

# The Laguito Water Body in Cartagena and its Sedimentation Legal Problem against the Increase of the Sea Level for Climate Change

Elizabeth Ramirez Llerena, PdH  
Cartagena Baykeeper NGO  
Executive Director  
Cartagena - Colombia

Hebert Rico Royero, Msc  
Libre University in Cartagena  
Master in Administrative Law  
Cartagena - Colombia

Nilson Figueroa Atencia, Msc  
Cartagena Baykeeper NGO  
Director of the administrative and accounting department  
Cartagena - Colombia

Lourdes Villadiego Coneo, Msc  
Libre University in Cartagena  
Master in Administrative Law  
Cartagena - Colombia

Ana Temis Herrera Barragán, Msc  
Cartagena Baykeeper NGO  
director of the legal department  
Cartagena - Colombia

Maria Alejandra Benitez Hurtado  
Master in Administrative Law student  
Antonio de Arévalo University Foundation  
Cartagena - Colombia

**Abstract:-** The objective of the work from which this investigation is extracted was to examine whether Laguito and its connection with the Caribbean Sea is due to a sedimentation problem and the above has made it a legal problem for the residents of the town. This was a legal, quantitative socio-research, the method of this research was the statistical one, and the units of analysis were the perception of the inhabitants of Laguito about the sedimentation problem of this body of water that has become a legal problem. The analysis was done through statistical survey and content analysis. As findings we have, that the mouth of the Laguito body of water opens and closes from time to time, because the sand of the sea sediments there, preventing seawater from oxygenating the water of the Lake and the main conclusions obtained is that the Laguito sedimentation is a phenomenon that is not new, in fact this problem has several years and varied solutions have been proposed by the residents of the town, which in fact have taken legal scope, constitutional actions have been filed that bind the District and to the Nation its execution, as well as those applied by the state institutions, which have not had an effect, considering that the laziness and disinterest of the District authorities sharpens the problem of sea level rise due to global warming, bringing as consequently the defrosting of the poles that moves this water through the sea currents, causing the risk of the Coastal area of the city of Cartagena being flooded by the Caribbean Sea.

**Keywords:-** Climate Change, Sea Level Increase, Sedimentation, Laguito, Sand, Beaches, Caribbean Sea, Environmental Damage and Administrative Law.

## I. INTRODUCTION.

At present, the entrance (the mouth) of Laguito in Cartagena de Indias, capital of the Department of Bolívar in Colombia, has been almost completely closed, which has resulted in the fall of recreational activities that were previously carried out in a manner daily in the body of water, recently it was completely closed due to the death of fish due to lack of oxygen in the lake, which resulted in bad odors and an environmental tragedy. Today you cannot practice activities such as surfing, boating, water bikes, or floating worms and much less fishing, due to the high degree of toxicity in which the water source is today. The great lake that one day was is a short time to become a body of dead water if you do not have the intervention of the District on time.

In the region of the American continent and the islands that interacts closely with the Atlantic Ocean in the Bay of Cartagena as the Rosario Islands, there is an area called the coast that is very important for its ecological, environmental and economic value, due to the presence from different marine ecosystems from which Cartagena's coastal communities benefit from the exercise of activities such as fishing, tourism and mineral extraction, as has happened in this coastal territory.

The effect of wind, waves, sea currents and tides give rise to important geographical accidents among which are mentioned, the beaches of Laguito, these are extensions of variable width and length, constituted by particles from rocks or shells of organisms; They are crossing the shore of the Atlantic Ocean which is the one that collects the waters of the Caribbean Sea that bathes these beaches. Sometimes behind the beaches are the dunes, which are small elevations of sand that provide material so that they do not disappear.

Among the problems currently facing the El Laguito neighborhood, its beaches and the body of water that surrounds it, since there is excessive urbanization because there is no urban control in the sale of lots that arise from the mangrove landfill with more buildings of 40 floors that is densely populated.

The Laguito is a body of water that has a marine ecosystem composed of flora and fauna that are in danger of extinction, that is why the residents of the neighborhood live worried about taking care of it, protecting it and conserving it because they care about maintaining their deteriorated health, so that the future generations may continue to enjoy its benefits, since those who live in the Laguito understand that they are in a flood zone, due to rising sea levels, which becomes a threat to this human settlement and its economic activity that is The tourism. Marine ecosystems such as coral reefs are also being affected, which are impacted by the increase in the average sea water temperature, related to coral bleaching, and by the greater entry of CO into the ocean that can lead to acidification problems Oceanic.

