

POLLUTION OF THE OCEANS BY PLASTICS AND EFFECTIVENESS OF LEGAL NORMS OF PROTECTION: COMPARISON BETWEEN THE LEGISLATION OF BRAZIL AND PANAMA

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ABSTRACT: Studies established that oceans cover 71% of the Earth's surface. This area of the planet, nowadays, suffers from plastic pollution due to its inadequate disposal, which affects marine fauna and flora. Only 9% of these plastics are reused or recycled, meaning that the rest ends up being garbage that goes into different places. According to United Nations Environmental Program, about 90% of the waste that is floating in the oceans comes from plastic or derived. Given this scenario, the UN has established the conservation and sustainable use of oceans, seas and marine resources as one of its sustainable development main goals, to be accomplished in 2030. This goal will not be achieved without the containment of contemporary predatory capitalism, were the general model of life is linked to consumption, as a way of demonstrating the identity of the individual, his ethical values and behaviors, requiring more effective

coercive norms, organized with economic incentive policies. Considering that Brazil and Panama are ROCRAM members, and that one of its main principles is to integrate efforts and exchange experiences in order to make more effective implementation of international conventions on maritime pollution, it's possible to compare these two countries related legislation. As a result of an ongoing research, this paper proposes as a mechanism to approach to a possible answer and to address the following points in the investigation: What are the international environmental agreements related to the protection against incorrect plastic disposal and ocean pollution? What are the environmental legal norms applied by Brazil and Panama, and the relationship between the legal norms and the effectiveness (or not) of pollution reduction? The methodology is based on a descriptive investigation, through data collection, making an analysis and focusing on solving the questions established above, according to the existing international legislation, aiming for ocean protection.

RESUM: Els estudis van establir que els oceans cobreixen el 71% de la superfície de la Terra. Aquesta zona del planeta, actualment, pateix la contaminació de plàstics per la seva inadequada eliminació, que afecta la fauna i la flora marines. Només el 9 % d'aquests plàstics són reutilitzats o reciclats, de manera que la resta acaben sent escombraries que es troben en diferents llocs. Segons el Programa de les Nacions Unides per al Medi Ambient, aproximadament el 90 % dels residus que floten als oceans procedeixen de plàstics o derivats. Davant d'aquest escenari, l'ONU ha establert la conservació i l'ús sostenible dels oceans, mars i recursos marins com un dels seus objectius principals de desenvolupament sostenible, que es preveu assolir el 2030. Aquest objectiu no s'aconseguirà sense la contenció del capitalisme depredador contemporani, on el model general de la vida està vinculat al consum, com a manera de demostrar la identitat de l'individu, els seus valors i comportaments ètics, que requereixen normes coercitives més eficaces organitzades amb polítiques d'incentius econòmics. Tenint en compte que Brasil i Panamà són membres de ROCRAM, i que un dels seus principis principals és integrar esforços i intercanviar experiències per aconseguir una implementació més efectiva de convencions internacionals sobre la contaminació marítima, es poden

comparar la legislació relacionada d'aquests dos països. Com a resultat d'una investigació en curs, aquest article proposa com a mecanisme per acostar-se a una possible resposta i abordar els següents punts de la investigació: Quins són els acords ambientals internacionals relacionats amb la protecció contra l'eliminació de plàstics incorrecta i la contaminació dels oceans? Quines són les normes legals ambientals aplicades per Brasil i Panamà, i la relació entre les normes legals i l'eficàcia (o no) de la reducció de la contaminació? La metodologia es basa en una investigació descriptiva, a través de la recopilació de dades, fent una anàlisi i centrant-se en la solució de les qüestions establertes anteriorment, segons la legislació internacional existent, amb l'objectiu de protegir els oceans.

RESUMEN: Los estudios establecieron que los océanos cubren el 71 % de la superficie de la Tierra. Esta zona del planeta hoy en día sufre de la contaminación de plástico debido a su eliminación inadecuada, que afecta a la fauna y flora marina. Solo el 9 % de estos plásticos son reutilizados o reciclados, lo que significa que el resto termina siendo basura que se deposita en diferentes lugares. Según el Programa de las Naciones Unidas para el Medio Ambiente, alrededor del 90 % de los residuos que flotan en los océanos provienen de plástico o derivados. Dado este escenario, la ONU ha establecido la conservación y el uso sostenible de los océanos, mares y recursos marinos como uno de sus principales objetivos de desarrollo sostenible, que se prevé lograr en 2030. Este objetivo no se conseguirá sin la contención del capitalismo depredador contemporáneo, donde el modelo general de vida esté vinculado al consumo, como una forma de demostrar la identidad del individuo, sus valores y comportamientos éticos, que requieren normas coercitivas más efectivas, organizadas con políticas de incentivo económico. Teniendo en cuenta que Brasil y Panamá son miembros de ROCRAM, y que uno de sus principios fundamentales es integrar esfuerzos e intercambiar experiencias para hacer más efectiva la implementación de los convenios internacionales sobre la contaminación marítima, es posible comparar la legislación relacionada de estos dos países. Como resultado de una investigación en curso, este artículo propone como mecanismo para acercarse a una posible respuesta y abordar los

siguientes puntos de la investigación: ¿Cuáles son los acuerdos ambientales internacionales relacionados con la protección contra la eliminación de plásticos incorrecta y la contaminación del océano? ¿Cuáles son las normas legales ambientales aplicadas por Brasil y Panamá, y la relación entre las normas legales y la efectividad (o no) de la reducción de la contaminación? La metodología se basa en una investigación descriptiva, a través de la recopilación de datos, haciendo un análisis y centrándose en resolver las preguntas establecidas anteriormente, de acuerdo con la legislación internacional existente, con el objetivo de proteger los océanos.

KEYWORDS: Environmental Law — Maritime pollution — Plastic pollution — Maritime Protection.

PARAULES CLAU: Dret ambiental — Contaminació marítima — Contaminació de plàstic — Protecció marítima.

PALABRAS CLAVE: Derecho ambiental — Contaminación marina — Contaminación de plástico — Protección marítima.

SUMMARY: I. Introduction. II. Plastic's productions and consume. 1. Superconsumers societies today. 2. Marine Pollution and plastics: A chaotic relationship? II. Legal maritime protection: International policies. 1. Maritime environmental policies. 2. Command and control instruments. 3. Maritime pollution protections: international agreements. 4. Montego Bay Convention. 5. Law of the Sea Convention (UNCLOS). 6. Rio+20 Conference. 7. Sustainable Development 2030 Agenda. 8. The Ocean Conference. 9. MEPC 72nd Session - International Maritime Organization. 10. International cases: Maritime pollution. III. Brazil and Panama: A comparison of its maritime protection systems. 1. Brazil. 2. Panama. IV. Conclusion. V. References.

I. INTRODUCTION

According to the lawyer and investigator Maria Helena Rolim, the marine environment should be protected and preserved in the perspective that it should be a space for maintaining life, fundamental for the marine and terrestrial ecosystem. The states should prioritize the use of the area for the protection of the marine environment against the harmful effects that may result from the activities developed in its use. We, use this thought as an introduction to our paper, as a result of the interest in research about the actual mechanism that protect the seas from pollution.

