

THE PRINCIPLE OF CAUTION AND THE THREAT OF DESTRUCTION OF THE CORAL REEF IN THE CARTAGENA'S BAY IN COLOMBIA, LATIN AMERICA.

Elizabeth Ramirez Llerena PhD, Luis Fernando De Avila, Jorge Luis Batista, Nilson Figueroa Atencia y Aniu Margarita Figueroa Ramirez

Abstract— The objective of this work was to determine the application of the principle of environmental precaution, as the adoption of pertinent measures to prevent damage to the environment with the construction of the Varadero Canal in the Bay of Cartagena, since after the enlargement of the Panama Canal, due to the arrival of the Postpanamax Ships, the extension of the Pass Channel is required to reach the Bay of Cartagena, so that the ships can enter to the Port of Cartagena; One of the units of analysis is whether the development work would be carried out, by Varadero because it cannot be done by other way because by Bocachica the foundations of the fortifications built by the Spaniards to protect the Cartagena metropolis can be damaged of the onslaught of the Corsairs, it cannot be done by Bocagrande way either because the Spaniards sealed the seabed with stones, so that no ship entered the port, there is the possibility of applying the precautionary principle in favor of the Varadero marine ecosystem. This is a quantitative, socio-legal investigation. The method of this investigation is the statistic. As primary sources the survey was used. The analysis was done through the statistical survey. As findings we have, that the precautionary principle is one of the foundations of national and international environmental law and, likewise, it has been accepted in the domestic sphere of Colombia both in the law and in the jurisprudence so the conclusions are, that the Political Constitution of 1991, sponsored international principles and fundamental rights that give environmental law a leading role within the national ordinance, which should be used to prevent the destruction of our natural marine heritage by the hand of the Cartagena developers, and that the coastal area continues to be affected by the increase in sea level against the constant change in climate.

Index Terms— Administrative Law, Caution Principle, Coral Reef, Cartagena Bay, Climate Change, Environmental Law, Sea Level Increase.

1 INTRODUCTION

In July 2015, it was announced by the Vice President of the Republic at that time, Mr. Germán Vargas Lleras, who allocated resources to begin the construction of what will become the second channel to access the bay from Cartagena, by Varadero.

All this occurred with the main objective of decongesting the waiting times at the accesses to the bay of Cartagena, in addition to considering the global logistic changes caused by the new world maritime fleet and the expansion of the Panama Canal, to this New infrastructure to be at the forefront of the times. The new construc-

tion would support the increase in the maritime traffic of postpanamax ships, there is a projection of large-capacity container ships and the income of oil ships in the bay, these being operated in the future by the Refinery that was built in the corralito de piedra, the most modern in Latin America, the same refinery that has allowed the entry into service of the Liquid Terminal of Puerto Bahía, which is the port of import of liquefied gas and that is contributing to the growing industrial development of the city [3]

It is surprising that between the dirty water and the great pollution of the sea in the Bay of Cartagena, where no one would expect to find vitality and diversity, between the Islands of Tierrabomba and Barú, a Coral Reef grows. **"They are in a surprisingly good state of conservation, considering the poor water quality that the bay has historically had, for the optimal development of these ecosystems,"** according to Mateo López Victoria, a Doctor of Biology and researcher at the Javeriana University of Cali, who has been studying this phenomenon of nature together with several of his colleagues; but on this special coral reef looms a threat: The mega work that will be carried out to have an alternate channel that gives more access to the port of Cartagena, which would almost completely destroy the reef by mentioning, since it would pass over it, partially destroying it from the seabed, if this construction is done [4]

- Elizabeth Ramirez Llerena, is a doctor in legal sociology at Externado University, in Colombia. E-mail: cartagenabaykeeper@gmail.com
- Luis Fernando De Avila, is a masters degree program in administrative law at Libre University in Cartagena, Colombia, E-mail: luisferdam4196@hotmail
- Jorge Luis Batista Herrera, is a masters degree program in administrative law at Libre University in Cartagena, Colombia, E-mail: jorgealejandro07@live.com
- Nilson Figueroa Atencia, is a masters degree program in sustainable business administration at University for International Cooperation in Mexico, E-mail: nilsosky@hotmail
- Aniu Margarita Figueroa Ramirez, is bachellor program in environmental engineering at Comfenalco University Technical Foundation in Cartagena, Colombia, E-mail: aniuquita@gmail.com

It is considered that in this case to save the Varadero reef, the Precautionary Principle can be applied, since Lora [2] says that the Precautionary Principle is enshrined in the Internal Law of each country and in International Law, as a guiding principle and protectionist of the environment, which seeks to guide the management of any state official to prevent or prevent damage, serious and irreversible, to the environment, therefore the importance of doing this research, which allows us to establish the possible application of the Principle of Caution Environmental in the adoption of pertinent measures in order to avoid damage to the ecosystem with the construction of the Varadero Canal in Cartagena Bay.