It is well known by locals that from time to time the mouth of Laguito opens and closes according to the sedimentation of the sandbars, on several occasions the local newspaper, El Universal de Cartagena, has manifested the problem through news and It confirms with high-impact and comparative images of how the body of water used to be and how it is today, the socio-environmental problem has had great reach in recent years. An example of local news was when the media reported on May 17, 1998, at that time the Mayor was Hans Gerdtz Martinez, who said that the closing of the mouth of the body of water was not a cause of the activities of works carried out by the Chinese dredger on the beaches of Castillogrande, but the mouth recovered its natural state, the Mayor cited a study of the Institute of Oceanographic Research of 1977, which in turn mentions 1935 when it was also closed and with that lowered the level of uncertainty of the premises at that time.

Something that causes great curiosity is that Laguito does not appear in the plans of the colonial era, so it can be seen in the book "History of the fortifications of Cartagena of India's" by Juan Manuel Zapata Olivella, in the topographic survey of the Bay, made by the ship's captain Francisco Fidalgo, from 1778, there you can see the Escollera de Bocagrande and the sandbars that began to appear in the Punta de Icacos that later served as the basis for its formation.

In fact, Laguito was a limited lake in the first third of the twentieth century, it was a weak water source that went to the bay by an unstable sandbar, had a large mouth, at the bottom of which what was built today is built known as the Caribe Hotel. Already by the 60s the district decided to make an intervention and dredge it to give it depth and with the sand and caracolejo extracted from its bed the lands stabilized what we now known as El Laguito, on these lands residential and tourist buildings have been built. Today it is known that the instability of the mouth of the body of water is a product of the effect of the combination between the

construction of the Iribarren Breakwater and the landfills made to build the Hilton Hotel, at its southern end.

This enclosure by the sedimentation of the body of water and the spurs by the Hilton Hotel, to whom neighbors and locals state that they are one of the main culprits for the lack of oxygen in the lake. The discord was born by the construction of the two new breakwaters by the hotel to build private beaches, resulting in the formation of the sand bar that periodically cover the mouth of the body of water, thereby causing great environmental damage in it . There have been several proposals to solve the environmental problem that the lake is handling today, some a bit far-fetched as, to fill the lake and turn it into a park for entertainment of locals and tourists and another less transcendental solution that emerged was that it was ceded the concession to an international marina that takes care of the dredging of the Lake and passes into the hands of private entities, both solutions that despite some are good ideas, may not be the solution for a body of water that you want to live and that you only want The opportunity to return to be majestic and vital as in his young years, is the District that cannot and should not leave the task to private entities and much less let the residents of the town solve with stones and shovels a solution that must give local government

## II. METHODOLOGY

The question that guides this research is: Is Laguito and its connection with the Caribbean Sea a problem of sedimentation or a legal problem? The general objective is to: Examine whether Laguito and its connection with the Caribbean Sea is due to a sedimentation problem which has become a legal problem for local residents. This was a legal and quantitative partner investigation. The method of this investigation was quantitative. As primary sources the survey was used. As secondary sources, bibliographic records were used. The analysis of the results was done through the statistical survey and the content analysis. Maintaining the Integrity of the Specifications

## III. RESULTS AND ANALYSIS.

This item examined the perception of inhabitants of the El Laguito neighborhood, who answered the survey that was prepared by the researcher and was subsequently constructed in a google doc form, which was sent to them by mail to be filled in personally by the respondents We know that the population that lives in the El Laguito neighborhood of Cartagena allows us to establish their perception of the environmental and legal problems that the Laguito body of water has experienced. The stratified sample was designed taking into account the margin of statistical error, which depends, among other variables, on the number of members of the total sample of the population living in the Historic and North Caribbean locality that has Ten (10) community units of government, which highlights the Community Unit of Government No. 1, which is located geographically the El Laguito neighborhood, which has three hundred eighty-eight thousand (388) four hundred ninety-eight (498) inhabitants and representativeness of the same with respect to the

population, through the use of segmentation variables of the sample, which took 10% representative of the population investigated, which gave us a total of 33 respondents.

Regarding the methodology used, we can say that this was a descriptive and cross-sectional and probabilistic investigation, since it will serve to measure and qualify the perception that the investigated population has about whether the problem that the Laguito lives is a problem of sedimentation or a legal problem in the face of rising sea levels due to climate change. This is the analysis of the surveys:

After the text edit has been completed, the paper is ready for the template. Duplicate the template file by using the Save As command, and use the naming convention prescribed by your conference for the name of your paper. In this newly created file, highlight all of the contents and import your prepared text file. You are now ready to style your paper; use the scroll down window on the left of the MS Word Formatting toolbar.

Variable 1: ¿Do you think that there is a threat that sticks to El Laguito neighborhood due to rising sea levels as a result of climate change because Cartagena is a coastal city?

OPTION	FREQUENCY	PERCENTAGE
Yes	20	61%
Not	13	39%
<b>Total</b>	<b>33 Persons</b>	<b>100%</b>

Table 1:- Source: Surveys conducted by the researcher.

