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# Natural Stone Waste: Regional Policies and Their Implementation

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## Abstract
**Background**. Various cases of environmental pollution, such as the disposal of natural stone found in Cirebon Regency, particularly in Dukupuntang District, result in waste from the cutting process. Business operators utilize flowing water to cool the natural stone cutting machines. Unfortunately, the waste generated is directly discharged into rivers without undergoing treatment, leading to pollution in the river flow.
**Aims**. The objective is to understand the implementation of policies, strategies, and the factors that support and hinder them, as well as the steps taken by the government. By utilizing George C. Edward III's theory, the researcher will examine policy implementation, covering aspects of communication, resources, disposition, and bureaucratic structure.
Methods. The research method used is a descriptive qualitative approach, where the natural stone industry players and the surrounding community will be the subjects of observation.
**Result.** The results of this study indicate that the implementation of environmental policies in Cirebon Regency has not yet reached an optimal level. However, several hindering factors need to be addressed, one of which is the Wastewater Treatment Plant (WWTP), which requires further processing.
**Conclusion**. Efforts that need to be undertaken by the Department in managing natural stone waste include communicating through the media, using communication or educational methods, and conducting supervision and guidance.
**Implementation**. Reporting on efforts already undertaken, allocating budget funds, and fostering public awareness, all of which are crucial for effectively implementing policies related to natural stone waste

**Keywords**: Resources, Natural Stone Entrepreneurs, Environmental Agency, Liquid Waste, Policy Implementation



## INTRODUCTION

Indonesia has abundant natural resources, one of which is its extensive river system. Rivers serve as an important source of water to meet the daily needs of the community. However, polluted rivers can harm the surrounding environment and may even be considered

unfit for use by the community (Aprilia & Zunggaval, 2019, as cited in Salsabilla et al., 2024). Therefore, the community must be able to manage and utilize these natural resources under the 1945 Constitution, Article 5(1), Article 20(1), and Article 33, which state that Indonesia's biological natural resources and ecosystems, which hold a significant position and role in sustaining life, are a gift from the Almighty God. Natural capacity cannot be separated from ecosystems, which can be understood as the natural potential to support human sustainability, as explained by Wardhana in (Nuraeni et al., 2014). Therefore, as humans, we must manage and utilize these resources as effectively and sustainably as possible so that they can be passed on to future generations. However, many managers act carelessly regarding waste disposal, leading to poor management of natural resources and excessive waste pollution.

Continuous environmental damage harms people's lives, not only economically, but also poses a threat to human life, Minister of Environment Hatta (Asri & Julisman, 2022). One example of environmental pollution is waste disposal, which encompasses various types of waste, including solid waste and liquid waste such as sludge and fine powders.

One of the policies for managing natural stone waste in Indonesia is the Ministerial Regulation of the Republic of Indonesia's Ministry of Environment and Forestry. Among them is the Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number 5 of 2022 concerning Wastewater Treatment for Mining Businesses and/or Activities Using Artificial Wetland Methods; Government Regulation of the Republic of Indonesia No. 22 of 2021 on the Implementation of Environmental Protection and Management; Law of the Republic of Indonesia No. 32 of 2009 on Environmental Protection and Management; and based on the Regional Regulation of Cirebon Regency No. 6 of 2016 on Environmental Protection and Management.

The importance of the government in implementing natural stone waste policies lies in its development strategy, which aims to achieve social welfare by improving the quality of life for everyone. (Elwan & Ode, 2018) According to Khumayah (2021), improving the quality of life encompasses social services and social security for all levels of society, particularly for disadvantaged groups. Additionally, community empowerment is enhanced through the establishment of economic, social, and political systems and institutions that respect human dignity and worth. Finally, freedom is perfected by expanding accessibility and choices of opportunities that align with aspirations, capabilities, and humanitarian standards.

Solid waste is the residue from human activities that often contains hazardous materials and can have indirect environmental impacts. Examples of solid waste include food scraps,

vegetables, wood chips, and industrial waste (Suhartawan, 2023). Domestic liquid waste is waste generated from household activities, buildings, commerce, and offices. This waste includes soapy water, detergent residue from washing processes, and liquid waste from sewage. On the other hand, industrial liquid waste is generated from various industrial processes, including dye residues from the textile industry, water produced during food processing, washing waste from meat, fruit, and vegetable processing, as well as waste produced from natural stone cutting (Fauzia & Siska, 2021).

