Bridging the Gap: Legal Perspective, Technology Limitation, Cultural Behavior into Solid Waste Management in Bekasi and Sumedang

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***Abstract*-. Indonesia faces increasing waste management challenges, driven by rapid urbanization, population growth, and inadequate infrastructure. This study examines the limitations of waste management technology in Bekasi City and Sumedang Regency by analyzing governance, legal frameworks, and cultural behavior. A mixed-method approach was employed, incorporating interviews, observations, and questionnaires with key stakeholders, supported by multiple linear regression analysis. The result reveals that governance is a significant factor, depicting the highest regression coefficient (B = 0.166). Weak regulatory enforcement and institutional inefficiencies are identified as primary barriers to effective waste management as governance issues. Additionally, cultural resistance to adopting new technologies significantly hampers the progress of waste processing systems. Comparative insights from other ASEAN countries, such as the Philippines, reveal similar governance-related obstacles. This study contributes to enriching the literature on the dynamics of waste management in Indonesia and providing objectivity in formulating policies. This study offers a unique perspective on policy formulation that combines law enforcement with cultural considerations to ensure the implementation of sustainable waste management technologies. The findings emphasize that technological solutions should be combined with governance reform and cultural alignment to effectively address the waste management crisis.**

Keywords; Bekasi, Cultural Behavior, Governance, Sumedang, Waste Management

I. INTRODUCTION

Indonesia is confronting a rising waste management challenge, driven by rapid urbanization[1], population growth [2], and inadequate infrastructure[3]. Recent data indicates that Indonesia generates 38.4 million tons of waste annually, with only 62.36% being managed [4]. This problem impacts environmental quality [5], public health [6], social cost and economic development [7]. Addressing these complex waste management issues requires a comprehensive strategy [8]. This entails the integration of technological, legal, institutional, and stakeholder participation. These five aspects are interconnected and must be considered to establish an effective waste management system [9].

The lack of progress in technology and the stagnation of infrastructure and facilities are clear indicators of inefficient waste management in Indonesia. Several factors, such as operational inefficiencies, budgetary constraints, and insufficient governance, contribute to the underperformance of waste processing technologies. The requisite technology is already available; thus, the focus of the Global Waste Management Outlook 2015 is on addressing governance issues, including regulatory laws, collaborations, and financing, to build sustainable waste solutions [10]. However, it also points out that some nations have failed to implement the necessary legislative and regulatory instruments for a long-term waste management system.

Additionally, cultural factors play a crucial role in shaping waste management practices, as highlighted in several studies. Research underscores that cultural participation and behavior significantly influence household recycling and waste reduction efforts [11]. Conversely, in urban centers, cultural practices such as preferences for non-biodegradable packaging and individualistic attitudes contribute to increased solid waste generation [12]. The findings suggest that integrating cultural considerations into governance and policy frameworks can enhance public perception, decision-making, and participation in solid waste management. This underscores the importance of aligning governance reforms and technological solutions with cultural contexts to ensure sustainable waste management systems.

Bekasi City and Sumedang Regency were selected as the study sites to represent metropolitan and regency contexts in Indonesia. In both areas, numerous waste facilities remain underused or not functioning properly. For instance, in Bekasi City, particularly in the North Bekasi sub-district, technical regulations for the sorting, collection,

transporting, and processing of waste–as well as facilities such as small Material Recover Facility (small-MRF) or 'Tempat Pemrosesan Sampah 3R (TPS 3R)'–have been provided. However, public awareness regarding waste sorting, collection, and processing remains insufficient. In some cases, residents use their own communal containers and procedures for waste management that do not compliant with established regulations. A similar situation is observed in Sumedang Regency, where local wisdom is incorporated into waste management practices. However, the enforcement of technical-operational regulations remains insufficient, particularly regarding the provision of appropriate waste management facilities. The community relies on a self-managed waste disposal system, which substantially deviates from regulatory standards, leading to the ineffective implementation of both individual and communal waste disposal models. These challenges highlight governance issues, including difficulties with regulatory enforcement and insufficient institutional support, which hinder the operation and maintenance of waste management technologies.

