

Environmental Governance Based On The CSR Model For The Orderly Management Of Liquid Effluents

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ABSTRACT

This study was developed with the purpose of analyzing corporate social responsibility (CSR) with respect to the management of liquid effluents in the Manta canton and the influence that municipal ordinances have regarding responsibility with the environment. A methodology was applied under the empirical and analytical epistemic approach, in a first phase with a post-facto, transectional, bibliographic design, characterized by a mixed investigation. Results data on physical-chemical analysis of seawater in different areas of industrial, tourist and domestic influence of the Manta canton carried out by previous research were analyzed and in the same way a survey was carried out on a specific sample of the population that evidenced the problem analyzed. The main objective of this research is to analyze the influence of local environmental regulations in terms of management by applying the CSR method by the local authorities of the canton. This research constitutes the beginning of an extensive investigation on reforms that can be proposed to existing ordinances and the possibility of generating new proposals for ordinances that consider the results that have arisen in addition to analyzing the need to generate a draft regulation that indicates how to achieve the effective compliance with current ordinances and regulations, which, although it is true, would be more effective if it is established how they can achieve their management objective regarding environmental responsibility. Results were obtained that show the current state of the beaches with the greatest anthropogenic influence in the Manta canton through the results of physical, chemical and perceptual characteristics of the population and the effectiveness of current regulations.

KEYWORDS: Environment, Management, Water pollution, Governance.

1. Introduction

The anthropogenic activities of the Manta canton have generated for decades significant negative effects on the environment in its components water, atmosphere

and soil with the emission of odors, particulate matter and effluents that are discharged into seawater due to industrial, domestic and tourist activities added to the pollution of its winter rivers that despite being of this nature remain most of the year with water that is not precisely due to of rain or natural causes. The water is discharged as a result of clandestine household and industrial connections, as well as from the oxidation lagoons of the city where the treatment received does not comply with the regulations regarding the maximum limits allowed by environmental regulations, added to the pollution that is caused as it passes through the Manta River that later joins the Burro River and flows into the beach.

Discharges resulting from industrial and household activities are generally discharged into a public sewer system, rivers or effluents which have high concentrations of organic load, because they include substances such as feces, salt, microorganisms, solid waste, lead, solid sulfides, suspended solids, alkaline waste, acid waste, dyes among other chemical substances that seriously or irreversibly affect water resources (Vásquez, J. & González, D.2009).

Addressing corporate social responsibility (CSR) is the totality of the legal and voluntary obligations that a company must assume in order to be perceived as a model of good citizenship in a given environment. According to Donna Wood's model, corporate social responsibility (CSR) is an area of study from which different approaches have been derived from the year 1880 to the present day, of the proposed models Donna Wood's is of relevant importance because it explicitly considers the environmental perception that society has of institutions as mentioned (Pasquero, 2000). Wood's model summarized in Table 1 is based on some principles as well as processes and results of corporate social responsibility, which are shown below:

CSR Principles	Corporate social receptivity processes	Business behavior results
✓ Institutional principle: legitimacy ✓ Organizational principle: public responsibility ✓ Individual principle: managerial discretion	✓ Environmental assessment. ✓ Management of stakeholders. ✓ Consequence management.	✓ Social impacts. ✓ Social programs. ✓ Social policies.

The World Business Council for Sustainable Development (2002) defines CSR as the commitment made by a company to contribute to sustainable economic development through collaboration with its employees, their families, the local community and society as a whole, but with the aim of improving the quality of life. The CSR management model proposes that the articulation of the expectations of the different stakeholders concurrent in the business activity, the adoption of the CSR philosophy begins with the adoption of formal policies and management systems in different areas (Figueroa, L., Aguirre, S., Wilches, M. Rojas, M. 2012).

It is considered crucial to analyze the political models of regimes of representation to control and order water, these discourses are supported under premises as true and universal, while other visions of water are hidden and other ways of life must be alienated or excluded under homogenizing policy frameworks. These procedures are indirectly related to the concept of governmentality, that is, the art of governing and conducting conduct. Francisco Peña reflects and analyzes the process that

scientifically legitimizes decision-making in water management under situations of environmental risk. It emphasizes the complexity that scientific knowledge faces in recognizing all threats that concern water. In Ecuador, the different articles show the beginning of a political and legislative change in the country where a new legal framework opens up different possibilities closer to a legal pluralism that promotes water justice (Duarte, Yacoub, C. & Hoogester, J. 2016).

Finally, as it is public knowledge and Constitutional law, water is fundamental and inalienable, it constitutes a strategic national heritage for public use, inalienable, imprescriptible, non-seizable and essential for life, it is considered strategic national heritage for public use, inalienable and imprescriptible domain of the State due to the fact that it constitutes a vital element for nature and for the existence of human beings (Constitution, 2018).

