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The Wastewater in Las Abras Gorge and its Violation of the Right to Live in a Healthy Environment

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Abstract

The purpose of this research is to analyze, from a legal and doctrinal perspective, how environmental pollution affects the right to live in a healthy environment, a fundamental human right formally recognized in the Universal Declaration of Human Rights. The goal is to determine and identify the causes and consequences of the violation of this essential human right, which is the right to live in an environmentally balanced, pollution-free environment—a legal aspect of the right to life. Additionally, it aims to examine environmental pollution, considered one of the most serious offenses as determined by our Constitution within the framework of regulated rights. This is seen as a social necessity for the proper conservation of a healthy environment within society and to prevent the deterioration of our environment. This research is based on a documentary and doctrinal approach, applying qualitative, deductive, analytical, and synthetic research methods, which lead to proposing a potential solution to uncover theoretical contributions, doctrinal insights, international court decisions, as well as the seriousness of human actions. This serves as a solid foundation to strengthen the research. In conclusion, as part of the pursuit of environmental well-being for the planet Earth in harmony with humans and society, and to reduce environmental decline in our city, an environmental management plan with binding provisions for central and decentralized authorities responsible in this field should be implemented. It also requires the commitment of civil society to the care and conservation of nature.

Keywords: wastewater; gorge; right to live in a healthy environment; pollution.

Introduction

The current environmental crisis justifies the urgent need for prompt attention and regulation in environmental matters. This need arises from the convergence of various branches of law intending to cease the potential violation of the right to live in a healthy environment, recognized as a fundamental human right in the Universal Declaration of Human Rights. (Arias, 2021, page 25)

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In November 2002, the Committee on Economic, Social, and Cultural Rights adopted General Comment No. 15 on the right to water. Article I.1 establishes that 'The human right to water is essential for a life in human dignity.' General Comment No. 15 also defines the right to water as the right of everyone to have access to sufficient, safe, acceptable, physically accessible, and affordable water for personal and domestic use. (The right to water. United Nations Committee on Economic, Social and Cultural Rights, 2002)

Ecuador, compared to neighboring countries like Colombia, Brazil, Bolivia, and Peru, has unfortunately become a leader in pollution. In the 1990s, the loss of a healthy environment, such as rivers, seas, and streams, advanced rapidly. Mining and oil activities have affected the conservation of Ecuador's forests and moorlands. In our city, the loss of streams, the filling of channels, settlements near rivers, and especially the lack of treatment of wastewater in these areas contribute to an increased risk of flooding, not only in our locality but also in cities throughout Ecuador. This is because some natural hydrographic basins are located in the Andean region, and with the arrival of seasonal rainfall, the situation worsens. This is because the measurement and drainage systems do not adapt to the current situation, where the frequency and intensity of rainfall have increased compared to past years. (Abello & Pearce, 2022)

Currently, one of the greatest concerns of society is the care and preservation of the environment in order to remedy the damage caused by humans and prevent further deterioration. This directly and indirectly affects the health and well-being of humans and other organisms. Environmental pollution is a cyclical process that involves all environments: air, water, and soil, and from any perspective, living beings are both emitters and receivers of pollutants.

In this research, the problem lies in "How the wastewater from Las Abras area affects the right to live in a healthy environment." It has been directly identified that a significant amount of environmental pollution is caused by wastewater. Therefore, the main objective is to raise awareness among the competent authorities for their prompt intervention and environmental restoration to maintain and restore a healthy and safe environment without violating human dignity in the neighborhood of Las Abras Gorge.

Methods

The type of research that was used in this study is detailed below:

- **Qualitative:** Allows understanding the issue of violation of a constitutional right as well as human rights as a result of various negative acts by humans, and concerning the field research, the information collected will be used through a communication process, including interviews.

The methods used are:

- **Inductive:** Other factors will be analyzed, such as a review of the causes of these acts.
- **Deductive:** The entire structure determined in the Ecuadorian Constitution will be detailed.
- **Deductive-Inductive Method:** This scientific method will allow starting from the very history of the origin of this pollution locally within Las Abras Sector, thus allowing general conclusions to be obtained.

- **Analytical-Synthetic Method:** "t studies the facts, starting from the breakdown of the object of study into its individual parts in order to study them individually and then in an integral manner to observe the causes, nature, and effects. This allowed for an assessment of the object of transformation, and a general analysis was conducted based on the interview, in which it is revealed how the right to a healthy environment and a dignified life is affected and violated.

