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INDONESIA'S FLOODING ISSUES

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Abstract

Flooding is a significant and complex issue in most regions of Indonesia. Every time the rainy season comes, towns and regions throughout Indonesia are inundated by floodwaters. This qualitative research study is conducted at a library—techniques for collecting secondary data, such as journals, conferences, books, periodicals, and news. The data was analyzed by reducing, presenting, and making conclusions. The findings revealed that the floods were caused by more than just heavy rain. However, human actions such as dumping trash into rivers or cutting down trees, causing forests to be deforested, contribute to floods. Rubbish dumped into the river accumulates over time, and when it rains, the river water overflows because the flow is impeded by a massive mound of garbage, resulting in floods.
Keywords: Flooding, Community, Environment, Weather, Indonesia

Abstrak

Banjir merupakan masalah yang signifikan dan kompleks di sebagian besar wilayah Indonesia. Setiap kali musim hujan tiba, kota-kota dan daerah-daerah di seluruh Indonesia tergenang air banjir. Penelitian kualitatif ini dilakukan di perpustakaan—teknik pengumpulan data sekunder, seperti jurnal, konferensi, buku, majalah, dan berita. Data dianalisis dengan cara mereduksi, menyajikan, dan membuat kesimpulan. Temuan mengungkapkan bahwa banjir disebabkan oleh lebih dari sekedar hujan lebat. Namun, tindakan manusia seperti membuang sampah ke sungai atau menebang pohon, menyebabkan hutan menjadi gundul, berkontribusi terhadap banjir. Sampah yang dibuang ke sungai menumpuk seiring waktu, dan ketika hujan, air sungai meluap karena alirannya terhambat oleh tumpukan sampah yang sangat besar, sehingga menyebabkan banjir.
Kata Kunci: *Banjir, Masyarakat, Lingkungan, Cuaca, Indonesia*

1. Introduction

Flooding is a significant and complex issue in most regions of Indonesia. Every time the rainy season comes, towns and regions throughout Indonesia are inundated by floodwaters (Plate, 2002). The overflow of floods may occur many times throughout each rainy season, and each flood that happens might last for more than three days. This leads to massive losses.

Floods are overflows or inundations of rivers or other bodies of water produced by heavy rainfall or melting snow or by tidal waves that inundate the majority of the floodplain (Cloke & Pappenberger, 2009). Meanwhile, a flood, according to Plate (2002), is a flow or pool of water that causes economic damage and even death. Flooding is defined as the flow of river water that exceeds the river's carrying capacity, causing the flow of river water to pass through the river bank and inundate the surrounding region (Mohapatra & Singh, 2003).

Based on this knowledge, it is possible to infer that flooding is a natural catastrophe caused by natural occurrences such as heavy rainfall, which often results in physical and material losses. According to Mohapatra & Singh (2003), flooding consists of two events: first, flooding occurs in regions that are not usually impacted by floods, and second, flooding happens as a result of river runoff owing to its high discharge, which river channels cannot drain.

Excess local rainfall that produces floods may be produced by two factors: soil saturation in that location and a high-water level in the river channel. Because of the high soil saturation, soil absorption (infiltration) is low, resulting in significant surface runoff. The river body can handle the significant surface runoff caused by excessive rain. Excess water (flooding) caused by overflowing river water or local rain will develop flood formations, which are classified as fluvial formations on a larger scale.

Floods are caused by more than just heavy rain. However, human actions such as dumping trash into rivers or cutting down trees, causing forests to be deforested, contribute to floods. Rubbish dumped into the river accumulates over time, and when it rains, the river water overflows because the flow is impeded by a massive mound of garbage, resulting in floods.

The most devastating natural catastrophe is a flood. This catastrophe occurred in the lowlands, in a hollow top-level region. Flood protection may be divided into two categories: structural (structural measures) and non-structural (non-structural measures) (non-structural measures). Making check dams, embankments, and dams are physical examples. In contrast, non-physical examples include mapping susceptible regions, land use management, flood disaster early warning systems, flood hazard socialization, and flood prevention programs (Mohapatra & Singh, 2003).

One of the most successful flood prevention methods is to conduct indoctrination and campaigns on the risks and effects of floods on all aspects of society. The community is taught to realize how significant their involvement is as a flood preventer or cause. It should establish community groups to take early measures and control their involvement in flood mitigation phases, beginning with pre-flood prevention and progressing to flood management and post-flood recovery (Dutta et al., 2003). These phases are part of a never-ending cycle of flood control efforts.