Natural resources are found everywhere, including in the soil, water, land surface, air, and other places. The impact of poor processing is the generation of solid and liquid waste. Biological Oxygen Demand (BOD) waste is generated from excessive waste disposal, particularly from domestic waste such as washing, and industrial waste, including natural stone waste (Wahyuningsih, 2024). In Cirebon Regency, there is environmental pollution, including the disposal of aluminum waste, textile waste from fabric dyeing, rattan waste, cement waste/hazardous waste (B3), laundry waste, and natural stone waste, all of which are found in the Dukupuntang river area.

Among the various areas in Cirebon Regency severely affected by environmental pollution, the most significant is the river in the Dukupuntang area. Cirebon Regency has 18 river basins (DAS), five of which experience significant levels of pollution, namely the Ciberes, Cimanis, Jamblang, Kumpul Kuista, and Suba rivers. These rivers serve as a source of raw water for drinking water and agricultural irrigation needs in the Cirebon Regency area, including the Jamblang River. This situation has caused damage to the functions and ecosystems of these rivers (Wahyuningsih, 2024). The main challenge faced by the natural stone industry is related to waste management, which includes solid waste, such as stone fragments, and powder waste consisting of stone sawdust, which can affect air pollution quality due to wind-blown dust (Pranoto & Huda, 2015).

In Dukupuntang Subdistrict, natural stone processing business owners utilize water flow to cool cutting machines. The natural stone washing process generates waste that causes river pollution. Water pollution can be identified through changes in color, odor, and effects or symptoms on humans. Water mixed with waste from natural stone cutting, which has a dark color like cement, is then directly discharged into rivers around their factories, according to Herlambang in (Ramdhani & Muhammad, 2017).

Efforts to address challenges in implementing domestic wastewater management policies include strengthening regulations and policies, enhancing infrastructure, improving education,

and promoting community participation (Kusnaidi et al., 2022). To address this issue, the government must take action to manage waste pollution in Dukupuntang Subdistrict, including issuing government circulars, conducting intensive supervision and guidance, and providing infrastructure. These policies aim to ensure the implementation of the policy.

In this study, the researcher aims to analyze various approaches to Natural Stone Waste management, specifically in relation to Local Government and its Implementation, as outlined in Local Regulation No. 6 of 2016 of Cirebon District, regarding Environmental Protection and Management.

## LITERATURE REVIEW

Implementation refers to a series of actions taken to achieve the objectives outlined in the policy. These actions can be carried out by individuals, government officials, or private parties (Jumarianto, 2021). Policy is a series of decisions or actions taken by an individual or group, aimed at selecting objectives and the means to achieve those objectives. Policy implementation is a step in the process carried out immediately after the enactment of a law, as viewed from a broader perspective by Winarno in (Nazar et al., 2021). Implementation is a dynamic process, where the actions or activities carried out by policy implementers will produce results in line with the objectives or targets of the policy. Government policy implementation is a form of service provided to the public, in line with the role of government bureaucracy in serving the public, as stated by Agustino in (Nazar et al., 2021).

Implementation can be simply understood as the execution or application of a plan that has been formulated. According to Browne and Wildavsky, implementation refers to the development of mutually adaptive activities, as stated by Mclaughin in (Mujuddin et al., 2019). Based on the above explanation, it can be concluded that implementation is a planned activity that involves formulating a policy with specific objectives to be achieved through that policy.

The theory used in this study is the theory proposed by experts on Policy Implementation, with an emphasis on the perspective of George C. Edwards III, as explained in his work (Subarsono, 2013). He states that four variables influence Policy Implementation, namely:

a. Communication is an important factor in achieving successful public policy implementation. Implementers must have a thorough understanding of the steps required, as well as the objectives and targets of the policy that need to be communicated to the target groups. With this approach, the possibility of changes in the

form of deviations or distortions from the original form during the implementation process can be minimized.

b. Resources: Even if policies are clearly and consistently communicated, implementation effectiveness will be hampered if implementers do not have adequate resources. These resources include aspects such as human resource competencies and financial support.
c. Disposition, referring to the nature and character of individuals in carrying out their duties, which includes commitment, integrity, and democratic attitudes. When someone has a positive disposition, they tend to be able to implement policies effectively by policymakers' expectations. Conversely, if individuals have views or attitudes that differ from those of policymakers, the implementation of these policies may be less effective.
d. Bureaucratic Structure refers to the organizational structure responsible for implementing policies, which has a significant impact on the implementation of those policies. One of the key elements in an organizational structure is the presence of standard operating procedures (SOPs). SOPs serve as guidelines for every implementer in carrying out their duties. If the organizational structure is too convoluted, this can reduce the effectiveness of oversight and create red tape—that is, complex and cumbersome bureaucratic procedures—which ultimately results in a lack of flexibility in organizational activities.

