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Waste Management Policy: Government or Company Responsibility?

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Abstract. This article aims to analyse the case of water pollution in the Brantas Watershed and explore the application of Corporate Citizenship and Corporate Social Responsibility (CSR) by stakeholders (companies and communities located around the Brantas Watershed), related to industrial and domestic waste management. The main focus of the research is on the social responsibility of the stakeholders, as well as the role of the central government, provincial government, and district/city government in controlling environmental pollution. Using a qualitative approach with a case study method and secondary data analysis, this research describes the various negative impacts of pollution, ranging from damage to the river ecosystem to health risks for the community. The results show that pollution of the Brantas River is caused by the industry's low compliance with waste treatment, weak government supervision, and lack of community participation in protecting the environment. Despite regulatory efforts and legal interventions, policy implementation still faces constraints and limited resources. This research recommends increased supervision, stricter law enforcement, cross-sector collaboration, and community education as strategies to strengthen the sustainability of river management.

Keywords: Environmental Pollution; Industrial Waste; Corporate Social Responsibility (CSR); Corporate Citizenship (CC); Sustainable Development;

INTRODUCTION

A river is a natural and/or artificial waterway or container in the form of a water flow network and the water in it, starting from the upstream to the estuary, which is limited on the right and left by a border line (Government Regulation of the Republic of Indonesia Number 38 of 2011, concerning rivers). People who live around rivers utilize river water for consumption, sanitation, and other daily activities. However, increasing population, urbanization, and industrial development can increase river pollution. Pollution that occurs in river flows is generally a direct result of various human activities and the surrounding environmental conditions (Alfatihah et al., 2022; Chan Kujiek & Sahile, 2024; Marselina et al., 2022; Wikurendra et al., 2022). Waste that enters the river can change the physical, chemical, and microbiological characteristics of water, which are indicators of the level of pollution. River water quality is a reflection of the quality of water sources in the surrounding area, which is also often affected by activities in the watershed (Alyandri et al., 2019; Arifin, 2021; GAZALI & WIDADA, 2021; Hanum et al., 2022). In addition, sources of pollution can come from various things, including domestic waste (household waste), industrial waste (post-production waste by industry), and mining activities (mining industry waste). If this waste is not managed properly, it will have a long and serious negative impact on the environment through hazardous substances that pollute water and soil for the surrounding community. According to Wintoro (2012), environmental damage is often caused by the orientation of companies that are too focused on achieving profits alone, without considering the impact on

the surrounding ecosystem. This negligent attitude towards environmental sustainability leads to the exploitation of non-renewable natural resources, causing long-term losses to the preservation of nature.

For this reason, companies are expected not only to prioritize profit but also the surrounding balance. *Corporate citizenship* is an ideal situation and is expected by a company, where the company not only prioritizes profit and the quality of the value brought, but also prioritizes sustainability, so the company can compete with other similar companies. *Corporate citizenship* involves business social responsibility, ethics, law, economics, and wisdom or philanthropy (Carrol, 2016). All lines of business have ethical and legal responsibilities, but most businesses succeed in building a good and strong *corporate citizenship* foundation so that they can demonstrate commitment through ethical behavior by creating a balance between the needs of stakeholders, the needs of society, and the needs of the surrounding environment. These practices can help companies gain customers and successfully build brand and company loyalty in the community.

In addition, *corporate citizenship* is able to assist companies in creating responsible business practices and building community involvement so that there is a value exchange process between the company and the wider community. The World Commission on Environment and Development (WCED) in the *Brundtland* Report (1987) examines *CSR* in three *3P* focuses, namely Profit, Planet, and People. According to Carrigan et al. (2013), the concept of *corporate citizenship* is realized with *Corporate Social Responsibility (CSR)*. *Corporate Social Responsibility (CSR)* is a manifestation of the idea of sustainable development, which is covered in three dimensions: economic development, environmental protection, and social equality. Basically, it reflects a form of social progress that respects the needs of each individual while ensuring the protection of the ecosystem as a whole. The management of natural resources is done wisely, while maintaining sustainable economic growth and avoiding inequalities in the provision of employment in society.