Several studies indicate that governance, rather than technology, becomes the main obstacle to efficient waste management. Inadequate implementation and enforcement of solid waste management (SWM) rules and regulations has also made the disposal of municipal solid waste (MSW) a major concern for governments, especially in developing countries. A study in Kenya identified the patchwork of laws and regulations as one of the main causes of waste management failures. Additional factors, including corruption, inaction, political interference, and lack of public support, further exacerbate these challenges [13]. No amount of cutting-edge technology can ensure efficient operation without strong governance. A supportive regulatory framework is essential for effective and sustainable waste management practices, and the institutions responsible for enforcement must be adequately empowered and equipped to fulfill their roles. The experiences in Bekasi and Sumedang underscore the importance of governance in the effectiveness of waste management [14–16].

Effective law enforcement is fundamental for effective waste management [17]. In Bekasi and Sumedang, inadequate enforcement of laws and regulations weakens efforts to implement waste management technologies. Governments may enact legislation mandating recycling technology: however, in the absence of sanctions or regulatory oversight, compliance remains weak. Additionally, cultural behavior toward waste management influences the effectiveness of such regulations. A lack of public awareness appears to undermine the law and its implementation, making sanctions necessary to establish good governance [18]. This creates a cycle in which technologies are not sustained, exacerbating environmental and public health problems.

This research focuses on the specific challenges facing Bekasi and Sumedang, two regions with unique waste management issues. Additionally, deep-rooted cultural practices and public resistance to change further hinder these efforts. While both regions have attempted to adopt waste processing technologies, progress has largely stalled. This case study investigates the factors behind technological stagnation, focusing on the interactions between legal frameworks, institutional capabilities, and cultural behavior in waste management. By analyzing these two areas, the study provides insight into the critical role of good governance and the social barriers that undermine the effectiveness of technological waste management solutions.

II. METHODS

This study used a mixed-method approach, combining qualitative and quantitative data collection techniques to ensure a comprehensive understanding of the issues. Data collection included in-depth interviews, direct observations, and structured questionnaires targeting a wide range of stakeholders, including government officials, waste management practitioners, community members, and business entities. This study utilized purposive sampling to select respondents based on their relevance and involvement in waste management processes.

To identify the root causes behind the failure of legal enforcement in waste management, this research used a multiple linear regression analysis to examine the relationships between various variables or factors influencing law enforcement in waste management. Multiple Linear Regression is a regression equation that involves two or more variables in its analysis [19]. This model shows the relationship between independent variables and dependent variables. The independent variables used include government (X_1), law and regulation (X_2), financial (X_3), operational techniques (X_4), information and community participation (X_5), as well as enforcement activity (X_6). The Statistical Package for Social Science (SPSS) tool was used to analyze the data from 200 respondents.

Additionally, this research employs socio-legal research, which is a method that analyzes the law in practical contexts and investigates its functioning within society. The socio-legal study aims to examine the practical implementation of law concerning persons, organizations, communities, and legal institutions by concentrating on their behaviors in connection to the application or enactment of legal statutes [20]. This study utilizes both a conceptual and a comparative methodology. A conceptual framework is used to clarify the legal concepts included in the waste management system. The comparative approach

aims to highlight policy concepts and exemplary practices in waste management systems from similar countries, such as the Philippines. In contrast, the socio-legal approach is interdisciplinary [21]. Therefore, a non-juridical method is utilized as a tool to examine relevant legal issues, specifically through the Public Policy Science approach. This approach involves a dynamic systems analysis of the factors influencing cultural differences and the legal implications of waste management technology, thereby presenting new challenges within this framework [22]. The analysis results are presented through a descriptive-analytical framework, providing an evaluation of the legality of facts or legal issues identified from the study findings.

III. RESULT AND DISCUSSION

Technology, Governance, and Cultural Behavior of waste problems in Bekasi city and Sumedang City

Norms and objectives have shifted due to the significant impact that technology has had on culture in recent years. The possibility of cultural conflict will increase as these changes become more apparent due to technological advancements [23]. Unfortunately, people are not aware of the technological systems that are in place for this purpose, even though technology should make it easier for people, including make it easier for people to manage waste [24,25]. Poor waste management in metropolitan and regency such as Bekasi City and Sumedang Regency shows that it is not only due to inadequate infrastructure, lack of human resources, and the legal framework, but also when technology availability and the cultural behavior as users integrate improperly.