It should be noted that the interview was used as a research instrument, in which real and personalized information was obtained from María Auxiliadora Falquez, a representative of the San Antonio neighborhood, the area where "Las Abras" stream is located. The interview provided insights into the experiences that she and her community have gone through, which have been the cause of water pollution, with the primary factor being the stream in the area. This pollution is a result of landfilling, waste disposal in the area, and, most importantly, untreated sewage. These issues also affect the crops near the location. (Falquez, 2023)

Results

Wastewater

1.1. Wastewater and its Conception

Wastewater is water with impurities originating from various discharge activities, primarily domestic and industrial. Municipal wastewater is typically discharged through a sewer system and treated at a wastewater treatment plant before being released. The absence of wastewater treatment plants in the Riobamba-Guano cantons, within mining, agricultural, and livestock facilities, leads to the generation of large quantities of contaminated wastewater, causing significant environmental damage. Most of this water is discharged into rivers, open areas, or underground through septic tanks and landfills. (Lopez, 2018)

Wastewater discharged into surface water bodies (lakes, rivers, seas) without any treatment causes serious contamination problems that affect the flora and fauna. Before being discharged into these receptacles, wastewater must undergo proper treatment capable of altering its physical, chemical, and microbiological conditions, ensuring that this process does not pose a health risk. Treatment facilities should be designed, constructed, and operated to transform used water supply into acceptable final wastewater and to properly remove hazardous solids that need to be separated during the process.

1.2. Bacteria in wastewater

The presence of pathogenic organisms, primarily originating from the intestinal tract, makes this wastewater extremely hazardous, especially when discharged on the surface of the earth, in the subsurface, or into bodies of water. This is the case with the presence of enteric bacteria that cause waterborne diseases such as typhoid fever, paratyphoid fever, dysentery, and cholera, among others. The main diseases caused by viruses in wastewater include poliomyelitis, infectious hepatitis, etc. The presence of microorganisms can lead to amoebic dysentery, schistosomiasis, and other illnesses. (Rodriguez, 2010)

1.3. Harmful Elements in Wastewater

- **Bad Smells:** Consequence of the foreign substances it contains and the compounds coming from these materials, with the anaerobic splitting of its organic complexes that generate gases resulting from decomposition.

- **Toxic Action:** Many of the mineral and organic compounds contained in these wastewaters affect the natural flora and fauna of the receiving bodies and the consumers who use these waters.
- **Infective Potential:** Contained in the receiving waters and allowing the transmission of diseases and becoming a danger to exposed communities. The irrigation of food plants with this water has caused epidemics of amoebiasis, and its discharge into the sea has caused pollution in oyster and fish farms.
- **Modification of Physical Appearance:** Aesthetic modification in recreational areas where contaminated effluents are discharged.
- **Thermal Pollution:** Generated by certain industrial liquid wastes that have high temperatures.

The organic matter present in wastewater undergoes changes through chemical processes and bacterial action to achieve the oxidation and reduction of organic matter, typically by 25 to 50% in a few hours; the remaining portion requires days or weeks. (Rodríguez, 2010).

Pollution

1.4. Pollution and its conception

Environmental pollution refers to the presence of harmful components, whether chemical, physical, or biological, in the natural and artificial environment that are harmful to the organisms that inhabit it, including humans. Environmental pollution is mainly caused by human activities, such as the release of greenhouse gases into the atmosphere or the overexploitation of natural resources.

Consequently, environmental pollution threatens the health of organisms that live in contaminated ecosystems, including humans. Furthermore, deforestation, excessive use of natural resources, and the release of pollutants into the environment (gases into the atmosphere, discharges into the aquatic environment, and solid waste) lead to the destruction of ecosystems. In this way, the natural habitats of many plant and animal species have been degraded, possibly leading to their extinction. (Poveda, 2016)

Another concept of environmental pollution refers to any phenomenon that directly and indirectly affects the health of populations, not only humans but also alters the balance of ecosystems. In general, both people and wildlife are exposed to mixtures of more than two toxic substances. This contact with toxic pollutants can occur during the production, distribution, or use of products such as medicines, food, cleaning products, insecticides, pesticides, industrial formulations, and household items, or when these are disposed of in the environment. Cases of exposure to a single toxic product are rare and may occur due to occupational activities or be discovered in laboratory animal studies, although they are practically not observed in wildlife.

1.5. Effects of Pollution in “La Abras” Gorge

Wastewater discharged into a surface stream without any treatment has caused serious contamination problems that have affected the flora and fauna of the area. These wastewater discharges have not received proper treatment to modify their physical, chemical, and microbiological conditions, which has led to the issues mentioned above.

The residual substances are dissolved, primarily of organic nature, and are commonly found in the wastewater, accumulating on dead organic matter. These substances attack organic complexes, partially destroying or stabilizing them through a series of decomposition processes. In the case of Las Abras Gorge, due to the diversion of the natural course of the stream, bad smells are present, resulting from the decomposition process. Toxic gases are also generated due to the organic compounds contained in this wastewater, causing severe damage to the natural flora and fauna in the receiving bodies of water and to the consumers who reuse the stream water. This poses a risk to the surrounding communities that use this water for irrigation, potentially leading to amoebiasis epidemics and thermal pollution.

