



Development Factors of Household Waste Reduction Based on the Waste Bank Program on the Quality of Area Facilities

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Abstract

Implementation of environmentally friendly waste management using a community-based 3R pattern in the form of a waste bank. On-site handling or handling of waste at the source is the treatment of waste that still has economic value which is carried out before the waste reaches the disposal site. This research is descriptive and qualitative research, relying on primary and secondary data collection. Data analysis refers to regulations related to waste. Conclusions are drawn deductively. The results of the analysis show that through a participatory approach, the community is able to identify, analyze and map their own problems, potential, threats and obstacles to the waste problem, as well as find solutions to the waste problem.

Introduction

Based on Batam City Regional Regulation (PERDA) No. 10 of 2016 concerning the Establishment of Regional Apparatus Organizations, the Batam City Environmental Service is a combination of the Batam City Environmental Impact Control Agency (BAPEDAL) and the Batam City Cleanliness and Parks Service (DKP) which has the task of administering Regional Government affairs in the field of Environment and Waste (Sidabutar Yuanita, 2021).

In line with the existence of Bureaucratic Reform which is marked by demands for good governance, namely accountability, transparency and community participation in every process of making public policies, the Batam City Environmental Service is opening itself to the public in providing information and policies. -Environmental Service policies that are easy to access. In this case, in accordance with Law no. 14 of 2008 concerning Public Information Openness (KIP) (Sidabutar & Indera, 2021).

Hopefully the website dlh.batam.go.id can be useful. As well as realizing that there are still many shortcomings and weaknesses in terms of the content and what is presented on this website, we expect input and criticism that is constructive in improving information about the Living Environment further. Suggestions and criticism can be sent via email: dlh@batam.go.id.

The Batam City Environmental Service was formed based on Regional Regulation (PERDA) Number 10 of 2016 concerning the Formation and Composition of Batam City Regional Apparatus which is a combination of the Environmental Impact Control Agency (BAPEDAL) and the Batam City Cleaning and Landscaping Service (DKP) (Sidabutar, 2020).

The Batam City Environmental Service is a Type A OPD which consists of 1 (one) Secretariat and 4 (four) Divisions including: (1) Supervision and Enforcement Sector; (2) Waste Management Sector; (3) Environmental Management Sector; (4) Environmental Protection Sector.

Observing Law Number 18 of 2008 concerning Waste Management, as well as Government Regulation number 81 of 2012 concerning Management of Household Waste and Waste

Similar to Household Waste, mandates the need for a fundamental paradigm change in waste management, namely from the collection-transport-dispose paradigm to processing that focuses on reducing waste and waste handling. Waste reduction activities mean that all levels of society, including the government, the business world and the wider community, carry out activities to limit waste accumulation, recycle and reuse waste or what is better known as Reduce, Reuse and Recycle (3R) through smart, efficient and programmed efforts (Masfar et al., 2023).

The socialization of the Segregate Waste from Home Movement is a collaborative program between the Batam City Environmental Service and the Batam City PKK Mobilization Team. In this event, the Head of the Department gave a speech and provided information about the importance of sorting waste from home. He said that currently the average amount of waste entering the Telaga Punggur landfill every day is 850 tons/day.