Public policy refers to decisions made by the state, especially by the government, which serve as strategies to guide society toward desired change (Nugroho in Santika, 2021). Experts have stated that public policy is a method or solution designed to address current public issues and those that may arise in the future, specifically for the benefit of society. In terms of government implementation, the Cirebon Regency Government uses Law No. 23 of 1997 concerning Environmental Management. However, the government's role in managing the environmental impact of the natural stone industry's waste is not optimal. This has caused various problems in Cirebon Regency, particularly in the Dukupuntang District, related to environmental pollution. To achieve this, West Java Province Regulation No. 1 of 2012 on Environmental Management and Compliance with Environmental Laws has been established.

The implementation of government policies in controlling environmental pollution is already stipulated in regulations. The Cirebon Regency government, in its efforts to address environmental issues, conducts analyses on natural stone waste management to find the most effective solutions, aligning with the capacity and capabilities of the community, industry players, and local governments. Policy implementation can be simply understood as the

application or execution of established policies. Policy implementers focus their attention on activities, actions, or organized entities within a specific system.

Natural stone waste is the residue produced during the process of creating decorative stones, such as those used for wall decorations and fences. The raw materials for this production are obtained from Gunung Kuda, located on the border of Cirebon and Majalengka, as well as from the Banta Rujeg area in Majalengka, Uktiani dalam (Santika, 2021). Liquid waste produced by the natural stone industry generally contains fine particles and mud from the stone cutting process. This waste is continuously discharged into rivers and eventually flows into waterways, potentially causing pollution in these water bodies (Wahyuningsih, 2024). Wastewater generated from natural stone contains soluble and sedimentable solid particles that can settle at the bottom of rivers, potentially degrading water and soil quality.

In this study, researchers aim to describe the implementation of Cirebon Regency Regulation No. 6 of 2016 on environmental protection and management. Based on previous research, the impact of natural stone waste pollution on the distribution and abundance of phytoplankton in the natural stone industry in Cirebon Regency resulted in a significant volume of liquid waste being directly discharged into rivers, The sediment deposits generated from the natural stone washing process contain high levels of suspended materials, leading to water pollution and disrupting aquatic organisms, including phytoplankton, according to Wahyuningsih (2024). Second, the environment is closely related to the carrying capacity of nature, which refers to the ability of nature to support human life. The carrying capacity of nature in an ecosystem encompasses all natural resources on the Earth's surface and within its layers. All these natural resources were created by God to meet human needs on this Earth, according to Wardhana (Nuraeni et al., 2014). Third, natural stone washing activities that generate waste pollute rivers. Water pollution can be identified through changes in color, odor, and effects or symptoms caused in humans, according to Herlambang in (Ramdhani & Muhammad, 2017).

Based on previous research, many natural stone businesses continue to violate regulations by dumping waste into rivers and failing to comply with the Cirebon Regency Regulations. Natural stone business operators should implement the policies established by the Cirebon Regency Environmental Agency. In a case study on natural stone waste in Dukupuntang Subdistrict, the research did not rely solely on existing theories but also conducted interviews to evaluate the alignment between the theories used and the conditions on the ground.

## RESEARCH METHOD

Data collection techniques can be categorized into two main types: primary data and secondary data. Primary data refers to information obtained directly through research conducted on-site. As in the Implementation of Local Government Policy and its Implementation in Cirebon Regency, regarding the handling of waste from the natural stone industry. Improving accuracy can be achieved by verifying the information obtained during the data collection process from various sources or references, as noted by Sugiyono (Alffansyur & Mariyani, 2020). Researchers obtained data sources through in-depth interviews and documentation conducted simultaneously (Ratnaningtyas, 2023). The informants in this study were the Environmental Agency as key informants, natural stone industry actors, and the surrounding community as informants. Secondary data is information obtained by researchers or data collectors from indirect sources.

