

The Waste Management of Non-Organic Waste by Residents of Laut Dendang Region

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ABSTRACT

This study is aiming to observe the condition and utilization of non-organic waste by the residents of Laut Dendang Region. This study is implementing qualitative method. The data collection techniques used observation and interviews technique. The environment is very closely related to humans. Non-organic waste is typical waste that cannot be decomposed by bacteria and takes a very long time to decompose. The increasing volume of waste requires prospered handle in which management of Non-organic waste that does not use the method will have a very dangerous impact to the environment and human health. The most dangerous waste is Non-organic waste which produced by households and industry. The use of Non-organic waste requires ways that must be carried out by the residents of Laut Dendang Region to maintain the environment and public health.

1. INTRODUCTION

Hendrik L. Blum (1997) argues that the environment is the place of all living things in this world. However, the factor that affects the level of health is the environment. Environmental and behavioural factors are affected public health. Therefore, humans have the responsibility to protect the environment. Humans and the environment cannot be separated, because the environment is very important in life, especially for humans. A clean environment produces a healthy life and creating comfortable living environments.

Environmental damage is a change in the nature due to the lack of human awareness (Marpaung et al., 2022). Environmental damage is becoming a global issue. The major reason affected to the environmental damage is the human activity to catch up to the global development. Environmental problems are daunting for developing countries. However, this is considered a common problem because the problem that often occurs in the environment that cannot be avoided today is producing mass waste. The factor such the increase of our community in purchasing life needs (consumptive life) and the increase of business activity is affected to the economic growth, in which the phenomena could lead to the increase of waste amount (Listyaningrum et al., 2019). The human behaviour and lifestyles is also becoming the lead of the increase of wasted. According to several arguments from experts, the most environmental damage leads by the human behaviour such littering and using hazardous product (Hardiatmi, 2011). The other factor that also increases the environmental damage caused by waste is the increase of human population. The increase of human population has linked to the increase of food and other product which could lead to the increase of waste.

There are several types of waste that is gas, liquid, and solid. The gas emission is known as pollution which mostly produces by industrial sector and fossil fuels. The other waste such water pollution also becoming the major issues today cause many human waste from industrial, farming, and household activity use the water zone as the last place to dump their waste (Gusmarti et al., 2020). These two types (water and air) pollution is becoming the main issues to cause the high threat to the human lives. The threat is increase due to the waste is typically nonorganic form which might be contain with poisonous component (Raharjo et al., 2022). Moreover, this typical waste has small particle form which is more difficult to avoid. It also should be note that the human are very highly depend on the air and water consumption. The industrial sector, mining, and human households are the most sectors that produces the non-organic waste.

The waste problem is becoming a serious problem faces for all country around the globe. If government didn't make rapid move towards this waste problem, the environmental expert believes the waste problem could lead to the massive disaster. Facing this threat, several development countries were attempted to overcome this problem by provide regulation about environmental endangerment and provide method of waste management. According to National Regulation No 4 Year 1982 mentioned the environmental management has the main provisions regarding the environment that everyone has the right to a healthy environment, the obligation to maintain the environment, prevent damage, pollution, and has the right to play a role in environmental management. Marliani (2014) argues that waste management must use specific methods. The unmanageable waste will give a very impactful effect towards the environment and humans, especially for the non-organic waste type which is difficult to decompose. Moreover, the regulation other regulation also could create such the dispose method for nonorganic waste especially that categorizing for hazardous waste.

As mentioned previously, the human awareness becoming the major issues towards the increase of number of waste. Consequently, the environmental education should introduce to

the community to maintain the quality of environment. Environmental education is a process to carry out in educating the community to increase their awareness towards the environmental problem. According to Apriliyana (2016) that environmental awareness is a behaviour that aims to realize harmony between humans and the environment which affected to the human activity in utilizing the proper resources to protect the environment. The importance of education is also aligned with studies showing that waste utilization can generate economic value and strengthen community empowerment (Albani et al., 2021; Dewi & Pradhana, 2022; Fatmi & Muhammad, 2021).

2. METHODOLOGY

This research was conducted in Laut Dendang Region, Deli Serdang Regency. The subjects of study are involved by 20 people. The study is conducted using qualitative methods. The Interview is a technique used to obtain more accurate data or information about the issues or themes raised and in accordance with the research objectives by asking questions to respondents directly face to face. The observation technique is also conducted to observe directly how the utilization of Non-organic waste by the community who lives in Laut Dendang region. Furthermore, the data obtained from the field is analyzed carefully using qualitative approach by selecting the common similarity that obtained from the research participant.

