

Analysis of Illegal Temporary Waste Shelters (TPSS) in Alam Barajo Sub-district Jambi City

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Abstract

Introduction: Alam Barajo Sub-district in Jambi City has been identified as the area with the highest waste generation, estimated at 79,202 tons per day or 28,988 tons annually, with a population of 101,350 as of 2022. Despite this high volume of waste, four illegal Temporary Waste Shelters (TPSS) were identified in the region. **Objective:** The purpose of this study is to Analyze Illegal Temporary Waste Shelters in Alam Barajo Sub-district, Jambi City. **Method:** A qualitative research method with a descriptive approach was applied, focusing on data collected between November 2024 and January 2025. The research explored several variables: the distribution and locations of illegal TPSS, contributing factors to their existence, their environmental and public health impacts, and the current management efforts in place. **Results and Discussion:** Distribution variables have been carried out in every illegal waste shelter, causal variables such as lack of public awareness, limited facilities and implementation of waste management regulations, causing environmental impacts and health risks. Efforts made by the government include improving facilities, educating the public, and enforcing applicable regulations. **Conclusion:** The findings revealed that the proliferation of illegal TPSS is mainly driven by low public awareness, inadequate official waste facilities, and weak enforcement of waste management regulations. These conditions contribute to environmental degradation and pose health risks, as accumulated waste serves as a breeding ground for disease vectors. Government efforts include infrastructure improvements, public education, and stricter enforcement.

Introduction

The environment is a condition directly linked to those who inhabit the area and all its components (Khoiriyah, 2021); (Nugroho, 2022). Environmental pollution is a serious issue that requires urgent attention from all stakeholders to mitigate its negative impacts and ideally prevent its occurrence (Hendra, Setiawan, & Handayani, 2024); (Erika & Gusmira, 2024); (Andayani, Zahra, Musafikah, & Qibtiyah, 2023). Environmental protection and management are conducted to preserve the environment and prevent pollution or damage through planning, utilization, control, maintenance, supervision, and law enforcement at Law Number 32 of 2009 (Herlina, 2017); (Azami & Kustanto, 2023); (Sriyanti, 2023)

Waste is the residue or by-product of human activities that is no longer useful (Reza & Syuhriatin, 2020); (Abidin & Marpaung, 2021);. Improper waste disposal behavior can damage the environment and negatively affect public health. Low awareness of waste management, lack of village government support, and limited facilities and infrastructure are the main factors driving littering behavior. Providing proper waste disposal facilities is a solution, as well as conducting socialization and education on waste processing to enhance public knowledge and awareness (Marpaung, Iriyanti, & Prayoga, 2022)

Poor waste management increases the risk of environmentally-based diseases. Some areas still lack proper waste management facilities, which can attract vectors that spread diseases such as diarrhea and dengue (Ahyanti, 2020). Jambi City Regional Regulation No. 5/2020 sets a goal to reduce waste by 30% by 2025 and process 70% of total waste. Waste management includes separation, collection, transportation, processing, and final disposal. Waste reduction strategies include limiting, reusing, and recycling (Regional Regulation Number 5 of 2020)

According to Jambi City's Environmental Service, the population of Jambi City in 2023 was 633,650 across an area of 205.43 km. Daily waste generation is recorded at 443.56 tons/day or 161,897.58 tons/year, with each individual producing about 0.7 kg of waste per day. As of 2022, Jambi City has 250 official waste shelters (TPS) distributed across districts: Alam Barajo (10), Danau Sipin (42), Danau Teluk (6), Jambi Selatan (24), Jambi Timur (18), Jelutung (39), Koto Baru (27), Paal Merah (9), Pasar Jambi (32), Pelayangan (6), and Telanaipura (39).