This study used a qualitative approach with the aim of analyzing objects in their natural state. The choice of this approach is based on the researcher's desire to conduct a comprehensive and focused analysis. Thus, the data collection process utilizes interview guidelines that allow for improvisation and development during the interview. Data collection techniques are carried out using a triangulation approach, which is inductive and emphasizes understanding meaning rather than generalization. This method utilizes descriptive data that includes both written and oral information obtained from individuals and observable actors. In the context of this research, this approach is based on the understanding that truth is not singular but has various complexities, as noted by Sugiyono (2019).

## DISCUSSION

Cirebon Regency itself has several locations in the natural stone industry, one of which is in Dukupuntang District, which is home to around 274 natural stone industry companies. With numerous natural stone industries, many people have been significantly impacted by the disposal of natural stone waste. Socialization, education, and technical guidance programs have been conducted annually since 2017 and 2018, in collaboration between the village and district authorities. Through effective communication, this program serves as a social control mechanism for the Cirebon Regency Environmental Agency's policies in addressing natural stone waste issues.

**Figure 1. Location of river flows affected by natural stone waste**
**Source: Researcher's Documentation (2024)**

The image provides evidence of light green and even gray colored natural stone wastewater flowing along a river where the natural stone industry is located. The polluted river then flows into the agricultural areas owned by farmers. Natural stone industry owners typically establish their businesses on land located along roads, near rivers, and during the natural stone production process. This is due to the critical need for river water in the natural stone cutting process, where the wastewater is directly discharged into the river, as stated in the book (Manisworo, 2014).

One of the Environmental Pollution Prevention and Control Programs includes education and awareness campaigns. Additionally, the government implements a policy to provide support in the production process as a pilot project.

**Implementation of Natural Stone Waste Policy**

The implementation of natural stone waste policies aims to mitigate the negative environmental and societal impacts caused by the natural stone industry, including water, soil, and air pollution. This policy encompasses various aspects, including regulations, waste

management, education, and socialization within the community. The importance of the government in implementing natural stone waste policies lies in its development strategy, which aims to achieve social welfare by improving the quality of life for everyone.

This study aims to analyze natural stone waste, local government, and Its Implementation. The policy implementation theory used in this study is the one proposed by George C. Edwards III, as cited by Winarno in Kusuma and Simanungkalit (2022), which states that the success of public policy is influenced by four dimensions: communication, resources, disposition, and bureaucratic structure. The following presents the research findings related to natural stone waste: Local Government Policies and Their Implementation.

**Communication**

Communication plays a very important role in the successful implementation of public policies, enabling implementers to understand the steps that need to be taken. In addition, information related to policies needs to be conveyed clearly to the target groups, according to George C, Edward III in (Subarsono, 2013). Communication is a process where individuals convey information to others with the aim of informing or influencing attitudes, perspectives, or behaviors, either directly through speech or indirectly through various media, so that the intended objectives can be implemented, as stated by Onong (2004) in Wahyuni & Pithaloka (2022).

The implementation of socialization and education programs, as well as technical guidance, has been carried out since 2017 to date, not only for business actors but also for villages and sub-districts, with the primary target of the information policy being natural stone mining entrepreneurs. The Environmental Agency communicates and coordinates program activities that serve as social control, striving to maintain two classifications of data: data that is only accessible internally by the Environmental Agency of Cirebon District or the Internal Government of Cirebon District, and secondly, data that is public and accessible to the community. When conveying information about how each business operator manages wastewater, various methods and approaches are employed. First, through circular letters, whether from the Head of the Cirebon Regency Environmental Agency or the Regent on behalf of the Cirebon Regency Government. Second, through the media, including newspapers, radio, and television. However, information is continuously disseminated through the media, television, or online platforms, thirdly, through communication or educational tools. Fourth, through supervision methods, to disseminate information to all business operators.

Meanwhile, according to interviews with entrepreneurs and local communities, the government's strategy has not been optimal. Entrepreneurs have received education and information through circular letters, but many still fail to comply with the regulations. Natural stone entrepreneurs feel that the existing regulations are still inadequate and often cause difficulties in their business operations. Meanwhile, communities living in areas with natural stone industrial activities feel that the government has not made sufficient efforts to address the environmental impacts caused by these activities.

Thus, in Natural Stone Waste: Regional Policies and Their Implementation, targeted communication has been established, but there is a lack of awareness and attention from natural stone business owners regarding the issue of waste management.

**Resources**

Resources refer to policy content that has been communicated clearly and consistently. However, if the implementation does not have sufficient resources to implement the policy, it cannot be carried out effectively (Subarsono, 2013).