In Bekasi City and Sumedang Regency, inconsistencies in waste management practices from storage to final processing, reveal significant gaps in infrastructure, governance, and social behavior. The influence of socio-cultural practices and inadequate government support further exacerbate these issues, leading to ineffective waste-handling systems that contradict existing regulations. For instance, the government of Bekasi City has regulated community behavior to manage waste from its source through Bekasi City Regulation Number 2 of 2021 [25]. This regulation has been revised twice to accommodate changes in behavior, including the integration of technology and facility considerations to encourage efficient waste management. However, a significant challenge remains, as the availability of technology does not fully align with the community's cultural behaviors as users of these systems.

Bekasi City, a metropolitan area with a population of approximately 2.627 million people [26], generates about 1,839 tons of waste daily. The relationship between population density and the organization of settlements significantly impacts waste management practices, which are further influenced by geographical and demographic factors, including cultural behaviors. In Bekasi City, settlements are categorized into three classifications: (1) irregular settlements with minimal formal management, (2) managed areas with regular landed settlements, and (3) managed areas with regular vertical settlements. Despite the availability of waste management facilities and technologies, which vary in complexity according to the specific requirements of each classification, regulations are not consistently followed across all areas [27]. Even where building managers have appointed third-party operators to handle waste management, community behavior has not yet aligned with optimal waste management regulations, particularly in waste sorting and processing.

At the waste sorting level, interviews with neighborhood heads (for landed housing) and area managers, including those from apartments and housing complexes in North Bekasi District, indicated that waste sorting facilities, such as segregated trash bins, are available at some managed landed-settlement locations. However, in unmanaged areas, waste sorting facilities are nearly nonexistent. Despite the availability of facilities, proper waste sorting practices among residents remain limited. Currently, waste is typically collected at a central point, transported, and then disposed of at the landfill using an open dumping system. Law enforcement related to waste management is minimal, consisting primarily of verbal outreach efforts to encourage waste sorting, as well as verbal warnings directed mainly at managed areas. In contrast, in irregular settlements without structured waste management, the practices of burning and illegal dumping of waste are common, with little supervision or enforcement.

Observations revealed that waste collection has not been adequately enforced in the area. It has been reported that waste is still being combined and collected in a single truck or basic container provided by the local authorities. Despite a mutual agreement on collection practices, the Bekasi City Environmental Agency has occasionally encountered delays in the waste collection schedule. Initially, the agency had planned to collect waste twice a month but later revised this to monthly collection. Although a timetable was established, inconsistent implementation led the community to adopt a simpler, self-managed waste management approach. They reached a consensus to set up self-maintained trash bins near the residential gate entrance, finding this arrangement more accessible and efficient. However, some community members have resorted to alternative disposal methods, such as burning waste or leaving it for scavengers to collect. In one instance, a garden was converted into a makeshift dumping site where waste was burned. This practice has had negative effects on the community, including house fires and

unpleasant odors, especially during the rainy season when waste leachate becomes more noticeable.

Regarding waste processing, the Prima Harapan small-MRF in Bekasi City has supported the local community in the corresponding sub-district by providing access to organic and inorganic waste management services. The facility is equipped with waste processing technology, including plastic shredders, organic waste processors, and categorized waste sorting facilities. However, critical facilities such as residue containers for waste processing and biogas production units are not available. The government has adequate human resource capacity to operate this technology, having re-recruited five former civil servants or retired honorary employees for this purpose. While technical regulations for small-MRFs have not yet been adopted at the local level, Prima Harapan small-MRF meets national regulatory standards for infrastructure. Despite the simplified waste processing approach, the community initially opposed the establishment of the Prima Harapan small-MRF site due to concerns about leachate odors and the untidy appearance of the facility. Waste processing technology continues to face cultural challenges within the community, where negative public perceptions persist. Nevertheless, Prima Harapan small-MRF has established a partnership with waste collectors who purchase processed waste, thereby contributing economic value to its operations.

Waste processing technology in Bekasi City has reportedly continued to expand its capacity to convert waste into electricity through Waste-to-Energy (WtE) plants, known locally as “Pembangkit Listrik Tenaga Sampah” (PLTSa). This initiative was formally outlined in the city’s medium-term regional development plan for 2018-2023, a key technocratic development planning document. Bekasi City originally planned to construct a PLTSa facility at the Sumur Batu landfill, but despite completing the trial stage, the project ultimately failed, leading to the contract’s termination. The PLTSa project required a budget of approximately IDR 1.6 trillion, funded primarily by the central government. According to a representative from the Bekasi City Environmental Service, the project failed due to insufficient collaboration, as the power plant network was unable to meet electricity provision requirements. Although a new procurement process has been conducted, bureaucratic obstacles and changes in regional leadership have further hindered the project's progress.