The main questions to be answered in this paper will be: does protection established by international legislations exist in practice? Can we safeguard ourselves and our coasts, only with what is written in international treaties, or should we promote state entities that endorse prevention against maritime pollution, and, failing that, punish with punishment? What are the international environmental agreements related to the protection against incorrect plastic disposal and ocean pollution? What are the environmental legal norms applied by Brazil and Panama, and the relationship between the legal norms and the effectiveness (or not) of pollution reduction?

In the present paper, an investigation will be carried out in order to know, in a general way, the policies that have more relevance in the world in terms of environmental protection, specifically aimed at the prevention of marine pollution through the deposit of plastics and waste, on the coast and open sea. It will be examined whether if the international environmental law does indeed provide a strong and sufficient basis for such protection or whether, on the contrary, it is insufficient.

The analysis to be carried out refers to the existence of laws that address the subject matter discussed in this article, however, it is possible to verify that there is little supervision and effectiveness in the application of the laws in the concrete case by the State, which generates the inefficiency in the environmental protection, especially with regard to avoiding pollution in the seas and oceans.

The methodology to be used will be through descriptive investigation, analyzing laws, articles, books and frameworks that have highlighted ocean pollution protection policies worldwide, either through command and control mechanisms or financial incentive instruments. A brief history of the consumer society and its influence on the generation of plastic waste will be treated, which in the destination process are dumped in the oceans.

A comparison of the laws of Brazil and Panama will be done in this paper, because both countries are ROCRAM members, with the main principle of integrate efforts and exchange experiences in order to effectuate the implementation of international conventions on maritime pollution. In addition, it will be identifying the points in which these two legislations are related or different,

making a comparison. The main purpose is to use theoretical legal mechanisms for the reduction and elimination of marine pollution by plastic waste.

II. PLASTIC'S PRODUCTION AND CONSUME

1. Superconsumers societies today

What is to be studied in today's consumer society is the unceasing economic and cultural flow that transforms the intentions of people into individualistic and immaterialistic, causing hyperconsumption and environmental pollution as its consequences.

The contemporary modern life is linked to consumption demonstrating the identity of the individual, his values and ethical behaviors, however, consumerism has been transformed into compulsion and dependence. This model comes from a gradual change of the society perspective, mainly since the industrial revolution, expanded with globalization.

The consumer society walks side by side with the industrial revolution. This, marked by a historical moment of social changes and evolution in the productive process, brought significant economic and cultural consequences, felt until today. With globalization, according to Baumann, a standardization of conduct has been provided as an irreversible process that is not only linked to standardization of behavior but which has ramifications in economics, politics, law, the individual and especially the environment.

It is interesting to mention that the origin of the consumer society does not have a definite historical cause or moment. Some sociologists who dealt with this subject, such as Neil McKendrick, Rosalind H. William, and Chandra Mukerji, indicate that, in the eighteenth century, England emerged from the consumption of fabrics imported from India, or from France in the nineteenth century, with retail and advertising trade, or in England, in the fifteenth and sixteenth centuries, with the advent of the press, respectively.

It is important to know the history of consumer society, because this society is a gradual evolution of the society of humanity in the last decades. Hence, Gilles Lipovestky states that the term consumer society arose in the 1920s and became

popular in the 1950s and 1960s, and furthermore, it clarifies that the development of consumer society occurred in three phases.

The first phase, according to this author, begins at the end of the nineteenth century and occurs until World War II, and is characterized by the mass production and commercialization of technical innovations introduced in the production processes. In addition, there was an important "democratization of desire, decisively influencing lifestyle change and the creation of" consumer seduction "and" consumer distraction "as well as the fallacy that world economic growth could only happen with production based on "disposable" consumer goods.

The second phase is called the "society of abundance", which occurred after World War II until the end of the 1970s. It is characterized by an increase in economic development and, consequently, in the purchasing power of consumer goods, with society.

Finally, the third phase, known as the "hyperconsumption society", began in the late 1970s and is perpetuated to today, according to Lipovestky. There is a strong interference of technology and consumption in human life; the goal of acquiring goods is no longer to differentiate themselves from others, but for a "personal fulfillment, subjectively: emotionally, bodily, sensory, and aesthetic".

Contrary to the second phase, where "consumption was used for social status purposes", in the third stage "the focus is on the hedonistic practice of consumption", that is "as a search for pleasures, emotions, experiences, happiness." Still in the third phase, the author associates the shift from traditional marketing to sensory or emotional marketing as one of the most influential factors in that period.

As it seems, consumption is the mechanism that inserts the individual into society for what he "has," however, the "have" must be maintained contemporaneously with the next-generation. This strategy stimulates the exaggerated consumption, which brings the idea of programmed, precocious, perceived and psychological obsolescence.

Assumed the presented context, in addition to the contextualization of the consumer society and the mechanisms of sustaining consumption at levels that

are unsustainable to the environment, it is possible to visualize that it is not consumption alone that must be studied and questioned in the current society.

2. Marine Pollution and plastics: A chaotic relationship?

The change in consumer behavior could change the present picture of contamination of the seas by plastics and consequently of the animals that subside from the sea.

Plastic is made from fossil hydrocarbons (derived from petroleum and natural gas) and widely used as a lightweight, resistant, hygienic and easily handled material when heated, so it can be molded at the discretion of its manufacturer.

For this reason, since 1950, the production of plastic packaging has increased, as has its disposal. The world production is estimated to be 400 million tons of plastics every year, with 36% of this total being plastic packaging, such as bags, PET bottles, plastic lids, food packaging, plastic bullets, plastic cups and plastic cutlery, among others¹.

Normally, the use of these plastic packaging is a single-use only, as for example, when one person goes to the supermarket carries the food inside a plastic bag, or when it purchase a PET bottle of water. In both cases, the consumer will take advantage of the transport bag and then not use it again, and in the case of the PET bottle, the water will be ingested by the individual and then, the individual will discard the PET bottle on the trash.

Therefore, according to the UN² in 2015 the global waste of plastic packaging reached 47%, and half of this percentage refers only into the Asian continent. Another concern of the UN refers to the use and disposal of plastics and their fragmentation in microplastics with the decomposition process.

Unlike metals, plastics do not rust or corrode. Most plastics do not biodegrade, but instead photodegrade, meaning that they slowly break

¹ UN, United Nations Environment Program. Single-Use Plastics: a Roadmap for sustainability. 2018. Available at: <<https://www.unenvironment.org/resources/report/single-use-plastics-roadmap-sustainability>>. Last access: 10/june/2018, p. 4.

² UN, 2018, p.5.

down into small fragments known as microplastics. The fragmentation of large plastic items into microplastics is common on land such as beaches because of high UV irradiation and abrasion by waves, while the degradation process is much slower in the ocean due to cooler temperatures and reduced UV exposure³.

