CITIZEN PERCEPTION

AND INTER-INSTITUTIONAL MANAGEMENT OF THE ENVIRONMENTAL DEGRADATION OF THE POVE RIVER

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PERCEPCIÓN CIUDADANA Y GESTIÓN INTERINSTITUCIONAL FRENTE A LA DEGRADACIÓN AMBIENTAL DEL RÍO POVE

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ABSTRACT

The pollution of the Pove River in Santo Domingo constitutes a socio-environmental problem that transcends the strictly ecological to become a reflection of the tensions between citizens and public institutions. Although various organizations have recognized the severity of the riverbed's deterioration, progress in its restoration is scarce and fragmented. This situation is largely explained by the lack of inter-institutional coordination and weak links with the communities settled along the riverbanks, whose participation is crucial to reversing the accumulated damage. The research focuses on examining how these dynamics of dislocation impact the persistence of harmful daily practices, such as the dumping of household waste and the lack of effective control over productive activities that intensify environmental degradation. Analyzing citizen perceptions of the problem, it is evident that the river is simultaneously conceived as a vital resource and a disposable space, which generates contradictions in the construction of a collective environmental consciousness. There is a need to move beyond isolated approaches that reduce environmental management to occasional campaigns or specific cleanup interventions, and instead propose a strategy that integrates social co-responsibility and sustained government commitment. This perspective allows us to understand that the recovery of the Pove River is not only a technical matter, but also a process of cultural and political transformation.

Keywords:

Community participation, environmental justice, ecological restoration, environmental culture, sustainable development.

RESUMEN

La contaminación del río Pove en Santo Domingo representa un problema socioambiental que trasciende las preocupaciones meramente ecológicas para convertirse en un reflejo de las tensiones entre la ciudadanía y las instituciones públicas. Aunque diversas organizaciones han reconocido la gravedad del deterioro del río, los avances hacia su recuperación siguen siendo limitados y fragmentados. Esta situación se explica en gran medida por la falta de coordinación interinstitucional y la escasa vinculación con las comunidades asentadas a lo largo de sus riberas, cuya participación resulta esencial para revertir los daños acumulados. Esta investigación se centra en examinar cómo estas dinámicas de desarticulación contribuyen a la persistencia de prácticas cotidianas perjudiciales, como la disposición de desechos domésticos y la ausencia de un control efectivo sobre las actividades productivas que intensifican la degradación ambiental. Al analizar las percepciones ciudadanas sobre el

problema, se evidencia que el río es concebido simultáneamente como un recurso vital y como un espacio desechable, generando contradicciones en la construcción de una conciencia ambiental colectiva. El estudio propone superar los enfoques aislados que reducen la gestión ambiental a campañas ocasionales o intervenciones puntuales de limpieza, planteando en su lugar una estrategia que integre la corresponsabilidad social y un compromiso gubernamental sostenido. Esta perspectiva subraya que la recuperación del río Pove no es únicamente un asunto técnico, sino también un proceso de transformación cultural y política.

Palabras clave:

Participación comunitaria, justicia ambiental, restauración ecológica, cultura ambiental, desarrollo sostenible.

INTRODUCTION

The Constitution of the Republic of Ecuador incorporated a legal milestone by recognizing, in its Chapter VII, the rights of nature, declaring that ***Pacha Mama*** , the space in which life is reproduced and sustained, has the right to have its existence respected, as well as to the conservation of its vital cycles, structure and evolutionary processes (Ecuador. Asamblea Nacional Constituyente, 2008) . This recognition placed the country in the international sphere as a benchmark in the incorporation of environmental principles into the legal system, directly linking sustainability with ecological justice.

In parallel, the same fundamental norm established in Article 12 that access to water constitutes a fundamental and inalienable human right, defining it as a strategic, inalienable, and essential national asset for life (Ecuador. Asamblea Nacional Constituyente, 2008). This provision reaffirms that water should not be conceived solely as an economic resource, but as a basic right whose management must respond to criteria of equity and sustainability.