These principles are no exception for companies that stand around the *Brantas* Watershed, where, in addition to prioritizing Profit, they also need to pay attention to two other *3P* focuses, namely Planet and People. In terms of profit, the company must ensure that its operational activities generate sustainable profits without sacrificing social and environmental aspects. These profits are usually obtained and used for investment in environmental management and social programs. In terms of Planet, the company must pay attention to environmental aspects such as managing waste properly in accordance with quality standards to avoid discharging liquid waste directly into the river without treatment. In this aspect, several companies around the *Brantas* Watershed implement an integrated waste management system, adopting the *3R* principle reduce, reuse, and recycle which includes efforts to reduce waste, reuse materials, and recycle processes to significantly reduce environmental impacts. In terms of People, the company engages and empowers the surrounding community through *CSR* programs that focus on improving welfare, skills training, and providing access to clean water. This empowerment is a form of concern for environmental sustainability and community welfare, which is needed because sustainability is not only about the company's ability to grow, but also about maintaining and enjoying the environment for the next generation.

However, in 2024, it was discovered that one of the companies around the *Brantas* Watershed was suspected of dumping waste into the *Brantas* River. Moreover, the *Brantas*

River is used by the Regional Drinking Water Company as raw material for regional drinking water. Company waste that is not properly processed will contaminate river water and potentially enter the human food chain. Over time, the negative impact of contamination will disrupt the body's hormonal and metabolic systems. In addition to having a negative impact on humans, river water and waste contamination can also disrupt the health of river biota. For example, fish experience intersex (sexual anomalies in fish, such as eggs growing in the gonads of male fish). The phenomenon of intersex fish can potentially decrease the fish population in the *Brantas* River. By knowing the adverse effects caused by the activities of groups and industries around the *Brantas* Watershed, researchers are interested in analyzing cases of *Brantas* Watershed water pollution and exploring the theory and practice of implementing *Corporate Citizenship* and *Corporate Social Responsibility (CSR)* by stakeholders responsible for *Brantas* Watershed water pollution. The researcher conducted this research article with the aim of analyzing the role of each stakeholder in dealing with water pollution problems in the *Brantas* Watershed.

METHOD

This research used a qualitative approach to gain an in-depth understanding of the phenomena experienced by the research subject. The author chose the case study research method because it allowed researchers to analyse the adverse effects of Brantas Watershed water pollution, and the roles and social responsibilities carried out by stakeholders. The method used was a descriptive literature study, focusing on analysing the adverse effects of Brantas Watershed water pollution and the roles and social responsibilities that had been carried out by stakeholders, relying on secondary data as the main source of information.

RESULTS AND DISCUSSION

The presence of industry along the Brantas Watershed contributes significantly to economic and social development in East Java Province. The industries developed in this region provide thousands of jobs for local communities, thereby increasing the income and welfare of residents around the Brantas watershed. The growth of the industrial sector has contributed to sustainable economic development, increased regional income and strengthened the community's economic base. The Brantas River, as a major water resource, supports various industrial activities that are the main drivers of regional economic growth. The area around the Brantas Watershed in East Java has developed into an industrial growth centre that includes the manufacturing sector, food and beverage processing, paper, plastics, and basic metal and chemical industries.

In addition, the Brantas River also plays an important role in supporting the agricultural sector, which is the national food barn, especially in providing irrigation water. Industries operating around the river also support the development of infrastructure and facilities needed for the production and distribution of agricultural and industrial products. Along with the increasing awareness of the importance of environmental conservation, some industry players in the Brantas Watershed area have begun to adopt environmentally friendly technologies and develop more sustainable products. For example, the implementation of production processes that reduce waste and use recycled raw materials, the development of food and beverage

packaging made from biodegradable materials that can decompose naturally without polluting the environment, as part of Corporate Social Responsibility (CSR) and Corporate Citizenship (CC) efforts. These environmentally friendly products are expected to not only reduce the negative impact on the Brantas Watershed, but also increase the company's competitiveness in national and international markets.

But unfortunately, in the production process of these environmentally friendly products, business actors are suspected of discharging the liquid and solid waste that pollutes the river. This is evidenced by several laboratory tests that have been conducted and show that the Brantas River contains hazardous chemical elements Chemical Oxygen Demand (COD), Total Suspended Solid (TSS), iron (Fe), Total Dissolved Solids (TDS), lead (Pb), Copper (Cu), Chromium (Cr), and other compounds. This leads to significant deterioration in water quality, discolouration of the water to murky brown, unpleasant odour, and mass mortality of fish. ECOTON explains that water with high levels of Fe and TDS has the potential to cause negative impacts on human health and other organisms that live in it. In line with this, Ika (2012) explained that the presence of heavy metals in waters carries a great risk both directly to aquatic organisms and indirectly to humans who consume them. Heavy metals are known to be difficult to decompose naturally and have a tendency to accumulate in the aquatic environment, potentially causing long-term pollution and toxic effects that are detrimental to ecosystems and human health. This accumulation of heavy metals can occur in aquatic organisms such as fish and other marine life, which can then enter the food chain and negatively affect human health if consumed in excessive amounts or over a long period of time.