2 MATERIALS AND METHODS.

The question that guides this research was: Is it possible to apply the Principle of Environmental Precaution as the adoption of relevant measures to prevent damage to the environment with the construction of the Varadero Canal in Cartagena Bay? The general objective of this investigation was, To determine the application of the Principle of Environmental Caution as the adoption of pertinent measures to avoid damage to the environment with the construction of the Varadero Canal in Cartagena Bay and the specific objectives, were: To carry out an analysis normative, jurisprudential and doctrinal on the application of the Principle of Caution in Colombia and in Comparative Law; Review hermeneutically through an analytical matrix the Development Plans of the last three mayors of the city of Cartagena de Indias to determine if there are public policies that involve the Principle of Environmental Caution for the Protection of the Environment in the city of Cartagena and Perform a statistical survey in groups focused on the city of Cartagena to establish the possible application of the Principle of Environmental Precaution as pertinent measures to avoid damage to the environment with the construction of the Varadero Canal in the Bay of Cartagena.

The Hypothesis was: The environmental authorities must take the necessary measures to protect the sea forest from the ecosystem of the Bay of Cartagena by Varadero, in order to take care of the environment of the population that lives next to the possible Canal of access to the Port; if the communities do not do so, they must collect the Precautionary Principle to seek a preventive action by the State in the protection of the special coral reef. This is a quantitative, socio-legal investigation. The method of this investigation is the statistic. As primary sources the survey was used. The analysis was done through the statistical survey.

3 RESULTS

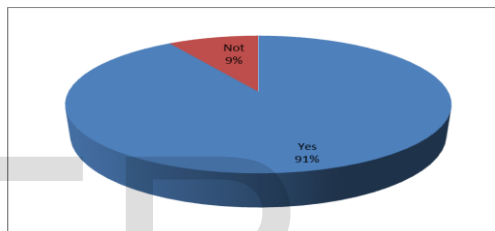
They are presented as a result, the analysis of the statistical survey that is carried out in groups focused on the city of Cartagena, in which the perception of the inhabitants of the insular area of Cartagena in the Historic town and of the Historic and North Caribbean, that is, those who live in the island towns of Barú, Bocachica, Caño del Oro, El Recreo, Fuerte Island, Palma Island, Panda Island, Rosario Islands, San Bernardo Islet, Leticia, Santa Ana, and Tierra Bomba , on the possibility of applying the precautionary principle against the destruction of the coral reef in Varadero, by the construction of a new access channel to the bay;

the population that lives in the insular zone (and other Community Government Units that make up the mentioned locality, 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10) are three hundred eighty-eight thousand (388) four hundred and ninety-eight (498) inhabitants and its representativeness is 33 people, through the use of segmentation variables of the sample, since 10% was taken which will be the population investigated. Let's see, the analysis mentioned:

Graph No 1: Do you consider that the coastal area of Cartagena has been damaged by deteriorating the marine and coastal resources that interact between the land and the Caribbean Sea?

OPTION	FREQUENCY	PERCENTAGE
Yes	30	91%
Not	3	9%
TOTAL	33	100%

Source: Surveys carried out on the population living in the insular zone of Cartagena in the Historic and North Caribbean.

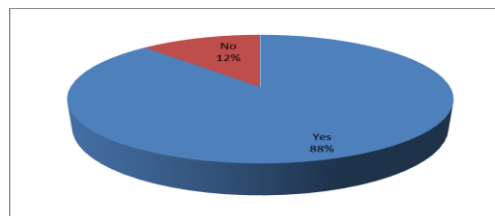


The respondents, the inhabitants of the insular zone of Cartagena in the Historic and Northern Caribbean locality, in Cartagena - Colombia, consider that they have caused damage to the coastal area of Cartagena deteriorating the marine and coastal resources that interact between the land and the Caribbean Sea, Yes in 91% and No in 9%.