Additionally, the Bekasi City Government faced challenges in managing grants provided by donors, revealing governance issues in waste management. The Sumur Batu Landfill—a joint initiative between the Bekasi City Government and private companies—received advanced waste processing technology grants from international sources. However, one of these plants, the Waste Gas Management Plant at Sumur Batu, ceased operations after its contract expired in 2015 due to malfunctioning flaring machines needed for waste incineration. The methane gas processing project site was abandoned, with few visible remnants of prior activity. It was estimated that processing methane gas at Sumur Batu would require incinerating around 700,000 tons over a seven-year period. This partnership initially advanced a carbon credit program with the World Bank, which anticipated profits from carbon sales potentially exceeding $15,000 per tonne of CO_2. However, volatility in the global carbon market caused prices to fall to $5,000 per tonne of CO_2, undermining the partnership's financial viability. As a result, the collaboration to reduce carbon emissions through waste processing ultimately collapsed.

The Bekasi City government has frequently secured funding from the Japanese government for large-scale organic waste management initiatives. Through the "Kompos Patriot" initiative, the government has facilitated third-party collaborations to establish composting and sorting facilities. This facility receives shredded waste from various markets across Bekasi, including Bantargebang, Kranji Market, and Pasar Baru Market. The partnership has achieved positive outcomes, including converting waste into fertilizer and granulating it, with a production capacity of 50 tons per day. One of Indonesia’s leading fertilizer producers has purchased this fertilizer. However, the partnership has since ended, as the company has recently started sourcing livestock waste from outside the region for composting. The local government’s commitment to improving organic waste management reflects ongoing issues in governance, particularly in auditing and overseeing waste management grants within government operations.

The Bekasi city government not only failed to manage grants but also failed to provide incentives to the community to support the waste-to-energy program. Based on Bekasi City Regulation Number 2 of 2021, Bekasi City Government has expanded the authority of the neighborhood head, village head and sub-district head as waste management institutions at the grass-root level. However, the authority to enforce effective waste management has not been fully realized due to a lack of awareness among the public regarding the proper sorting of waste at the source. Some community associations or “Rukun Warga” (RW) have been given incentives to build their own waste banks. One example is a competition that offers prizes in the form of waste processing machine technology. Besides the misdirected incentives, the community is also poorly educated on how to use the technological equipment.

In the meantime, Sumedang Regency, which has 1,205,685 residents overall, produces a substantial amount of waste- roughly 602.8 tons per day. The availability of

land remains proportional from a geographical standpoint, provided that the conditions of settlement and population density are not excessively dense. The Regency of Sumedang maintains a rural culture and strong emotional bonds among its residents. This also affects how the local government implements waste management regulations that consider local cultural wisdom.

Concerning cultural wisdom, an intriguing case study has been conducted on the occurrence of cultural conflict and technological stagnation in Sumedang.Regency. The government has introduced a village-level communal waste segregation system known as "Wadah Sampah Desa" (WASADES) based on Regent Regulation Number 105 of 2020 to manage organic waste and address illegal dumping with simple sanitary landfill method. Despite two rounds of regulatory improvement, WASADES aims to prevent each village from disposing of waste in a single location without addressing the underlying issues, particularly by reducing the less effective enforcement efforts against illegal waste disposal. However, the persistence of illegal dumping sites presents a paradox, as the availability of waste processing facilities has not effectively resolved the issue. Interestingly, the community has developed a cultural tendency to dispose of waste carelessly, especially when the recommended waste processing technologies have proven ineffective. At the same time, the community chooses to use self-managed containers such as drums, plastic bags, paint cans or buckets, and sacks that do not meet legal requirements.

The Sumedang Regency Government has established Temporary Waste Disposal Sites known as “Tempat Penampungan Sementara” (TPS) to mitigate the incidence of unlawful waste disposal. Facilities such as wheeled bins and waste carts are used to collect waste; however, these do not ensure proper categorization by waste type. Currently, only 37 TPS and four small-MRFs are operational, while an additional four small-MRFs remain under development. Despite these efforts, the facilities remain inadequate and inconsistent, particularly in providing optimal waste processing technologies. The limited availability of waste management services forces the community to adopt alternative methods of waste disposal, including the establishment of illegal dumpsites. This situation has led to practices such as burning waste or the accumulation of refuse in specific locations, posing environmental and health risks.

