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Barriers and facilitators in implementing household waste management program in West Kotawaringin

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Abstract

Purpose: This study aims to evaluate the program at South Arut District to explore barriers and facilitators in the household waste management program. **Methods:** This qualitative case-explanatory study used a thematic analysis approach. Thirteen respondents were the environmental service chair, the health office, the sub-district of South Arut, the cleaning staff (2 people), the Yayorin manager (NGO), restaurant owners, farmers, fishers, Aisyiyah, Bawi Dayak, Culture and Tourism Association, student, head of RT 15, and household member with at least three years residence in Pangkalan Bun. **Results:** The parties forming regulations are the Environment Service, Public Works Service, South Arut Sub-district, kelurahan, and village heads. The budget is 21 billion rupiahs. Program coordinators in each unit are still not optimal in managing activities that can produce marketable outputs. The strategies are socialization, distributing pamphlets, and broadcasting broadcasts on regional television channels. The inhibiting factor is the perception of people who do not care about the environment and lack infrastructure. The driving factor is the self-awareness of people who care about environmental cleanliness. **Conclusion:** Local governments need to consider having an executive manager and operational management team in each unit who can add the necessary infrastructure and closely monitor implementation, which will maximize the production process with marketable products. Also, the management team must promote the utilization of the waste management system to the community.

Keywords: evaluation; management; waste management

INTRODUCTION

Waste is a classic problem faced by developed and developing countries because waste is a type of object or item usually unliked, a discarded item. As *the World Health Organization* (WHO) explains, waste is not used, worn, liked, or thrown away because of human activities [1]. The handling and management of waste are still being developed to this day.

As a developing country, waste problems in Indonesia are still a serious concern, along with the increasing population growth rate [2]. This means that the population growth rate significantly impacts the increase in waste generation in society in accordance with the Law of the Republic of Indonesia No. 18 of 2008 concerning Waste Management. The increase in the amount of waste is caused by several things, including population growth, less than optimal waste management, uneven and non-comprehensive management, and regulations in various regions that are not yet firm at the implementation stage. In 2016, the amount of waste produced in Indonesia was 65,200,000 tons per year, with a population of 261,115,456 people [3]. It is estimated that in 2025, waste will increase by 5-6 million tons, while in 2030, each country must substantially show the results of the waste reduction process through prevention, reduction, recycling, and reuse [3].

South Arut District's largest population presents a challenge and opportunity for effective waste management. The researcher's preliminary study found that some people are still accustomed to throwing garbage in the wrong place, especially in the river. This is especially true for those whose homes have been hereditary on the banks of the Arut River, where household waste from the community has polluted them for a long time. Such conditions can occur because environmental health strategies and promotions have not been implemented effectively.

At the reduction stage, landfilling waste is still being used. The technology and creativity used to process household and household-like waste are not evenly distributed. The handling stage of sorting containers is not optimal, and transportation facilities are minimal. Another problem is that the capacity of the final disposal site located in Pasir Panjang Village has not been able to accommodate all the waste in the community.

The management method's limitations include the absence of a set time for the community to dispose of waste before the cleaning staff transports it. No waste bins are around the community's homes, resulting in people littering and a decrease in environmental quality, such as air pollution, in the area around the waste disposal container.

The above problems prompted researchers to research the implementation of household waste management program policies and household-like waste. The research topic researchers raised attention of Household Waste Management Program Policies and Household-like Waste in Arut Selatan District, West Kotawaringin Regency, Central Kalimantan Province".

METHODS

The type of research is qualitative with a case study-*explanatory research design*. The design of this research is a case study-explanatory design [4]. The research location is in Arut Selatan District, Pangkalan Bun, West Kotawaringin Regency. The study was conducted in September-November after obtaining approval from the FK-KMK UGM Ethics Commission (EC number KE/FK/0974/EC/2021).

Researchers used a non-probability sampling method. The inclusion criteria were members of the Pangkalan Bun community who were over 18 years old, domiciled in Pangkalan Bun for at least 3 years, and willing to be informants (signing *a*n informed consent form).

The subjects in this study were 13 people, the head of the environmental service (46 years old), the health service (48 years old), the sub-district head of South Arut (56 years old), the coordinator in the TPA environment (50 years old), the coordinator outside the TPA (44 years old), the non-governmental organization Orang Utan Foundation (62 years old), the owner of a restaurant (28 years old), a farmer (25 years old), a fisherman (41 years old), a women's organization/ Aiysiyah (46 years old), the Bawi Dayak, Culture, and Tourism Association of Central Kalimantan (55 years old), a student (21 years old), the head of RT 15 (55 years old).

The data analysis method in this study uses thematic analysis. Data validity uses source triangulation and method triangulation techniques. Data collection techniques are: data collection, experiencing data, data interpretation, data verification, and data representation [5].

RESULTS

Input

The parties or institutions involved are the Environmental Service, Public Works Service, Arut

Selatan Sub-district Head, sub-districts, and village heads. The budget prepared for waste management in 2021 is 21 billion rupiah.

Process

The waste reduction process consists of three stages: limiting generation, recycling, and reusing waste. Limiting waste generation has been achieved through socialization in the community. However, waste continues to increase significantly. Reasonable efforts have been made to recycle waste, such as using mineral water bottles to make bags or clothes and holding events or fashion shows using recycled materials. Bricks from basic plastic waste materials have also been reused.