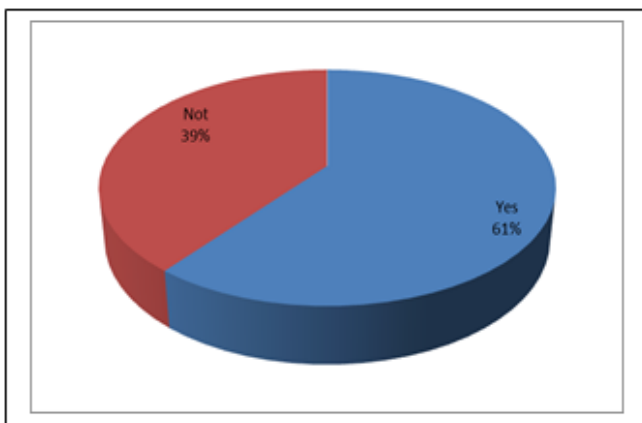


Fig. 1:- Threat that sticks over El Laguito neighborhood due to sea level rise.

Variable 2: ¿Do you think that neighborhoods near the sea such as Bocagrande, Castillogrande, El Laguito and Marbella, among others, would be the biggest affected by the natural phenomenon of sea level rise, climate change?

OPTION	FREQUENCY	PERCENTAGE
Yes	19	58%
Not	14	42%
<b>Total</b>	<b>33 Persons</b>	<b>100%</b>

Table 2:- Source: Surveys conducted by the researcher.

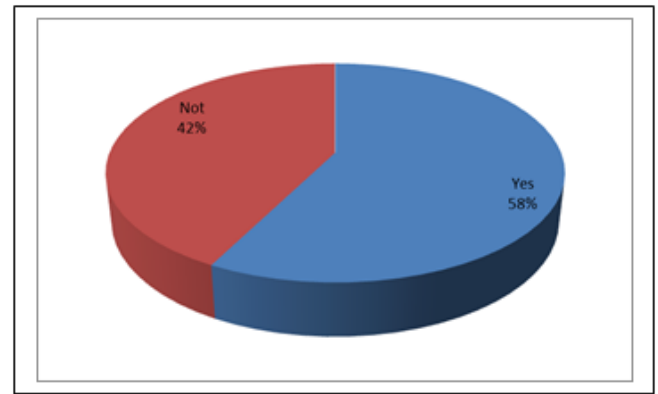


Fig. 2:- Neighborhoods near the sea as major affected by the natural phenomenon of sea level rise, climate change

Variable 3: ¿Do you think that the affectation of the El Laguito neighborhood, due to the natural phenomenon of sea level rise as an affectation of climate change, is caused by hotel disorders and the construction of the habitat of man that have attacked the environment?

OPTION	FREQUENCY	PERCENTAGE
Yes	28	85%
Not	5	15%
<b>Total</b>	<b>33 Persons</b>	<b>100%</b>

Table 3:- Source: Surveys conducted by the researcher.

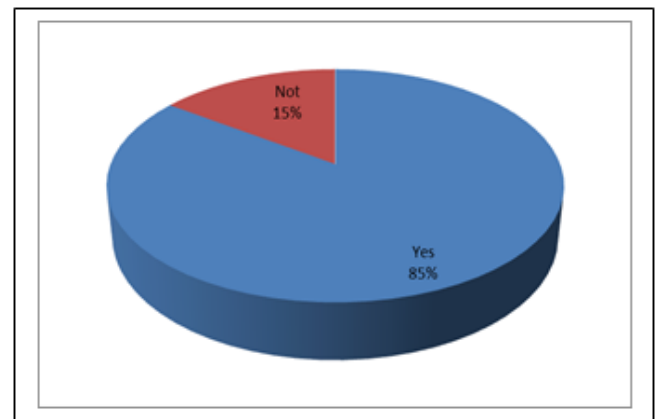


Fig. 3:- Impact of climate change, is caused by hotel and building disorders of the habitat of man who have threatened the environment

Variable 4: ¿Do you consider that the District of Cartagena and the environmental and urban control authorities are responsible for the impact that the El Laguito neighborhood has, for the natural phenomenon of sea level rise as an effect of climate change?

OPTION	FREQUENCY	PERCENTAGE
Yes	30	91%
Not	3	9%
<b>Total</b>	<b>33 Persons</b>	<b>100%</b>

Table 4:- Source: Surveys conducted by the researcher.

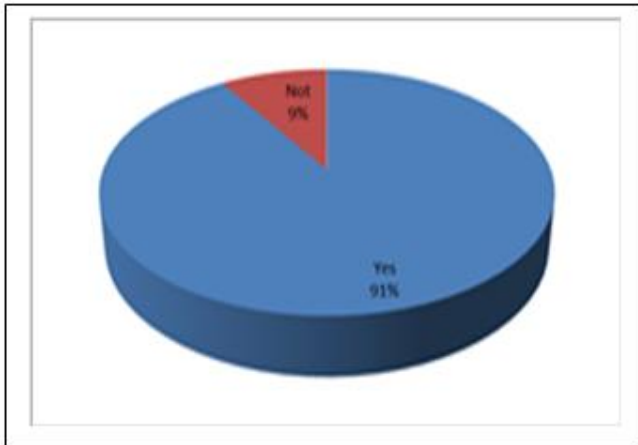


Fig. 4:- Cartagena District and the environmental and urban control authorities are responsible for the affectation of the El Laguito neighborhood

Variable 5: ¿Do you think that the District of Cartagena and the Nation have carried out effective measures and strategies to solve the environmental problem of the Laguito water body, to counteract the eventualities of sea level rise due to climate change?