In line with the Smart City masterplan of Sumedang Regency for the year 2022, the Sumedang Regency government has encouraged the use of environmentally friendly technology. Improving waste management systems for energy, such as biogas and converting plastic waste into asphalt, is a primary goal of the smart city plan. However, public awareness about the importance of maintaining cleanliness is still low. The use of environmentally friendly waste management technology has not encouraged the community to process waste at its source. The utilization of technology has not yielded satisfactory outcomes due to the lack of widespread education about waste management in the community. Meanwhile, the officials of the Environmental Agency have stated that the enforcement of legislation becomes increasingly challenging when education, outreach, and legal awareness-raising by the municipal government are not conducted concurrently.

In Sumedang Regency, a significant challenge in waste management is the government's ongoing effort to secure land for a landfill, which has led to the development of joint Regional Landfills with neighboring cities and regencies. However, these Regional Landfills often prove ineffective due to large institutional structures that lack functional efficiency. A major issue is the coordination among institutions at the regional level, where overlapping responsibilities across districts hinder problem resolution, particularly when landfills are unavailable. Despite the existence of a legal framework, such as the Waste Management Act, the implementation of regional waste disposal policies continues to be hindered by institutional inefficiency.

According to the case studies mentioned earlier, inadequate financing, a lack of expertise, outdated infrastructure, and a weak system of oversight and enforcement are the main reasons why solid waste policies are not well implemented. Poor leadership is the main cause of solid waste policy implementation failure. Various issues with waste management arise at every level due to inadequate governance. The goal of good governance approaches is to fix problems with waste management policy implementation across all levels of stakeholders [28]. The cultural divide between Bekas City and Sumedang Regency is a result of poor waste management facilities and technological governance, according to this research. It highlights the reality that poor leadership is one of the main reasons why systems like municipal solid waste fail. It is believed that all parties involved in waste management policy implementation would be able to fix their weaknesses via good governance procedures. The principles of involvement, consensus orientation, accountability, openness, responsiveness, efficacy, efficiency, equality, inclusion, and rule of law should all be upheld by waste management governance that is successful [28].

Figure 1 below illustrates the technological stagnation in Bekasi and Sumedang Regency regarding legal frameworks and cultural behaviors. The cycle begins with minimal to no law enforcement, where weak regulatory frameworks fail to ensure compliance with waste management standards. This lack of enforcement leads to the ineffectiveness of waste processing technologies, which are often underutilized or operate below capacity due to

limited technical capabilities (from basic to low-tech solutions). As a result, communities develop an instant cultural pattern of choosing alternative waste management methods, often deviating from formal regulations. This includes improper disposal practices, communal waste management systems, or reliance on self-managed waste handling methods. Consequently, the public exhibits a low level of perception regarding the use of technology, driven by a lack of trust and familiarity with the existing waste management infrastructure. Finally, this cycle is compounded by a lack of education on proper technology use, where communities are not sufficiently informed or trained on the importance and functioning of waste processing technologies. This figure highlights the critical need for improved governance to break the cycle of stagnation and enhance waste management outcomes.

Figure 1. Cycle of technology stagnation in Bekasi City and Sumedang Regency using Dynamic System Analysis Model

Benchmarking countries with significant similar stagnant problems: a Study Case in Philipines

In the Philippines, between 15% and 60% of waste is improperly disposed of, with the Metro Manila-the country's largest metropolitan area-achieving a maximum waste collection rate of 85%, while access to controlled landfill facilities remains below 15%. Several factors contribute to the country's waste management challenges, including limited operational vehicles, outdated regulations, weak policy enforcement, and poor governance. Waste management is often deprioritized by local mayors, and municipalities frequently lack both the necessary personnel and adequate government support. While expensive technologies, such as MRF, may not always be required, simpler and more cost-effective waste segregation methods can be more practical. The effectiveness and sustainability of such methods can be enhanced through promotion, education, and incentives, allowing for the integration of technology and cultural behavior at the same level [29]. Mayors in Metro Manila found that weak enforcement of waste collection laws hampers proper segregation, as people don't see the consequences. When infrastructure, services, and economical alternatives are accessible, it becomes easier and more intuitive for the public to adopt the desired waste segregation behavior, fostering intrinsic motivation.