Despite this legal framework, water management in the country faces severe challenges. Only about 12% of domestic wastewater is treated, while the remaining 88% is discharged directly into streams and rivers, causing significant ecosystem degradation (Antúnez Sánchez et al., 2024; Velásquez Piñas et al., 2023). The National Secretariat of Water (now the Ministry of the Environment) has warned that rivers located below 2,800 meters above sea level are highly polluted and their waters are unfit for human consumption (Caicedo Vélez et al., 2025; Ríos Tobón et al., 2017).

Secondary regulations, particularly the Unified Text of Secondary Environmental Legislation (TULSMA), establish technical discharge parameters such as BOD, COD, and total suspended solids, seeking to limit the impact of discharges on water bodies (Subía Cabrera & Subía Cabrera, 2022). However, compliance levels are far from what was expected. Recent experience shows that only through judicial proceedings (such as the cases of the Monjas, Machángara, and Aquepi rivers and the Los Cedros Protective Forest) has it been possible to make the magnitude of the problem visible and demand the responsibility of the authorities in defending environmental rights.

An analysis of these rulings shows that the lack of urban planning, uncontrolled expansion, and poor enforcement of controls have intensified the deterioration of rivers and forests. This violates both the rights of nature and the human right to water.

In this context, the Pove River in Santo Domingo has become an illustrative example of the contradiction between the regulatory framework and environmental reality. Various institutional reports have pointed out the presence of untreated domestic and industrial discharges, generating risky conditions for both public health and the integrity of the ecosystem. Although certain inspections have recorded indicators of aquatic life, recent technical studies place it in low-quality categories due to non-compliance with key parameters such as COD and fecal coliforms (Hermawan et al., 2025; Mestanza Ramón et al., 2021).

The lack of sanitation infrastructure and ineffective enforcement of environmental regulations preclude a critical situation that demands immediate responses. Based on this background, this article examines how the lack of inter-institutional coordination and limited public awareness influence the persistence of pollution in the Pove River , in order to identify strategies for social and governmental co-responsibility that promote its ecological recovery.

MATERIALS AND METHODS

The study was conducted using a documentary, observational, and participatory approach, seeking to understand the environmental situation of the Pove River and the institutional management associated with its restoration. To this end, three levels of analysis were undertaken: legal, technical, and social.

First, a **documentary analysis** of the jurisprudence of the Constitutional Court of Ecuador was carried out, taking three emblematic rulings as references: No. 2167-21-EP/22 (Monjas River), No. 1185-20-JP/21 (Aquepi River), and No. 1149-19-JP-21 (Los Cedros Protective Forest). The selection responded to their relevance in the protection of nature rights and their applicability to the case of the Pove River . The review was oriented to the identification of legal principles, reparation orders, and institutional responsibilities that could serve as a framework for comparison.

Second, **direct field observations were conducted** in different sections of the Pove River , prioritizing areas with high population density and visible discharges. During these sessions, the physical characteristics of the water (color, odor, and turbidity) were recorded, as well as the presence of solid and industrial waste. To ensure objectivity, a

previously designed observation guide was used, which allowed for a systematic description of visible indicators of pollution.

The third component consisted of **semi-structured interviews** with representatives of key institutions: the Ministry of the Environment, the Municipality of Santo Domingo, and the Provincial Prefecture. A set of questions was outlined to clarify competencies, ongoing programs, technical limitations, and funding sources. These interviews were complemented by input from environmental experts and academics, which facilitated the comparison of official information with independent perspectives.

community interviews were conducted in riverside areas with residents who had directly experienced the deterioration of the river. Participants were intentionally selected, seeking diversity in age, occupation, and length of residence. The testimonies collected allowed for an exploration of the social dimension of the problem, particularly their perceptions of the impacts on health, quality of life, and trust in institutions.

