

Community Behavior towards Plastic Waste: Case Study in Nagari Batu Basa as a Traditional Village

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ABSTRACT

Sumatra Barat is a halal tourist area but many people throw rubbish carelessly. This phenomenon is a big problem, because environmental issues and waste are world issues. This study reveals the causes of people's behavior of littering using quantitative and qualitative methods. Using 30 observers who monitored community activities for 10 days. The population of this research is the people of Nagari Batu Basa, Pariangan Tanah Datar, Sumatra Barat, consisting of three Jorong (hamlet), Jorong Batu Basa, Jorong Koto Baru, and Jorong Sialahan. The results of the study reveal that people's behavior is to throw rubbish into the river because there are no regulations from the government, there are no rubbish bins, and there is no community initiative to make rubbish bins. People throwing rubbish carelessly has become a habit. People do not care about plastic waste because they do not have knowledge and understanding about plastic waste. Education about waste is also not provided to school students. Apart from that, the government does not pay special attention to plastic waste. The results of this study prove that regulations have an important role in shaping people's behavior in managing waste, especially plastic waste.

Keywords: *Rubbish; Plastic; Behavior; Environment; Public.*

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INTRODUCTION

Environmental issues and waste are world issues [1][2]. Joint agreement through the sustainable development goals program seeks to create a friendly, clean and healthy world [3][4]. There are many government policies formulated with environmental issues in mind [5]. Waste is a top priority because humans produce it every day. Indonesia is the second plastic waste producing country in Southeast Asia after Thailand [6]. This is homework for the Indonesian government because the waste problem is a serious threat to health and environmental comfort.

This statement is increasingly worrying because until now, the government's attention to waste has not been distributed evenly to the community. Because it is found that in some areas people do not care about waste or they throw rubbish carelessly [7].

The area of special attention in this study is Sumatra Barat, Indonesia, where this area is labeled as halal tourism in 2021. Apart from that, this area is also known for its customs and figures in building the Indonesian nation. However, plastic waste is found in almost every tourist area. One of the old areas in Sumatra Barat is the Pariangan sub-district, Tanah Datar.

Ideally, this traditional area and tourist area should be clean of plastic waste. However, in reality, plastic waste is scattered at this location.

Therefore, the causes of this problem must be revealed in order to find a solution. This study is designed to uncover the causes of people's behavior.

METHOD

This research is descriptive research with a mix method approach (quantitative and qualitative) [8]. This research is the initial stage of implementing community service in Nagari Batu Basa, Pariangan, Tanah Datar. This stage was carried out to reveal community behavior regarding plastic waste, in order to obtain an overview of the treatment that will be provided in community service later. This activity is also designed to involve students taking community service courses. The research instruments are divided into three, namely measuring environmental conditions, measuring government efforts in managing waste, and measuring community behavior towards waste as in Figure 1.

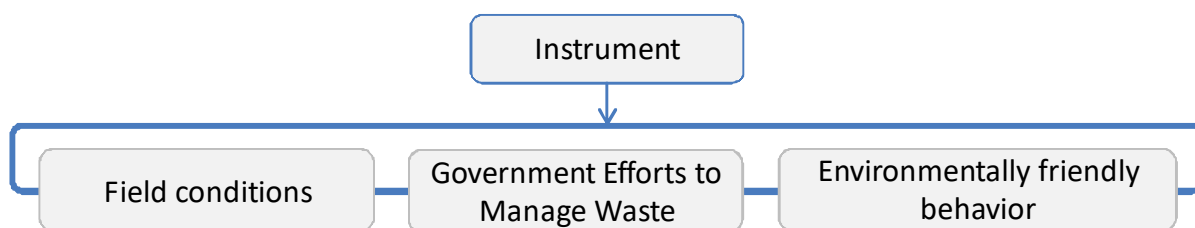


Figure 1. Research variables

Participants

This study used 30 observers (students). The population of this study is the Nagari Batu Basa community which consists of 3 Jorongs (Batu Basa, Koto Baru, and Sialahan). However in this study the population did not have an important role in data collection. The function of the population in this study is only as a community whose activities are assessed through observations made by observers. Apart from that, this research gathered information from the guardian of Nagari (1 person) and the guardian of Jorong (3 people).

Research subject and procedure

The research subject is people's behavior towards plastic waste. The instrument was designed based on policies regarding community activities related to waste. After the instrument is completed, it is given to the observer. They observed people's behavior regarding plastic waste disposal activities for 10 days. In addition, interviews were conducted with the heads of Jorong and Wali Nagari to obtain information about the government's efforts in managing plastic waste.

