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Awareness Campaign on Minimizing Single-Use Packaging to Support Sustainable Micro, Small, and Medium Enterprises in Mangunsari, Gunung Pati

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Abstract

The improper management of single-use packaging containers poses considerable environmental risks, particularly within the context of micro, small, and medium enterprises (MSMEs) that still rely heavily on plastic and Styrofoam-based materials. In Kelurahan Mangunsari, Kecamatan Gunung Pati, the prevalence of single-use packaging among households and local business actors remains high, primarily due to cost-efficiency and practicality considerations. In response to this issue, the present outreach initiative was designed to provide comprehensive education on the environmental implications of disposable packaging, while simultaneously introducing sustainable and eco-friendly packaging alternatives suitable for local MSME implementation. Through an integrative approach combining educational, demonstrative, and participatory methods, the program effectively enhanced the environmental awareness of local citizen concerning the importance of sustainable packaging practices. Evaluation results indicate that 78% of participants expressed a commitment to begin reducing their reliance on single-use packaging and to adopt more environmentally responsible alternatives.

Keywords: *Sustainability; package; single-use plastic; household*

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A. INTRODUCTION

The escalating volume of plastic waste in Indonesia—particularly originating from the food consumption sector—has emerged as one of the most pressing

environmental issues over the past decade. Various environmental studies and official reports indicate that a substantial portion of non-organic solid waste polluting both terrestrial and aquatic ecosystems is the byproduct of daily consumption activities, predominantly in the form of food and beverage packaging. Among the different types of plastic waste, single-use packaging such as plastic bags, styrofoam containers, and disposable food trays significantly contribute to the accumulation of persistent, non-biodegradable waste (Jambeck et al. 2015; Ministry of Environment and Forestry 2020; World Bank 2021).

A major source of this type of waste is the micro, small, and medium enterprise (MSME) sector, particularly those engaged in food production and distribution. While MSMEs play a crucial role in supporting local and national economic structures, they are simultaneously part of a production and consumption system that may generate considerable ecological consequences if not guided by principles of environmental sustainability. This phenomenon is particularly evident in Kelurahan Mangunsari, Kecamatan Gunung Pati, where field observations have shown that most food and beverage business actors continue to use plastic and styrofoam-based packaging materials. The widespread use of such materials is commonly driven by considerations of low cost and convenience, often without adequate awareness of their long-term environmental implications (Bappenas 2020; GGGI Indonesia 2022; WWF Indonesia 2020).

The primary concern with single-use packaging lies in its intrinsic material properties, which render it resistant to natural decomposition. Plastic and styrofoam can persist in the environment for hundreds of years, leading to soil contamination, clogging of drainage systems, and harmful impacts on ecosystems, including aquatic and soil-dwelling organisms. If left unaddressed, this condition is likely to exacerbate the environmental crisis and impose an increasing burden on local and national waste management infrastructures.

Therefore, a systematic and educational intervention is urgently needed to shift the mindset and practices of MSME actors regarding product packaging. Such intervention should aim to raise awareness of the ecological consequences of single-use packaging and encourage the adoption of more environmentally responsible alternatives. Educational programs must include the introduction of eco-friendly packaging options—such as biodegradable materials, recycled paper-based containers, or reusable packaging—as well as an economic perspective that demonstrates how environmentally conscious practices need not be financially prohibitive, but can instead serve as long-term investments in sustainable development (Lestari & Trihadiningrum 2019; UNEP 2018).

B. METHOD

1. Implementation Method

This community service program was conducted through a combination of **educational counselling, thematic socialization, environmental workshops, and practical demonstrations** facilitated by a team of lecturers from Universitas Negeri Semarang. The activities were designed to provide both cognitive and behavioral stimulation to local households and MSME actors, with a focus on encouraging sustainable packaging practices and reducing dependency on single-use materials.

2. Partner Profile

The program's target partners were 10 people (households and local MSME) located in Kelurahan Mangunsari, Kecamatan Gunung Pati, Semaran. These MSME actors primarily operate in the food and beverage sector, producing traditional snacks, catering services, herbal drinks, and ready-to-eat foods. Most of them use plastic-based packaging materials due to their affordability and ease of access. Prior to the program, the majority lacked awareness regarding the long-term environmental impact of single-use packaging and had limited exposure to eco-friendly alternatives.

3. Implementation Stages

The implementation process consisted of three main phases: **Pre-Activity**, **Main Activities**, and **Monitoring & Evaluation**, as detailed below:

1. Pre-Activity Stage

- **Initial Survey and Needs Assessment**:
  A structured survey was conducted to assess the types of packaging materials used by participants and their level of awareness regarding packaging waste and its environmental implications.
- **Stakeholder Coordination**
  The implementation team held coordination meetings with the one of Mangunsari citizen, MSME community leaders, and local facilitators to ensure administrative support and optimal participant involvement.