The integration of these four sources (jurisprudence, direct observation, institutional interviews, and community interviews) created a methodological design with a mixed approach, albeit with an eminently interpretive purpose. This framework allowed for the articulation of legal, technical, and social data, offering a comprehensive view of the problem and generating comparative data with other environmental protection cases in the country.

RESULTS AND DISCUSSION

Results of the documentary analysis

A review of case law shows that the Ecuadorian Constitutional Court has strengthened the application of the rights of nature and the environment in several cases. In Judgment No. 2167-21-EP/22 (Lazo Sánchez, 2025) , regarding the Monjas River, it was found that the municipality of Quito had prepared pollution assessments, albeit without effective implementation. The Court ordered comprehensive reparation measures aimed at improving water quality and preserving ecosystems.

In Judgment No. 1185-20-JP/21 (Macias Bravo & Guerrero Aray, 2025) , which involved the Aquepi River , it was determined that the authorization for the use of the flow violated the right to water, environmental consultation, and the integrity of the ecological flow. Consequently, the authorization was revoked, and the obligation to conduct environmental assessments prior to infrastructure projects was emphasized.

For its part, in Judgment No. 1149-19-JP-21 (Cure Bueno, 2024) , related to the Los Cedros protected forest, the Court applied the precautionary principle in the face of the risk of irreversible damage resulting from mining. The Court recognized the intrinsic importance of nature, as well as the strategic value of water for human consumption and biodiversity. Furthermore, it identified that the lack of environmental consultation prior to the granting of concessions violated the constitutional rights of communities.

Observation results

Physical analysis of the Pove River water showed it to be unsuitable for safe consumption or use, with poor color, odor, and turbidity. The presence of plastics, glass, and metals, including those from household appliances, was also recorded. Pollution is exacerbated by untreated domestic and industrial discharges, combined with the presence of nearby settlements that discharge waste directly into the river.

The lack of consistent intervention by authorities is reflected in the accumulation of waste and the deterioration of the ecosystem. Residents reported illnesses such as dengue fever and dermatological conditions, linking environmental degradation with negative effects on public health.

Results of institutional interviews

In interviews with the Ministry of the Environment, inconsistencies were observed in the definition of responsibilities for river management. Initially, it was indicated that jurisdiction fell solely to the Prefecture, although the existence of shared responsibilities with the Decentralized Autonomous Governments was later recognized. The municipality, in particular, is responsible for wastewater treatment and the provision of drinking water.

The Municipality of Santo Domingo reported that the Zone B Sewerage Plan is underway, aimed at redirecting wastewater to the Bellavista treatment plant. This project is estimated to reduce the pollutant load discharged into the Pove River by 60 to 80% . However, it was noted that high infrastructure costs, a lack of inter-institutional coordination, and limited public awareness represent significant limitations to consolidating a comprehensive recovery process.

The Prefecture, for its part, reported hydrological and bathymetric studies on other rivers in the province, but not on the Pove . Its interventions focus on planning public works and environmental education programs for the community.

The director of the municipality's flagship projects specified that the financing comes from international loans, with the main infrastructure currently at 95% completion, and pending deadlines for residential connections. He also warned that uneven urban expansion limits system coverage and requires consideration of alternatives such as compact treatment plants.

An environmental engineer interviewed noted that the river's water quality is critical and that official studies differ from those conducted by private universities. While institutional reports from 2019 indicate tolerable levels of

pollution, 2021 investigations report concentrations that exceed permissible limits, particularly in central areas of the riverbed. This discrepancy reveals gaps in monitoring and creates uncertainty about the true magnitude of the problem.

Community interview results

Testimonies from residents near the Pove River coincide in pointing to direct impacts on health and quality of life. They described recurring skin diseases in children, a proliferation of mosquitoes, and persistent odors, especially during the dry season. The accumulation of solid waste in the riverbed causes blockages and overflows in residential areas, increasing the perception of neglect by the authorities.

