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The Impact of Digital Waste Initiatives on Enhancing Community Mindset in Daleman Kidul Village Aiming to Boost the Village Economy Through Maggot Farming, Organic Fertilizer Production, and Crafts from Inorganic Waste.

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Abstract: This research aims to analyze the impact of the Digital Waste House (DWH) program on improving the economy and changing the mindset of the people of Daleman Kidul Village, Pakis Subdistrict, Magelang Regency. This research uses a qualitative method with a descriptive approach. Data were collected through observation, interviews, and literature studies. The results showed that the DWH program positively impacted the economy and community mindset. This program increases awareness and community participation in waste management and opens opportunities to increase residents' income through selling waste sorting results, cultivating maggots, processing organic fertilizers, and making handicrafts from inorganic waste.

Keyword: Digital Waste House, community mindset, institutional-based waste management, qualitative.

INTRODUCTION

Waste is solid waste left over from human activity that is no longer used. The rapid population growth impacts the amount of waste generation and the type of waste produced. Consumption patterns, lifestyles, and the community's economy can also increase waste production. The problem of waste is a global challenge that requires serious attention. In Indonesia, waste generation continues to increase with population growth and economic activity. According to data from the National Waste Management Information System (SIPSN) in 2023, waste generation in Indonesia reached 38.2 million tons/year (Monika #). According to data from the National Waste Management Information System (SIPSN), Magelang Regency has 241,767 tons of waste per year. /year (Mustikasari 2021).

This condition is exacerbated by the lack of public awareness of the importance of sustainable waste management. Most waste is still disposed of in landfills, which can

negatively impact the environment and health. Waste problems are often neglected due to limited infrastructure and community knowledge about proper waste management. Lack of understanding of waste sorting and processing and the minimal alternative waste processing of economic value are the main causes of waste accumulation.

Therefore, innovation in waste management can increase public awareness, manage waste effectively, and create economic value. Digital Waste House comes as an innovative solution by integrating digital technology and community participation in waste management (Ginting Wiro Oktavius. (2022).

METHOD

This research uses a qualitative method with a descriptive approach. Data were collected through observation, interviews, and literature studies. Observations were made to observe the condition of waste management in Daleman Kidul Village. Interviews were conducted with several key informants, namely PKK Cadres, Youth Organizations, Farmer Groups, Village Officials, and the Daleman Kidul Village Community. Literature studies were conducted to obtain additional information and support data obtained from observations and interviews. The research location is in Daleman Kidul Village, Pakis District, Magelang Regency. Participants in this study were residents of Daleman Kidul Village who were involved in the Digital Waste House program. The qualitative data collected is analyzed thematically to identify patterns and meanings from the collected data.

RESULTS AND DISCUSSION

Conditions of Waste Management in Daleman Kidul Village



Picture 1. Waste in Daleman Kidul village

Based on observations and interviews, waste management in Daleman Kidul Village is not yet optimal. Most residents still dispose of waste carelessly. The limited level of education and lack of public awareness of the importance of waste management are the main factors in this problem. A lot of organic waste from harvest residues and household waste is neglected, as is inorganic waste, which has the potential to cause environmental pollution. As stated by Pak Edi from Dudan Hamlet, "There are some in the river or in the pine trees; there was even land for residents to dispose of garbage; if it's plastic, it's often burned."

Implementation of Digital Waste House and Its Impact

The Digital Waste House (DWH) program was initiated as an innovative solution to overcome the problem of waste in Daleman Kidul Village. This program focuses not only on

collecting and sorting waste but also on community empowerment through maggot cultivation, organic fertilizer processing, and handicrafts from inorganic waste. The people of Daleman Kidul Village are better acquainted with how to handle waste properly to avoid polluting the environment. The DWH program was initiated as an innovative solution to overcome the problem of waste in Daleman Kidul Village. DWH is here to facilitate recording, and every resident can also monitor waste prices online and offline.

Regular waste collection activities also invite various groups to care about waste. This can be seen from several hamlets, which were attended by various age groups, from children to parents. The digital waste house is also here to facilitate recording, and every resident can monitor waste prices online.



Picture 2 Daleman Kidul hamlet waste bank, Daleman Kidul village

Impact of the DWH Program on Improving Mindset

The DWH program has a positive impact on the economy and the mindset of residents. The people of Daleman Kidul Village are better acquainted with how to handle waste properly to avoid polluting the environment. Regular waste collection activities also invite various groups to care about waste. Waste sorting and sales provide a new source of income for residents that can be used as village treasury, as stated by Pak Edi from Daleman Kidul Hamlet, "Scattered garbage can disturb the environment, and some can still be used."

Challenges and Opportunities

Although the DWH program has a positive impact, there are still several challenges. First, the limitations of waste management equipment. This includes the availability of waste processing facilities and infrastructure, which are still limited. Second, the need for regular mentoring and training. The community needs regular mentoring and training to improve knowledge and skills in waste management and ensure the sustainability of the Digital Waste House program.

However, there are also opportunities that can be developed. First, regional government support in handling waste. This support can be in the form of providing infrastructure, training, and funding to support the DWH program. Daleman Kidul Village has budgeted for waste management in the following year through MUSRENBANGDES (Village Development Planning Deliberation). Second, increasing public awareness of environmentally friendly products. The DWH program can encourage people to use environmentally friendly products and reduce the use of products that pollute the environment. Third, the potential for developing

tourist villages integrated with the DWH program. The DWH program can improve the personal branding of Daleman Kidul Village. Some residents, such as Pak Sarji from Gumuk Hamlet, said, "I already know a little about the types of waste," a sign that residents already have basic knowledge for implementing organic and inorganic waste processing.