Microplastics are found in beauty products, such as cosmetics (eyelash masks, lipsticks, eyeliners, etc.), toothpastes and liquid soaps, and have a maximum size of 5mm (the rice grain is 7mm, just for comparison). Normally, microplastics are produced from polyethylene, polypropylene and polyethylene terephthalate, which can, like other forms of plastics, impact on the environment (soil, water and air contamination) and human health (respiratory diseases and cancer).⁴

At the end of the plastic life, it may be recycled, incinerated, grounded or disposed on the environment at uncontrolled locations. It is estimated that 79% of plastic waste is discarded in landfills, 12% is incinerated and only 9% is recycled⁵. Remembering that, plastic packaging is produced from natural gas and oil derivatives, which is a finite natural resource, and once discarded takes about 1000 years to decompose⁶.

It is important to highlight what is considered marine litter by the UNEP - United Nations Environment Program:

Marine litter is defined as any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment. Consists of items that have been made or used by people and deliberately discarded into the sea, rivers or beaches; brought indirectly to the sea with rivers, sewage, storm water or winds; accidentally lost, including material lost at sea in bad weather (fishing gear, cargo); or deliberately left by people on beaches and shores⁷.

³ UN, 2018, p. 2.

⁴ PARKER, Laura Planet or Plastic. National Geographic Magazine. Available at https://www.nationalgeographic.com/environment/planetorplastic/?utm_source=Scroll&utm_medium=Article&utm_campaign=PlanetOrPlastic. Last access: 14/june/2018.

⁵ UN, 2018, p. 6.

⁶ UN, 2018, p. 12.

⁷ UN, United Nations Environment Programme. Marine Litter: A Global Challenge. April, 2009. p. 13. Available at: <http://wedocs.unep.org/handle/20.500.11822/7787>. Last access: 14/june/2018

Marine pollution generates not only impacts the environment, by producing pollution of the water, soil and in animals that ingest plastics by confusing them with food, but the marine pollution also affects human health, because in the composition of plastics there are two carcinogens components (styrene and benzene) that attack the nervous, reproductive and respiratory systems of humans. Finally, it still impacts the economies of countries that depend on tourism and fishing and transport companies.

The marine litter not only affects biologically, its transcendence is even greater, its social, economic, cultural, environmental, aesthetical, meaning that its consequences are more revealing of what directly seemed to affect⁸.

The UN, in recent studies on marine pollution, has shown great concern for the disposal of waste plastic bags and food packaging in seas and oceans. According to a study, plastics in the environment pose significant hazards to wildlife both on land and in the ocean. High concentrations of plastic materials, particularly plastic bags, have been found blocking the breathing passages and stomachs of hundreds of different species. Plastic bags in the ocean resemble jellyfish and are often ingested by turtles and dolphins who mistake them for food⁹.

In reference to plastic bags, for example, in Brazil about 1.5 million plastic bags per hour are distributed, according to information from the Ministry of the Environment¹⁰. Despite this alarming number, there are some sparse laws (in São Paulo and Minas Gerais¹¹) that prohibit or restrict the use of plastic bags, replacing it with biodegradable bags with 51% of raw material from renewable or reusable sources.

The oceans and seas, considered as the cradle of life, and because of the oceans are covering a large percent of the Earth, the Earth might be consider as a “Blue Planet”. This Blue Planet has being driven by the incorrect disposition of solid waste, including plastic packaging waste which goes to the sea as garbage.

⁸ UN, 2009, p. 13

⁹ UN, 2018, p. 13.

¹⁰ BRASIL. Ministério do Meio Ambiente. O tamanho do problema. Available at: <http://www.mma.gov.br/responsabilidade-socioambiental/producao-e-consumo-sustentavel/saco-e-um-saco/saiba-mais>. Last access 14/june /2018. Translation made by the authors.

¹¹ BRASIL. Lei Municipal São Paulo nº 15.374, de 18 de maio de 2011, regulamentada pelo Decreto Municipal nº 55.827, de 06 de janeiro de 2015. Lei Estadual de Minas Gerais nº 21.412, de 11 de julho de 2014. Translation made by the authors.

Gradually the seas and oceans are becoming a sea of floating plastics as can be seen in certain locations around the globe – Honduras coasts, Guatemala, Bali in Indonesia, and among other places surveyed by UNEP¹².

The importance of cleanliness and preservation of the seas has been highlighted by the UN and UNEP in reports, as well as the marine litters in the various regions of the world. In June of 2018, with a UN partnership, the subject of the National Geographic Magazine is *Planet or Plastic?* which addresses information from the production of plastic to the destination that most often are the seas.

Small attitudes can change, not only the form of consumption as the own production of plastics, as for example: to use of ecological bags of cloth in substitution to the plastic bags; replace PET water bottles with glass or aluminum bottles; dispensing the use of plastic straws and cutlery, among other measures that protect the environment.

II. Legal maritime protection: International policies

1. Maritime environmental policies

There are different maritime environmental policies applied internationally, born because the population has been facing the increase of maritime pollution, with a percentage only on the rise worldwide.¹³ For this reason, the states of the world, concerned and interested in taking actions, are trying to preserve environmental resources to last in time and space for many generations. With these needs in mind, there has been an implementation of different policies, according to the specific needs of every country, but where not only the economic interest of the country overcome, which is already important, but also the rest of the interests: social, cultural, environmental, political.

¹² UN, 2009.

¹³ PATCH.ALBECK-RIPKA, Livia. The “Great Pacific Garbage Patch” is ballooning, 87,000 tons of plastic and counting. March, 2018. The New York Times. According to the article published in March 2018 by The New York Times, only at the Pacific Ocean there are around 87,000 tons of trash, between California and Hawaii, an area known as the Great Pacific Garbage. Available at: <https://www.nytimes.com/2018/03/22/climate/great-pacific-garbage-patch.html?ref=nyt-es&mcid=nyt-es&subid=article>.

Therefore, the majority of states are trying to create different strategies, which will reach and maintain environmental policies as a priority one, so there is a way to protect the ideals and avoid situations of risk due to massive contamination.

According to the researchers Maria Cecilia Lustosa and Carlos Young¹⁴, an environmental policy is defined as a set of goals, instruments and techniques, which aim to reduce the negative impacts of human action on the environment. This policy also needs to consider its effects on economic activities and on other social programs, because, in this way, it will be possible to verify how much it favors and induces a type of economic behavior of production and consumption that ends up generate impacts on the environment.

The foregoing means that environmental policies will have environmental protection as a priority, however, they will not seek to affect commercial movements, or at least try not to do so, so that there can be a balance between production, protection and consumption.

The authors Sandra Moraes and F. A. Turolla¹⁵ consider that an environmental policy can be understood as a set of instruments that a State is capable of altering the resources distribution, thus reducing both the demand for natural inputs and consumption and scarce services, which are subject to negative externalities.

Therefore, it is understood that environmental policies will have the objective of maintaining, protecting and defense environmental resources, verifying within their legislation, nationally and outside their legislation, in the different international documents, what mechanisms are necessary for the adequate protection of the state and its resources.

The policies for marine protection, consequently, will develop and implement legal standards that address vessel source pollution and ocean contamination, trying to reduce the sources of marine pollution. In general terms, is not common on the actual legislations of the countries this kind of protection, the states only limit their obligations at the environmental area only.