OPTION	FREQUENCY	PERCENTAGE
Yes	19	58%
Not	14	42%
<b>Total</b>	<b>33 Persons</b>	<b>100%</b>

Table 5:- Source: Surveys conducted by the researcher.

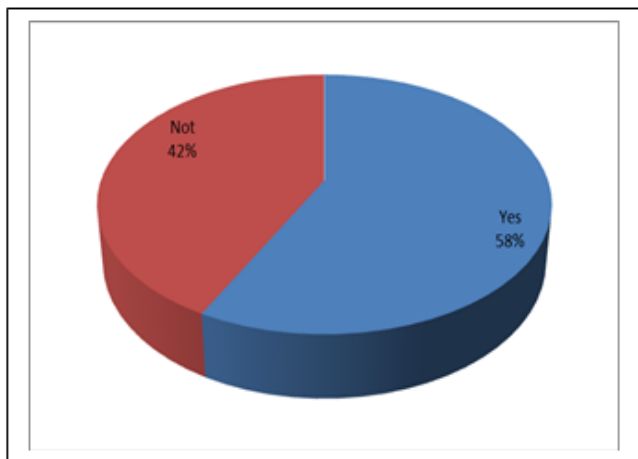


Fig. 5. The District of Cartagena and the Nation have not carried out effective measures and strategies to solve the environmental problem of the Laguito water body, to counteract the eventualities of sea level rise due to climate change.

Variable 6: ¿Do you think that the Colombian State must force hotel entrepreneurs, and developers in the El Laguito neighborhood to compensate for the environmental damage they have caused to the body of water that surrounds it and for the land taken on the beaches of this sector?

OPTION	FREQUENCY	PERCENTAGE
Yes	27	82%
Not	6	18%
<b>Total</b>	<b>33 Persons</b>	<b>100%</b>

Table 6:- Source: Surveys conducted by the researcher.

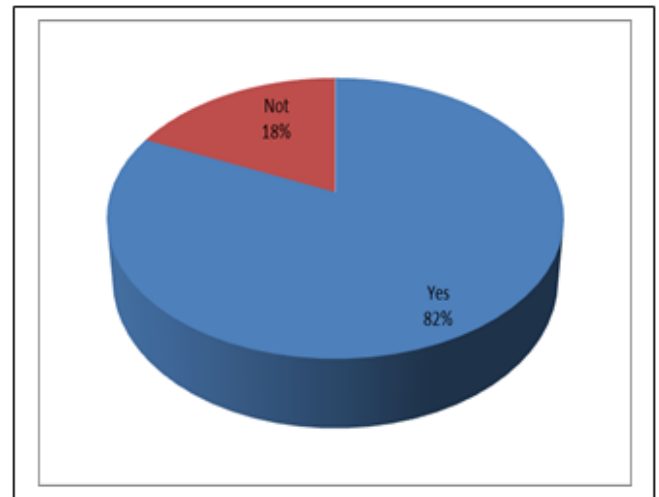


Fig. 6:- The Colombian State must oblige hotel entrepreneurs, and developers in the El Laguito neighborhood to compensate for the environmental damage they have caused to the body of water

Variable 7: ¿Do you think that opening the settling mouth of El Laguito is with the resources of the neighbors of the neighborhood, since the authorities are very late to present a solution to the death of the fish that is caused by the lack of oxygen; and that although it is not with the proper technique, remove the sedimentation?

OPTION	FREQUENCY	PERCENTAGE
Yes	16	48%
Not	17	52%
<b>Total</b>	<b>33 Persons</b>	<b>100%</b>

Table 7:- Source: Surveys conducted by the researcher.

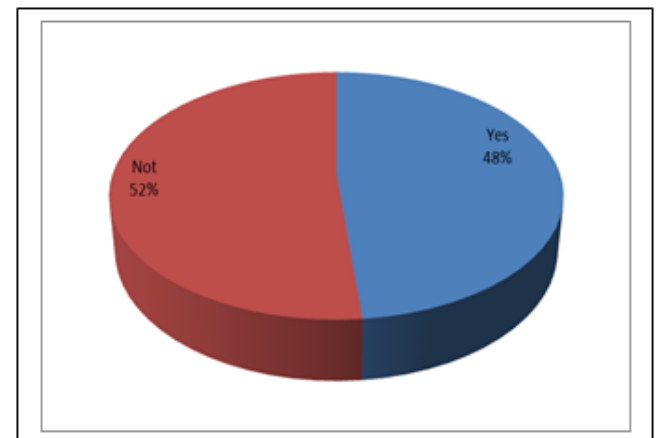


Fig. 7. The authorities are very late to present a solution to the death of fish that is caused by lack of oxygen

Variable 8: ¿Do you think that the legal actions that the community has established so that the District and the Nation face the environmental problem that the Laguito water body has been effective before the Colombian justice?