In the canton of Manta, since June 30, 1999, the ordinance for the prevention and control of pollution by industrial, service and other toxic and dangerous wastes generated by fixed sources of the canton of Manta was created, which aims to regulate the mechanisms for the protection of the cantonal environmental quality affected by liquid wastes and emissions into the atmosphere of a non-domestic nature emitted by the control subjects. Liquid waste includes process sewage sludge and, in general, effluents from fixed sources that are discharged into public sewer channels or directly to natural receiving bodies to the soil and subsoil of the canton. In addition, it establishes the maximum permissible limits, as well as the control and prevention mechanisms.

In this sense, it is important to analyze governance based on a CSR model in such a way that the government entity at the local, provincial and/or national level adopts the criteria established in the literature and in the regulations regarding liquid effluents in the canton of Manta, assuming responsibility for the rights of nature and the rights of citizens in general.

2. Methodology

A methodological sequence was carried out in order to analyze the environmental impact in a corporate social responsibility model for liquid effluents, therefore, in order to know the impact generated by anthropogenic sources, it is necessary to initially determine an area of direct influence as a space for analysis, as well as the impact on the places affected by the action of water pollution from industries, household sources and tourist activities. In this sense, in order to identify and assess the magnitude of the impact on the biotic environment as abiotic, as well as on the socioeconomic environment, a qualitative assessment of said impact and the environmental regulations of the Manta canton, as well as at the country level, was carried out. In the international literature on environmental policy, Barry Field recognizes the strategy of taxes on emissions as a viable alternative to internalize in the business economy the damages caused by environmental degradation (Field, 1998) and in the canton of Manta there are environmental ordinances that regulate the rates for those who discharge liquid effluents from households. as well as industrial sources using primary and secondary sources for this purpose.

As for primary sources, information was taken from the collection of data from surveys carried out on inhabitants of the sector of influence with the highest pollution of the same, social actors knowledgeable about different dimensions of CSR and pollution by liquid effluents also participated, which helps us to corroborate the results. While in secondary sources books, documents, articles, previous works were used.

In addition to this, the results of laboratory analysis were analyzed and discussed where the state of the oxidation lagoons of the canton was evidenced because it is there where all waste and liquid effluents are received, as well as results of analysis of the main beaches of the canton and it is where the problem of contamination is most accentuated and it is also evident that the management of the GAD applying CSR is not applied.

3. Results and Discussion

As for the perception of the citizens of the management of liquid effluents in the canton, it was carried out through a sampling formula applied for a finite population, approximately 800 families who live on the banks of the Burro, Manta and Muerto rivers in the city of Manta, as well as the coastal edge that corresponds to the Los Esteros and Tarqui beaches, which is where the incidence of contamination. This formula results in what is described below:

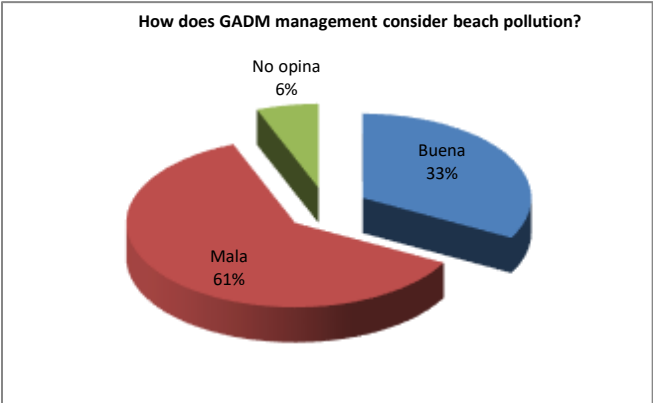
$$n = \frac{N * Z^2 * p * q}{d^2 * (N - 1) + Z^2 * p * q}$$

Where:

- ✓ N= Total population
- ✓ $Z^2 \alpha = 1.96$ squared (if safety is 95%)
- ✓ p = proporcion = n esperada (en este caso 5% = 0,05)
- ✓ Q = 1-P (in this case 1 – 0.05 = 0.95)
- ✓ d= accuracy (5%)

