

## **WASTE BANKS AS A TRIPLE-IMPACT SOLUTION: CLEANLINESS, ENVIRONMENTAL SUSTAINABILITY, AND ECONOMIC EMPOWERMENT IN THE INDONESIAN DIASPORA OF PENANG**

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### **ABSTRACT**

This community engagement program aimed to increase awareness and capacity among the Indonesian diaspora in Penang, Malaysia, regarding responsible waste management through the establishment of a Waste Bank. The program responded to issues of low public awareness, improper waste disposal behavior, and a lack of understanding of the economic potential of waste. Training, consultation, and mentoring sessions were conducted for members of the Indonesian Community Association (PERMAI) Penang, focusing on the concept, benefits, and practical steps of setting up a Waste Bank. The results revealed that prior to the training, most participants had limited knowledge of Waste Banks and their role in addressing cleanliness, environmental sustainability, and economic improvement. However, after participating in the sessions, participants demonstrated increased knowledge, positive attitudes, and strong enthusiasm to establish a Waste Bank in their local environment. The initiative proved that participatory education and continuous mentoring are effective strategies in transforming waste-related behaviors and fostering economic empowerment within migrant communities. It is expected that the knowledge gained will not only benefit the community in Penang but also be applied in Indonesia upon the participants' return.

**Keywords:** Waste Bank, Community Empowerment, Environmental Awareness, Sustainable Waste Management, Indonesian Diaspora, Penang

### **1. INTRODUCTION**

The global world is faced with increasing awareness of the importance of sustainability. Likewise, Indonesia continues to fight for progressive steps in supporting the achievement of Sustainable Development Goals (SDGs) 12, namely Responsible Consumption and Production (United Nations, 2015; BAPPENAS, 2020). SDG 12 aims to ensure sustainable consumption and production patterns globally, with a focus on resource efficiency, waste reduction, and promotion of environmentally friendly production practices. Waste reduction is the Target of Indonesia Bersih Sampah 2025, by 30%. Waste management is targeted at 70%.

On the other hand, a report from the WorldBuzz page states that the Penang state government estimates that an average of 700 Kilograms of food is wasted every day (Sihite & Andrianjara, 2017) so that the government there is overwhelmed by the overflowing food waste. This is due to the increasing number of tourists, also due to the lack of awareness of Penang residents not to litter. News from Penang went viral about apartment residents throwing garbage from the height of apartment windows, damaging cars below (Prastiyawati, 2024). This incident is in accordance with the opinion of Marpaung et al (2021) that irresponsible waste disposal behavior results in environmental damage, damage to environmental sustainability, and endangers health. According to Marpaung et al (2021), factors that encourage littering behavior include unavailable waste disposal facilities and infrastructure 63%, low education levels 57%, and lack of government support. Different from the opinion of Abdul Aziz (2019) that the factor that most influences waste disposal behavior is attitude. In addition, other influencing factors are low awareness of the impact of waste disposal, rejection of the effects of waste disposal, and laziness to dispose of waste in its place. The case that occurred in Penang was caused by lazy behavior.

In addition to the need to understand people's behavior towards waste, it needs to be conveyed that waste has two sides. The first side has a negative impact, the second side actually provides added economic value if managed further. Waste management can be done by forming a Waste Bank. A waste bank, which can turn waste into a source of environmental, economic, and social benefits (Gde Ana & Suyana, 2021). The problem faced by the PERMAI Penang community is the lack of proper awareness and attitude in managing waste

appropriately. They do not yet understand the positive potential of waste, nor do they have the attitude and awareness needed to turn waste into economic value.

## 2. METHOD

Based on the problems described in the situation analysis above, the solution that will be implemented is to provide training and consultation to MSMEs and the community regarding the positive and negative impacts of waste, regarding the proper treatment of waste, and the establishment of a Waste Bank to turn waste into money. From the results of research (Wulandari & Uno, 2021), it is known that training and consultation influence the performance of Micro Enterprises. It is hoped that the training and consultations carried out for Micro Enterprises can improve the performance of Micro enterprise according to the results of the research above.

The training carried out involved Mercu Buana University lecturers in the field of Management involving partners from the Association of Indonesian Community Organizations (PERMAI) Pulau Pinang. It is hoped that the results of this Community Service will motivate and increase positive attitudes and public awareness to treat and process waste so that it provides environmental, social, and economic benefits, and direct the participating community to form a Waste Bank. The expected output target from this activity is that micro businesses that take part in training and consultation can improve their performance.