The waste management process consists of five stages: sorting, collecting, transporting, processing, and final. The waste sorting process is still constrained because people do not sort waste according to its type. Except for B3 waste in health facilities, it has been well-conditioned. The waste collection process still has many points where the collection is not found at TPS and TPS 3R, except for B3 waste.

The transportation process already has a time or schedule for transportation at 5 am. B3 waste has been managed well from the source to the transportation process. The waste processing process uses the *sanitary landfill method* and compost through the shredding process. The final process of waste at the Trans-Lik TPA, Pasir Panjang Village, is processed into compost, and non-organic waste produces leachate that is safe to dispose of in nature. The Kotawaringin Regency Government's strategy involves conducting outreach, distributing pamphlets, and broadcasting on the regional television *channel* SBTV.

Output

Output is still very low due to low public awareness and the fact that people are still not accustomed to using recycled materials. Waste handling output is still low. However, the results of the collected waste can be managed and made into products.

Obstacles and encouragement

Obstacles to waste management in West Kotawaringin are the behavior of people who throw garbage in any place and inadequate infrastructure that causes people to throw garbage anywhere. According to the Head of Waste and B3 Waste Division of the West Kotawaringin Regency Environmental Service, the factor that drives people to comply with throwing garbage and managing waste properly and correctly comes from the awareness of the community itself.

DISCUSSION

Input

The parties/institutions involved in obtaining input for the regent's regulation are the Environmental Service, Public Works Service, South Arut Sub-district Head, sub-districts, and village heads. This aligns with research conducted by Uje, Fitriyah, and Paselle (2011), which explains that the parties/institutions collaborating on waste management in Samarinda are the Sub-district Head, Sub-district, and RW/RT Head [6].

The waste budget in West Kotawaringin Regency is IDR 21,000,000,000, with IDR 7,000,000,000 to fulfill suggestions and infrastructure. According to the Head of Waste and B3 Waste Division of the West Kotawaringin Regency Environmental Service, the funding is sufficient to manage waste in the community.

Process

The reduction stage consists of three processes: reducing waste generation, recycling, and reusing waste. Limiting waste generation has been carried out through socialization within the community. However, waste continues to increase significantly over time. The population mainly contributes to the amount of waste generated [7].

Reasonable efforts have been made to recycle waste, such as using mineral water bottles to make bags or clothes and holding events or fashion shows using recycled materials. Research conducted by Lestari (2019) found that the results of processing at the Berlian waste bank are plant pots made from non-organic materials and compost made from organic materials [8]. Reusing waste in the form of bricks from basic plastic waste materials is very beneficial because it can reduce shopping costs, save landfill space, and create a beautiful environment [9].

The handling stage comprises five processes: sorting, collecting, transporting, processing, and final. The waste sorting process is still constrained because people do not sort waste according to type. Except for B3 waste in health facilities, it has been well-conditioned. According to Lestari (2019), in Dumai City, there is no waste sorting process because facilities and infrastructure used for the auction process still have many points where the collection is not found at TPS and TPS 3R, except waste. The results of Lestari's research (2019) stated that people

in Dumai City still burn waste in their home environment, which can be dangerous for respiratory health [8].

The transportation process already has a time or schedule for transportation at 5 am. B3 waste has been appropriately transported. The appropriate transportation is a specific *container truck* equipped with a press tool to compact the waste with 2-4 trash [10]. The waste processing process uses sanitary landfills and composting through shredding. Sanitary landfills are controlled waste processing methods with a sound sanitation system [9]. The final waste process at the Trans-Lik TPA, Pasir Panjang Village, is composting. Non-organic waste produces leachate that is safe to dispose of in nature. However, leachate must be processed because it can pollute wells and rivers, killing biota or causing disease in the community [11].

The Kotawaringin Regency Government's strategy involves conducting socialization, distributing pamphlets, and broadcasting on the regional television *channel* SBTV. These socialization and education activities for the community aim to increase public awareness of the importance of protecting the environment and reduce the government's burden in terms of environmental conservation [8].

Output

The achievement of the waste handling and reduction process in West Kotawaringin Regency is still low at 1%. Only some people sort organic and non-organic waste using animal feed or compost. The expected target of this waste recycling activity is that it can be carried out by every member of society who produces waste, reducing the volume of waste [8].

Obstacles and encouragement

Obstacles to waste management in West Kotawaringin are people's behavior of throwing waste anywhere and inadequate infrastructure, resulting in people throwing waste anywhere. Facilities and infrastructure must be considered because they are essential in waste management, especially in transporting waste to the final disposal site (TPA) [8]. Meanwhile, the community's awareness is key to ensuring the management process is carried out properly and correctly. Factors that can influence people not to comply with waste management include the lack of government outreach regarding regulations on waste management to the community [6].

CONCLUSION

The parties drafting the regent regulation are the Environmental Service, Public Works Service, Arut Selatan Sub-district Head, sub-districts, and village heads. The waste management budget is 21 billion rupiah. Reducing waste generation, recycling, and reusing waste produces crafts and bricks from plastic, but this process is not yet optimal. The sorting, collection, and transportation processes have not been implemented optimally. The final waste process is good, using *sanitary landfills* and environmentally safe leachate.

The government's waste management strategy involves socialization, pamphlet distribution, and broadcasts on regional television *channels*, such as SBTV. *However, the* reduction and handling output is still below 1%. The community's low mindset and inadequate facilities and infrastructure are waste management barriers. The community's awareness is the driving factor in ensuring good and correct waste management. The West Kotawaringin Regency Government needs to socialize waste management in the community massively, inspect waste management facilities, and optimize waste processing results to obtain economic value.

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