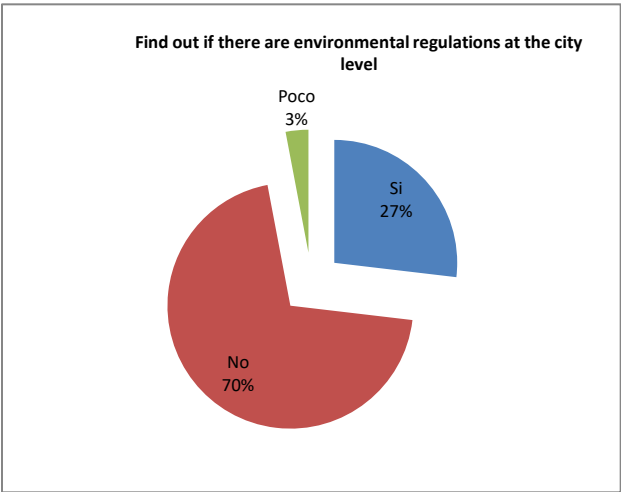
$$\frac{800 * (1.96)^2 * 0.05 * 0.95}{0.05^2 * (800 - 1) + (1.96)^2 * 0.05 * 0.95} = 67$$

The survey was applied to 67 people from the aforementioned environment, with the result that the perception regarding the management of local public institutions resulted in the following:



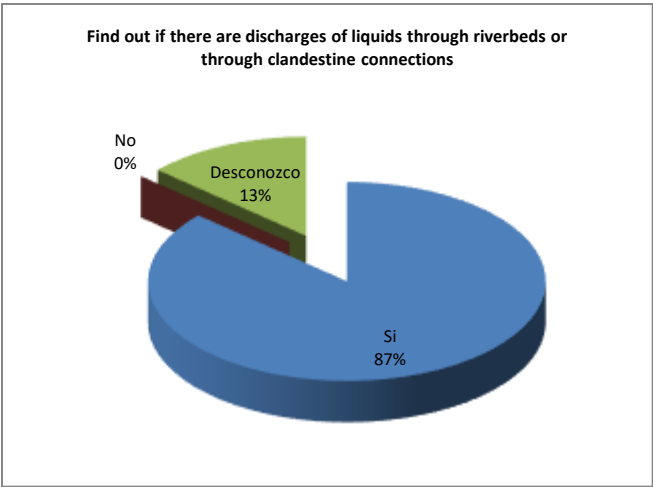
Bernal, A. (2020), mentions that, in industrial processes, the actors responsible for industrial risks are diverse, in such a way that not only the industries but also the administrative authorities and in many cases the

local politicians bear the responsibility. In this sense, the perception of the citizens regarding the management of the GADM in the face of the pollution of the beaches in the Manta jj consider 61% to be bad, while 33% consider it to be good and 6% prefer not to give an opinion on the matter due to ignorance or because they avoid giving an opinion.



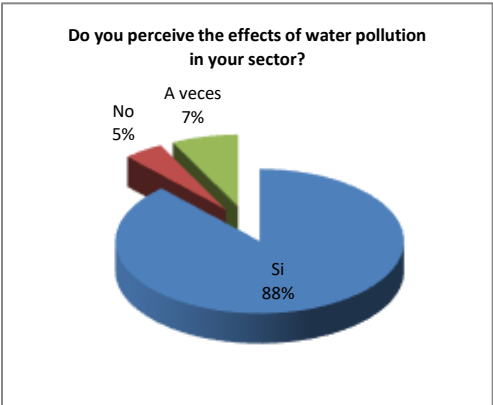
Ecuador is one of the countries with a great wealth of biodiversity and therefore one of the pioneers in enshrining various novelties and singularities in the management of environmental issues with emphasis on the Constitution, the Environmental Management Law and the Organic Code of the environment and

municipal ordinances (Velasco, M., Caicedo, M., & Sarango, E. 2022). Despite being a need of citizens due to the impact that occurs, 70% of the citizens surveyed do not know about the existence of environmental regulations, 27% indicated that they do know or have heard about their existence and 3% stated that they have heard something in brief strokes about the regulations and their approach at the city level.



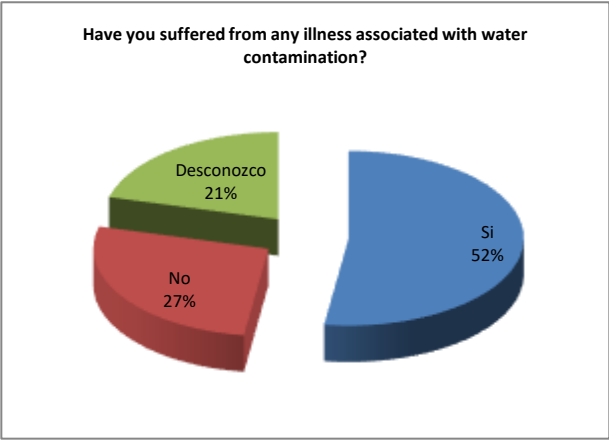
Vinces, D (2018), indicates that there is effluent discharge through the riverbed in addition to non-compliance with current regulations evidenced by the existing pollution, therefore it is of public interest for the city, since in this research the environmental impacts on the