OPTION	FREQUENCY	PERCENTAGE
Yes	11	33%
Not	22	67%
<b>Total</b>	<b>33 Persons</b>	<b>100%</b>

Table 8:- Source: Surveys conducted by the researcher.

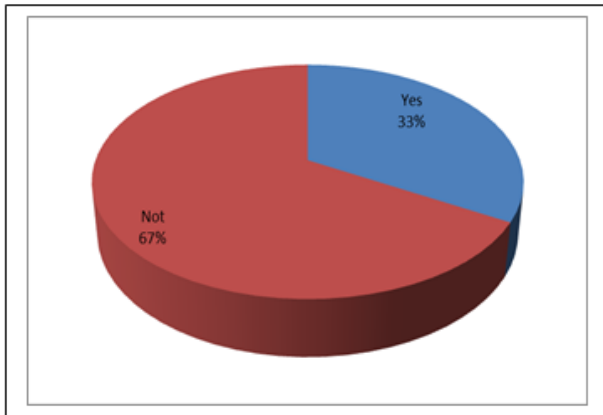


Fig. 8:- The legal actions that the community has instituted so that the District and the Nation face the environmental problem of the Laguito water body has not been effective before Colombian justice.

Variable 9: ¿Do you consider that the District and the Nation are responsible for the environmental damage of the Laguito water body?

OPTION	FREQUENCY	PERCENTAGE
Yes	29	88%
Not	4	12%
<b>Total</b>	<b>33 Persons</b>	<b>100%</b>

Table 9:- Source: Surveys conducted by the researcher.

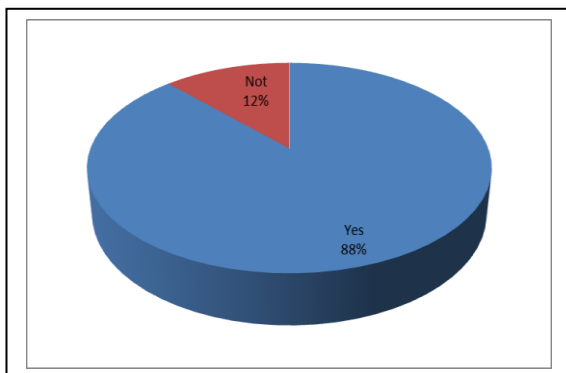


Fig. 9:- The District and the Nation are responsible for the environmental damage of the Laguito water body.

Variable 10: ¿Do you consider that the dark color of the water, the bad smell of it, and the recurrent fish mortality, which keeps residents and residents of El Laguito worried has gone from being a problem of sedimentation to a legal problem?

OPTION	FREQUENCY	PERCENTAGE
Yes	30	91%
Not	3	9%
<b>Total</b>	<b>33 Persons</b>	<b>100%</b>

Table 10:- Source: Surveys conducted by the researcher.

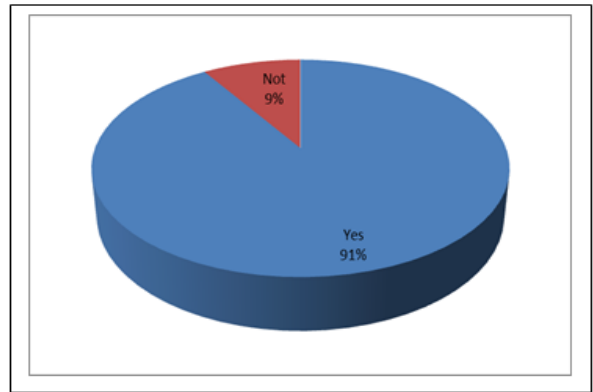


Fig. 10:- The dark color of the water, the bad smell of it, and the recurrent fish mortality, which keeps residents and residents of El Laguito worried have gone from being a problem of sedimentation to a legal problem.

#### IV. DISCUSSION

According to or before, from the applied surveys it could be inferred that the respondents, members of the population that lives in the El Laguito neighborhood of Cartagena, consider that for the community that lives in the El Laguito neighborhood the contamination of the body of water has It has become a legal problem with the District and the Nation due to the sedimentation of the sandbanks at the mouth of the body of water of the same name and the lack of action to solve the problem, even when it is ordered by a judicial authority.