¹⁴ LUTOSA, Maria Cecília J.; YOUNG, Carlos Eduardo F. *Política Ambiental*. In: KUPFER, David; HASENCLEVER, Lia. *Economia Industrial: Fundamentos Teóricos e Práticos no Brasil*. 1 ed. Rio de Janeiro: Campus, 2002. Cap. 24, p. 569.

¹⁵ MORAES, Sandra R. R.; TUROLLA, F. A. *Visão Geral dos Problemas e da Política Ambiental no Brasil*. *Informações Econômicas*, São Paulo, v. 34, p.32.

Most of environmental protection policies, including the marine protection policies too, are applied as a mechanism of punishment in different states, where if you are catch polluting the environment you will have a punishment.

The economist Eduardo Barbosa Martorelli¹⁶ wrote about this kind of mechanism, indicating that environmental management policies are divided into three main groups: command and control instruments, economic instruments and communication tools. For our own purpose we will discuss specifically command and control instruments, due to the importance they have related on the laws regulation control and punishment inside every state.

2. Command and control instruments

Due to the need of maintain the reasonable use of environmental resources, the states interferes, using mechanisms that protect and control possible situations that will produce or produced pollution.

According to Maria Cecilia Lustosa and F.A. Young, the command and control instruments are those that set standards, rules, procedures and patterns determined for economic activities in order to ensure the compliance of the policy in question and, in the case of failure, entails penal and administrative sanctions.¹⁷

The command and control approach as a public policy is one in which, in order to generate socially desirable behavior, legislators simply enforce behavior by law and then use any surveillance machinery-courts, police, fines, necessary to make people obey the law, according to the economists Martha and Barry Field.¹⁸

As a result of this, the command and control mechanisms will have as goal the fulfillment of the law, seeking the mechanisms to impose, according to the legislative decision, and then, by controls in the civil, criminal or administrative

¹⁶ MARTORELLI, Eduardo Barbosa. *Política Ambiental: dos limites do comando e controle à potencialidade dos instrumentos econômicos*. Brasília – Brasília, 2015, p.15.

¹⁷ LUTOSA, Maria Cecília J.; YOUNG, Carlos Eduardo F. *Política Ambiental*. In: KUPFER, David; HASENCLEVER, Lia. *Economia Industrial: Fundamentos Teóricos e Práticos no Brasil*. 1 ed. Rio de Janeiro: Campus, 2002. Cap. 24p.578. Translation made by the authors.

¹⁸ FIELD, Barry C.; FIELD, Martha K. *Introdução à Economia do Meio Ambiente*. 6ed. Porto Alegre: Bookman., 2014. Translation made by the authors.

area, so the main idea of the public policies, in our case environmental and marine protection policies are applied and respected.

Environmental policies and command and control mechanisms are applied cooperatively, in most cases, because of their degree of compatibility with each other. According to the author Ronaldo Seroa da Motta,

Command and control instruments are usually adopted in environmental policies, guided by technological relations, standards and processes, and imposed in a non-flexible way to all users without spatial differentiation. These instruments do not consider the individual costs of each user, thus imposing generally maximum levels of pollutants or use to be achieved, penalizing those who exceed them.¹⁹

Some examples of mechanisms of command and control can be the direct and indirect regulation through legislation, norms and market mechanisms, such as rates, fines, taxes, penalties, and beyond.

The utilization of economical instruments in the environmental policies worked as an advantage related to the command and control mechanisms, in general terms, because they allowed the creation of taxes and tariff revenues, with the collection of fees to guarantee the resources for payment or incentive and rewards to empower environmental agencies. It also enables technologies that are less intensive in environmental protected areas, and other examples related according to the area which is going to be protected specifically.

An example of a command and control mechanism commonly used is the application of charges to companies that pollute rivers or river reserves, being the nature of these sanctions usually monetary, but may also include community work, in addition to the repair of the damage caused, as far as possible. The states, normally, try to make the sanctions strong and effective, so that it is not an option contemplated even its non-compliance.

The application of command and control mechanisms will depend on the specifications of each country, the values it considers to be priorities and the

¹⁹ MOTTA, Ronaldo Seroa da; RUTENBEEK, Jack e HUBER, Richard. *Uso de instrumentos econômicos na gestão ambiental da América Latina e Caribe: lições e recomendações*. Discussion text nº 440. IPEA. Rio de Janeiro, 1996. p. 28. Translation made by the authors.

needs of "control" that same country needs. In addition, there are international conventions, which serve as mechanisms of command and control by the signatory countries. The next section will explain in more detail the subject.

3. Maritime pollution protections: international agreements

Different are the conventions and international conferences that intervene, in some way, in the care of the environment, specifically of the marine area and related pollution. It's important to understand that all the environmental existing treaties, related with maritime pollution or not, are a mechanism of protection, produce by the International environmental law, compressing substantive, procedural and institutional rules of international law. which have as their primary objective the protection of the environment.²⁰

For reasons of content and importance, we will cite the most important conventions and the reason for their importance for the protection of maritime pollution, below:

4. Montego Bay Convention

The United Nations Convention of the Law of the Sea was signed on 10 December 1982 in Montego Bay, Jamaica, with the aim of consolidating the rules pertaining to the law of the sea, that would help to know the guidelines for the appropriate use of the oceans.

The Convention on the Law of the Sea, or Montego Bay Convention, as is generally known, proposes in its preamble:

A legal order for the seas and oceans that facilitates international communications and promotes the peaceful uses of the seas and oceans, equitable and efficient use of their resources, conservation of living resources and study, protection and preservation of the marine environment.

The former allows to know the importance of this convention, since its main intention is to have a legal order that promotes the peaceful use of the seas and

²⁰ Compact Oxford English Dictionary (1991, 2nd edn), 523

the conservation of these and their resources. In this regard, the Convention draws attention to the need to preserve the natural resources of the land by imputing to States the obligation to prevent pollution of the seas by substances that could endanger human health and cause damage to the living resources of the environment.²¹

The importance of the Convention lies in the fact that it represents not only a consolidation of written standards on all legal aspects related to maritime and oceanic spaces, such as the definition and delimitation of such spaces, the definition of States' rights in those spaces, navigation, exploitation and conservation of living resources, as well as a transformation of international customs into written law and the introduction of new concepts.²²

5. Law of the Sea Convention (UNCLOS)

The convention was approved on April 20, 1982, in New York, United States, known as the first official document that includes obligations to protect the oceans. It is important to note that there were other conventions about the law on the sea before the UNCLOS, including the 1973 International Convention for the Prevention of Pollution from Ships (MARPOL), which provided for the creation of the United Nations Convention on the Law of the Sea.

The 1982 Maritime Law Convention lays down the rules governing all uses of the oceans and their resources. It enshrines the notion that all problems of the ocean space are closely interrelated and need to be treated as a whole.

In article 1, referring to terms used and scope, numeral 4, indicates the definition of pollution of the marine environment, which is understood as:

Pollution of the marine environment means the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate

²¹ ROLIM, 1982, p.80

²² SOARES, 2003, p. 122

uses of the sea, impairment of quality for use of sea water and reduction of amenities.²³

In Part XII, concerning the protection and preservation of the marine environment, the Convention on the Law of the Sea indicates different general provisions, including the sovereign right of states to exploit their natural resources (art.193) and measures to prevent, reduce and control pollution of the marine environment (art. 194).