It has been determined that in various sections of Las Abras Gorge, the natural course of the stream has been diverted or obstructed by human activities. This has a negative impact on the quality of life for the population, causing health issues and environmental damage. The main causes of blockage are garbage dumping, depositing debris (construction materials), discharges of domestic wastewater, channel diversion, filling with materials other than debris, and illegal construction.

Right to Live in a Healthy Environment and State Responsibility

1.6. The Right to Live in a Healthy Environment

The United Nations General Assembly adopted a historic resolution, declaring universal access to a clean, healthy, and sustainable environment as a human right, something that was not included in the Universal Declaration of Human Rights of 1948. This will change the nature of international law, urging countries, international organizations, and the private sector to intensify efforts to ensure a healthy environment for all and address the triple crisis facing our planet: the climate emergency, pollution, and biodiversity loss.

The resolution marks a significant step in protecting our environment and addressing the climate emergency, as access to a healthy environment will shift from being a request to being a right. The new Environmental and Social Policy Framework (ESPF) of the IDB reaffirms our commitment as a partner in the region to manage environmental and social risks in the operations we support and sets benchmark standards in various areas.

In line with the UN resolution and the Escazú Agreement, we recognize access to justice in environmental matters, the rights of access to environmental information, and public participation as key pillars in environmental decision-making, as outlined in the Stakeholder Participation and Information Disclosure Standard. (Espinoza, 2021)

One of the ways that the ESPF addresses the environmental crisis responds to:

Pollution: The implementation of the IDB's ESPF in the projects it finances offers a clear benefit by promoting measures aimed at preventing, reducing, reusing, and recovering waste, as well as reducing or eliminating pollution resulting from project activities, through the use of materials free of toxic substances. Additionally, and if necessary, it allows the strengthening of national regulations and the institutional capacity of borrowers to comply with international standards and the best available practices.

The improper practices in the treatment of wastewater have violated the rights of nature, which are constitutionally recognized by articles 71, 72, and 73 of the Constitution of the Republic. These violations include the comprehensive right to the existence of "Las Abras Gorge" affecting the health of the nearby residents and ecosystems in relation to the right of nature to

the integral respect of its existence. Furthermore, these practices have infringed upon the right to a healthy environment, as provided in the Constitution's articles 14 and 66, numeral 27; the right to water (Article 12); and the right to health (Article 32). The people living around the gorge have firsthand knowledge that the native flora and fauna of the area have been lost, resulting in a lack of vegetation, trees, and birds. They are aware that during heavy rainfall, there is a risk of disaster due to the creek being obstructed and filled. (National Assembly of Ecuador, 2008)

1.7. The Responsibility of the Decentralized Autonomous Government of the Riobamba Canton

Part of the problem that has been identified by the Decentralized Autonomous Government (DAG) in "Las Abras Gorge" is the excessive dumping of debris. The DAG recognized this issue in its development plan for the year 2021. The DAG has made repeated requests to the Ministry of the Environment to issue a resolution that can safeguard "Las Abras gorge" area. Based on all these arguments, who would be responsible for addressing this issue? (Las Abras Case, 2022).

1.8. The Responsibility of the Decentralized Autonomous Government of the Guano Canton

An important development has been the declaration of "Las Abras" gorge as a natural heritage, which has allowed for institutional management and relevant conservation actions. Efforts have been made to prevent landfills and exercise control over the gorge. The declaration as a natural heritage has facilitated immediate implementation, thanks to administrative acts by the Guano Canton.

Control actions have been carried out, as well as sanctioning processes regarding the filling of Las Abras Gorge. These have been supervised through the intervention of the Ministry of the Environment and the DAG of the Guano Canton. (The letter suspending construction and starting processes, February 23, 2022.)

Therefore, the responsibility of the Municipal Governments of Riobamba and Guano cannot be evaded, as it is determined whether the hydraulic axis has been affected or not. It has been said that there is a possible impact on the water. The Water Secretariat has bodies such as the Water Control Agency. Article 10 of this regulation empowers it to investigate and sanction infractions. This control does not fall under the purview of the Water Secretariat but rather the Water Control Agency, which is not present because it has not been requested. However, according to the Constitution and the COOTAD, the comprehensive management of provincial environmental management is the responsibility of Provincial Governments.

1.9. The Responsibility of the Ministry of the Environment

In 2021, at the request of the Municipal Government of Riobamba and Guano, two administrative processes were initiated to establish a hydraulic axis. However, the issuance of the resolution has taken a long time because the request was submitted on January 5, 2021, information was requested from the respective Municipal Governments on March 3, 2021, and there was a state of emergency due to the pandemic. On July 27, the Municipal Government of Guano completed the information, and the request was accepted for processing to notify all potential affected parties. Therefore, on December 9, it was accepted, and inspections were carried out, emphasizing that this resolution is not as simple as the Ombudsman's Office has portrayed it. (Ministry of the Environment, 2021).