Alam Barajo is the district with the highest waste generation, at approximately 79.202 tons/day or 28,988 tons/year, with a population of 101,350 in 2022. The district has 10 official TPS, but with only 7 in good condition, 2 slightly damaged, and 1 severely damaged. There are also 12 illegal TPSS locations. Inadequate official waste management facilities contribute to poor waste behavior, including burning and illegal dumping, endangering the environment and public health. Given these issues, this study aims to analyze the distribution of illegal TPSS in Alam Barajo.

Method

This qualitative research uses a descriptive approach with a sample of 18 interviewees. Primary data include interviews, observation, document study, and documentation; secondary data include administrative data and TPSS distribution data. Conducted from November 2024 to January 2025, the study involved district heads, sub-district officials, waste collectors, and residents near illegal TPSS. Data were analyzed qualitatively using data reduction, presentation, and conclusion. Data validity was ensured through triangulation of sources, methods, and theory.

Research and Discussions

1. Results

The 18 informants included: 1 sub-district head, 5 sub-district staff, 2 waste collectors, and 10 local residents

Characteristics of Illegal TPSS

Based on the results of interviews and observations that have been carried out, it can be concluded that the characteristics of this illegal TPSS are TPSS located in an empty land, on the side of the road and also around the river. The waste is left to pile up without proper management, it can cause air, soil, water, and air pollution, resulting in an unpleasant odor. The government itself has made efforts to conduct joint surveillance patrols, as well as provide education to the public in the form of appeals, making prohibition banners. Garbage transportation is also still carried out 2 times a day at official TPS and illegal TPS. These efforts are in accordance with PERDA No. 5 of 2020 concerning the handling of Waste Disposal Sites.

"...From the study that we conducted in the field, in supervision, the obstacles that caused the illegal TPS, one is that sometimes the community complains that the official TPS is far away. So the garbage is thrown away, where can it be thrown away like that? For example, on the border, there are no official TPS. Automatically, looking at the empty location, people will throw it carelessly, right? But we have anticipated it, indeed educating the community, don't bring it carelessly anymore..." (Informan S)

The distribution of illegal TPSS that has been verified from reports from the sub-districts is at several locations:

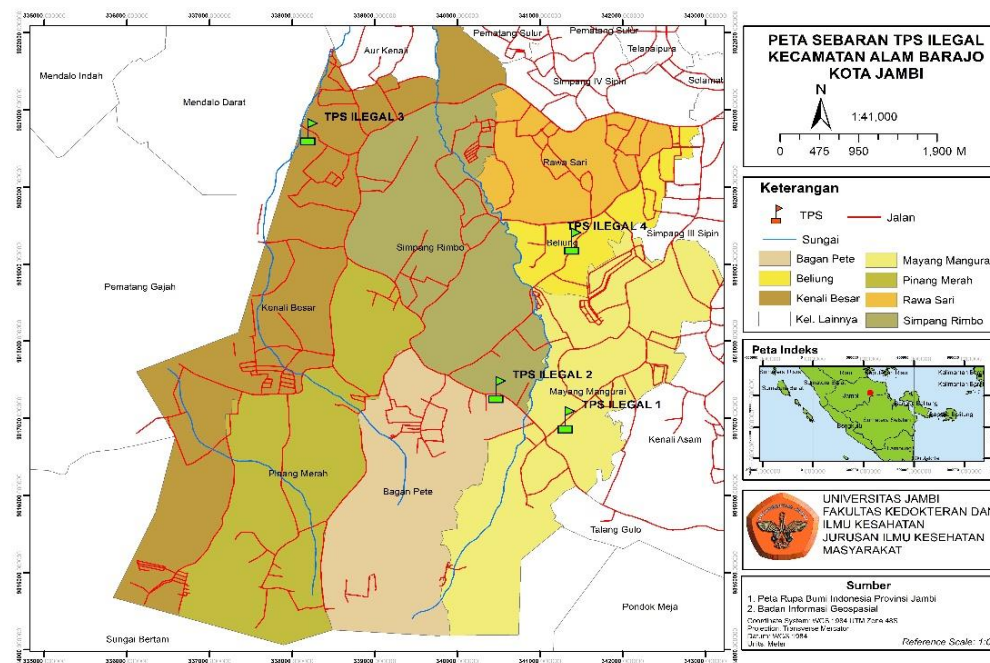


Figure 1. Map of Distribution of Illegal Polling Stations in Alam Barajo District