environmental factor and biodiversity due to the eutrophication process were revealed along with other impacts. For their part, 87% of the citizens surveyed mention that they show evidence of liquid discharge through the riverbed, while 13% consider that they do not know if this affectation is generated, since the river is supposed to be winter, which is in line with what was mentioned by Jaramillo, J. (2022) who indicates that the Manta River is seasonal since it only has a flow in the winter season with copious rains and in the winter season. Discharge from the oxidation lagoons where illegal discharges from homes settled on the riverbank are incorporated.



The municipal ordinance GADMC-MANTA No. 052 (2018) aims to regulate the operation of the sanitary sewer and storm drainage system in order to limit the pollutant load that enters the municipal treatment system and preserve the water resources of the canton, however, despite the existence of municipal ordinances, they are not complied with, since 88% of the population does perceive the

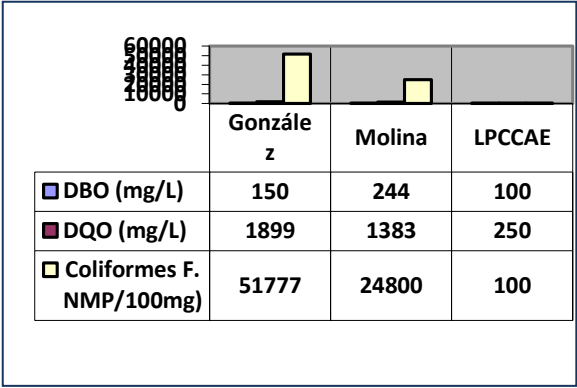
effects of pollution in their sector, that is, the inhabitants of the banks of the riverbeds, while 5% indicate that they do not perceive these effects and 7% mention that they only sometimes perceive such effects because they are accentuated in the odors that are generated in the sector, as mentioned by El diario (2019) these inconveniences are not new, The actions of the authorities have not been able to eradicate them and there is a risk that they will worsen.



They were also asked if they or any member of their family have ever suffered from diseases, to which 52% mentioned yes, while 27% indicated that they did not and 21% indicated that they do not know if the diseases they have suffered at some point are attributed to environmental

pollution factors. As mentioned by Bofill, S. et al. (2005), hepatitis E viruses and human polyomaviruses have been shown to exist in greater depth in wastewater in all the countries studied. According to information from the World Health Organization (2004), approximately 2 million people die each year.

After the perception of the public, some laboratory results of research carried out in recent years were analyzed, the same that according to the Law for the Prevention and Control of Environmental Pollution in Ecuador (2008) should not register pollution levels above 100 mg/Lt BOD, 250 mg/Lt COD and 100mg/Lt of fecal coliforms, which are the most influential parameters in polluted waters of this type more however, the results of physical, chemical and microbiological analyses carried out in other investigations determined that the waters of the beaches are above these ranges without major intervention by local, provincial or national entities.



In the analyses carried out by González, C. & González H., (2016) and Molina, L., (2015) it is shown that the waters of the beaches of Los Esteros, Tarqui and Murciélago de Manta were analyzed with respect to the BOD, COD and ST parameters, which indicate that according to the Law for the Prevention and Control of

Environmental Pollution in Ecuador the BOD should not exceed 100 mg/L but in the analyses carried out they are found between 150 and 244 mg/L; as for COD, the LPCCA indicates that the limit is 250 mg/L, while the situation of these waters is between 1383 and 1899 mg/L; and Fecal coliforms, the aforementioned standard indicates that it should not exceed 100 MPN/100 ml and these waters are between 24000 and 51777 MPN/100 ml.

4. Conclusions

With the data analyzed, it can be concluded that the regulations in forms and substance of corporate social responsibility on the part of local governments exist since the different regulatory bodies determine the respective parameters in their limits and article 264 numeral 4 of the Constitution of the Republic stipulates that wastewater treatment services, environmental sanitation activities and others are the competences of the municipal governments, which is combined with the stipulations of articles 54 and 55 of the COOTAD and the ordinances of the GADM 051 and 052, however, no progress is seen in any of the simple or scientific studies of the situation of wastewater and its treatment systems or discharges, It is also concluded that the perception of citizens is that there is pollution in the environment and there is no evidence of knowledge of regulations due to their lack of application, so it is important to direct a governance focused on the social responsibility of the local government complemented by citizens and their contribution to reduction activities. awareness and support to GADM in remediation through social responsibility in its different areas.

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