Graph No 2: Do you think that in the insular and coastal area of the city of Cartagena there have been many activities that produce pollution such as the construction of hotels, roads, ports, etc.?

OPTION	FREQUENCY	PERCENTAGE
Yes	29	88%
Not	4	12%
TOTAL	33	100%

Source: Surveys carried out on the population living in the insular zone of Cartagena in the Historic and North Caribbean.

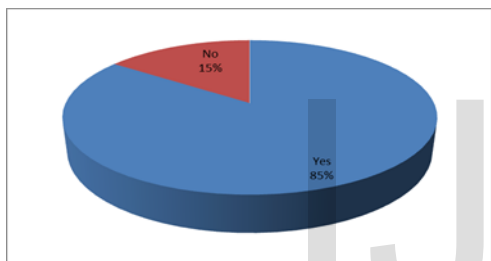


The respondents, the inhabitants of the insular zone of Cartagena in the Historic and Northern Caribbean locality, in Cartagena - Colombia, believe that in the insular and coastal zone of the city of Cartagena there have been many activities that produce pollution such as the construction of hotels, roads, ports, etc., If in 88% and No in 12%.

Graph No 3: Do you think that the development activities that have been carried out in the insular and coastal zone of Cartagena have not been carried out with the necessary care to protect the marine environment causing damage to ecosystems and coastal waters?

OPTION	FREQUENCY	PERCENTAGE
Yes	28	85%
No	5	15%
TOTAL	33	100%

Source: Surveys carried out on the population living in the insular zone of Cartagena in the Historic and North Caribbean.

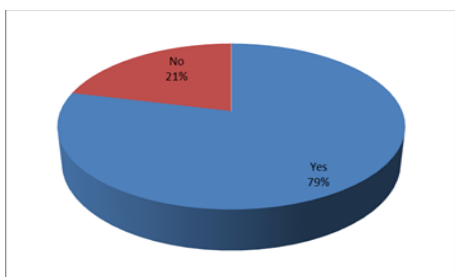


Respondents, the inhabitants of the insular zone of Cartagena in the Historic and North Caribbean, in Cartagena - Colombia, Yes in 85% and No in 15%.

Graph No 4: Do you think that the development activities that have been carried out in the insular and coastal zone of Cartagena have produced the disappearance and changes in marine organisms and their habitat?

OPTION	FREQUENCY	PERCENTAGE
Yes	26	79%
No	7	21%
TOTAL	33	100%

Source: Surveys carried out on the population living in the insular zone of Cartagena in the Historic and North Caribbean.

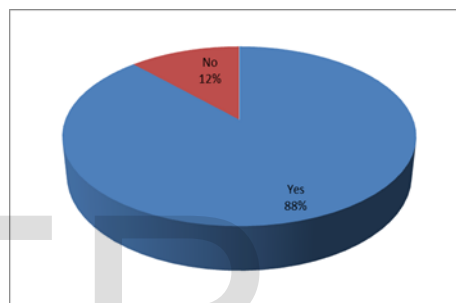


Respondents, the inhabitants of the insular zone of Cartagena in the Historic and North Caribbean, in Cartagena - Colombia, Yes in 79% and No in 21%.

Graph No 5: Do you think there has been damage in the mangrove cut to advance urban development works such as roads, hotels, ports and various crops in the insular and coastal area of Cartagena?

OPTION	FREQUENCY	PERCENTAGE
Yes	29	88%
No	4	12%
TOTAL	39	100%

Source: Surveys carried out on the population living in the insular zone of Cartagena in the Historic and North Caribbean.

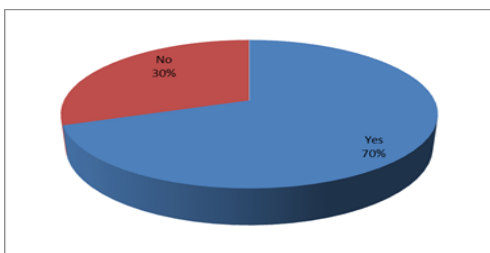


The respondents, the inhabitants of the insular zone of Cartagena in the Historic and North Caribbean locality, in Cartagena - Colombia, do you consider that the plugging by the sedimentation that the Laguito lives when communicating with the sea the fresh water, alters the physical conditions Chemicals that lead to the degradation of estuaries, if in 70% and not in 30%.

