

Community Empowerment in Waste Management Household Using Barrel Media

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Abstract

Economic development in Palopo City continues to increase; this has implications for waste production, which increases significantly in quantity, quality, and complexity. The development of time is always accompanied by population growth, so automatically, the amount of waste generation increases and does not increase, even though the available land is challenging to find sufficient land for waste processing. This service activity aims to increase community knowledge about household waste management and empower the community to convert household waste into organic fertilizer. This service activity has been carried out with various achievements by the output targets, namely, socialization of household waste management through this activity is expected to increase knowledge about household waste management properly and training in the utilization of household waste into fertilizer products that can be used for themselves or sold to provide economic benefits.

Keywords: Community Empowerment, Household waste management, Organic Fertilizer

1. Introduction

The escalating waste problem in Palopo presents a multifaceted challenge intricately linked with the city's demographic dynamics, economic evolution, and shifts in consumption patterns reflective of changing lifestyles. As of 2023, Palopo City's population stands at 190,867 individuals, each contributing to a daily waste generation rate of approximately 0.5 kg, cumulatively amounting to 95.43 tons of waste per day. This substantial volume of waste underscores the pressing need for robust and scalable waste management solutions (World Bank, 2018).

The infrastructure and facilities dedicated to solid waste management in Palopo are evidently inadequate, both in terms of quantity and diversity. This inadequacy, coupled with a general lack of public awareness, severely hampers the effectiveness and efficiency of waste management efforts within the city. Unmanaged waste accrues a variety of adverse impacts, ranging from becoming a harbinger of diseases and environmental degradation to contributing to air pollution through indiscriminate burning, which exacerbates global warming. Furthermore, the decomposition of waste releases noxious odors detrimental to health, while improper disposal in water bodies leads to siltation and heightened flood risks (Kaza, Yao, Bhada-Tata, & Van Woerden, 2018).

In addressing these challenges, a holistic approach involving all societal echelons—ranging from individual citizens to government bodies and the private sector—is imperative. The implementation of waste reduction strategies, encapsulated in the Reduce, Reuse, and Recycle (3R) philosophy, represents a critical pathway towards mitigating the adverse impacts of waste. Such strategies necessitate concerted, intelligent, and programmatic efforts to transform waste from a liability into a resource yielding tangible economic and social benefits, including enhanced public health and environmental aesthetics (Wilson, Velis, & Cheeseman, 2006).

The active participation of the community is paramount in the realm of waste management. Not only does it facilitate the tailoring of governmental interventions to the specific needs and attitudes of the local populace, but it also engenders a sense of ownership and responsibility towards the environment. Recognizing the significance of community engagement, targeted efforts to bolster community

involvement through educational campaigns, counseling, training, and direct participation in waste management projects are essential (Schübeler, Wehrle, & Christen, 1996).

A noteworthy initiative in Dangerakko Village underscores the potential of community empowerment in waste management. By engaging homemakers and young women, totaling 20 individuals, the program ensured household-level participation in waste management activities. This initiative introduced an innovative solution dubbed “TongKat,” a device engineered to convert household or food waste into valuable byproducts such as liquid fertilizer, Maggot, and ready-to-use compost. Given the predominant composition of food waste in the overall waste stream, this approach holds significant promise in substantially reducing the volume of waste destined for the final disposal site (TPA), thereby alleviating the burden on landfills and contributing to the sustainability of urban environments (Hoorweg & Bhada-Tata, 2012; Guerrero, Maas, & Hogland, 2013).

Therefore, the waste management conundrum in Palopo demands a multifaceted solution that transcends mere technical fixes to encompass community engagement, education, and the adoption of sustainable waste management practices. Through initiatives like the one in Dangerakko Village, not only can waste be transformed into resources, but it can also foster a more environmentally conscious society. It is through such integrated approaches that cities like Palopo can navigate the challenges of waste management and move towards a more sustainable and resilient future (Diaz, Savage, & Eggerth, 2005).

2. Method

The approach to implementing community empowerment activities aimed at enhancing household waste management in Dangerakko village is meticulously designed to address the most pressing issues identified within the community. This strategic intervention is planned to unfold in a comprehensive session that combines the delivery of educational content with an interactive discussion format. This blend of methodologies is chosen to maximize participant engagement and facilitate a deeper understanding of waste management principles and practices. To ensure the effectiveness of this session, the organizing committee has engaged a facilitator possessing the requisite expertise and experience in guiding communities toward sustainable waste management solutions (Wilson, Rodic, Modak, Soos, Carpintero, Velis, Iyer, & Simonett, 2015).