Theoretically, this research is justified because the Heroic is one of the cities of the country that has been identified as a critical area because of its great vulnerability to climate change, all this due to the great increases in sea level that not only increase every year but also every time they do with greater speed, as evidenced by the scientific study carried out at the beginning of this century by the Institute of Marine and Coastal Research –INVEMAR, in the document “Definition of the vulnerability of bio geophysical and socioeconomic systems due to a change in the sea level in the Colombian coastal zone (continental Caribbean, insular Caribbean and Pacific) and measures for its adaptation”, which had as an opinion, that INVEMAR, together with the current Ministry of Environment and Sustainable Development -MADS- and the Dutch Program of Assistance for Climate Change Studies -NCAP-, they will carry out a process of “capacity building between 2004 and 2008 to improve adaptation to rapid sea level rise in two vulnerable coastal areas in Colombia, including Cartagena”.

One of the priorities of the Government Plan of the then President Juan Manuel Santos, in the National Development Plan 2011-2014, priority was given to carry out the National Plan and the Territorial Plans for Climate

Change Adaptation, and in an Agreement for the Prosperity of the Presidency of the Republic, MADS, the Mayor's Office of Cartagena and INVEMAR all these governmental entities joined forces to take advantage of the progress made on the issue for the city of Cartagena, the International Cooperation of the Climate and Development Alliance - CDKN- and the sectorial support of the Chamber of Commerce of Cartagena, will begin the project of "Integration of Climate Change Adaptation in Territorial and Sectorial Planning of Cartagena".

The realization of this project is of great importance on a social level because according to the opinions of the lawyer Norberto Gary, who instituted a popular action against the Hilton Hotel, showing the truth of a legal case that just started and that only touched on the surface from the Cartagena public and that until now it is awakening the local consciences, and is that "The Cartagena of all strata always saw very badly that the Hilton Hotel will install a wall, a spur to prevent access to the beaches of bathers who were not their customers, and the general public. The beaches, the territorial sea are goods of public use that belong to the Nation, and are for the use and enjoyment of all Colombians. So when I was a student, when I saw that abuse of law, I was motivated to investigate why the Hilton had that privilege, where it came from and why?"

Thanks to the investigation by this lawyer, it appears that The Hilton Hotel (Hotel Company Cartagena of India's) legally acquired 6 lots that do not add up to 8,000 MTS<sup>2</sup> globally, the investigation also showed that these lots would have been provided by the Cartagena city in 1973, for which he was a partner of the hotel company; These properties belonged at that time to the Urbanization El Laguito and were going to become a public school, a police inspection, a church that was never built because the priest of the time (Father Cano) preferred to give his masses in the open air. the extension of the Almirante Brión Avenue and a green zone, five (5) lots that the District contributed and that did not add 7,000 MTS<sup>2</sup>.

A sixth lot is purchased by the hotel complex, which does not exceed 1,500 MTS<sup>2</sup> to reach 8,500 MTS<sup>2</sup>. "In that writing of the year 73 they put the poison, and it is that 'the hotel company also acquires the right to recover all the land that it can from the sea in the terms of articles 719 to 724 of the Colombian Civil Code, which speak of the Flood, which is a property that can increase its extension at the expense of the bank of a river or lake by the slow and imperceptible withdrawal of the waters; but in the case of the Hilton it is very different: there is no flood because there is no river, there are no lakes and it is also not a slow and imperceptible withdrawal from the waters, but a very well done engineering work where sand is captured with some spurs for that consolidates itself as firm ground and continue building and appropriating land of the territorial sea". "The engineering work was so good that seven years later, in 1980, they make a public deed that says: 'Fruit of the land recovery work (by the Hilton) the measures and boundaries are as follows ... and the lot It grows from 8,000 square

meters to more than 30,000 m<sup>2</sup>, at the expense of our territorial sea.

Experts have recommended that in front of the Boca del Laguito, the construction of a large sediment trap is necessary, followed by an access channel, so that the Laguito's water body has direct connection with the sea, is oxygenated and life returns to the site Natural aquatic, so we decided to address this degree work in the Master in Administrative Law of the Free University Cartagena Headquarters.

An antecedent of popular action against the Hilton Hotel was carried out in 2001, on August 13, there the lawyer Gary filed the complaint against the Hotel Company Cartagena of India's S.A, in which it was stated that the company would have appropriate land that is public use property of the Nation to be located in low tide zone, in other words in Colombian territorial sea and are not vacant land as previously stated. Additionally, the Mayor's Office of Cartagena, the Superintendence of Notaries and Registry were sued together with its attached Office of Registry of Public Instruments of Cartagena, the Ministry of Defense and the Captainty of the Port of this city, since they are the vigilant entities and regulators of these cases and let us overlook a usurpation of such a high magnitude "all for their passive attitude towards the dispossession that was done to the State," said the lawyer.