Graph No 6: Do you consider that the plugging by the sedimentation that Laguito experiences when communicating with the sea the fresh water, alters the physical chemical conditions that lead to the degradation of the estuaries?

OPTION	FREQUENCY	PERCENTAGE
Yes	23	70%
No	10	30%
TOTAL	33	100%

Source: Surveys carried out on the population living in the insular zone of Cartagena in the Historic and North Caribbean.

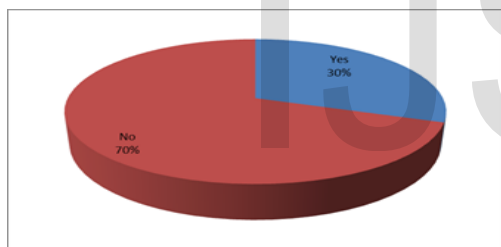


The respondents, the inhabitants of the insular zone of Cartagena in the Historic and North Caribbean locality, in Cartagena - Colombia, do you consider that the plugging by the sedimentation that the Laguito lives when communicating with the sea the fresh water, alters the physical conditions Chemicals that lead to the degradation of estuaries, if in 70% and not in 30%.

Graph No 7: Do you think that lagoon fillings have been developed in the insular and coastal area of Cartagena that cause death to vegetation and animals?

OPTION	FREQUENCY	PERCENTAGE
Yes	10	30%
No	23	70%
TOTAL	39	100%

Source: Surveys carried out on the population living in the insular zone of Cartagena in the Historic and North Caribbean.

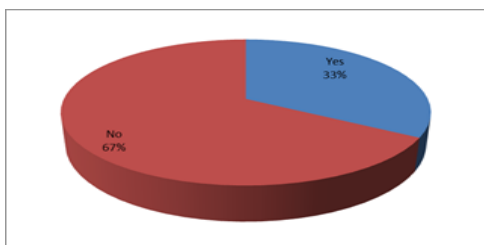


The respondents, the inhabitants of the insular zone of Cartagena in the Historic and Northern Caribbean locality, in Cartagena - Colombia, believe that fillings of lagoons have been developed in the insular and coastal area of Cartagena that cause death to the vegetation and the animals, if in 30% and not in 70%.

Graph No 8: Do you consider that there is damage to the marine ecosystem with the urbanization of the islands of the insular and coastal area of Cartagena with tourism or housing projects?

OPTION	FREQUENCY	PERCENTAGE
Yes	11	33%
No	22	67%
TOTAL	33	100%

Source: Surveys carried out on the population living in the insular zone of Cartagena in the Historic and North Caribbean.

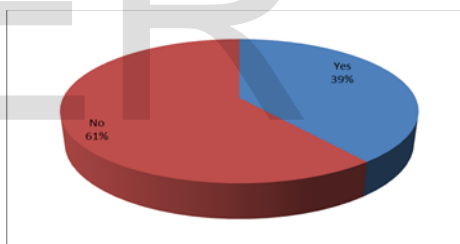


The respondents, the inhabitants of the insular zone of Cartagena in the Historic and North Caribbean, in Cartagena - Colombia, consider that there is damage to the marine ecosystem with the urbanization of the islands of the insular and coastal area of Cartagena with tourism projects or residential, Yes in 30% and No in 70%.

Graph No 9: Do you think that the destruction of the coral reef located in Varadero, for the construction of the new access channel to the bay, contributes to the increase in sea level and the impact on climate change?

OPTION	FREQUENCY	PERCENTAGE
Yes	13	39%
No	20	61%
TOTAL	33	100%

Source: Surveys carried out on the population living in the insular zone of Cartagena in the Historic and North Caribbean.

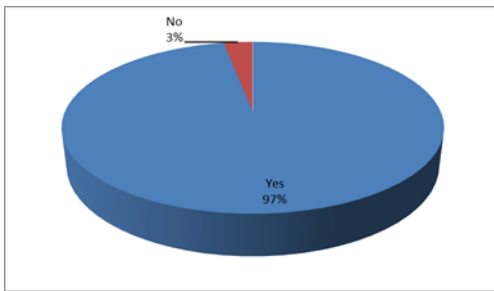


Respondents, the inhabitants of the insular zone of Cartagena in the Historic and North Caribbean, in Cartagena - Colombia, believe that the destruction of the coral reef located in Varadero, for the construction of the new access channel to the bay, contributes to the increase in sea level and the impact on climate change, if in 39% and No in 61%.