In 2013, there was a protection zone. In 2014, after the Water Resources Law was passed, Resolution Pastaza was established, which was delivered to all Municipal Governments in Zone 3. Article 1 of this resolution defines the water protection zone within the demographic jurisdiction of Pastaza. Any modification to this protection zone must be carried out through an administrative procedure in accordance with Article 64 of the Organic Water Resources Law. Even though Las Abras Gorge had its protection and limitation zone in 2013, this matter should not be taken lightly because it is not just a technical and legal conflict but also a social one. During the proceedings, it was evident that the hydraulic axis had been affected over time due to landfills. The axis has approximately 2,905 coordinate points, in addition to the protection zone that was ratified and areas that were not determined to be maintained in the 2019 resolution. (Official Record Supplement 305, 2014).

Discussion

The starting point for our research is Ecuadorian and international regulations that protect the environment and emphasize the importance of the right to a healthy environment. Over time, the need to safeguard the right to live in a healthy environment, ensuring a dignified life, has become apparent. The investigation identifies the potential solutions for the studied area, such as "Las Abras" sector, for which awareness must be raised about the importance of caring for hydraulic axes.

The damage inflicted along the hydraulic axis of "Las Abras" sector has caused significant environmental harm to the flora, fauna, and various ecosystems within it. This not only directly impacts the health of residents in the area but also demonstrates a visible lack of control and sanctions against those contributing to pollution, hindering the improvement and care of resources and thereby affecting the quality of life for citizens.

Preserving a healthy environment is a fundamental right that is regrettably violated by various factors, as highlighted in our research. One of the most detrimental factors is pollution caused by the discharge of wastewater, which must receive adequate and specialized treatment to prevent not only environmental damage but also future harm to the sector's residents and the accumulation of domestic waste in inappropriate areas.

Finally, there is a lack of environmental awareness among residents and passersby regarding the improvement and care of the spaces around their homes near the gorge. For this reason, it is important to encourage participation through programs and discussions about cleanliness, care, and environmental protection to raise awareness about the importance of nature and its conservation.

Several criteria are proposed that will initially respond to a possible solution to the problem. This involves preventing the pollution represented by the wastewater of Las Abras sector with the following actions:

- A waste dump is a place where all kinds of debris will be deposited.
- The DAGs of the Riobamba and Guano cantons, in accordance with the delimitation of the hydraulic axis of "Las Abras" within their respective jurisdictions, must carry out ongoing control activities for sewage discharges in the surrounding areas. They should technically control the land use permits issued, verifying the legality of use, as well as the constructions and productive activities taking place in the area through the intervention of the respective Precincts (neighborhood observers). Additionally, they should carry out necessary works and projects to restore the hydraulic axis of Las Abras sector, defining and implementing public policies for the implementation of an Environmental Management Plan for Las Abras sector.

- The Municipal DAGs of Riobamba and Guano, as well as the Provincial Council, must generate the necessary regulations to include in their budgets the necessary economic resources to carry out prevention and care activities for Nature.
- As a guarantee of non-repetition, they must develop periodic training for their officials and society on the Rights of Nature, the adoption of domestic law measures, and the adoption of regulations.
- To ensure the protection, recovery, and conservation of the hydraulic axis of Las Abras sector and to ensure compliance, a Citizen Oversight Office will be established to control and monitor the ordered measures, without limiting the participation of other Social Control mechanisms and Citizen Control established in the Constitution; For the constitution of the Oversight Office, the Council for Citizen Participation and Social Control (CPCCS) is required to intervene, providing the necessary logistics.
- Ensure proper coordination to create a resolution by the Ministry of the Environment to establish the watercourse.

Conclusions

The damage along the hydraulic axis in "Las Abras" area has caused significant environmental impacts on the flora, fauna, and the various ecosystems within it. This not only directly affects the health of the residents in the area but also highlights a clear lack of control and sanctions against those responsible for pollution. This, in turn, hinders the improvement and care of resources, ultimately affecting the quality of life of the citizens.

Preserving a healthy environment is a fundamental right that is unfortunately being violated due to various factors. One of the most detrimental factors identified in our research is the pollution caused by wastewater discharges, which should undergo proper treatment to prevent not only environmental damage but also potential future harm to the residents in the area. The accumulation of domestic waste in inappropriate areas is also a concern.

In conclusion, there is currently a lack of environmental awareness among the residents and passersby regarding the improvement and care of the areas surrounding their homes near the gorge. To address this, it is essential to promote participation through programs and lectures on cleanliness, care, and environmental protection. This would help raise awareness among people about the importance of nature and the need to protect it.

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