The demographic makeup of the participants in this pivotal activity is diverse, encompassing a wide array of community stakeholders to foster an inclusive and holistic dialogue on waste management. The participant group includes 25 individuals, carefully selected to represent different segments of the Dangerakko village community. This includes ten members from women's groups, primarily homemakers, who play a crucial role in household waste management decisions. Additionally, seven individuals from youth groups and other local organizations are involved, bringing fresh perspectives and dynamic energy to the discussion. The inclusion of five representatives from community stores and religious leaders ensures that the economic and moral dimensions of waste management are adequately covered. Finally, three village staff members are also participating, providing administrative insight and the potential for policy alignment. This diverse participant composition is instrumental in garnering broad-based support for waste management initiatives and ensuring that multiple facets of the community are represented in the conversation (O'Leary, 2012; United Nations Environment Programme, 2019).

In conclusion, the method of implementing community empowerment activities for household waste management in Dangerakko village is a carefully crafted strategy designed to engage a broad cross-section of the community. By leveraging the expertise of a skilled facilitator and fostering an environment conducive to active participation and discussion, this initiative aims to instill sustainable waste management practices among the villagers. The diverse composition of participants is expected to enrich the dialogue, enabling the formulation of comprehensive and inclusive waste management strategies that resonate with the entire community.

3. Result and Discussions

The initiative aimed at enhancing community engagement, particularly among mothers, in managing household waste in their homes presents a multifaceted approach to addressing waste management issues in Palopo City. This effort is not merely about reducing the volume of waste generated but also explores the potential economic benefits and applications of processed waste, especially as a fertilizer for plants. The successful implementation of this program can serve as a model for sustainable waste management practices, integrating environmental stewardship with economic viability (Wilson et al., 2015).

The establishment of the Waste Care Community Forum (FPSD) in Dangerakko Village marks a significant milestone in community-driven environmental initiatives. By forming this dedicated group, the community has laid a foundation for ongoing education, collaboration, and action towards more sustainable waste management practices. The FPSD serves as a platform for sharing knowledge, resources, and strategies, fostering a collective sense of responsibility and empowerment among its members (Swilling et al., 2014).

A key achievement of this initiative is the introduction and adoption of the TongKat method among participants. This innovative approach to household waste processing not only educates participants on effective waste management but also provides them with the skills to produce Tongkat media. The Tongkat method represents a practical, scalable solution to waste processing, turning organic household waste into valuable compost and liquid fertilizer, thereby closing the loop on waste generation and use within the community (Kaza et al., 2018).

Furthermore, the FPSD's commitment to implementing a comprehensive household waste management system signifies a proactive step toward addressing various waste streams within the community. This system, encompassing both organic and inorganic waste, underscores the importance of a holistic approach to waste management. By incorporating monitoring and evaluation steps, the FPSD aims to ensure the effectiveness and adaptability of its strategies, facilitating continuous improvement and refinement of waste management practices (Hoorweg & Bhada-Tata, 2012).

These efforts in Dangerakko Village highlight the potential of community-led initiatives in transforming waste management practices from the ground up. By focusing on education, practical skills development, and collective action, communities like Dangerakko Village are paving the way for a more sustainable and economically viable future. This model underscores the critical role of community engagement in addressing environmental challenges, demonstrating that with the right knowledge and tools, communities can significantly contribute to sustainability goals (Gui et al., 2017).

4. Conclusion

The culmination of the community engagement activity in Palopo City has brought forth significant strides in the journey towards sustainable waste management practices, particularly emphasizing the role of local communities, especially mothers, in environmental stewardship. One of the pivotal outcomes of this initiative has been the establishment of the Waste Care Community Forum (FMPS), a vital step towards institutionalizing community-led waste management efforts in Dangerakko Village. This newly formed entity is poised to spearhead the adoption and implementation of a comprehensive household waste management system, mirroring successful models of waste segregation, recycling, and monitoring mechanisms. Such systems are not only essential for reducing the volume of waste but also crucial in minimizing the environmental footprint of local communities.

The educational component of the initiative has equipped participants with invaluable knowledge and skills in managing household waste using innovative and sustainable methods, particularly through the TongKat method. This method, characterized by its simplicity and effectiveness, enables the transformation of organic waste into useful products such as liquid fertilizer, compost, and maggot,

which serve as critical inputs for agricultural and aquacultural activities. The ability to convert waste into economic assets underscores the dual benefit of this initiative—addressing waste management challenges while contributing to the local economy and food security.

Moreover, the initiative has laid a solid foundation for future waste management efforts through practical training in crafting TongKat media. This hands-on experience is crucial in ensuring the sustainability of waste management practices at the household level, empowering community members to take proactive steps in waste segregation right from the source. By integrating these practices into daily routines, the FMPS aims to foster a culture of environmental responsibility and sustainability within the community.

In conclusion, the collaborative efforts between local communities, particularly mothers and supportive organizations, have set a promising trajectory towards sustainable waste management in Palopo City. The establishment of the FMPS, coupled with the dissemination of practical waste management skills and the promotion of waste-to-resource initiatives, heralds a new era of environmental stewardship in Dangerakko Village. As this initiative continues to evolve, it holds the potential to serve as a model for other communities grappling with similar environmental challenges, paving the way for a cleaner, greener, and more sustainable future.

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