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Study of household waste handling in Buton Utara regency, 2022

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Abstract

Background: Waste handling is one of the health issues that founded in Buton Utara regency. The waste originating from households has not been managed properly. Many people who live in coastal areas still disposed their garbage into the sea. This is due to the lack of waste management facilities such as temporary landfill and waste transport. Therefore, this study aimed to identify the community's household waste handling.

Method: A quantitative descriptive was conducted in this study. Data collection was carried out by survey method using questionnaires and observation checklists. Total amounted samples were 3,640 households and the respondents were housewife.

Result: Most of the respondents (30,05%), burned their waste. Some of them, gave the waste to the informal collectors for recycling and the rest (0.27%) was composted.

Conclusion: Burning is one way of handling household waste that is carried out by most communities in Buton Utara Regency.

Keywords: Study; Handling; Household waste; Regency

1. Introduction

Nowadays, there are more and more sources of knowledge and learning regarding how waste management affects society and the environment.[1][3]. Globally, almost one-third of all food produced for human consumption is lost or wasted. This equates to 1.3 billion tons of food per year [4]. Leftover food is one of the waste materials from household consumption.

One of the major issues in the world currently is household waste, which is particularly severe in poor or developing countries such as Indonesia. Waste from household activities that cannot be handled properly will have negative impacts to community and environment [5].

The Ministry of Environment and Forestry Indonesia in 2021 recorded that out of 154 districts in Indonesia, the volume of waste was 18.2 tons per year. Only 72.95% managed properly [6]. In Indonesia, there are still people who dispose their waste in the wrong place such as in the rivers, irrigation canals, lakes or the seas. A census conducted in 2018 found out of 2,354 respondents, 198 respondents disposed of waste into rivers, irrigation canals, lakes, and the seas while 1,729 respondents burned their waste or put it in the ground hole [7]

Since 1995, the Ministry of Health Indonesia has made efforts to continue achieving clean and healthy behavior (PHBS) among Indonesia people to improve the quality of public health status. However the PHBS program has not obtained

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optimal results as expected [8]. The habit of disposing household waste anywhere is still prevalent in the community. Likewise, in Buton Utara Reegency

Buton Utara is one of regency's in Southeast Sulawesi Province. The result of survey in Kulisusu Sub-District, Buton Utara regency to identify the health issues, was found that the handling of household waste in the area was inadequate. Even the community in the coastal area, disposed the waste into the seas. This can be brought on the lack of temporary waste disposal sites and waste transportation facilities in the village [9].

Related to the problem, this study aimed to determine the waste handling that produced from household activities by community Buton Utara regency, 2022.

2. Material and methods

This study was a quantitative descriptive. Data was collected through surveys with questionnaires and observation sheets. Surveys were used to obtained the real condition in community related waste handling and the result were compared to observation data. The data in this study also were validated. The total samples of 3,640 households and respondents include housewives. This study used *proportional random sampling technique*. Data were analyzed using SPPS software version 20.0 and Microsoft Excel 2016, which is shown in the tables and figures.

3. Result and Discussion

Data collection was carried out by interviewing housewives as respondents and observing the environment. The characteristics of respondents by age group can be seen in following Table 1.

Table 1 The characteristic of respondents by age group

No	Age Group (Years)	n	%
1	<= 20	58	1.59
2	21 – 25	178	4.89
3	26 – 30	438	12.03
4	31 – 35	533	14.64
5	36 – 40	759	20.85
6	41 – 45	484	13.30
7	> 45	1.190	32.69
Total		3.640	100.00

Resource: Primary data, 2022

Table 1 showed that, the majority of the 3,640 respondents (32.69%) were more than 45 years old, while only 1.59% were less than or equal to 20 years old.

Table 2 The characteristic of Respondents by education level

No	Education level	n	%
1	Uneducated	349	9.59
2	Elementary School	1.547	42.50
3	Junior High School	501	13.76
4	Senior High School	809	22.23
5	Vocational School	106	2.91
6	University	328	9.01
Total		3.640	100,00

Resource: Primary data, 2022

Based on Table 2. The highest education level of respondents was university. However, the, elementary school was the highest percentage of respondents' education level at 42.50%, and vocational school was the lowest at 2.91%

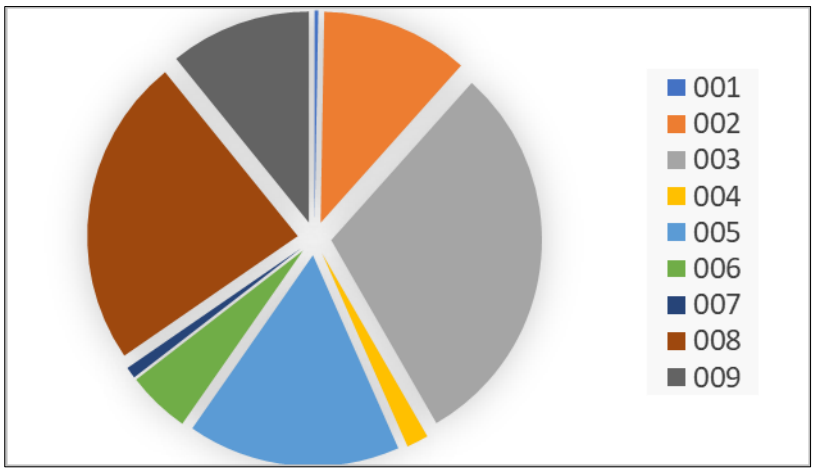
The surveys and direct home observations were conducted to find out how community handle waste from household activities. The result of surveys and observation showed in the following Table 3:

Table 3 The methods of household waste handling in Buton Utara regency, 2022

Code	Household waste handling methods	n	%
001	Collected by informal collector for recycling or organic trash buried in the ground/ composted	10	0.27
002	Collected and disposed of at the landfill	413	11.35
003	Burned	1.094	30.05
004	Buried in the ground	61	1.68
005	Disposed it in the open ground pit	595	16.35
006	Disposed into river, sea or lake	176	4.84
007	Just disposed around the home and left to decompose	32	0.88
008	Just disposed into the empty land/ garden/ forest and left to decompose	864	23.74
009	Unknown	395	10.85
	Total	3.640	100.00

Source: Primary data, 2022

Table 3 above indicated that majority of respondents (30,05%) burnt their household waste, and fewest of them (0.27%), their waste was collected by informal collector for recycling or the waste buried in the ground/ composed at 10 respondents (0,27%). The proportion of household waste handling by community in Buton Utara regency was displayed in the following figure 1:



Source: Primary data, 2022

Figure 1 Proportion of household waste handling by community in Buton Utara regency

Domestic waste is waste that generated from household activities including solid, liquid and gas wastes. Household waste is the unused solid material and disposed. The waste disposing has positive and negative impacts. One of negative impacts of household waste is environmental damage. Therefore, the proper waste management is needed.

The household waste of community in Buton Utara regency was handled by burned, disposed into the empty land/ garden/ forest and left to decompose, put in the open ground pit, collected and disposed in the landfill, disposed into the sea/ rivers/ lake, buried, just disposed around home and left to decompose, collected by informal collector for

recycling and the organic wastes was piled up and composted. From these methods, burning is mostly done by community. This was chosen because it was considered to require low costs and can be done without using a lot of energy. This was in line with the waste handling method with community in Baubau City, South East Sulawesi Province [5].

Globally, biomass burning has a negative impact on the environment, air quality, and climate. [10]. The burning garbage activity is one of air pollution source and human can be exposed it[11]. This exposure can lead to diseases such as acute respiratory infection ISPA, even more severe ones that can lead to pneumonia, especially in toddlers.

Beside burning, disposing waste into the rivers/ lake/ seas also has impact on the ecosystem. The water will contaminated by bacteria and hazardous chemical that come from the decomposition of waste in the water [12]. Another factor of community did this because the lack of temporary waste disposal sites (TPS) that providing by Government. The government support is needed to provide proper temporary waste disposal sites and ensure that waste transported every day to prevent the accumulation.

Actually, community wants to adopt sustainable waste practice but practice but they have the limited capacity to do it because of the structural barriers especially for recycling. For more effective, the campaigns of waste management focused on reuse and reduction practice must work by understanding how household norms interact with the larger system [13]. Additional challenges in adoption of sustainable waste practice to minimize the negative social and environmental impacts [14], such as education level of community [15].

Recycling waste is a better method in waste handling, however the community in Buton Utara regency rarely do this. With the private recycle center, there is a good chance of some with the high value recycling is diverted from landfill. However, the system is built around poverty. Other researchers found that scavengers generally have an income below the poverty line and they were at the bottom layer of waste recycling in many cities in developing countries [16][17].

The amount of waste generated that ends up as waste rather than being recovered. This was influenced by the existing infrastructure and also behavior, perception, social norm of human. In fact, a cross-country study found that social norm was a significant predictor of recycling and reduction waste [18] likewise with the cultural context greatly mediated the correlation. In Indonesia, awareness of cleanliness in the community is strongly correlated with waste sorting and reduction [19]. Countries may always produce waste, but how much the waste that is a product of the particular community and technologies that must be eliminated[20].

4. Conclusion

Mostly of community in Buton Utara regency chooses to burn the household waste and only a few people processing it first before disposed. This is like collected by informal collector for dan recycled or the organic waste buried in the ground or composted. This issue needs a special attention from Government for intensifying in waste handling in a way does not damage the environment or has negative impact in community. Besides being environmentally friendly, it can also increase people's income.

Compliance with ethical standards

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Disclosure of conflict of interest

All authors in the making of this scientific article have no conflict of interest.

Statement of informed consent

All informants/respondents involved in this study have stated their consent as informants/respondents to be interviewed and provided information/information in accordance with research needs.

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