Graph No 10: Do you consider that as citizens you can use the precautionary principle in a constitutional action to curb the damage done to the environment in the city of Cartagena?

OPTION	FREQUENCY	PERCENTAGE
Yes	33	97%
No	1	3%
TOTAL	33	100%

Source: Surveys carried out on the population living in the insular zone of Cartagena in the Historic and North Caribbean.



Respondents, the inhabitants of the insular zone of Cartagena in the Historic and Northern Caribbean locality, in Cartagena - Colombia, consider that as citizens they can use the precautionary principle in a constitutional action to curb the damage done to the environment in the city of Cartagena Yes in 97% and No in 3%.

According to the above, from the applied surveys it can be inferred that the respondents, belonging to the population that lives in the insular zone of Cartagena in the Historic and North Caribbean region, agree that culturally this area has been harmed of the corralito de piedra for carrying out development activities which allows for an impact on climate change and is the increase in sea level, respondents also agree on the application of the principle of environmental precaution in the threat of destruction of the reef Special coral in the bay of Cartagena for the construction of the Varadero Canal to expand the access channel to the bay and thus receive postpanamax boats.

4 DISCUSSION:

This research work focuses as a research problem that the Government of the Republic of Colombia introduced in the Construction Program for Prosperity, the construction of the new Varadero Canal to enter the Bay of Cartagena de Indias, the easiest and most dynamic way, the new project has three objectives:

1. - Successfully carry out the dredging plan for the construction of the new Varadero Canal.
2. - Maximize the value of the material to be dredged to minimize environmental effects, in addition to guaranteeing the economic use of the residual resource.
3. - Link the private company to participate in the project; For this reason, the Cartagena Chamber of Commerce carried out concrete actions with the central government to achieve the completion of the construction of the Varadero Canal, it was argued that it was an extremely necessary alternative to achieve the opportunities offered by the expansion of the Panama Canal, free trade agreements, maritime transport, among others.

With the previous information, it is concluded that the National Government will give its total support to the construction of the project, together with the support of the Ministry of Transportation, which gives the assurance that the Varadero Canal is a task with high priority not only to The Caribbean Coast but also for the rest of the country, this work welcomes a full internationalization, connectivity and, above all, Foreign Trade.

A construction project of this size must have an environmental license, for its full development in the area, for this reason the

Directorate of Prior Consultation of the Ministry of Interior, had to meet with the Community Councils of Bocachica and Caño de Loro communities that are adjacent to the Varadero Canal to see if they agree with the project and the requirements that the work will have, in addition to the representatives of political and social institutions, citizens and interested in the environmental issue, with this consultation it was concluded that they do not accept the desecration of the Varadero reef for the construction of a new canal to give access to the Bay of Cartagena, which already exists today. In the environment it is of the utmost importance in this project and it must prioritize its vitality and not its destruction. These two pre-consultations showed the manifesto of the coastal population that wishes to be clear about the issue of what the proposal of the Aqua & Terra company means at the environmental level, which, in the name of the ports and the government, conducts the Environmental Impact Study (EIS) required for the National Environmental Licensing Agency (NELA) to authorize the dredging of the reef.

Searching the media for information on how the community feels about Varadero's care for the environment, a clear example was analyst Rafael Vergara who referred in the middle of Caracol Radio Cartagena, about the construction work of a new channel, which will give access to the Bay of Cartagena, replicating the questions asked by the leader of Caño de Loro, lawyer Wilmer Herrera Imitola, on Why exclude the community councils of Ararca, Pasacaballos and Earth pump? This should not happen since the communities that are also adjacent to the passage of the Varadero Canal, since, if dredging to open the road to the Varadero Canal, it would be endangered and in a premeditated manner would end centenary coral colonies, causing an environmental tragedy, this would break the barrier and remove the seabed which would help activate buried heavy metals, contributing to the erosion of the reef and completely changing the dynamics of the currents with the column of water that would enter or exit when deepening at 15 meters [6]