The stages carried out to provide solutions to the problems include problem identification, training & consulting, training evaluation, and reporting. These stages are illustrated in the following (Figure 1).



Figure 1. The stages for implementation the service

The materials presented during the training and consultation included an understanding of Waste Banks, the benefits of establishing a Waste Bank, and the process of forming one. A Sample Waste Bank Book was also provided as a reference and starting point to help develop a Waste Bank in Penang. The following is an example of the Waste Bank Book (Figure 2).

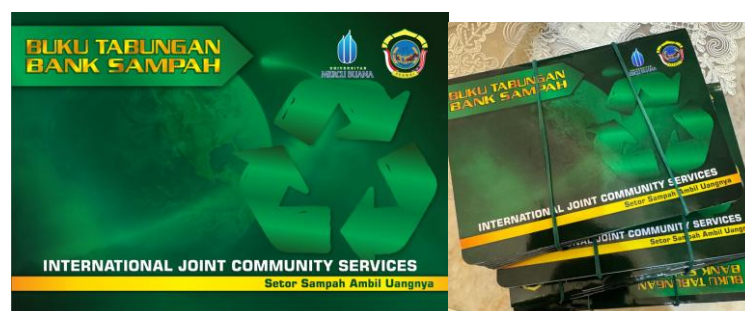


Figure 2. Sample Waste Bank Book

### 3. RESULTS AND DISCUSSION

The problem identification results indicate that the training participants, who are members of the PERMAI community (Indonesian Community Association) in Penang, have not yet understood the concept of a Waste Bank, especially its benefits in addressing cleanliness issues, environmental sustainability, and economic advantages. Following this, the training materials presented included:

The training material presented included the following topics:

1. Definition of Waste Bank
  - A Waste Bank is an institution that manages waste using banking principles.
  - Waste is sorted, deposited, and exchanged for money or daily necessities.
  - Waste Banks are managed by and for the community.
  - The establishment of a Waste Bank can promote environmental awareness and economic empowerment.
2. Benefits of Waste Banks
  - Reducing environmental waste (Putri, N. W. D., & Aryawan, I. B. A., 2020)
  - Increasing awareness of the importance of waste management (Suprayogi, W., et al., 2022)
  - Generating additional household income (Gde Ana & Suyana, 2021)
  - Fostering a spirit of mutual cooperation and laying the foundation for cooperative formation (Putri, N. W. D., & Aryawan, I. B. A., 2020)
3. Procedures for Establishing a Waste Bank

According to Suprayogi, W., et al. (2022); Gde Ana & Suyana (2021); and Putri, N. W. D., & Aryawan, I. B. A. (2020), the process begins with outreach (socialization), followed by the formation of a team. The team consists of a Chairperson, Secretary, Treasurer, Recording and Weighing Officer, and Marketing Officer.

The training results showed the participants' enthusiasm for establishing a Waste Bank, as most of them came to understand the concept and benefits of setting up a Waste Bank. The consultation sessions held after the training further broadened the participants' insights on Waste Banks and increased their motivation to collaborate in establishing one in their own neighborhoods in Penang. Moreover, it is hoped that the knowledge and implementation of the Waste Bank will serve as valuable experience and capital for the participants to apply the concept in Indonesia when they return. Among the triple impacts of the Waste Bank, the most appealing aspect for the participants was the potential to improve their family's economic situation, in addition to promoting cleanliness and environmental sustainability.

### 4. CONCLUSION

The training and consultation activities provided to the PERMAI community (Indonesian Community Association) in Penang, Malaysia, indicate that the community's limited understanding of the concept and benefits of Waste Banks is one of the main factors contributing to the inadequate management of waste. This activity successfully enhanced participants' knowledge, attitudes, and awareness of the importance of responsible waste management.

Through comprehensive training and a participatory approach, participants not only understood the definition and benefits of Waste Banks but also gained practical knowledge on the steps to establish a Waste Bank within their residential environment. The enthusiasm shown during discussions and consultation sessions reflected a strong interest in establishing a Waste Bank, driven primarily by the potential for improving household income, in addition to contributing to cleanliness and environmental sustainability.

This activity demonstrates that participatory education and consultation can serve as effective solutions for building environmental awareness and promoting economic empowerment among migrant communities. It is hoped that this initiative can be replicated sustainably and serve as a valuable provision for participants who return to Indonesia, enabling them to implement the Waste Bank concept in their own communities.

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