The lawyer Norberto Gary tells the newspaper El Universal de Cartagena, that the popular action ruled in his favor by the State Council dates back to 1991. "I never stopped fighting despite the fact that the Administrative Court ruled the popular action against the law, at consider that, in 1980, when the hotel was built, it did not apply the law of popular action, which was promulgated in 1998, when that citizen mechanism was already covered by the Civil Code". Today, this lawyer is very satisfied to know that the Cartagena community will have a recovered area for their benefit and enjoyment since the State Council obliges the Hilton Hotel to build a park as compensation because the environmental damage to Laguito.

In order to follow up on the ruling of the State Council, a committee composed of government bodies and he as the author of the popular action must be formed. In his account of the facts, and an investigation that represented several years of his time, he realized that the company cited used the figure called "recovery" to attach 26 thousand square meters to the land that initially was 8 thousand square meters, which were registered with public deed 2274 of 1980. They were 12 years of struggle. Today the State Council has proved him right.

On March 16, 2006, a judgment was issued in the case of Gary Garcia Vs The Hilton Hotel, the Administrative Court of Bolívar issued an adverse ruling on the claims of Gary Garcia, after which the plaintiff filed an appeal, 7 years after this appeal, on March 6, 2013, the case was resolved by the State Council who ruled in favor of the lawyer and against the hotel company. Then it was resolved as follows:

substantially the sentence orders the Hotel Company to buy land with the same extension of the strip that will take away the territorial sea for three decades, that is, 26,961 MTS<sup>2</sup>, so that in a time that cannot be After more than three (3) years, build an eco-park for the use and recreation of the entire community.

In this resolution, in a similar way, the hotel is obliged to permanently support the spurs that have obtained the influence of the Hilton all those years, this in order to stop the degeneration of the water mirror of El Laguito and with them to start the environmental recovery of the lake. However, the hotel company sought with a right of petition, a petition for annulment and which was subsequently rejected by the State Council itself.

The literature found for the elaboration of the state of the art, allows us an approach to the understanding of the legal activities carried out by the lawyer Norberto Gary, this is how Diaz (2014) states that in the coastal region of Cartagena more specifically in La Boquilla and the Laguito, there is great influence of the waves; with this, the behavior that is observed on the coastal strip in the coastal region is observed, which has the action of the waves that depends on the seasonal change, there the group of winds arise during a calendar year, defined in two climatic seasons, wet and dry mainly.

Only the mathematical models HISHWA and SBEACH are the only ones allowed for the respective calculation for the wave parameters, the only tool recommended in the field of oceanography. This tool will also be used for sediment transport, and this only for the coastal sector between La Boquilla and El Laguito. HISHWA is the mathematical method based on the calculation of wave energy and its variation in the nodes of an operational grid and SBEACH is the method that involves the simulation of changes in beach profile to establish erosion - growth balance in particle traffic of sediment; in specific fine sands. Thanks to these methods it was possible to verify that in the driest time of the year the winds tend to be stronger and more persistent, which generates coastal currents that cause the construction of a sandy shore infra bar, when the wet season arrives, it is found Under the influence of weak winds and a variant direction, it migrates its material in search of shelter in the most favorable structural forms of the coast. With this, it can be concluded that the coastal region north of Cartagena suffers a cyclical phenomenon adjusted to the influence of prevailing winds at each climatic time of the year and to sedimentary traffic controlled by the dynamic action of the waves.

Through the application of GIS tools and multicriteria methods at the coast line, Colombian Caribbean, researchers Rangel-Buitrago, N. and B.O. Posada-Posada (2013) affirms us of the determination of vulnerability and coastal risk The authors conclude by consensus that there is a unanimous scientific decision about the global climate, which resolves that it is significantly affected with the increase in the level of sea and also with changes in precipitation patterns among

others. At present there is a great concern related to the dimensions of these changes; Vulnerability and risk analyzes along the coastlines are the first step in defining what will be the basis for creating a climate change adaptation plan. For all the above, the city of Cartagena was chosen as the study area, which is located in a coastal area on the coast of the Colombian Caribbean, located between the coordinates  $10^{\circ} 45'N-75^{\circ} 15'W$  and  $10^{\circ} 10' N -75^{\circ} 45'W$ , with an approximate length of 370 km. With these data, a detailed assessment of vulnerability and erosion risk along this coastline from the physical, social, conservation and heritage point of view was carried out.

The mentioned researchers carried out a critical analysis which by means of a semi-quantitative approach and applying relative indices such as geomorphological unit, width, slope and type of beach, degree of exposure of the coast to waves, among other characteristics. There were quantitative data on coastal recoil and variables associated with land use, conservation and heritage. The result showed that between 1994-2011 erosion rates reached values greater than 3 m year<sup>-1</sup> in critical sectors, for example: Tierra Bomba y Playetas located in front of Laguito affecting land use and local and regional economy. It was also stated that 41% of the coastline was classified as low and very low risk, 32.15% with moderate risk, while 13.69% and 13.27% correspond to high and very high risk values respectively. Under the conditions of climate change, sea level rise and sedimentary imbalance, in the short, medium and long term the erosion found on the coast line of the Cartagena of India's district will intensify with its decline. Adaptation must be a priority strategy to be considered, with alternatives for relocation and sustainable protection, and detailed studies with the purpose of zoning for settlements, uses and future uses of the coast.