The work could easily make Isla Draga and Castillo de San José disappear by passing by and dredging the rock, as Aqua & Terra calls the fossil coral. If this mega construction is allowed, it will impact negatively on the forest of the sea that is very likely not to survive such aggression; this would be in more traditional words to kill the coastal environment. For this reason, the platform for social change change.org, collected signatures in more than 21 thousand citizens of more than 18 countries that require #SalvemosVaradero, natural heritage of the nation and humanity. The theme of Varadero is a subject of high importance; citizenship needs to be heard by the Control entities, the Ministry of Environment, Invemar, National Parks, the National Environmental Forum and other defenders of the Natural Heritage [7]

We believe that it is necessary to make a holistic analysis of the legal phenomenon that prevents environmental damage, which invites us to reflect on the connection between regulations and social assessments, including specific emotions about the environment. It is no exaggeration to suppose that the law can express, amplify or minimize damage to the environment; In other words, it helps to modulate them.

De Cozar [1] mentions that if the environment is threatened, the precautionary principle requires that adequate measures be taken to achieve full damage prevention, this principle is also used that in case of threat to health and in case of a situation of scientific uncertainty.

Lora [2] in turn establishes that the Precautionary Principle is

defined in Colombian legislation; For this reason, this investigation is legally based on the fact that the Precautionary Principle is one of the fundamental pillars of the principle of sustainable development and the duty to protect the environment, and in our country the enactment of Law 1523 of 2012 was made, which already expressly enshrines the precautionary principle in environmental legislation. With the aforementioned it can be said that the Precautionary Principle has a constitutional foundation. We also find the following regulations that allow us to strengthen the use of the precautionary principle against damage to the Colombian environment.

Rio Declaration 1992. "Rio Declaration on Environment and Development" (Article 15).

Law 165 of 1994. "Through which the Convention on Biological Diversity, made in Rio de Janeiro on June 5, 1992, is approved."

Law 99 of 1993. "By which the Ministry of the Environment is created, the Public Sector in charge of the management and conservation of the environment and renewable natural resources is reorganized, the National Environmental System, SINA, is organized and others are issued provisions"

In environmental matters, the Precautionary Principle is enshrined in Law 99 of 1993, which states the following: "Article 1. General Environmental Principles. Colombian environmental policy will follow the following general principles:

1. The country's economic and social development process will be guided according to the universal principles and sustainable development contained in the Rio de Janeiro Declaration of June 1992 on Environment and Development.

(...)

The formulation of environmental policies will take into account the result of the scientific research process. However, environmental authorities and individuals will apply the precautionary principle according to which, when there is a danger of serious and irreversible damage, the lack of absolute scientific certainty should not be used as a reason to postpone the adoption of effective measures to prevent degradation, environment".

The Jurisprudence on the Principle of Caution in Colombia has said: In Judgment C-703 of 2010, the Constitutional Court said about the environment that it is a legal good that commits the State, the national community and the international community. The Constitution of 1991 stands out from the previous constitutional versions that had been drawn up in our country, as it is considered as an eco-friendly Statute because of the place so important that it gives protection to the environment (Constitutional Court. Judgment C-703 2010. M.P Gabriel Eduardo Mendoza Martelo).

Likewise, the Constitutional Court in Judgment C-703 of 2010, said about the environment, that its protection is based on the preventive action of the State with support in the principles of prevention and precaution (Constitutional Court. Judgment C-703 of 2010. M.P Gabriel Eduardo Mendoza Martelo).

And in Judgment C-449 of 2015 he said about the protection of nature and the configurations in which it is specified, that the regulations issued and the existing constitutional jurispru-

dence for the protection of the natural environment and the ecological environment have departed from lines of ideology that they have come together in the compatibility of several legal approaches that come to be concretized in the following points of view: Anthropocentric, biocentric and ecocentric, among others. (Constitutional Court. Judgment C-449 of 2015. M. P. Jorge Iván Palacio P)

On the constitutional actions in defense of the environment, said in the Judgment T-080 of 2015, the same Court on popular action in the 1991 Constitution: Regarding collective rights, the ability of judges to protect the rights of people when they are affected by the environment.

The Atlantic Ocean and the atmosphere are two important environments that the city of Cartagena has, which although usually treated independently, are intimately related by their chemical components. The continental shelf is the outer region of the continent that goes from where the coast begins and extends below sea level, to where the depth changes by establishing a variable limit between 100 and 200 meters, from there the open sea begins, This happens after passing through the forts in Bocachica and only small draft ships pass through there, a postpanamax ship cannot do it. At the stated depths the sunlight reaches to influence what the process of photosynthesis allows, which is why most of the ocean's wealth, represented in plants, animals and minerals, is where a coral bank grows, in spite of the contamination with heavy metals that have the waters of the bay of Cartagena.