Research conducted by the Cirebon Regency Environmental Agency indicates that human resources are a vital asset that companies must possess. In addition, highly competent resources minimize the impact of waste produced by companies. Implementation strategies to increase public awareness and involvement in managing natural stone waste include, among others:

1. Conducting continuous monitoring
2. Conducting incentive-based supervision
3. Providing assistance to business operators by providing detailed information on incentives and administrative sanctions, ranging from written warnings to government enforcement of license revocation.

Government regulations and policies influence the allocation of funds for natural stone waste management, namely:

1. Allocate budget funds to improve the competence of the Human Resources of the Environmental Agency.
2. The provision of human resources must be increased for officials of the Environment Agency. Budget allocation must be increased so that supervision can be comprehensive
3. Allocation of funds for facilities and infrastructure.

Meanwhile, interviews with local entrepreneurs and communities show that natural stone waste management standards have not been optimally implemented in the management process. In this context, the natural stone industry can have various impacts, both positive and negative, depending on how it is managed. However, several obstacles exist in the operational handling of natural stone waste, including the use of chemicals, electricity requirements, and waste transfer costs. The negative impacts caused by the natural stone industry include water pollution that can disrupt irrigation channels, potentially reducing the quality of agricultural products, particularly rice. On the other hand, the positive impacts include increased financial resources that benefit the local economy and reduce unemployment rates in the area.

**Disposition**

Disposition refers to the tendency to have awareness, rules, and a willingness to behave in a certain way to achieve goals, as noted by Katz (1993) in Jumarianto (2021) and Rahman Hakim (2019). The implementation of government policies where natural stone industry activities are still traditional and passed down through generations, coupled with inadequate educational backgrounds. Therefore, to implement these policies, natural stone industry activities must have an IPAL (Integrated Wastewater Treatment Plant). However, from the perspective of human resources and the mindset of business operators, many operators still violate the regulations. The government imposes strict sanctions on parties that fail to comply with regulations governing the management of natural stone waste, ranging from mild to severe penalties. Mild penalties include written warnings, such as letters of reprimand, while severe penalties include revocation of permits. Once a permit is revoked, the business is no longer allowed to operate.

In the accountability mechanism for natural stone waste management, transparency and compliance with regulations must be strictly enforced:

1. Possess environmental documents, such as Environmental Management Efforts (UKL), Environmental Monitoring Efforts (UPL), or Environmental Management Statement Letters (SPPL).
2. Reporting letters that are required to manage wastewater in accordance with standards, and
3. On-site supervision.

Meanwhile, according to interviews with entrepreneurs and local communities, the government has already implemented and enforced a program to increase transparency of information related to natural stone waste management. However, natural stone industry players

still lack awareness of IPAL (wastewater treatment plants). Challenges also arise from human resources (HR) and mindsets that do not fully support these changes, as well as inconsistency in implementation and a lack of attention to the mechanisms issued by the government.

**Bureaucratic Structure**

Bureaucratic structures are a form of organization responsible for policy implementation and have a significant impact on the success of policy implementation. The nature of the government towards business actors, according to George C Edward III (Subarsono, 2013).

The Cirebon Regency Environment Agency has a comprehensive policy structure for managing natural stone waste, encompassing four key areas: environmental management, legal control and regulation, restoration, and waste management. In implementing this policy, whose function is to supervise and guide business operators so that standard operating procedures (SOPs) are correctly implemented, there are two SOPs, namely;

1. SOP for entrepreneurs

   It is mandatory to treat wastewater using a wastewater treatment plant, where wastewater can be recycled and used as raw material for cutting natural stone.
2. SOP for the Environmental Agency

   Supervision using standard operating procedures, conducting inventory of supervised objects, issuing notification letters, preparing supervision reports, following up on reports, imposing sanctions, issuing warning letters.

Based on the above procedures, the establishment of a natural stone business is already well standardized; however, additional procedures are required to open a business, such as ensuring the completeness of natural stone business documents. According to the Environmental Agency's procedures for establishing a natural stone business, which are clearly outlined, additional procedures are necessary, and manual methods should be avoided to enhance the safety of business operators.

The government has implemented policies, but many business operators continue to violate them. These policies cannot be effectively implemented or enforced if the bureaucratic structure does not operate properly, which can lead to waste of resources and inefficiency, thereby hindering the implementation of policies, such as issuing warning letters and revoking business permits.