In the Environmental Law (UU PLH) article 1 paragraph 9, impacts are environmental changes caused by an activity. What is meant by environment is that it consists of physical and non-physical environments. The physical environment is an environment that includes physical aspects including land use, ownership and control of land. Meanwhile, non-fiscal, namely the community environment, includes social, economic and cultural aspects. Impact can simply be interpreted as the result or influence when making a decision, which is reciprocal between one another. In line with that, impact is a state of reciprocal relationship between one another as a result of what is influenced and what influences. Impacts can be positive or negative. Many factors influence the determination of whether the impact is beneficial (positive) or detrimental (negative) (Shields et al., 2021; Morwanto et al., 2023). When assessing social impacts, it is necessary to pay attention to the following things (Vanclay, 2002). 1. Impact on way of life, such as how people live, work, play and interact with each other after the development or program. Volume 1 Issue 1, June 2021. p. 18-31. Sutiawati, DA et al. 22 2. Impact on community involvement or participation in village traditions, after the development or program. 3. Impact on the political system, looking at people being able to participate in decisions that affect people's lives, the level of democratization that is occurring, and the resources provided for the purpose of this program. 4. Impact on the environment by looking at the quality of air and water used by the community; the availability and quality of the food they eat; the level of danger or risk, dust and noise to which they are exposed; the adequacy of sanitation, their physical security, and their access to and control over resources. 5. The impact on the health and well-being of society sees health understood in a similar way to the World Health Organization, namely a state of complete physical, mental and social well-being, not just the absence of disease or infirmity. 6. Impact on personal and property rights looks at whether people are economically impacted, or experience personal harm that may amount to a violation of their civil liberties. 7. Impact on people's fears and aspirations, namely people's perceptions about safety, people's fears about the future and their community and the future of their children. (Finsterbusch, Llewellyn, & Wolf, 1983) Evaluation of policy impacts differentiate policy consequences into two types, namely output and impact. Output is goods, services or other facilities received by a certain group of people, both the target group and other groups that are not intended to be touched by the policy. Meanwhile, impacts are physical and social conditions as a result of policy output (Wibawa, 1994; Saputra et al., 2024).

Local wisdom is a creative response to local geographic-political, historical and situational situations. Local wisdom can also be interpreted as a view of life and knowledge as well as various life strategies in the form of activities carried out by local communities in responding to various problems in meeting their needs (Sidabutar Yuanita, 2021).

According to Sedyawati (2006), local wisdom is defined as wisdom in the traditional culture of ethnic groups. Wisdom in a broad sense does not only consist of cultural norms and values, but also all elements of ideas, including those that have implications for technology, health care and aesthetics. With this understanding, what is included as a description of local wisdom are various patterns of action and the results of its material culture (Martan et al., 2024).

According to Nasiwan et al (2012), local wisdom is wisdom or noble values contained in local cultural treasures such as traditions, sayings and life mottos. Facilities for managing waste using the 3R principles (Reduce, Reuse and Recycle), as a means of education, changing behavior in waste management, and implementing a circular economy, which is formed and managed by the community.

Waste Bank is a concept of collecting dry waste and sorting it and having management like banking but what is saved is not money but rubbish. Residents who save, also called customers, have a savings book and can borrow money which will later be returned with waste for the amount of money borrowed. The waste saved is weighed and valued at the amount of money will later be sold at the collaborating factories.

The waste bank is managed using a banking-like system carried out by volunteer officers. The main aim of establishing a waste bank is to:helps handle waste processing and the next aim of the waste bank is to make people aware of a healthy, neat and clean environment.

According to Dasrol & Bachtiar (2020), local wisdom has six dimensions, namely: (1) Dimensions of Local Knowledge: Every community has the ability to adapt to its environment because the community has local knowledge in controlling nature. Such as public knowledge about climate change and a number of other natural phenomena; (2) Local Value Dimensions: Every society has local rules or values regarding actions or behavior that are obeyed and agreed upon by all its members, but these values will change according to the progress of the society. The values of actions or behavior that exist in one group are not necessarily agreed upon or accepted in other community groups, there are uniqueness. Like the Dayak tribe with its tradition of tattooing and piercing in several parts of the body; (3) Local Skills Dimension: Every community has the ability to survive to fulfill their respective family needs or what is called substantial economics. This is a way to maintain human life which depends on nature, starting from hunting, gathering, farming, to home industry; (4) Local Resource Dimensions: Each community will use local resources according to their needs and will not exploit them on a large scale or commercialize them. People are required to balance the balance of nature so that it does not have a dangerous impact on them; (5) Dimensions of Local Decision-Making Mechanisms, Every community basically has its own local government or is called tribal government. A tribe is a legal entity that orders its citizens to act according to rules that have been agreed upon long ago. Then if someone violates these rules, then he will be given certain sanctions through the tribal chief as the decision maker.

Dimensions of Local Group Solidarity, Humans are social creatures who need the help of other people in doing their work, because humans cannot live alone. Just like humans work together to protect the surrounding environment.