In general terms, all States have an obligation to protect and preserve the marine environment, so that, when exercised in a state of exploitation of resources, they must also respect policies in the protection of the environment and the marine environment.

Among the obligations that States Parties will have, referring to the Convention, are the use of measures that prevent, reduce and control the pollution of the marine environment, avoiding damages due to contamination to other states.

Among some of the possible measures is the evacuation of toxic substances, avoid pollution caused by ships, or by facilities and devices for the exploration or exploitation of natural resources of the seabed and subsoil, or any type of installation that may affect safety in operations at sea.

In this way, the signatory states must neither transfer data nor transform one type of pollution into another (art.195).

About emergency plans against pollution, article 199 of the Convention states:

[...] States in the area affected, in accordance with their capabilities, and the competent international organizations shall cooperate, to the extent possible, in eliminating the effects of pollution and preventing or minimizing the damage. To this end, States shall jointly develop and promote contingency plans for responding to pollution incidents in the marine environment.²⁴

²³ UNCLOS. 1982. Art.1, Available at: http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf Last access: 16/june/2018.

²⁴ UNCLOS. 1982. Art.199, available at: http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf Last access: 16/june/2018

By virtue of the above, and in a position of criticism, it is observed that the convention does not really offer protection, it simply invites the parties, if it is within their possibilities, what seems to be an option, something secondary, something not a priority, to cooperate for the elimination or reduction of the pollution effects, and not the pollution itself, and to prevent damage to a minimum. If we cling literally to the article 199, there is little really what the convention protects with respect to emergency plans against marine pollution.

In Section 4 of the Convention, possible mechanisms of environmental monitoring and evaluation are indicated, establishing, in article 204, and similar to what's indicated in article 199, that States directly or through international organizations, if possible, should observe, measure, evaluate and analyze, through recognized scientific methods, the risks of contamination of the marine environment or its effects. For our part, we also criticize this article, because it is too broad, almost an invitation, not a protection.

In Section 5, the Convention established international rules and legislation to prevent, reduce and control pollution of the marine environment, indicating, in article 207, that states, in the case of pollution from land-based sources, must dictate laws and regulations trying to prevent, reduce and control that pollution in the marine environment, including rivers, estuaries, pipes, drainage structures, among others.

Also, the states must take additional measures, the convention does not mention which, to prevent and reduce that pollution, trying the states to harmonize their policies with respect to the approved regional level.

Article 208 indicates the provisions regarding the contamination of activities to the seabed subject to national jurisdiction, indicating that the riparian states will create laws that prevent this type of pollution, in addition to the necessary measures, and such laws will not be less effective than rules, standards and recommended practices and procedures, of an international nature, seeking ways to harmonize policies so as not to contradict one another.

Thus, the Convention indicates other forms of pollution, such as pollution resulting from activities in the exclusive economic zone (Article 209), pollution by

dumping (Article 210), Pollution caused by ships (Article 211), and contamination from the atmosphere or through it (Article 212).

As a manner of criticism, the 1982 UNCLOS does not define 'marine environment', although it appears to include ecosystems, habitats, threatened or endangered species and other forms of marine life, and atmospheric pollution. In spite of the aforementioned criticisms, the fundamental contribution of the United Nations Law of the Sea, was the establishment of objective rules in the International Environmental Law, specifically regarding the protection and preservation of the maritime environment.

Brazil ratified the Convention in December 1988, adjusting its domestic law, with the law 8617 of 1988. In Panama, the convention was ratified and accepted by Law 38 of 1996, which approves the United Nations Convention on the Law of the Sea.

6. Rio+20 Conference

One of the priorities of the Rio +20 Conference is to ensure the seas and oceans peacefully for the common good of humanity. In 2012, processes that considered the need to create a legal instrument for the protection of biodiversity on the high seas began.

One of the intentions of the Conference is the implementation of the Global Program of Action for the protection of the marine environment of terrestrial activities, directing resources for treatment of human waste and sewage, and developing a global action plan to combat pollution.

Specifically, about the oceans, the Conference endorsed the sustainable development goals, part of the UN 2030 agenda, specifically in goal 14.

According to the Conference, the marine pollution problem generates a toxicity substance which stays for a while on the oceans and rivers, which will be accumulated by the live organism living inside of it.

7. Sustainable Development 2030 Agenda

According to Sebastian Unger, chief in the Ocean Governance department at the Sustainability Advances Studies Institute (IASS) the oceans are the central point

at the sustainability system, and this is important to fight marine pollution and find solutions to fight the global warming effects on the oceans²⁵.

In Agenda 2030 for sustainable development, on the goal 14, was indicated the protection of marine life. Different aspects were established, divided in a rate of years, so that it is a gradual advance. Until year 2025 the prevention and significant reduction of maritime pollution of all types is sought, until 2020 it seek to generate a change in the forms of sustainability and marine protection marine, it is also promoted to regulate the extraction of marine resources in a disorderly manner²⁶.

As noted, although the establishment of such a specific objective as the protection of marine life is, in fact, an advance, this goal is quite broad and general in its application too, and it is broad when requesting its execution. For this reason, we will review the following conference.

8. The Ocean Conference

With the purpose of expanding the protection indicated in goal 14 of the 2030 Agenda, regarding the defense of marine life, representatives of organizations from different parts of the world, civil societies, presidents and heads of state met at the headquarters of United Nations., in New York for the realization of the Ocean Conference, in June 2017.

The main drive of this conference was to promote the implementation of sustainable goal 14, regarding the conservation and sustainable use of oceans, seas and marine resources for sustainable development.

In item 13 of the final document issued, the Conference indicates that:

We call upon all stakeholders to conserve and sustainably use the oceans, seas and marine resources for sustainable development through the

²⁵ Postdam Advances studies of sustainability Institute.(IASS). Interview to Sebastian Unger, "Ocean Governance" chief. Available in: <http://www.dw.com/es/un-gobierno-para-nuestros-oc%C3%A9anos/a-39137336>) Last access: 16/june/2018

²⁶2030 Sustainable Agenda. Goal 14, Protect marine life.Available in: <https://www.unric.org/pt/ods-link-menu/31983-objetivo-14-potecao-dos-recursos-marinhos> Last access:16/june/2018

following actions, which must be applied as a matter of urgency, including through the use of existing partnerships.²⁷

Making a small observation on this point, although the Conference extends the protection against pollution, it is still quite broad, if we stop to read this paragraph.

This conservation in a sustainable way, according to what the Conference suggests, can be done in different ways, among them, we give relevance to the one indicated in number g, which indicates that through the impulse of actions to significantly prevent and reduce the pollution of all the types, specifically the one produced by terrestrial activities, such as plastics and micro plastics, among others.²⁸

By virtue of the above, it is observed that the conference specifies a little more the delimitation of what maritime pollution refers to, specifying that it is produced, mainly, by the production of terrestrial waste, especially plastics and micro plastics.

9. MEPC 72nd Session - International Maritime Organization

From April 9 to 13, 2018, this session for the marine environment protection committee was held, highlighting the marine litter as the topics of the session, as well as the possible measures to reduce the risks of using and transporting heavy fuel oil as fuel through ships in Arctic waters, Review of the Guidelines on biological contamination.