Kelurahan kenali besar

Kelurahan Ketahuan Besar is included in the kelurahan in Alam Barajo District. This kelurahan itself does not have an official TPSS since the expansion of the region in Alam Barajo District, so it is likely to cause the emergence of illegal TPSS. From the results of observations conducted at the location of illegal TPSS in Kenali Besar Village, it was found that the illegal TPSS is located on the border of Jambi City and Muaro Jambi, this illegal TPSS is lying on empty land on the side of the road and far from residential areas, but close to the river. The width of the illegal TPSS is about 2 meters and the length is about 5 meters, the volume of waste in Kenali Besar Village is classified as the largest with various types of waste ranging from plastic waste, bling, wood, cans, rubber, food waste and even B3 waste. In this illegal TPSS, waste burning is also often carried out, as it is known that burning waste can harm the environment and its surroundings.

Kelurahan Bagan Pete

It can be seen from the results of the observations made, this illegal waste disposal site is located in an empty land and far from residential areas, but certainly harms residents who pass through the area. The estimated width of the illegal TPSS is around 1 meter with a length of 3 meters and has a fairly large volume of waste, the types of waste ranging from plastic waste, cans, wood, glass, household waste, even B3 waste.

Kelurahan Mayang Mangurai

One of the illegal TPSS in Alam Barajo District is located in the Mayang Mangurai Sub-district, precisely on the side of the road, the pile of garbage is often seen around early morning because most residents throw away garbage at night and in the afternoon. The estimated length of the illegal TPSS in Mayang Mangurai Village is around 2 meters and 1 meter wide, the volume of garbage is not too much, but because the location of the illegal TPSS is on the side of the road and quite close to residential areas. Based on the survey results, there are various types of garbage in the pile of garbage ranging from plastic, wood, glass, household waste, metal and others.

Kelurahan Beliung

Based on the data obtained, Beliung Village has 2 official TPSS locations and also found 1 illegal TPSS location lying on empty land and quite close to residents' homes, so that it can harm the community. The estimated width of the illegal TPSS is around 2 meters with a length of 5-7 meters and has a fairly large volume of waste, the types of waste ranging from plastic waste, cans, wood, glass, household waste.

Factors Causing the Emergence of Illegal TPSS

The factors causing the emergence of Illegal Temporary Waste Shelters in Alam Barajo District cannot be separated from the daily habits of the community. The community and government are considered negligent in paying attention to their own environment. In addition, illegal TPSS can appear due to several main factors, including:

lack of public awareness

This lack of public awareness can be seen from the regulations that have been implemented by the government, as well as from the socialization that has been carried out, but there are still people who dump their waste in illegal TPSS.

"... If you look at the main cause... it is the lack of public awareness to throw rubbish in its place, there is a lack of discipline in throwing rubbish in its place.."(Informan SU)

"... If public awareness of TPS management, that is for the time being, this waste has not been sorted. However, even though it has been disposed of properly, it is not sorted. The waste is still in one pile." (Informan S)

Based on observations, it was also found that some people have also disposed of their waste properly, but waste sorting was not carried out first, when disposed of, the waste was still in one pile, so that its management was less intensive. The government itself has created a waste bank program, but until now it has not been effective.

lack of availability of official TPSS

The limited availability of legal TPSS that can be reached by the community is one of the reasons for them to dump waste illegally in an empty land. Based on the observations that researchers found, it is known that Kenali Besar Village does not have an official TPSS, this allows for the formation of illegal TPSS carried out by the community, due to the absence of an official TPSS in Kenali Besar Village.