Yepes (2006) tells us about the microbiological and physical-chemical quality of water for recreational uses on the beaches of Laguito, Bocagrande and Marbella in Cartagena of India's, Colombia. At present, Cartagena is the Colombian port on the Caribbean Sea with greater recognition for its historical trajectory and its tourist activity. Due to the importance of the quality of recreational waters for bathers and users in general, microbiological, physical and chemical parameters were evaluated on the beaches of Laguito, Bocagrande and Marbella, during the months of February to April 2004, which they correspond to the summer season of the region. It was observed that the physical and chemical parameters had a stationary behavior during the sampling period and comply with the standards set forth in Decree 1594 of 1984. In microbiological parameters, the estimated average of total coliforms exceeded the index established by this standard. The results obtained for the parameters E coli and whole coconuts were compared with studies associated with the occurrence of diseases, carried out by Cheung (1989) and Bandanarayake (1995), respectively.

Andrade et al (2016) tells us about the dynamic morphs aspects of the bay of Cartagena. This article analyzes the changes in depth that occurred recently (one

century) in the bottoms of the Bay of Cartagena by comparing the bathymetric surveys of the years 1935, 1987 and 2004. The distribution of sediments is also characterized and analyzed. from the bay in its external and internal part. The results show that the sediments of the inner part owe their distribution and origin to three anthropic structures, El Laguito, the Escollera de Bocagrande and the Canal del Dique. The sediments of the dike have already occupied the sandy parts of the funds a few years ago and its delta has advanced more than a kilometer to the north, compromising the depth of the navigable access channel to Bocagrande and the internal bay of Cartagena.

## V. CONCLUSIONS

Civil engineers propose a hydraulic project to protect the coastal line of El Laguito in the long term and save the polluted lake in this neighborhood, but it is still damaged due to the lack of the 16,000 million pesos required to carry out the important works. The civil engineer Pedro Fabris Anicharico, one of the professionals who best knows the chosen coastal and environmental recovery project, believes that it is not up to the District of Cartagena to obtain the resources to carry out these works, but to the Nation, and considers that this disbursement This could be done through the Ministry of Environment or the Ministry of Transportation, or the National Risk Management System, or all of these entities together. (El Universal, 2012)

The recovery of the coastal line of El Laguito and opening of the mouth of its internal body of water includes the construction of an access channel, a sediment trap, one hundred (100) meters of marginal protection consisting of a casing attached to the coastline, the dumping of 30,000 cubic meters (m<sup>3</sup>) of filler material for the creation of a strip of beach in front of the neighborhood, and the construction of 916 linear meters of spurs.

Since 2002 the District has made several interventions to mitigate the problem, in compliance with judicial mandates, and that at this time it is without resources for the new project and this body of water is still contaminated and likely to be a victim of landfill and converted In hotel buildings in the city, for this reason, as a result of this research work, according to Tello (2018) we hope that the exit to this problem is in the areas of International Law and in some instrument that allows the claim of legal protection of the right to water, which although the supply of drinking water constitutes a public service that states must provide to individuals in an obligatory manner, because access to water is a collective, basic or fundamental need, such supply has not been entirely possible satisfied by many governments in various countries, especially in those where underdevelopment conditions prevail.

It is presumed that the human right of the appeal is implicit within the Universal Declaration of Human Rights and its existence is inferred from articles 11 and 12 of the International Covenant on Economic, Social and Cultural Rights, because there is no reference to explicit and general form of this right and that leaves no doubt of this as a

fundamental right within a document of the sphere of international law, due to this lack of specification in the law there is a strong impediment to compliance with it, since The acceptance or recognition of their real existence is then due to questions of interpretation, which provides justifications for avoiding recognition.

In turn Ribeiro do Nascimento (2018) considers that drinking water is a fundamental right and is a source of life for human beings, however in many regions of the country and even in the same city of Cartagena there are neighborhoods and towns that still do not have the precious liquid, they find no access to this. Based on the foregoing and regarding the Inter-American System for the Protection of Human Rights, it was verified that water has not yet been expressly affiliated in the treaties or declarations that comprise it. In this context and taking into account that the safeguarding of the essential rights of people in the Americas is produced through intermediation, above all, of the jurisdictional action of the Inter-American Court of Human Rights, based on the jurisprudential analysis carried out, and although verified that this is not a right established by the Inter-American Court of Human Rights, it recognizes the right to water as a right derived from other rights explicitly protected before this court.

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