**Obstacles and Efforts in Implementing Natural Stone Policies**

The government has implemented its natural stone policy, but there are still obstacles in the implementation process. Obstacles in the implementation of the natural stone policy in Dukupuntang Subdistrict are as follows:

1. Awareness and Mindset

   Natural stone entrepreneurs who still do not consider the impact of their activities can be observed in the traditional nature of the industry and the lack of waste management facilities. Their sole objective is to make a profit without considering the impact of natural stone processing.
2. Obstacles in the licensing process

   Many industries are not yet officially registered or do not have the necessary environmental documents, Ukal Upl documents, or SPPL documents. These documents require companies to have an IPAL.
3. Limited land for management facilities

   Many entrepreneurs still establish businesses by leasing land at relatively high rents, which often results in a lack of concern for waste management.
4. Lack of environmental supervision

   The lack of supervisory officers has led to ineffective guidance, inadequate information provision, and insufficient sanctions.

There are several measures that the Agency can take in handling Natural Stone Waste, including the following:

1. Issuing circular letters, such as circular letters from the Head of the Cirebon Regency Environment Agency, circular letters from the Regent on behalf of the Cirebon Regency Government, containing information related to regulations that must be complied with by the perpetrators. Regulations on waste management include sanctions imposed on companies that commit violations, as well as obligations that must be complied with by business actors in the wastewater treatment process.
2. Communicate through mass media, such as newspapers, radio, or television, and display information on the Cirebon Regency Environment Agency website to inform companies of the steps they need to take in waste management.
3. Using communication or educational methods to change the mindset of business actors in waste management.

4. Continuously monitor and supervise business operators by going directly to the field and disseminating comprehensive information. For example, requiring them to have wastewater treatment plants and quality control systems and prohibiting them from discharging wastewater into rivers.
5. Reporting: Once the perpetrator has carried out their actions, they are required to report everything that has been done. If there are any violations, administrative sanctions will be imposed, starting with a written warning and then revocation of the business license.
6. Allocating budget funds to improve human resource competencies and infrastructure at the Cirebon Regency Environment Agency in handling waste.

Government agencies can take several measures to handle natural stone waste, including intensive supervision and guidance, provision of infrastructure, and implementation of government policies.

## CONCLUSION

Regulations on waste management include penalties imposed on companies that violate these regulations, as well as obligations that businesses must fulfill in wastewater treatment, as outlined in Cirebon Regency Regulation No. 6 of 2016 on Environmental Protection and Management. In implementing policies on natural stone waste management, the government has made efforts to increase public awareness and participation, including optimizing communication. Communication plays a crucial role in achieving the success of public policies. The Environmental Agency communicates through synergistic program activities that serve as social control, striving to maintain two classifications of data: data that is only accessible internally by the Cirebon Regency Environmental Agency or the Cirebon Regency Local Government, and data that is public and accessible to the community. Resources refer to clear and consistent policy content.

Competent resources reduce the impact of waste. Strategies to raise public awareness of natural stone waste management include continuous monitoring, incentive-based monitoring, and providing businesses with information and administrative support. Funding for improving human resource competencies and infrastructure must be increased to enable comprehensive monitoring.

Disposition refers to the tendency to behave according to objectives. The implementation of government policies in the natural stone industry remains traditional, with insufficient education. Enforcement of laws for violations in natural stone waste management ranges from

light to severe penalties. In terms of accountability, there must be environmental documentation and monitoring.

Bureaucratic structure is a crucial form of organization for implementing policies and has a substantial impact on the success of those policies. The Cirebon Regency Environmental Agency has a structure for managing natural stone waste with four divisions: environmental management, legal control and regulation, restoration, and waste management. Its task is to supervise and guide business operators to ensure that standard operating procedures (SOPs) are followed. There are two SOPs: one for business operators and another for the Environmental Agency.

The agency conducts oversight, issues circular letters, and requires reporting from businesses establishing operations. It also provides guidance and development support to businesses in the natural stone industry to ensure proper disposal of wastewater. Several obstacles exist, including the awareness and mindset of natural stone business operators, limited land for waste management facilities, and inadequate environmental oversight. Therefore, the Cirebon Regency Environmental Agency needs to enhance oversight and inter-agency communication. To address the issues hindering policy implementation, various solutions are available for the implementation of natural stone waste management policies in Cirebon Regency.

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