Long-term consumption of water with high Fe levels can result in organ damage, such as days or heart disease, and consumption of water with high TDS can result in the risk of kidney disorders and cardiovascular disease. In addition to having an effect on human health. In addition to factory waste, household waste and agricultural waste discharged into rivers also have serious impacts on river ecosystems such as degradation of water quality, damage to the natural habitat of river biodiversity, and a decrease in the population of aquatic organisms because species unable to adapt to pollution are drastically reduced and the biodiversity of interrelated ecological systems has been lost (Safenlock). In addition to affecting biodiversity, heavy metals can also affect the respiratory tract (gills) and digestive tract of river biota if heavy metals successfully enter the body tissue (Setiawan, 2013). Furthermore, Darmono (2001) said that the absorption process of metals entering through the respiratory tract in aquatic animals tends to be quite large. Absorption of metals through the gills with the highest metal residues is usually found in the liver and kidneys (Rumahlatu, 2011). Inside the cell, heavy metals will combine with other molecules called ligands. Heavy metals can attach to parts of proteins called sulfhydryl groups, thus damaging the protein. This damage will eventually disrupt metabolic work in the body (Palar, 2004).

In October 2023, ECOTON conducted a fish census of the Berantas River and found that the local fish diversity had decreased to only 7 species, which was drastically reduced compared to the data from 10 years ago. Dozens of species were no longer found. This is likely due to the poor water quality of the river, which has caused the fish to migrate to better places. In addition, ECOTON also conducted a survey of 535 residents in the East Java region, where as many as 62.1% of respondents considered that the management of the Brantas Watershed by the provincial government, especially the Governor of East Java, was poor. The majority of

residents, around 75%, identified household liquid waste as the main source of pollution of the Brantas River, while the other 25% came from industrial waste that was not adequately treated. However, in May 2025, the Brantas River again experienced severe mass fish kills, especially in the Surabaya River, a tributary of the Brantas River that crosses the Gresik and Surabaya districts. Thousands of local fish such as Rengkik, Keting, white Bader, and red Bader were found floating dead due to heavy pollution allegedly from industrial and domestic waste discharged directly into the river without adequate treatment (Ecoton, 2025; Kompas, 2025). Water quality measurements showed dissolved oxygen (DO) levels of only about 0.1 mg/L, far below the water quality standard threshold of 4 mg/L, which caused fish stress and mass mortality. This condition is exacerbated by weak environmental governance and supervision, including the lack of law enforcement against polluters and the lack of coordination between local governments and river management agencies.

In the context of responsibility, the Brantas River as a National Strategic River Basin is under the authority of the central government, but the East Java provincial government and city/district governments also have an important role in supervision and law enforcement in their areas. The central government has the main authority in managing the Brantas Watershed because the Brantas River is designated as a National Strategic River Basin. This is regulated in Presidential Decree Number. 12/2012 and strengthened by Law Number 23/2014, which states that watershed management is the authority of the central government, while provincial and district/city governments play a role in coordination and implementation in their respective areas. In the context of pollution control, the central government has implemented various regulations, including Government Regulation Number 22 of 2021 concerning the Implementation of Environmental Protection and Management which replaces Government Regulation Number 82 of 2001, as well as Decree of the Ministry of Public Works and Public Housing Number 904/KPTS/M/2021 concerning the Brantas River Basin Water Resources Management Plan which emphasizes integrated planning (Ministry of Public Works and Public Housing, 2021). In 2024, the Supreme Court, through Decision Number 1190K/PDT/2024 on April 30, 2024, has ordered the Governor of East Java to take steps to remedy pollution. This decision obliges the Government, namely the Governor of East Java and the Ministry of Public Works and Pubic Housing, to:

1. Order the Defendants to apologise to the communities in the 15 cities/regencies through which the Brantas River flows for the negligent management and supervision that has led to mass fish kills every year.
2. Order the Defendant to include a program to restore the water quality of the Brantas River in the State Budget.
3. Ordering the Defendants to install CCTV at every outlet of the Brantas watershed to improve the monitoring of liquid waste disposal.
4. Order the Defendants to conduct an independent examination of all Provincial Environmental Agencies in the province of East Java, both Provincial Environmental Agencies and City/Regency Environmental Agencies, involving elements of the community, academics, environmental consultants and NGOs in the field of environmental management in this case, liquid waste disposal.
5. Order the Defendants to issue a warning to industries, especially those located in the Brantas watershed area, to manage liquid waste before discharging it into the river.