Considering specifically marine litter, the MEPC agreed a new result that addresses the issue of plastic waste from maritime transport in the context of the Sustainable Development Goal 14. Member Governments and international organizations were invited to present at this session concrete proposal to MEPC 73 for the development of an action plan.

On the other hand, the Food and Agriculture Organization (FAO) and other organizations presented the latest updates on their relative work in marine plastic

²⁷ Ocean conference call for action. Available in: <https://oceanconference.un.org/callforaction> last access: 16/june/2018

²⁸ United Nations Organization. Ocean conference. Available in: <https://nacoesunidas.org/onu-divulga-versao-em-portugues-do-documento-final-da-conferencia-oceanos/> last access: 16/june/2018

waste. Among them, the FAO Voluntary Guidelines on the Marking of Fishing Gear were highlighted, which will be presented to the 33rd Session of the FAO Committee on Fisheries (COFI), from 9 to 13 July 2018.²⁹

In conclusion, the idea in the last decades of the twentieth century, was to maintain a tendency with the creation of large conventions with proposals or general principles, which framed projects and expectations and created other conventions that make feasible the specific project, in our case, the protection of marine pollution. The growing idea, as advancement, was to objectify the proposals and generate expectations nationally and internationally.

10. International cases: Maritime pollution

With the aim of illustrating how our life can be affected by plastic pollution in seas and oceans, we want to present some cases where there is a possibility of danger from the contamination itself.

We agree on first hand, by what was said by the lawyer Philippe Sands, about the States being obligated to notify, through international organizations or directly, the other states that may be affected by imminent or actual damages, if the marine environment is in danger of suffering pollution damages.³⁰

Although there is currently non particular jurisprudence where an entity is found guilty of plastic pollution, the fact is that the mere uncontrolled plastic accumulation causes damage to public health and marine life.

Plastic waste becomes, therefore, in accumulations of waste that, because of their complex chemical composition, their disintegration, which takes hundreds of years, generates a hazardous waste. For this reason, governments, internally, should create, maintain and implement policies that promote protection through plastic pollution.

Measures have been taken in some countries, such as the ban of single-use plastic bags, such as in Denmark and Portugal, where they are sold and not given

²⁹ Food and Agriculture Organization. Marine plastic waste protection advances. Available in: <http://www.imo.org/en/MediaCentre/SecretaryGeneral/Secretary-GeneralsSpeechesToMeetings/Pages/MEPC72closing.aspx>

³⁰ SANDS, P. Principles of International environmental law. 2nd. Ed. Cambridge: Cambridge University Press, 2003.

away in supermarkets, which already generates a degree of awareness at the time of the election of buyers if they bring their own biodegradable or spend more in a plastic bag.

As a curious fact, Denmark was the first country to introduce a tax on plastic bags in 1993. The same tax is divided into a part for the supermarket and a part for the State, which promotes the reduction of plastics. According to a report by the National Geographic magazine, the danish citizens use an average of four plastic bags in a single year, which compared to the average American, uses one bag per day, at least.³¹

III. BRAZIL AND PANAMA: A COMPARISON OF ITS MARITIME PROTECTION SYSTEMS

1. Brazil

In Brazil there are numerous environmental legislation at all levels of the Federation, however, there is a significant deficiency in state supervision in the care by companies and individuals that somehow use the natural resources for the extraction and manufacture of products and / or raw materials . Legislation includes the National Solid Waste Policy (PNRS), the National Policy on Basic Sanitation and the National Policy on Water Resources, which establish the general guidelines for the implementation of measures aimed at the protection of the environment in natura until post-consumption, and finally, the Environmental Crimes Law.

In today's society legal relationships are intrinsically related to the environment, therefore, it encompasses consumer, administrative, tax or negotiation relations. An example of the connection between consumption and the environment stipulated in the Brazilian environmental legislation is a reverse logistics system, a mechanism performed by the supplier and the consumer, so that used or overdue products are returned to the producer to promote the reuse of raw materials in the production process.

³¹ GUNA, Karen-National Geographic. Denmark and the reduction of plastic bags. Available in: <https://www.nationalgeographic.es/medio-ambiente/2018/05/asi-ha-logrado-dinamarca-reducir-el-uso-de-bolsas-de-plastico>.

In addition, the National Policy on Solid Waste in Brazil, established by Law no. 12,305 in 2010, regulates post-consumer environmental liability and establishes the concept of shared responsibility for the product life cycle. Responsibility is associated with the product life cycle, which by the law in question is termed as a series of steps involving the development of the product, the obtaining of raw materials and inputs, the production process, the consumption and the final disposal.

The Law, in turn, assigns limited liability to the consumer, regarding the "proper disposal of waste for collection, or in the case of reverse logistics, to their return, according to information received from the production chain." Individuals with shared responsibility are consumers, suppliers and holders of public urban cleaning services, will have different attributions, as determined by Law No. 12,305 / 2010.

With regard to reverse logistics, the law requires that it be performed by suppliers with specific post-consumer waste, such as pesticides (waste and packaging, or after the use of hazardous waste); batteries; tires; lubricating oils (waste and packaging); fluorescent lamps, sodium and mercury vapor and mixed light; electronic products and their components.

The Institute of Applied Economic Research (IPEA), a federal public foundation linked to the Brazilian Ministry of Planning, Development and Management, announced in 2012 data on reverse logistics under analysis to 5,564 Brazilian municipalities, specifically regarding solid waste (batteries, pneumatic and fluorescent lamps). The report reveals that few municipalities exercise control over the service of special waste management by third parties, for example, for pneumatic waste 758 municipalities, batteries and batteries 323 municipalities and for fluorescent lamps, only 278 municipalities.

In Brazil, the National Basic Sanitation Policy, provided for in Law No. 11,445, dated January 5, 2007, and regulated by Decree No. 7,217, dated June 21, 2010, is also in force, whose objective is to universalize basic sanitation for the entire population and establish the basic guidelines for this to happen.

However, although the Law is from 2007 and from the 2010 Decree, the Brazilian deficiency in relation to basic sanitation is worrisome, according to the Brazilian

study on "Sewer idleness" and the National Sanitation Information System (SNIS).

51.92% of the population has access to sewage collection, more than 100 million Brazilians do not have access to effluent collection, more than 3.5 million Brazilians in the 100 largest cities in the country, dispose of wastewater irregularly, even having network collectors. In addition, 44.92% of the Brazilian sewage is treated, the average of the 100 largest Brazilian cities in sewage treatment was 50.26%. Only 10 of them treat up to 80% of their effluents.

In the face of these statistics, it is also possible to establish a connection between pollution by hazardous solid wastes as well as fluvial and oceanic and lack of basic sanitation, as irregular sewers are dumped into rivers, streams or streams, and coastal cities, sometimes dumped directly into the seas and oceans, without any previous treatment. Such conduct, in addition to polluting water resources, can transmit diseases and even cause deaths directly or indirectly linked to these types of pollution.