"yaa...that's why if the distance is far, people are lazy to throw their trash in official places, and also the official TPSS is currently still limited.."(Informan NP)

Based on previous research on illegal TPSS conducted in Alam Barajo District, the cause of the emergence of illegal TPSS was due to the distance from the official TPSS which was difficult for local people to reach and the lack of special attention given by related institutions to provide proper and easily accessible waste disposal facilities.

Non-Continuity of Waste Disposal Program

Many people in Alam Barajo sub-district still do not participate or do not pay monthly fees for waste transportation within the village. Waste transportation itself is an effort to overcome the problem of piles of waste, whereas the benefit of waste transportation itself is for the cleanliness of one's own home and the surrounding environment.

"... In the Bisonyo housing complex, the trash transportation is carried out directly by a trash truck, yoo, in Biasonyo there is a fee of Rp. 20,000 Rp. 30,000, but sometimes there are people who don't want to pay, so the payment for transporting the trash is hampered...."(Informan HS)

Lack of Implementation of Regulations on Waste Management

Based on the results of interviews and observations that have been carried out, it was found that there were still 4 illegal TPSS locations, which shows that waste management facility services are still not evenly received by the community.

"... Maybe people also often ignore the applicable regulations, they think that no one will get hurt if they throw rubbish here..."(Informan SU)

"... If you throw rubbish there is a ban on eating, banners are put up on jogo beans that you are not allowed to throw rubbish there, but these people and these kito-kitos still want to throw rubbish there..."(Informan AP)

The impact of the existence of illegal TPS

Impact On Environmental Health

Based on the results of interviews and observations conducted, it was found that the environmental impacts arising from the existence of illegal TPSS, namely can damage the aesthetics of the surrounding environment. Can produce an unpleasant odor that can spread to surrounding settlements, especially when exposed to wind and heat from the sun. And create a slum impression that can affect the perception of outsiders towards an area. It can also damage nature which reduces the overall quality of the environment.

Impact On Public Health

The impact on public health arising from the existence of illegal TPSS is that it can become a breeding ground for various microorganisms and disease vectors, such as flies, mosquitoes, rats, cockroaches that can cause the incidence of diseases, such as diarrhea, cholera, dengue fever, and other diseases. It can cause water pollution from the decomposition of waste that seeps into water channels, this water pollution can trigger long-term health problems such as kidney disorders and cancer due to these hazardous substances.

The stench from the garbage can disturb the comfort of residents and cause respiratory problems, nausea, and headaches. And people who often come into contact with polluted environments due to illegal TPSS are at risk of infection, allergies and skin irritation due to bacteria and fungi that grow in rotting garbage. According to garbage collectors in Jambi City, they often experience itching on their hands after collecting garbage. This can happen because garbage collectors come into direct contact with garbage that has been thrown away by the community.

Social Impact

The existence of illegal Temporary Waste Disposal Sites (TPSS) can cause various social impacts among the community, in Alam Barajo District itself there has been a social conflict between residents due to this illegal TPSS, both between residents and residents, as well as with landowners. The existence of this illegal TPSS has also become a bad habit for people who litter every day.

Efforts Made by the Government

Based on the results of the interviews that have been conducted, it was found that several efforts have been made by the Sub-district and Village to handle the problem of illegal TPSS in Alam Barajo Sub-district, namely by conducting joint surveillance patrols at each illegal TPSS point, the patrol activity is the most concrete step to handle the problem of illegal TPSS. In accordance with the instructions of the Mayor of Jambi that each OPD must have one waste bank, in Alam Barajo Sub-district itself a waste bank is being formed at the RT level to anticipate the problem of illegal TPSS. The sub-district

government has also conducted socialization and education to the community, as an effort to increase public knowledge about how to sort waste and increase public awareness not to litter anymore. The government is also designing the construction of pedestrians and drainage along the main road in Alam Barajo Sub-district.