Data analysis

Data analysis in research only uses a simple percentage formula. The first part, measuring community behavior carried out by observers only uses a rubric with eight indicators. The assessment stage only uses the check option with two choices (available and not available). The data analysis process only refers to the number of checklist entries and the average is taken from 30 observers. The second part, data collection was only carried out by interviews with a list of 5 questions.

RESULTS AND DISCUSSION

Result

The results of this research consist of three main parts, namely the results of the observer's observations of community behavior towards plastic waste, environmental conditions, and the government's response in efforts to manage plastic waste. The results of the assessment of community behavior towards waste are explained in Table 1.

Table 1. Environmentally Friendly Behavior Assessment Rubric

Indicator	available	Not available
People do not burn rubbish		√
People do not throw rubbish into sewers/rivers/sea		√
People do not throw rubbish carelessly		√
People recycle non-organic waste into crafts		√
People recycle organic waste into compost	√	
People dispose of waste according to type		√
People bring their own bags to replace plastic bags		√
People reuse items that are still suitable for use		√

Based on 8 indicators of community behavior towards waste, only 1 indicator is implemented by the community of Nagari Batu Basa. Meanwhile, 7 other indicators have not been implemented by the community.

Next, the environmental condition is assessed, the observer assesses it using nine (9) indicators as in Figure 2.

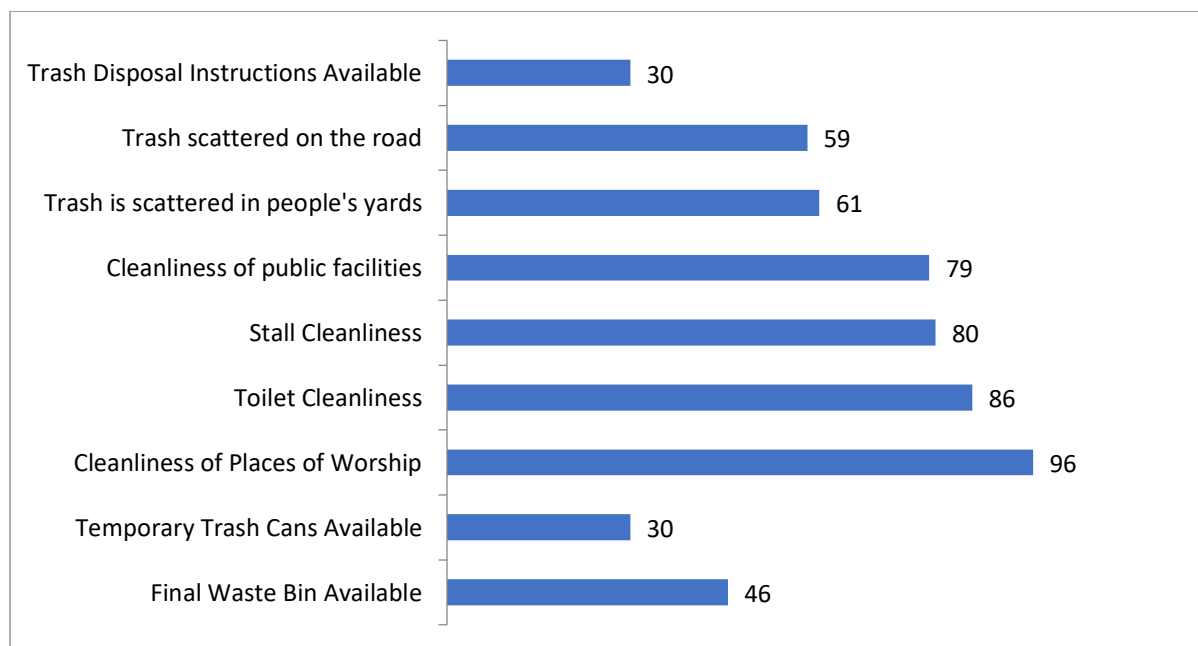


Figure 2. Assessment of environmental conditions

The assessment results in Figure 2 show that there are no waste disposal facilities available (temporary place or final waste place). Information boards regarding waste disposal instructions are also not available. However, several points have clean conditions, such as places of worship (mosques), public facilities, toilets and food stalls.)

Table 2. Government Efforts To Manage Waste

Questions	Responses
Does the government make special regulations regarding waste in this area?	There are no special regulations for waste
Does the government manage waste in this area?	No, waste management is left to the community
Does the government provide rubbish dumps?	The government has made plans for a trash bin program, but it has not been implemented at this time.
Does the government provide outreach on waste management?	The government carries out waste outreach to the community, but it is not the main program.
Where do people throw their rubbish?	They throw rubbish into the river or burn it

Based on the government's response to the three (3) initial questions, a response was obtained that was in accordance with field conditions (observations from observers) that there were no rubbish dumps in the area.