In addition to the laws described above, the National Water Resources Policy established in Law No. 9,433, of January 8, 1997, has as one of its objectives to ensure the current and future generations the availability of necessary water, in standards of appropriate quality their respective uses.

However, according to the study *Trata Brasil* that addressed the theme "Water Losses: Challenges to the Advancement of Basic Sanitation and Water Scarcity - 2015" and the National Sanitation Information System, it is verified that:

83.3% of Brazilians are served with treated water supply, that is, there are more than 35 million Brazilians without access to this basic service. Medical consumption of water in the country is 154.1 liters per inhabitant per day. In 2016, consumption varies regionally from 112.5 l / inhabitant per day in the Northeast region and 179.7 l / inhabitant / day in the Southeast region.

The sum of the volume of water lost for years in the city's distribution systems would fill 6 (six) Cantareira systems (totaling 1,269.5 million cubic meters of water in total).

When distributing water to ensure consumption, the systems suffer losses in distribution, which in the national average reach 38.1%, 3.7% above 2015.

In addition, the Law on Environmental Crimes (Law No. 9605/1998) establishes criminal and administrative sanctions arising from conduct and activities that are detrimental to the environment, and establishes, among other measures, the application of sanctions that vary from warning, fines, suspension of activities, embargoes, demolition, restriction of liberty.

Last but not least, because it is the basis of the laws described above, Article 225 of the Federal Constitution of 1988 ensures that "everyone has the right to an ecologically balanced environment, a common use of the people and essential for a quality of life healthy". and adds that, to this end, it imposes "... on the public power and the community the duty to defend and preserve it for present and future generations."

Thus, in Brazil there is a sufficient legal framework for preservation and environmental protection, in order to avoid pollution of water and soil, as well as penalties for those responsible, however, there is a precarious effectiveness in the inspection by the State, little awareness and engagement of society to protect natural resources that are finite.

2. Panama

In the case of Panama, a country with two oceans as its frontiers (Caribbean Sea and Pacific Ocean), which has the largest marine register of the world, it can be said that the most important institutions, as far as maritime pollution by plastics is concerned, are the Maritime Authority of Panama, the Panama Canal Authority, and the Ministry of Environment, for being in a position of administrators-caretakers of maritime areas, even though the main objective is the commercial trade on the two first mentioned authorities.

Panama also have the ARAP, which is the Water Resources Authority, a entity that takes charge of the water resources and its problems, created by the Law 44 of 2006. Among the ARAP functions is to promote principles and norms for the application of responsible practices that ensure the management and use of

aquatic resources, respecting the ecosystem, the biological diversity and the genetic patrimony of the nation.³²

The Panama Constitution says, on article 225, that:

Article 118. It is the fundamental duty of the State to guarantee that the population lives in a healthy and pollution-free environment, in where air, water and food meet the requirements of the proper development of human life.³³

In an investigation carried out by Universidad Tecnológica de Panama, referring to the presence of plastics within the coasts and oceans bordering the Panamá Republic, researcher Denisse del Valle de Borrero found that, within the Panama Canal area, one of the main economic engines of the country, plastics were found as polymers, in small sizes that are dissolved in the water, sand or the sea, usually carried by the waves, generating pollution and risks for the oceans and of human life³⁴.

A study by the Urban and Domiciliary Cleaning Authority (AAUC) showed that in Panamá some 4,372 tons of garbage are generated daily, of which 57.8% are collected and taken to landfills (2,536 tons), while the rest ends in different river lines and the sea.³⁵

The Water Resources Authority of Panama (ARAP) has among its projects to launch a marine research center oriented to the maritime pollution problem since 2016, however, little has been done.

The biologist Edison Barbieri, of the Fishing Institute from Brazil, was invited by the ARAP to Panama to talk about ecotoxicology, pointed out the problem of plastic:

³² PANAMÁ, Law 44 of 2006. Art. 3. Available at: http://arap.gob.pa/wp-content/uploads/2015/05/ARAP_legislacion_ley-2006-44.pdf last access: 17/june/2018

³³ PANAMÁ, Constitution. Available at: <http://www.ilo.org/dyn/travail/docs/2083/CONSTITUTION.pdf> last access: 15/june/2018

³⁴ RODRIGUEZ, Mirta. UTP estudia niveles de contaminacion por plásticos em mares panamenos. Published in the newspaper La Estrella de Panamá. Available at: <http://laestrella.com.pa/vida-de-hoy/planeta/estudia-niveles-contaminacion-plasticos-mares-panamenos/24026010>

³⁵ WATSON, Arnulfo Barroso. Un 53% de la basura va a parar a ríos y playas de Panamá. Available at: <https://www.panamaamerica.com.pa/sociedad/un-53-de-la-basura-va-parar-los-rios-y-playas-de-panama-1089908> Last access: 15/june/2018

Existing in seas, seashores, oceans and coasts, the problem begins when the plastic degrades and begins to produce ifenil, a chemical product, which affects causing that in some marine species, such as birds and turtles, the number of females increases, only by the presence of biphenyl.³⁶

On the Ministry of Environment there is one specific direction called the Seas and Coasts Direction, which should work in collaboration with the problems caused by marine pollution, but it doesn't even exist a publication or investigation regarding the issue of marine litter made by them.

Although it seems that the national public entities do not put so much effort, Panama, a country with almost 3,000 kilometers of coastline in the Pacific and the Caribbean, is the first in Latin America and the Caribbean that joined Mares Limpios foundation, so it can be promoted a series of far-reaching reforms that will result in a better treatment of the oceans.³⁷

One of these initiatives is a national plan to optimize the management of solid waste, which is prepared with the support of UN Environment. Currently, 42% of the 4,372 tons of waste produced in the country end up in natural areas such as bodies of water and the sea, according to a recent diagnosis by the local cleaning authority. This is only a project by now, and compared to Brazil legislation, Panama is very behind when we speak about recycle methods establish by public policies.

Following the comparison with Brazil Legislation, Panama has the Law No. 45 of October 31, 2007 that dictates Regulations on Consumer Protection, but that doesn't create a reverse logistic in recycling terms³⁸. By now, Panamá only applies reverse logistic methods by choice, not as an obligation.

However, not everything is negative, in the year 2018 Panamá became the first country in Central America to prohibit polyethylene bags in commerce, through

³⁶ARAP. Plastic pollution on seas. Interview made to Edison Barbieri, found at <http://www.pesca.agricultura.sp.gov.br/imagens/231> Last access: 15/june/2018.

³⁷ UN. Panamá bets for non polluting oceans. Available at: <https://www.unenvironment.org/news-and-stories/story/panama-apuesta-por-mares-sin-contaminacion-miles-de-voluntarios-limpian-mas> Last access: 17/june/2018

³⁸ Law No. 45 of October 31, 2007 that dictates Regulations on Consumer Protection. Available at: http://www.wipo.int/wipolex/en/text.jsp?file_id=438662 last access: 17/june/2018

the sanction of Law 1 of 2018³⁹, which prohibits the use of plastic bags in Panamá, with a period of adaptation of the stores of 18 months to stop using them.