One of the sub-districts that has created a program for waste management is Kenali Besar Sub-district, Kenali Besar Sub-district has created a new innovation for waste management, which is named ASMIDAR "I've Sorted Waste From Home". This innovation contains a way to manage waste starting from home. As well as the innovation PALING MASAM "Patrol Keliling Masalah Sampah" an activity to conduct patrols that monitor TPS-TPS or illegal waste disposal sites in the Kenali Besar area.

2. Discussion

Characteristics of illegal TPSS

Based on the theory, research results and support from previous research, the distribution of illegal TPSS in Alam Barajo District has been known and found based on its characteristics, the distribution is at 4 locations, namely in Kenali Besar Village, Bagan Pete Village, Mayang Mangurai Village, and Beliang Village. Meanwhile, the government itself has carried out distribution to overcome the problem of illegal TPSS by continuing to transport waste at each illegal TPSS location, the transportation itself is routinely carried out 2 times a day in the morning and evening, the government has made an appeal in the form of a banner prohibiting littering at the illegal TPSS location, and the government has also attempted simultaneous surveillance patrols at each illegal TPSS location with a team from the Jambi City Environmental Service OPD and the Alam Barajo District.

Factors causing the emergence of illegal TPSS

The emergence of illegal TPSS is caused by several factors, such as the lack of adequate official TPSS facilities, low public awareness of proper waste management, weak supervision and law enforcement, and uneven resources. According to A Efendi (2023) stated that the lack of public awareness about the negative impacts of illegal waste disposal on the environment and health is also a significant factor. Without adequate understanding of the importance of proper waste management, people may not feel motivated to avoid illegal dumping and prefer the most convenient solution.

There needs to be an integrated system that monitors and also evaluates the causes of the emergence of illegal TPSS in the Alam Barajo District area, by conducting periodic monitoring based on applicable information sources, the government should also work together with the community to manage waste according to the authority and obligations of both parties, for example to optimize waste management infrastructure and closer access from the community. Then, the community must also be aware of the waste that has been thrown away which will have a very dangerous impact on both the environment and health.

The impact of the existence of illegal tpss

The existence of illegal TPSS in Alam Barajo District has a negative impact on the environment and public health. According to. Waste can have a significant impact on the environment, especially if it is not managed properly. Unmanaged waste can cause soil, water, and air pollution, as well as being a source of disease for humans (Budiarni A 202

Continuously dumped waste results in piles of waste, thus damaging the aesthetics of an area, causing air, soil, and water pollution, and becoming a breeding ground for disease vectors such as flies, rats, and mosquitoes. So that it can cause the risk of diseases such as respiratory tract infections, diarrhea, itching, and dengue fever to increase. The existence of illegal TPSS can also trigger conflicts between residents.

Efforts made by the government

Indiscriminate waste disposal in a relatively short period of time can cause waste accumulation, which can cause environmental problems, and will cause impacts that are not only felt by one party, but all parties or the surrounding community. The efforts of the Sub-district and Village governments to overcome the problem of illegal TPSS in Alam Barajo Sub-district are by implementing operational waste management techniques, conducting socialization of waste management, supervising all illegal TPSS, and involving the role of the community.

Conclusion

Based on the results and discussion of the research analysis of the distribution of illegal Temporary Waste Disposal Sites (TPSS) in Alam Barajo District, Jambi City, it was concluded that illegal TPSS are spread in densely populated areas and are poorly supervised, this condition can be seen from the results of research conducted by researchers that there are still several illegal TPSS in Alam Barajo District itself, which is caused by low public awareness, minimal official TPSS facilities, and lack of awareness of supervision from the government. The existence of illegal TPSS also has a negative impact on the environment and public health, waste that is dumped continuously results in piles of waste, thus damaging the aesthetics of an area, causing pollution, and becoming a breeding ground for disease vectors.

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