Cebu City, a city in the Philippines, has demonstrated that poor governance and bureaucracy, such as inadequate human resources staffing and proper waste processing technology facilities, result in ineffective implementation and coordination of waste management policies, yielding unsatisfactory outcomes [30]. The system has had challenges in implementation due to financial limitations and low levels of public knowledge and compliance. Despite claims of 100% waste collection coverage, uncollected waste still accumulates on streets and in waterways. Issues include lack of political leadership, insufficient strategic planning, and limited public awareness, compliance, and expertise in managing composting facilities, all of which hinder effective waste management implementation.

In 2004, the Municipal Government of Cebu City approved Local Ordinance No. 2031, mandating source-sorting of garbage, setting fines for non-compliance, and establishing an incentive fund. Since April 2011, the city has implemented a segregated waste collection system for biodegradable, recyclable, and residual waste under the guiding principle of “No segregation, no collection.” One of the most notable achievements of this initiative has been the formation of the Cebu Environmental Sanitation and Enforcement Team (CESET). This team fosters cooperation among government officials, appointed residents, and civil society groups to pursue and penalize offenders, with participating parties receiving 20 percent of collected fines. Although the city has made significant progress, challenges remain, including limited political commitment, inadequate strategic planning, and the lack of financial, legal, and institutional support frameworks. Additionally, significant gaps in knowledge, capacity, and awareness persist concerning the operation and management of composting facilities [31].

Another best practice is the Alaminos Zero Waste Project in the Philippines, supported by GAIA, which transformed waste management through community-driven efforts and compliance with the 2000 Ecological Solid Waste Management Act. Within two years, the project nearly eliminated open burning, increased waste separation to over 80%, and boosted composting to 53%, establishing essential infrastructure like composting facilities. Strict policies, such as "No separation, no collection," reinforced the zero-waste vision, showcasing

effective change through collaboration between communities and local government [32].

Multiple linear regression test results

According to Table 2, the multiple linear regression analysis resulted in a model indicating that the government variable (X_1) has the highest regression coefficient (B = 0.166), signifying that government factors exert the greatest influence on waste law enforcement in Bekasi and Sumedang compared to other variables such as legal frameworks, financial resources, operational techniques, public participation, and enforcement activities. The significance value for the government variable was 0.014, below the α = 0.05 threshold, confirming a significant impact on waste law enforcement effectiveness.

Table 2. Multiple regression test result

Independent Variables	B	Significance
(Constant)	1.099	0.016
Government	0.166	0.014
Law and regulation	0.143	0.013
Financial	0.143	0.013
Operational technique	0.157	0.004
Information and community participation	0.119	0.014
Enforcement activity	0.103	0.040

a Adjusted SPSS output results

This confirms the results of previous research that found that governance influences waste management policies in Indonesia through strategy and policy development, the application of norms, standards, procedures, and criteria, and the regulation of programs and policies related to waste management [33,34]. The effectiveness of the waste management system relies on government involvement in providing technical and financial assistance, as well as guidance, to local governments. Municipal government commitment and broad societal participation are also crucial for successful waste management systems [18]. Therefore, governance- especially regarding commitment, government human resource capacity, bureaucracy, and coordination- exerts a considerable influence on waste management policies in Bekasi and Sumedang, particularly about law enforcement and waste regulation.

IV. CONCLUSION

The technological stagnation of solid waste management in Bekasi City and Sumedang Regency is driven by a cycle of weak law enforcement, ineffective solid waste technology, and instant cultural behavior, highlighting the need for stronger governance. The most significant factor, especially related to law enforcement that results in inefficient technical and operational waste management in Bekasi City and Sumedang Regency is the governance. Governance, especially in terms of law enforcement, emerges as the most critical factor contributing to inefficient technical and operational waste management in Bekasi City and Sumedang Regency. As a benchmark case, in Cebu City and Metro Manila, the Philippines experience similar challenges but address them through improved governance, particularly by promoting education, awareness, and offering incentives to the community.

This study acknowledges certain limitations, including the geographic scope confined to Bekasi City and Sumedang Regency, the timeframe during which the research was conducted, and the selection of subjects and informants, which may not fully represent the diverse perspectives of all stakeholders. Additionally, constraints in accessing comprehensive data from government institutions and private entities posed challenges in achieving a more extensive analysis. Future research could address these limitations by expanding the study to other regions in Indonesia to replicate or test the findings, offering a comparative analysis across various localities.

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