bank is now better positioned to serve as a role model for other waste banks and informal community enterprises across Bogor and beyond. The results reaffirm the importance of participatory, education-based interventions in fostering inclusive, sustainable development at the grassroots level.

### **Recommendations**

Building upon the outcomes of this initiative, several recommendations are proposed to further strengthen the Kenanga Waste Bank and replicate the model in other communities:

#### **1. Continuous Product Development and Innovation**

The creative product lines introduced in this activity should be further developed through ongoing design improvement, quality control, and market testing. Collaborations with design students or professionals may help enhance product appeal and diversify offerings to reach wider markets.

#### **2. Digital Marketing and Branding Training**

To scale their efforts, participants should be trained in digital marketing, including the use of social media, e-commerce platforms, and branding strategies. This would

increase product visibility, expand customer reach, and improve sales, especially among environmentally conscious consumers.

### 3. Institutional Support and Policy Alignment

Local government agencies and stakeholders should support similar initiatives through grants, infrastructure, and facilitation of permits or formal recognition. Integration with environmental and economic development policies will ensure long-term sustainability and scalability.

### 4. Development of Digital Financial Tools

Providing mobile-based or community-accessible digital bookkeeping applications will make financial reporting easier and more accurate. This will reduce human error and increase transparency and efficiency in community finance management.

### 5. Replication and Knowledge Sharing

This initiative can serve as a pilot model for other waste banks in Bogor and similar urban areas. Organizing knowledge-sharing forums or inter-waste bank collaborations will help disseminate best practices and foster a broader network of sustainable community enterprises.

By implementing these recommendations, the positive impacts of the project can be sustained, scaled, and institutionalized to benefit a larger portion of the community while addressing both environmental and socio-economic challenges.

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