IV. CONCLUSION

In view of the arguments and information presented, which deal with the influence of the consumer society on the production of contaminant wastes of the fauna and flora of the seas and oceans, as well as the poor inspection and effective implementation of the legislation in Brazil and Panama, there is the need to focus on environmental protection and preservation, especially pollution at all levels, including the seas and oceans. To do this, there are challenges that must be explored.

The main challenge is to produce the necessary awareness of all citizens, businesses and government, because, although waste is created by large companies based on the needs of the human being, it is precisely this human being who must change his way of consumption and consumption. It may seem that the action of a person in a home will not make any difference, however, it may be the beginning of a shift toward solving the social, environmental, economic, and cultural problems we experience. Consumption and post-consumption generate the pollution of the seas and oceans, especially by the quantity of plastics produced and not properly discarded, in turn, in a conscious society the reduction of the generation of plastic waste can be reduced, since our actions can change the way we affect the planet.

On the other hand, states must produce environmental protection legislation in this sense, so that the mechanisms of command and control are in fact disciplinary and effective, and also, that there is an active inspection body regarding the absence of treatment of solid wastes from avoid contamination of the seas and oceans, as well as contamination of the soil and consequently of groundwater.

³⁹ Law 1, 2018: that adopts measures to promote the use of reusable bags in commercial establishments.
https://www.gacetaoficial.gob.pa/pdfTemp/28448_B/GacetaNo_28448b_20180119.pdf

It is observed that in Brazil there is a strong environmental legislation, but poor in terms of effective protection against marine pollution. In Panama, despite being a country economically dependent on the international maritime trade it handles, attempts are made to protect the theory, not applied in practice.

Thus, it should be noted that although there are laws that address circumstances in order to avoid maritime pollution, the general public and the government are not aware that their environmentally incorrect attitudes, decisions or consumerism significantly transform the environment and that the return to the status quo ante could take thousands of years.

Among the possible solutions is the application of Ocean Governance: Making decisions about the sustainability of the oceans. This encompasses more than governing and regulating involves the legal aspect and the international obligations of states with society. All this plays a very important role in deciding how to properly treat the sustainability of the oceans, and especially what is the goal for our future, survival or extinction.

V. REFERENCES

2030 Sustainable Agenda. Goal 14, Protect marine life. Available at: <https://www.unric.org/pt/ods-link-menu/31983-objetivo-14-potecao-dos-recursos-marinhos>

ARAP. Plastic pollution on seas. Interview made to Edison Barbieri, found at <http://www.pesca.agricultura.sp.gov.br/imagens/231> Last access: 15/june/2018

BAUMANN, Zygmunt. Globalização: As consequências humanas. Tradução: Marcus Penchel. Rio de Janeiro: Jorge Zahar Editor, 1999.

BRASIL, Instituto de Pesquisa Econômica Aplicada – IPEA. Diagnóstico dos Resíduos Sólidos de Logística Reversa Obrigatória. Brasília, 2012. Disponível em:

http://www.ipea.gov.br/portal/images/stories/PDFs/relatoriopesquisa/120807_relatorio_residuos_solidos_reversa.pdf. Acessado em 31 jan. 2019.

BRASIL, Instituto Trata. Ociosidade das Redes de Esgoto. 2015. Disponível em: <http://www.tratabrasil.org.br/datafiles/estudos/ociosidade/relatorio-completo.pdf>. Acessado em 16 jun. 2018.

BRASIL, Instituto Trata. Perdas de Água: Desafios ao avanço do Saneamento Básico e à Escassez Hídrica. Março, 2015. Disponível em: <http://www.tratabrasil.org.br/datafiles/estudos/perdas-de-agua/Relatorio-Perdas-2013.pdf>. Acessado em 16 jun. 2016.

BRASIL. Ministério do Meio Ambiente. O tamanho do problema. Available at: <http://www.mma.gov.br/responsabilidade-socioambiental/producao-e-consumo-sustentavel/saco-e-um-saco/saiba-mais>. Last access 14 jun 2018.

FIELD, Barry C.; FIELD, Martha K. Introdução à Economia do Meio Ambiente. 6ed. Porto Alegre: Bookman., 2014.

FAO, Food and Agriculture Organization. Marine plastic waste protection advances. Available at: [http://www.imo.org/en/MediaCentre/SecretaryGeneral/Secretary-Generals SpeechesToMeetings/Pages/ MEPC72closing.aspx](http://www.imo.org/en/MediaCentre/SecretaryGeneral/Secretary-Generals%20SpeechesToMeetings/Pages/MEPC72closing.aspx)

GARCIA, Leonardo de Medeiros. Consumo sustentável – a proteção do meio ambiente no Código de Defesa do Consumidor. Salvador: Editora JusPODIVM, 2016. p. 27-32. Translation made by the authors.

GUNA, Karen-National Geographic. Denmark and the reduction of plastic bags. Available in: <https://www.nationalgeographic.es/medio-ambiente/2018/05/asi-ha-logrado-dinamarca-reducir-el-uso-de-bolsas-de-plastico>

LEBOW, Victor. Journal of Retailing. Price competition in 1955. Available at: <http://www.gcafh.org/edlab/Lebow.pdf>. Last access: 14/june/2018.

LEMOS, Patrícia Faga Iglesias. Resíduos Sólidos e Responsabilidade Civil Pós-consumo. São Paulo: Editora Revista dos Tribunais, 2011.

LIPOVETSKY, Gilles. The paradoxical happiness: essay on the hyperconsumption society. São Paulo: Companhia das Letras, 2007, p. 45

LUTOSA, Maria Cecília J.; YOUNG, Carlos Eduardo F. Política Ambiental. In: KUPFER, David; HASENCLEVER, Lia. Economia Industrial: Fundamentos Teóricos e Práticos no Brasil. 1 ed. Rio de Janeiro: Campus, 2002. Cap. 24, p. 569-578

MARTORELLI, Eduardo Barbosa. Política Ambiental: dos limites do comando e controle à potencialidade dos instrumentos econômicos. Brasília – Brasília, 2015. p.15

MCARTHUR, Ellen. The new plastics economy. Rethinking the future of plastics. Available at:

https://www.ellenmacarthurfoundation.org/assets/downloads/EllenMacArthurFoundation_TheNewPlasticsEconomy_15-3-16.pdf. Last access: 2/may/2018.

MORAES, Sandra R. R.; TUROLLA, F. A. Visão Geral dos Problemas e da Política Ambiental no Brasil. *Informações Econômicas*, São Paulo, v. 34, p.32.

MOTTA, Ronaldo Seroa da; RUTENBEEK, Jack e HUBER, Richard. *Uso de instrumentos econômicos na gestão ambiental da América Latina e Caribe: lições e recomendações*. Discussion text nº 440. IPEA. Rio de Janeiro, 1996. p. 28.

OXFORD, Compact English Dictionary. 1991, 2nd edition.

SANDS, P. *Principles of International environmental law*. 2nd. Ed. Cambridge: Cambridge University Press, 2003.

ROLIM, Marta Helena F.S. *Poluição Marítima por óleo*. In: *Justitia*. PGJ/SP, v.115, 1981, p.122.

UN. *United Nations Convention on the Law of the Sea (Montego Bay)*. 1982.

Available at:

<http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf

>. Last access: January 29, 2019.