As a step toward preventing flooding, an early warning system that causes it can implement flood disasters in various ways. One of which is by installing a signboard that reads "Please, Do Not Litter!" area around the river that is subscribed community or areas that have the potential to become a place for the accumulation of community waste. This is a small change that can have a significant effect.

One option that may chastise or make people aware via writing is to utilize the Sign Board to socialize or campaign against the community as one of the reasons for the flood catastrophe (Baan & Klijn, 2004). This Sign Board is a tool for changing people's negative behaviors to no longer dump trash wherever. This article aims to explain how to utilize the Sign Board as a flood prevention measure before it becomes a flood control tool. This document is intended to provide ideas to connected parties and serve as a reference for readers in general.

2. Method

This is a qualitative study with a literature review that focuses on books and other forms of literature as the primary object. The research method employed is qualitative, which means it generates information in the form of notes and descriptive data included in the text under investigation. Descriptive analysis is required for qualitative research. The descriptive analysis technique offers clear, objective, methodical, analytical, and essential flood prevention descriptions and information. This study data comes from a secondary source, mainly supporting and supplementary references for research materials. The technique used to gather research data in library research is library data that has been chosen, searched for, presented, and evaluated. This study's data source is searching for library data whose content necessitates philosophical and theoretical processing activities. The analysis is a set of essential efforts at developing and processing data research into a simple framework.

3. Results and Discussion

Flooding is one of the natural catastrophes that often strike Indonesia. This is inextricably linked to Indonesia's location in a tropical environment with only two seasons, namely the rainy season and the dry season (Brilly & Polic, 2005). Floods and landslides will occur if the rainy season lasts too long, whereas a drought will develop if the dry season lasts too long.

Of course, measures or methods to avoid floods are required to overcome and prevent flooding. Of course, dealing with floods requires community involvement in flood mitigation measures rather than depending only on the government (Browne & Hoyt, 2000).

The usage of the "Please, Do Not Litter" signboard in every setting, both flood-prone and seldom flooded, is one of the written warnings given to the community as a socialization step to alter harmful behaviors of dumping trash everywhere. Garbage put out everywhere will collect and create a stumbling block to the flow of water when the rainy season comes since certain kinds of garbage cannot be eliminated by water or soil (Messner & Meyer, 2006).

Waste is waste produced as a result of a manufacturing process, both industrial and residential (household). Meanwhile, according to Law No. 18 of 2008 on Waste Management, waste is defined as

the residue of daily human activities or natural processes in the form of solid or semi-solid organic or inorganic substances (Kelman & Spence, 2004). Those are biodegradable or non-biodegradable that are no longer useful and are disposed of in the environment.

Garbage originates from a variety of sources, the most common of which being garbage from residential areas. In a settlement, trash is often generated by a family living in a building or dormitory. Organic waste is often generated, such as food scraps or wet trash, dry waste, plastic dust, and others. Second, garbage from public areas and commercial establishments (Wilby & Keenan, 2012). Public spaces are locations where a large number of people congregate and engage in activities. These locations, including trade areas such as stores and marketplaces, have a high potential for trash generation. Food scraps, rotten vegetables, dry waste, ash, plastic, paper, cans, and other trash are the most common kinds of waste produced (Kourgialas & Karatzas, 2011).

The different types of trash listed above are just a tiny portion of the waste sources it may encounter in daily life. This demonstrates that human life will never be separated from trash—specifically, trash buildup in public areas such as the beach (Tockner et al., 2000). As a result, there is a need for community warnings to catalyze developing their knowledge of the many consequences of indiscriminate garbage disposal (Adelekan, 2011).

The local government may promote warnings or warnings about the effect of this garbage by placing notice boards throughout the community environment, which are typical locations for mass dumping of the community, primarily dispersed on empty land or the banks of rivers.

4. Conclusion

Based on the description above, it is possible to infer that trash impacts the ecosystem, particularly the incidence of floods. In response, the government plays an essential role in advising people not to dump trash in public places, particularly rivers, where it may clog the water flow during the rainy season, causing water to rise to the land's surface. Installation of the "Please Do Not Litter!" Sign Board has become one of the most efficient preventative measures to warn the public not to throw away their trash carelessly so that the stages of floods that often occur only reach the prevention stage and no longer reach the prevention stage.

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