Methods

The type of research used in this research is descriptive using a qualitative approach, namely conducting in-depth interviews and observations, then the results of the interviews and observations are processed so that data is obtained. This research was conducted in Patam Lestari Subdistrict, Sekupang District, as one of the subdistricts implementing the Waste Bank program. The selection of this research location was based on data obtained that Patam Lestari sub-district is one of the waste banks that is active in waste management in Sekupang District

(Sekupang District Central Waste Bank, 2023). The informants in this study represented 2 groups, namely the Waste Bank Managers of RT 02 Nirwana Residential Housing and Tiban Makmur Paris II Housing, 2 people, 4 people from the Community and the Head of Patam Lestari Village. This research was conducted from August to December 2023. The focus of this research is: (1) Description: Describe the condition of the community before and after the waste bank program, (2) Profile: Find out the community's understanding of the waste bank program, (3) Identification : Impact felt by the community with the waste bank program, (4) Projection: Impact expected by the community with the waste bank program, (5) Evaluation: Community assessment of the waste bank program, (6) Feedback: Efforts that have been made and are will be carried out to develop a waste bank program (Sutianto et al., 2023).

The data that has been collected is then analyzed qualitatively, namely data in the form of information, both verbal and written, which is not numerical in nature. Data is grouped to make it easier to filter which data is needed and/or not. After grouping, the data is then explained in text form so that it is better understood, then conclusions can be drawn from the data so that they can answer the main research problem.

Results and Discussion

Based on the results of research conducted to discuss the impact of the waste bank program in Patam Lestari Village, Sekupang District through interview and observation methods which are linked to the impact theory and concept forward.

Description

The public in general does not really know and understand about good waste management. People still use the concept of collect and transport. Good waste management applies the 3R concept (reuse, reduce, recycle). Some time ago, the 3R concept was still difficult to implement because people were still unfamiliar with this concept because the relevant government had not socialized this matter optimally. After looking at the existing waste problem, the government created a program called "Trash Bank" with Volume 1 Issue 1, June 2021. p. 18-31. Sutiawati, DA et al. 26 hopes that this program can reduce the amount of waste, educate the public and improve the economy of the local community (Sidabutar & Indra, 2021). In its development, socialization by waste bank managers has had a good influence in changing people's thought patterns and behavior in using waste. This socialization is able to mobilize the community to involve themselves as important actors in the smooth running of the waste bank program. Local communities who have been involved as customers also have concern for the surrounding environment to play a role in inviting other communities to get involved in this waste bank program. This also influences the level of awareness of the people of Bakung Village in looking at waste so that many people are starting to take the initiative to utilize the waste produced (Suhar & Sidabutar, 2023). Based on the results of observations made by researchers, the people in Bakung Village have implemented the 3R concept although there are still some who have not used this concept because they are still there is rubbish thrown directly on the side of the road. Before the Waste Bank Program, the people of Bakung Village still didn't understand the 3R concept, so people only used the collect-transport-dispose concept, which seemed futile. After the Waste Bank Program, the community began to understand the 3R concept and started thinking about how to use it. waste while participating in efforts to reduce the amount of waste in society.

Reduce, Reuse, Recycle" is the intention Waste management consists of three elements, namely, "Reducing", "Reusing" and "Recycling" waste (also known as 3R).

Table 1. of three elements, namely, "Reducing", "Reusing" and "Recycling" waste

Function and Use of Facilities	Strengths (Strengt)	Weaknesses (Weakness)	Opportunities (Chance)	Threats (Challenge)
Regional Facilities	Have more government budget resources (APBD).	Socialization from related agencies is lacking	There is a lot of organic waste in Batam	People are less enthusiastic about this program
Function and Use of Facilities	High level of community participation	Lack of Government participation	Improving community welfare	Competition with other areas such as Surabaya

The study of the Waste Bank programme in Patam Lestari Village, Sekupang District examine how this programme influence present methods of waste disposal and the extent of the social economic benefits. At the beginning, citizens of the country and residents had no ideas and minimal understanding of efficient waste disposal, and the regular practice was the “collect and transport” method. This method only entails the accumulation of waste and conveyance to a disposal area it does not respond to the issue of waste minimization or a call to recycling and reuse.