6. Ordering the Defendants to take legal action in the form of administrative sanctions for industries that violate or discharge liquid waste that exceeds the quality standards based on Government Regulation Number 82/2001.
7. Ordering the Defendants to install *real-time* water quality monitoring devices at each Liquid Waste Discharge outlet along the Brantas Watershed, to make it easier for the government to supervise and monitor the industry.
8. Ordering the Defendants to conduct a campaign and educate the people of the Brantas Watershed area, not to consume fish husbands who died because of industrial waste.
9. Ordering the Regency/City Environmental Agency to coordinate with the industry in the procedures for returning liquid waste that is the responsibility of the industry.
10. Ordering the Defendants to form a task force team to monitor and supervise the disposal of Liquid Waste in East Java.

The verdict came about because on January 4, 2019, ECOTON took legal action by filing a lawsuit against the Governor of East Java and the Ministry of Public Works and Public Housing over the mass fish deaths that repeatedly occurred in the Brantas River. The basis of the lawsuit is that the fish deaths are caused by pollution from industrial waste and poor management by the government. The results of the lawsuit mentioned by ECOTON have been granted by the Panel of Judges. However, in 2024, the Governor of East Java and the Ministry of Public Works and Public Housing filed an appeal against the Surabaya District Court's verdict Number 8/Pdt.G/2019/PN.Sby, which held them responsible for the pollution of the Brantas River, which had caused mass fish deaths. The cassation was eventually rejected by the Supreme Court.

At the Provincial level, the East Java Provincial Government is responsible for supervising, controlling, and implementing administrative actions against pollution sources in its territory. The East Java Provincial Government, as the main implementer at the regional level, has carried out supervision, education and control of pollution sources through the Provincial Environmental Agency. The provincial government's commitment is also evident from its efforts to follow up on the Supreme Court's decision, including the allocation of a recovery budget, the installation of CCTV and water quality monitoring devices at liquid waste outlets, and the formation of a Task Force involving elements of the community, academics, and environmental NGOs (Ecoton, 2024). Then, in addition to the Central Government and the East Java Provincial Government, the City/District Government also has a strategic role in supervision, licensing, and law enforcement at the local level, including domestic waste management and supervision of industries in its area. The Environmental Agency at the city/district level is tasked with controlling water pollution through supervision, enforcement of sanctions, and education of the community and businesses. However, specific regulations on watershed management at the district/city level are still very limited and generally follow the policies of the central and provincial governments.

The existence of this decision certainly means that the East Java Provincial Government and the Ministry of Public Works and Public Housing will face their own obstacles and challenges, including:

1. Limited Budget Capability.

   To fulfil the obligations stipulated in Decision Number 1190K/PDT/2024, the Government needs to consider adding budget details in connection with the Brantas River pollution as a form of commitment of the East Java Provincial Government and the Ministry of Public Works and Public Housing in overcoming environmental pollution problems. However, the additional costs that arise are certainly not small because, based on the decision, the Government is required to provide the use of technology for monitoring and supervision needs. For this reason, the government needs to prepare a budget based on a priority scale.
2. Limited Resources.

   In Decision Number 1190K/PDT/2024, the East Java Provincial Government and the Ministry of Public Works and Public Housing are required to carry out planning, implementation, and monitoring of programs and policies in the environment along the Brantas Watershed. The lack of skills and knowledge has led to the need for Human Resources that are expected to be reliable for the process. For this reason, the East Java Provincial Government should collaborate with the ECOTON team for joint patrols in the Brantas Watershed.
3. Non-compliance by Industries along the Brantas Watershed.

   The number of companies that stand along the Brantas Watershed has no awareness or commitment to environmental protection is a challenge for the East Java Provincial Government to discipline industry players to be more concerned about the environment. However, this can be anticipated by re-socialising and supervising the implementation of Government Regulation Number 82/2001 concerning Water Quality Management and Water Pollution Control to industry players along the Brantas Watershed.
4. Poor Environmental Conditions.