The community reported that the pollution has persisted for several decades and that the actions implemented have not produced visible improvements. Although ongoing sewage projects are mentioned, the lack of clear information about their scope reinforces citizen distrust in public administration.

An analysis of the results obtained regarding the environmental situation of the Pove River and the associated inter-institutional management reveals a complex picture, in which legal, technical, and social factors converge and influence the persistence of pollution. Ecuadorian constitutional jurisprudence has set a precedent by recognizing and reinforcing the rights of nature in cases such as those of the Monjas River, the Aquepi River , and the Los Cedros Protected Forest.

In these scenarios, the Constitutional Court has required the competent institutions to assume responsibility for pollution and extractive activities that endanger ecological integrity. This is particularly illustrative in the case of the Pove River , given that the deteriorating conditions observed reproduce similar patterns: lack of effective implementation of diagnostics, absence of prior environmental consultations, and deficiencies in mechanisms for controlling waste discharge.

A comparison with these rulings demonstrates that the problem is not limited solely to the local situation of Santo Domingo, but is part of a broader trend of tensions between urban development, economic activities, and environmental preservation. While in other cases the Court has ordered comprehensive reparation measures, in the POVE case , there is still limited institutional action that fails to respond with the same force. This suggests that, despite the favorable regulatory and jurisprudential framework, concrete responses at the territorial level remain fragmented and lack continuity.

Direct observation of the Pove River revealed a physical state incompatible with basic uses, confirming the magnitude of its degradation. The presence of plastics, glass, metals, and domestic and industrial waste is indicative of a systematic lack of wastewater treatment and solid waste control. This condition is directly related to community reports of diseases such as dengue fever and skin conditions, reinforcing the interdependence between environmental quality and public health.

The discussion must therefore incorporate a health perspective, as this is not just an ecological impact, but a constant risk to riverine populations. In this sense, the Pove River serves as an indicator of the interrelationship between environmental and social factors, where ecosystem deterioration translates into immediate impacts on quality of life.

The information provided by the interviewed institutions reveals a dynamic of diffuse responsibilities. While the Ministry of the Environment recognizes shared responsibilities, the municipality emphasizes water purification and the implementation of sewage projects. The Prefecture, for its part, focuses its efforts on studies and educational programs, without directly intervening in river sanitation. This fragmentation of roles creates operational gaps that delay the implementation of effective measures. While the Zone B sewage project represents a significant advance, its coverage restrictions and international financing challenges expose the difficulty of guaranteeing comprehensive sanitation.

The discrepancy between official data and studies conducted by private universities is another point of analysis. While institutional reports indicate tolerable levels of pollution, academic studies report concentrations that exceed the permitted limits. This discrepancy reflects the absence of a unified monitoring and control system, which creates uncertainty about the true extent of the deterioration.

The lack of transparency and consistency in data impedes the design of appropriate public policies and limits citizen trust in institutions. The discussion at this point refers to the value of independent scientific knowledge, which is essential for verifying official information and promoting evidence-based environmental management.

Community accounts confirm that the perception of institutional neglect is widespread. The population associates pollution with an increase in illnesses, unpleasant odors, and disruptions to daily life. This social dimension is fundamental to the discussion, as the legitimacy of environmental policies depends largely on public trust. Misinformation about ongoing projects reinforces this mistrust and contributes to the community's lack of active participation in recovery processes. Thus, a cycle of passivity develops in which the population perceives the river as an unrecoverable space, while institutions act in a biased and uncoordinated manner.

It is necessary to analyze the situation of the Pove River in light of the concept of socio-environmental co-responsibility. The recovery of an urban ecosystem requires not only investments in infrastructure, but also a cultural shift that

involves citizens in waste management and monitoring of polluting discharges. The evidence presented shows that isolated interventions, whether municipal or provincial, are insufficient to reverse the deterioration. Only a coordinated inter-institutional strategy, which considers the active participation of the community, can generate a sustained impact over time.