3. RESULTS AND DISCUSSION

Laut Dendang is a part of Percut Sei Tuan Sub-district in Deli Serdang Regency, covering an area of approximately 2.88 km² with a population of 15,678 residents. Most of the waste produced in this region comes from household activities, student boarding houses, and food vendors, which aligns with previous findings that densely populated settlements tend to generate large quantities of non-organic waste, especially plastic (Listyaningrum et al., 2019; Albani et al., 2021). Similar studies also confirm that regions with rapid growth in food-related economic activities experience high waste accumulation and limited waste segregation practices (Gusmarti et al., 2020; Dewi & Pradhana, 2022).

Community interviews indicated that residents recognize the importance of waste management but have limited access to systematic programs or government-led waste management initiatives. This condition is consistent with earlier research showing that the absence of structured waste systems leads to inconsistent community participation in waste reduction efforts (Hardiatmi, 2011; Marpaung et al., 2022). Even though trash containers and periodic garbage collection services are provided, the rapid increase in consumer waste such particularly plastic bags and bottles causes containers to overflow daily. This mirrors findings by Kilay & Wenno (2021), who report that dependency on single-use materials significantly increases non-organic waste generation in urban communities.

Many residents attempt to manage waste by burning it, which unfortunately contributes to air pollution. This behaviour has also been observed in other regions where communities lack access to proper waste technologies or recycling facilities (Raharjo et al., 2022; Yustiani et al., 2022). Previous studies further highlight that unsustainable disposal practices, such as open burning, are highly related to low environmental awareness and limited technical knowledge (Apriliyana, 2016; Fatmi & Muhammad, 2021).



Figure 1. The condition of container in Laut Dendang Region

To reduce the impact of non-organic waste, waste sorting and the application of the 3R concept (Reduce, Reuse, Recycle) should be emphasized. Creating handicrafts or economically valuable products from plastic waste is a feasible strategy, as demonstrated in several community empowerment projects across Indonesia (Marliani, 2014; Ratnaningsih et al., 2021; Chotimah et al., 2023). Albani et al. (2021) and Betris et al. (2022) also note that recycling-based initiatives can significantly improve community income while reducing environmental pollution. However, several obstacles were identified: (1) the lack of technology for processing non-organic waste; (2) the absence of continuous government programs to assist residents in converting waste into useful products; and (3) low community awareness toward reducing environmentally harmful consumption. Similar barriers were also documented in studies on waste management readiness and circular economy implementation in rural and urban communities (Pambudi et al., 2020; Wahyuningsih et al., 2023; Nugrahini et al., 2022).

Education and employment were found to be major determinants of waste-related behaviour. Individuals with limited education tend to have lower awareness and knowledge about proper waste utilization, a pattern also identified by Mann (1994) and Listyaningrum et al. (2019). Employment status similarly influences waste behaviour, as those who spend most of their time at work generally show lower engagement in household waste management—an observation supported by previous behavioural studies on community waste practices (Hardiatmi, 2011; Yustiani et al., 2022).

In summary, government involvement is essential for creating structured, continuous waste management programs in the Laut Dendang region. At the same time, community awareness must be strengthened to reduce dependence on non-organic products and to promote creativity in converting waste into economically valuable goods. These findings align with national and international research emphasizing the crucial roles of community engagement, environmental education, and local policy support in achieving sustainable waste management (Kurniawan et al., 2024; Wahyuningsih et al., 2023; Nugrahini et al., 2022).

3. CONCLUSION

The regulations that have been implemented in Law No. 18 of 2008 regarding waste management require public awareness in utilizing waste properly. This waste utilization involves the community to pay attention to the characteristics of waste. Furthermore, the most dangerous waste in the environment is Non-organic waste. Based on the discussion above, the most important thing is the role of the community in utilizing waste, knowledge, and the level of public awareness in the dangers of waste.

The community should also noticed that the excessive use of Non-organic waste will harm the environment especially can cause flooding and pollution. Surely, the negative impact caused by non-organic waste will affect humans, animals and plants. Non-organic waste has characteristics that difficult to decompose. The common strategy use to handle non-organic waste through the application of Reduce, Recycle, and Reuse. The successful on the utilization and managing of non-organic waste will massively impact on environmental preservation.

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