Discussion

The plastic waste problem that occurs in Nagari Batu Basa is caused by several reasons, firstly because there are no regulations from the government for waste management. This finding is important because the government plays a very large role in making policies for waste management. Apart from that, waste management regulations are very important to create a clean environment [9].

The second reason is because of people's habit of throwing rubbish into the river. This has become a habit of their parents. People are also used to burning rubbish because it is considered easier and more practical. In fact, burning rubbish is not allowed [10]. Therefore, the government should be consistent and try to implement regulations optimally.

The third very basic reason for the waste problem is because the government does not provide temporary or final waste bins. This is very vital, because people's behavioral patterns will be formed to throw rubbish into rubbish bins if provided by the government. This is supported by government policies regarding waste management [11][12].

Judging from community activities, community habits are assessed by observers based on eight (8) indicator, it was found that the community only manages compost waste in this area. Meanwhile, the community does not implement the other seven indicators. This means that this condition has become the behavior of society in general.

These results show how important the role of government is in creating a clean environment through regulations and collaboration with the community. Good behaviors are formed through the stages of creating regulations regarding waste management, providing rubbish bins, creating socialization programs, and even sustainable programs for the use of waste, especially plastic waste.

CONCLUSION

People throw plastic waste carelessly due to many factors, but the biggest cause is because there are no regulations regarding waste management, and there are no rubbish dumps. Apart

from that, people do not understand the negative impacts of plastic waste. Throwing away plastic waste becomes a habit because they are not equipped with knowledge about waste. Therefore, it is necessary for the government to provide regulations, waste bins, and provide attention, education and training to the community so that waste-conscious behavior is formed and they work together to create a clean environment.

REFERENCE

- [1] A. Teresa *et al.*, “Waste management from dental clinics : A case study in Belo,” *Waste Manag.*, vol. 189, no. August, pp. 177–184, 2024, doi: 10.1016/j.wasman.2024.08.027.
- [2] P. De Luca, “Green Building Materials: A Review of State of The Art Studies of Innovative Materials,” *J. Green Build.*, vol. 12, no. 4, pp. 141–161, 2019, doi: 10.3992/1943-4618.12.4.141.
- [3] J. Ayarkwa, D. G. Joe Opoku, P. Antwi-Afari, and R. Y. Man Li, “Sustainable building processes’ challenges and strategies: The relative important index approach,” *Clean. Eng. Technol.*, vol. 7, 2022, doi: 10.1016/j.clet.2022.100455.
- [4] L. B. Cole, “Green building literacy : a framework for advancing green building education,” *Int. J. STEM Educ.*, vol. 6, no. 18, pp. 1–13, 2019.
- [5] N. Syah, “Greenbuilding and Building Strength : Concept and Evaluation (Case Study in Universitas Negeri Padang) Greenbuilding and Building Strength : Concept and Evaluation (Case Study in Universitas Negeri Padang),” in *5th International Conference on Research and Learning of Physics*, 2022, doi: 10.1088/1742-6596/2582/1/012016.
- [6] I. S. Arumdani, A. S. Puspita, and M. A. Budihardjo, “MSW handling of top 5 leading waste-producing countries in Southeast Asia MSW handling of top 5 leading waste-producing countries in,” in *INCRID 2021*, 2021, pp. 1–7, doi: 10.1088/1755-1315/896/1/012003.
- [7] A. Ristanto, A. Solichin, A. V. Fitria, and T. Purwani, “Ecobrick sebagai smart solution dalam penanggulangan sampah di Kota Surakarta,” *J. Sci. Innov. Technol.*, vol. 2, no. 2, pp. 7–15, 2022.
- [8] L. Cohen, L. Manion, and K. Morrison, *Research Methods in Education*, 6th ed. London: Routledge, 2007.
- [9] A. P. Sunandar, F. Z. Farhana, and R. Q. C. Chahyani, “ECOBRIK Sebagai Pemanfaatan Sampah Plastik di Laboratorium Biologi dan Foodcourt Universtias Negeri Yogyakarta,” *J. Pengabd. Masy. MIPA dan Pendidik. MIPA*, vol. 4, no. 1, pp. 113–121, 2020.
- [10] Presiden Republik Indonesia, *Pengelolaan Sampah Spesifik*, no. 027851 A. Jakarta, 2020.

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- [11] Badan Pusat Statistik Indonesia, *Indikator Perilaku Peduli Lingkungan Hidup*. Jakarta: Badan Pusat Statistik, 2013.
- [12] S. Suminto, “Ecobrick: solusi cerdas dan kreatif untuk mengatasi sampah plastik,” *Prod. J. Desain Prod. (Pengetahuan dan Peranc. Produk)*, vol. 05, no. 01, pp. 11–15, 2020.