The evolution in waste disposal strategy Practice was marked by introduction of the famous 3R concept which included reduce, reuse and recycle. Nevertheless, this idea also had its implemented problems that needed to be overcome. From this aspect, the residents claimed the local government failed to better popularize the importance and ways of the 3R concept to them. Understanding the necessity for better organization of the wastes, the government has initiated the activity called “Trash Bank” in June, 2021. This program was designed with multiple objectives: in order to minimize the production of waste, to raise awareness of population on proper disposal of waste, and to stimulate the development of local economy through recycling and using of secondary materials (Soni et al., 2022; Oh & Hettiarachchi, 2020).

The waste bank program therefore introduced and implemented viable positive changes on the community. By focusing on the results, one of the components that positively influenced its performance was the proper socialization implemented by the waste bank managers (Astheria & Herdiansyah, 2022). These managers were involved in all duties of enhancing the society’s awareness and altering its perceptions towards wastes. Working depends on the target audience to stir up interest in the development of 3R concept through awareness creation campaigns in form of workshops, community meetings and educational campaigns to create that awareness of 3R and how it can be implemented in our daily practice. Thus, the inhabitants regarded themselves as significant subject in waste management process and engaged as active participants into the program (Fadhullah et al., 2022).

Another factor that was tied heavily to the effectiveness of the waste bank program was community participation. The inhabitants of the area who became customers of the waste bank felt responsible for the environment (Fatmawati et al., 2022). They not only use the products of the program themselves but also invited neighbors and friends to take part in it. It thus played a big role in raising awareness of the population and engaging everyone towards proper waste management.

Some of the findings that was noted by the researchers indicated that there was a significant reduction in the conduct of ill-mannered from the inhabitants of Bakung Village by the implementation of waste bank program. Earlier, people living in the community rarely knew the 3R concept and practiced the collect-transport-dispose procedure which was inefficient.

But then with the concept of creating the waste bank, the behaviour of the people they altered. Some residents embraced the 3R principles meaning they were able to find ways of minimizing what they threw away, extending the use of some items and recycle what they could. This change was proved by the use of the recycle bins and the overall improper disposal of wastes.

However, based on the findings of this study, there are also factors that may rise and challenges that may be encountered in the future, as presented by the following: Many of the strengths identified for the program were that APBD, government budget resources were available and the community involvement was high (Maskun & Istinah, 2020). These factors were useful in creating a convenient environment that supported the program's success. However, there have been some deficiencies, for example, that the related agencies were not fully socialized, and participated in government only to a certain extent. These weaknesses put into prescription the need for collective effort between the government and the community especially in supporting the program (World Health Organization, 2020).

The research also noted several areas for the improvement of the waste bank program. Thus, one of the opportunities identified was the availability of organic waste at Batam that can be need for composting or other recycling processes (Kurnianingsih et al., 2021). Further, they deemed the program as having the capacity to at least alleviate the conditions of communities by providing jobs and a lot of economic activities in waste disposal. However, the program also had several threats which are as follows: There is not much interest in waste management among the public and rivalry with other programs carried out in other regions of Indonesia, for instance, Surabaya. These threats warranted the constant need to actively engage the community and evolve the program to keep the interest of the target population active while at the same time ensuring that Triangle's program competed well for the limited resources your Programs receive.

Conclusion

Based on the results of the research that has been carried out, the author can draw conclusions regarding the impact of the waste bank program on society, namely that this waste bank program has had a very positive impact on society, especially on economic, social and environmental aspects. The waste bank program aims to reduce the amount of waste and improve the community's economy. In this waste bank program, the community is not only a supporter of this program but the community is also directly involved in the waste management process, especially household waste. Household waste is utilized and processed according to type and then the community gets economic value. This waste bank program can also be used as a solution to achieve a clean environment. developed because of the need to appreciate, maintain and continue collaborating with the Government and private parties.

The strategy for developing local wisdom-based tourism potential in Kampung Tua Patam Lestari is formulated based on local wisdom's Strengths, Weaknesses, Opportunities and Threats, including: (1) Increasing the potential of local wisdom by collaborating with the government and private parties; (2) Adding and improving existing supporting infrastructure by live in accordance with the situation, conditions, abilities, and values ilved in the society concerned; (3) Improving the quality of human resources in the tourism sector by providing training and assistance from the government. Maintaining the potential of existing local wisdom and creating innovative programs so that tourism development efforts can be optimal.

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