SWOT Analysis



The program received support from the village and sub-district governments, academics (PPK Ormawa HMJM FE UNTIDAR Team and Tidar University), village communities, and related agencies, indicating good collaboration. This is reinforced by the statement of Mrs. Surani from Powan Hamlet, who stated, "I strongly support the waste bank program."

Strengths

- This village has abundant natural resources (agricultural products, bamboo) and a rich culture that can be utilized to support waste management programs and improve the community's economy.
- The program has received support from the village government, academics (PPK Ormawa HMJM FE UNTIDAR Team and Tidar University), village communities, and related agencies, demonstrating good collaboration.
- The implementation of Digital Waste Houses and related applications (Banksampah.id, Mysmash) shows efforts to utilize technology in waste management.
- Programs such as maggot cultivation (as chicken feed or can be sold directly), organic fertilizer processing, and handicrafts from inorganic waste are expected to have the potential to increase the benefits of organic waste processing for the community.

Weaknesses

- The majority of villagers only have an education up to the junior high school level, which can hinder the application of technology and understanding of more complex waste management concepts.
- The program still requires regular mentoring and training, indicating that the community is not yet fully independent in waste management.

Opportunities

- The local government has a target to complete the waste management problem by 2025, which can be an opportunity to get further support in the waste management program in Daleman Kidul Village.

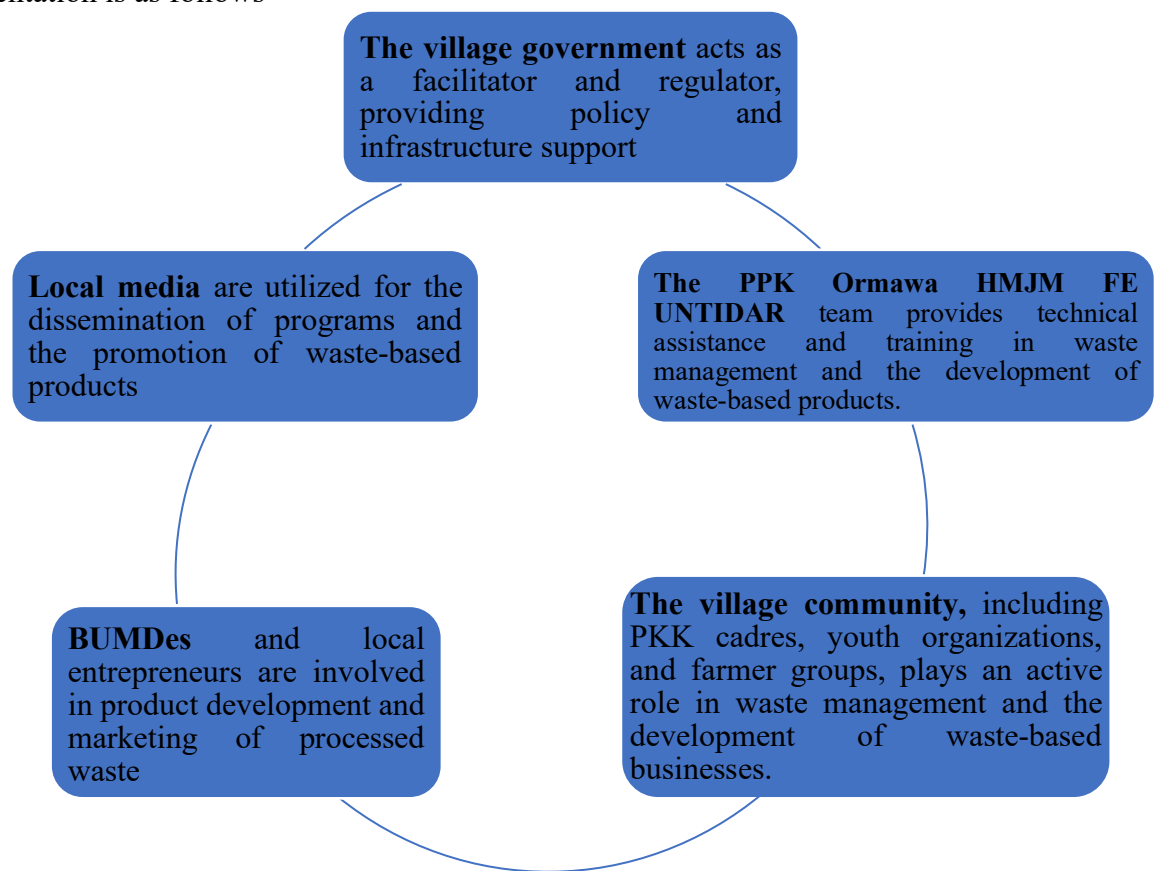
- Increasing public awareness of the importance of environmentally friendly products can be an opportunity to market processed waste products from this village.
- Tourism potential in the village, such as swimming pools and natural beauty, can be integrated with the waste management program to create a sustainable tourism village.

Threats

- The majority of the population relies on agriculture for their livelihood. This makes them vulnerable to fluctuations in agricultural product prices, which could impact their ability to participate in the program and develop waste-based businesses.
- Products derived from waste processing might face competition from similar products already available in the market. This could make it challenging to establish a foothold and achieve profitability.

Implementation of the Pentahelix Model

Adapting from the pentahelix model according to Arif M, et al (2024), the implementation is as follows



CONCLUSION

Based on the results of qualitative data analysis, it can be concluded that the Digital Waste House (DWH) program has a positive impact on improving the mindset and economy of the community in Daleman Kidul Village. The DWH program has successfully integrated waste management with community economic empowerment in Daleman Kidul Village. This program not only overcomes waste problems but also increases community awareness and creates new economic opportunities.

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