2. Main Activity: Environmental Socialization on the Reduction of Single-Use Packaging

Thematic sessions and hands-on activities were delivered in two hours class period. Participants were actively involved in simulations using real product packaging and received reference materials in the form of printed modules and eco-packaging sample kits.

3. Monitoring and Evaluation

- **Formative Evaluation (During Activity)**
  The implementation team conducted real-time observations and short interviews to monitor the level of engagement, the clarity of understanding, and the effectiveness of each session. Participant questions and concerns were recorded to inform future interventions.
- **Summative Evaluation (Post-Activity)**
  One week after the completion of the activity, a structured questionnaire was distributed to assess post-intervention impacts, including:
  - Increased knowledge about environmental issues related to single-use packaging
  - Changes in perception toward sustainable packaging alternatives
  - Readiness and willingness to transition to eco-friendly packaging
  - Early signs of behavioral change in business practices

C. RESULT AND DISCUSSION

1. Participant Profile

The community service activity involved 10 households and local MSME actors, predominantly operating in household-based food production. Demographically, the majority of participants were within the 30–50 age range. Despite their active engagement in food-related production, many lacked

exposures to sustainable packaging practices. A pre-activity baseline survey conducted prior to the intervention revealed that 88% of the participants relied on plastic or styrofoam packaging as their primary packaging material. This tendency was largely driven by the availability, low cost, and convenience associated with single-use packaging, with little to no consideration of its environmental implications.

2. Response to Educational Outreach

The educational sessions conducted during the main activity phase successfully broadened the participants' understanding of the long-term environmental consequences of single-use packaging. Participants showed high levels of engagement, particularly during the sessions addressing the environmental hazards of plastic waste and the regulatory framework surrounding its reduction.

The use of a demonstrative approach—introducing real examples of eco-friendly packaging alternatives such as banana leaves, oil-proof paper, cassava-based containers, and biodegradable cardboard—greatly contributed to participants' enthusiasm. Discussions became increasingly interactive, as participants actively posed questions related to the durability, cost-efficiency, and market reception of eco-friendly packaging materials.

Figure 1. Participant engagement during the educational session

The discussion-based format and simulation activities created a space for shared learning, encouraging participants to reflect on their current practices and consider feasible adaptations for their respective businesses. Moreover, participants expressed a sense of urgency to act more responsibly toward the environment without compromising the appeal or safety of their products.

3. Evaluation Results and Commitment to Change

Post-activity evaluation was conducted one week after the main activity using a structured questionnaire. The results indicated a positive shift in attitude and initial behavioural changes among participants:

- 78% expressed a willingness to transition from plastic-based to eco-friendly packaging in their business operations.
- 64% had already experimented with using banana leaves or recycled paper wrappers within the week following the training.
- 52% reported a positive response from consumers, indicating increased appreciation for the visual and environmental value of the new packaging.

These outcomes suggest that the intervention not only enhanced participants' environmental awareness but also had a tangible impact on their production behaviour and consumer interaction. The results validate the effectiveness of the participatory and demonstrative methods employed in this program.

However, several challenges remain that hinder the full and consistent adoption of eco-friendly packaging practices:

- The higher cost of alternative materials compared to conventional plastic options
- Limited local availability and supply chain constraints of biodegradable packaging products
- Lower physical resilience of some eco-packaging materials during storage and transportation processes

To address these constraints, it is recommended that the community collaborate with local cooperatives and green packaging suppliers to create a shared procurement system, which could reduce costs and ensure continuous supply. Additionally, follow-up training sessions focusing on efficient packaging techniques, storage solutions, and product handling are essential to improve participants' capacity to maintain product quality while utilizing sustainable materials.

These findings underscore the importance of sustained engagement, supportive policy, and local resource development in fostering environmentally conscious micro-entrepreneurship. The transition toward sustainable packaging, while initially challenging, represents a viable and strategic move for MSMEs seeking to align their operations with ecological and consumer trends.

CONCLUSION

The socialization of reducing the use of single-use packaging has proven effective in increasing awareness and encouraging changes in business practices among MSME actors in Kelurahan Mangunsari. Although challenges in implementation remain, this activity has laid an important foundation for the development of environmentally conscious and sustainable MSME practices. Similar initiatives should be continued on a regular basis, involving local government and alternative packaging providers as strategic partners, in order to foster a business ecosystem that is not only productive but also environmentally friendly. You may choose either 'conclusion' or 'concluding remarks' as title of the final part of your paper. In this section, you have to provide the general conclusions of your paper followed by your recommendations for future studies or your future prediction of the potential consequences of the conclusion of your study. You may also put your personal reflection after conducting your study.

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