In the ocean you can find three groups of living organisms: The plankton, the necton and the benthos, these organisms occupy specific places and play different roles in the processes that sustain marine life. Within the bentos, which are plants and animals that remain in close relationship with the seabed, to carry out their vital activities; those that are attached or displaced on the surface are called epiflora or epifauna, depending on whether they are vegetables or animals, corals being common, which are part of the marine and coastal ecosystem of the city of Cartagena. Coral reefs are considered the most productive ecosystem on the planet because it hosts a diverse fauna, as it includes both vertebrates and invertebrates.

One of the problems experienced by the coral reefs of the Rosario Islands is the increase in the temperature of the waters of the Caribbean Sea as a result of climate change, this results in zooxanthellae being expelled from polyps, a process known as bleaching Coral, which can cause the death of coral, and this is added the possibility that the hand of the Cartagena developers deteriorate the coral that is under the waters in Varadero, by the construction of the new channel which would make more practical and dynamic the way to access the bay of Cartagena.

There is the possibility of collecting the precautionary principle to prevent this from happening, for Lora [2] undoubtedly, the Precautionary Principle involves the responsibility of the agent that put at risk or has caused damage to the environment and also commits the public authority that does not apply said Principle correctly.

CONCLUSION

The bay of Cartagena since the time of the colony has been the main entrance of Colombia, its perfect strategic location and its natural conditions, made the colonists see in this city the ideal

port to transit merchandise, from South America to the old continent. Today, after 500 years of port management, the Port of Cartagena considers that in order to create greater connectivity and better port strategies, the bay must be able to receive postpanamax ships, since it is believed that this drives the economy of scale since a greater quantity of containers the individual value of the same one is reduced, that is to say the freight.

With this new structure, greater competitiveness for companies could be achieved and the country's social and economic development will be promoted; All of the above sounds excellent until it is mentioned that to expand the access channel to the Bay, it must be regulated by Varadero, where a new channel would be built, which would result in the destruction of the coral reef of the ecosystem of the bay, the which is a miracle of life and is in the matter of research that arises from the contaminated water in the bay. The debate arises again between what is more important: Environmental care or industrial development? Villagers who live and work near Varadero can collect the Precautionary Principle to prevent the construction of the canal from being carried out and the reef being destroyed, in addition to affecting not only their daily work, but their way of life in the community.

International Law constitutes the rights on which the protection and sustainable development of the coastal marine environment and its resources are based, but it should be noted that developers are also required to focus on land use planning and national development. International that demands that it be oriented towards the prevention of environmental damage. With this, we know that the coastal area of Cartagena de Indias, bathed by the Caribbean Sea and the Atlantic Ocean, constitute a component of the life support system, because they have a valuable resource but must be sustainable and not destroyed since They are threatened to be flooded by rising sea levels, which is what makes their legal protection not only in Colombian domestic law, but also in international law.

REFERENCES

[1] De Cózar Escalante, José Manuel. (2005). Principle of precaution and environment. Spanish Journal of Public Health, 79 (2), 133-144. Retrieved on March 29, 2019, from http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S1135-57272005000200003&lng=es&tlng=en.

[2] Lora Kesie Karem Ivette. The precautionary principle in Colombian environmental legislation. Legal News Magazine, edition 3 and 4, p 22-29.

[3] Recovered from:
<http://www.puertocartagena.com/es/bahia-de-cartagena/canal-de-acceso-y-canal-alterno>. Retrieved on May 23, 2018

[4] Recovered from: <http://www.elcolombiano.com/medio-ambiente/varadero-una-joya-amenazada-NG4190942>. Retrieved on May 23, 2018

[5] Recovered from:
<http://www.cccartagena.org.co/es/proyectos-regionales/canal-de-varadero>. Retrieved on May 23, 2018

[6] Recovered from:
http://caracol.com.co/emisora/2017/08/31/cartagena/1504181116_217256.html. Retrieved on May 23, 2018

[7] Recovered from:
<https://revistametro.co/2018/02/06/salvemos-varadero-bladimir/>. Retrieved on May 23, 2018