Furthermore, the jurisprudence analyzed demonstrates that the rights of nature should not be understood solely in declarative terms, but rather as a binding requirement that guides public policies. The Pove River experience suggests that the existence of an advanced legal framework does not automatically guarantee improved environmental conditions. The discussion must therefore recognize the gap between constitutional recognition and practical implementation, which depends on factors such as institutional capacity, funding, and political will.

The situation on the Pove River is an emblematic example of the tensions between environmental legislation, institutional action, and community perception. Environmental deterioration is evident in the physical aspects, the impact on health, and the loss of social trust. The institutional response is characterized by a dispersion of responsibilities and a lack of consistency in data, which limits the effectiveness of the projects undertaken.

The community, although directly affected, remains in a position of distrust and limited participation. This confluence of factors highlights the need for a more integrated environmental management model that incorporates constitutional jurisprudence as a guide, strengthens independent monitoring mechanisms, and promotes active co-responsibility between institutions and citizens. Only in this way will it be possible to move toward a progressive recovery of the Pove River and toward an environmental governance approach that transcends normative rhetoric to translate into effective and sustainable practices.

CONCLUSIONS

Despite the existence of a comprehensive regulatory framework in Ecuador, including the Constitution, the Organic Environmental Code, and the Organic Law on Water Resources, its enforcement in the management of the Pove River has been deficient. The lack of effective control over wastewater and solid waste discharges has exacerbated river pollution over the years. Previous administrations of the Decentralized Autonomous Governments (GAD) failed to implement adequate plans to mitigate this problem, allowing environmental degradation to continue without effective intervention.

The pollution of the Pove River is not only due to the authorities' lack of oversight, but also to a lack of public awareness about the impact of their actions. The improper disposal of waste and sewage has exacerbated the problem, highlighting the need for greater community commitment to its conservation. It is essential that the Municipality implement environmental education and awareness campaigns to foster a culture of ecological responsibility. The recovery of the Pove River depends not only on government management but also on the active participation of citizens in reducing pollution and protecting this water resource.

One of the main factors of pollution in the Pove River , in addition to industrial waste and garbage accumulation, is the discharge of wastewater. Since its inception, Santo Domingo has lacked an adequate sewage and wastewater treatment system. Although the Sewage Plan for Zone B seeks to mitigate this problem, its implementation is partial and faces technical and time constraints. This project focuses exclusively on the installation of residential sewage systems that convey wastewater to a treatment plant.

However, the plant is only in its initial stages of operation. Although authorities have announced progress in implementing the first phase, progress is minimal, and in many areas where the Pove River flows , no intervention has yet been made, maintaining pollution and affecting nearby communities. Furthermore, it is important to note that this project is limited to sewage management and does not contemplate direct actions to decontaminate the Pove River , as that responsibility falls to the Ministry of the Environment, the entity responsible for its restoration and preservation.

Although the Organic Code of Territorial Organization, Autonomy and Decentralization (COOTAD) assigns to the municipal Decentralized Autonomous Governments (GAD) the responsibility for the sanitation of wastewater in urban areas, and to the Prefecture the regulation of polluting industrial activities in rural areas, the Organic Code of the Environment establishes that the Ministry of the Environment is the governing authority in matters of environmental management, with the power to supervise and guarantee compliance with environmental regulations, as well as the treatment of water resources.

However, according to the interviews conducted, the Ministry of the Environment 's involvement in the management of the Pove River has been limited and dependent on the implementation of the Zone B Sewerage Plan, primarily restricting itself to the issuance of environmental licenses. This has led to delays in the implementation of immediate actions for the river's recovery, as the authorities have conditioned their intervention on the completion of this project, whose estimated completion date extends to 2050.

In practice, coordination between the GADs and the Ministry of the Environment has been deficient due to a lack of cooperation and constant contradictions regarding their responsibilities for managing the Pove River . This lack of institutional coordination has hindered the

implementation of effective measures to control pollution and restore the ecosystem.

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