   Pollution in the Brantas River is so alarming that it makes people who live around the Brantas Watershed live in poor conditions. These poor environmental conditions can cause poor quality of life and even lead to diseases for residents around the Brantas Watershed. In this case, the East Java Provincial Government should group pollution sources to facilitate the process of controlling and managing environmental pollution, such as:

   a. Pollution Based on Industrial Waste.

      Various industries located along the Brantas Watershed dispose of factory liquid waste directly into the river with inadequate treatment, so that hazardous chemical waste, heavy metals and other organic substances pollute the river.

   b. Pollution Based on Domestic Waste.

      In addition to industrial origin, waste can also come from households, markets and other local businesses that are not treated. In this category, wastes that become sources of pollution include detergents, faeces, organic waste, and other hazardous materials.

   c. Pollution Based on Agricultural Waste.

      Pollution waste can also come from agriculture. This waste usually comes from the excessive use of fertilisers and pesticides in agriculture. Fertilizers and pesticides are carried away by rainwater, causing excessive algae growth that covers the water surface and blocks sunlight from entering the water and can kill beneficial aquatic organisms.

d. And other sources of pollution.

Therefore, the East Java Provincial Government needs to take a comprehensive and sustainable approach based on the categorisation of the source of the Brantas River pollution problem to carry out a comprehensive recovery.

5. Low Community Participation.

The lack of community involvement in monitoring the supervision and implementation of environmental policies is often a major obstacle. People who are not involved tend to be less supportive and even refuse to support policies that will be enforced, thus reducing the effectiveness of government actions. For this reason, it is necessary to socialise the management of industrial waste and domestic waste and thoroughly educate the community regarding domestic waste management and household waste so that the community can participate in supporting the success of environmental supervision for the better. In addition, this activity can also increase public confidence in the Company that the Company has really carried out good waste management.

The policy performance of the central, provincial and city/district governments in controlling Brantas River pollution in 2024-2025 shows progress in the regulatory aspect, but still faces major challenges at the implementation level. At the provincial government level, commitment has been shown by the allocation of a recovery budget, the installation of water quality monitoring devices, and the establishment of a Task Force on liquid waste supervision. However, supervision in the field is still weak, administrative sanctions have yet to provide a deterrent effect, and cross-office synergies need to be improved. The city/district government, despite its strategic role in domestic effluent management and supervision of small industries, still faces the constraints of limited regulations, limited infrastructure, and low public awareness and participation. While the policy and regulatory framework related to Brantas River pollution control has been significantly strengthened, the successful implementation of the policy depends on several key factors that can also be used as recommendations.

The first factor is that stricter and more systematic supervision needs to be improved so that any violations can be detected and followed up quickly and accurately. Second, strict and consistent law enforcement must be prioritized to provide a deterrent effect to the perpetrators of pollution, thus encouraging compliance with applicable regulations. The third factor is that cross-sector collaboration between the central, provincial, district/city governments, as well as private institutions and civil society, must be strengthened to create effective synergy in water resources management and waste control. The fourth or last factor, increasing active community participation through education, environmental awareness, and involvement in supervision, is an important factor that can support the sustainability of efforts to preserve the Brantas River. Thus, the success of pollution control depends not only on formal regulations but also on real implementation involving all stakeholders in an integrated and sustainable manner. Furthermore, the Brantas River pollution control policy can run effectively and sustainably according to the mandate of the latest regulations and court decisions.

CONCLUSION

Communities around the Brantas Watershed have a dual role as both victims of pollution and potential agents of environmental monitoring, yet their participation in oversight and policy enforcement remains limited, often exacerbated by harmful practices such as direct waste disposal into the river. Despite the central government's responsibility for regulation and law enforcement as the Brantas is a National Strategic River Basin, persistent challenges like limited budgets and resources, weak provincial oversight, insufficient inter-agency collaboration, and inadequate local infrastructure continue to hinder effective management. Strengthening synergy among all stakeholders—including government at all levels, companies, and communities—is essential to restore and preserve the Brantas Watershed. Recommended actions include enhancing community education and engagement, introducing green funds and targeted regulations, developing real-time water quality monitoring, and improving intergovernmental cooperation. For future research, it is suggested to explore innovative community-based monitoring models and assess their effectiveness in improving stakeholder collaboration and river health outcomes.

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