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Regional Approaches to Marine Environment Protection: Comparative Analysis of Legal Frameworks of Baltic and Caribbean Regions

Master's Thesis

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List of used acronyms:

BAT – Best Available Technology

BEP – Best Environmental Practice

CEP – Caribbean Environment Program

HELCOM - Baltic Marine Environment Protection Commission

LME – Large Marine Environment

LOSC – United Nations Law of the Sea Convention

MPA – Marine Protected Areas

PPP – Polluter Pays Principle

RAC – Regional Activities Center

UNEP – United Nations Environmental Programme

WCR - Wider Caribbean Region

INTRODUCTION

As we know, the sea covers about 70 percent of the globe and is an integral part of humanity. Today, one of the most important problems that people face is the pollution of the living environment, which regrettably has not spared the marine environment either.

Since the 20th century, the marine pollution has gained momentum, although in the beginning it may not have seemed so global to mankind. Despite attempts to eliminate or reduce the damage from this problem can be observed, can they be called effective?

Marine pollution is considered to be the introduction of man-made materials into the marine environment, leading to damaging effects such as harming living species, endangering the health of people, interfering with marine activities, in particular fisheries, degrading the sea water quality for its use and diminishing facilities[1].

Considering the widespread use of seas and oceans for trade and the rising capacity of cargo as well as tankers, the danger to the maritime environment from unintentional and purposeful discharge of noxious chemicals grows by the day. The majority of contaminants enter the ocean via rivers, runoff from land, or atmospheric fallout.[2]

Partnership in protecting and conserving the maritime environment is not simply a mere gesture of good faith by States, but also creates a responsibility under international environmental law, embodied in an increasing amount of international agreements.[3]

The United Nations Convention on the Law of the Sea (LOSC) signed in 1982, is a multilateral environmental accord that addresses marine environmental protection on a systemic level.[4] The significance of this Convention should not be underestimated for several reasons. LOSC is widely regarded as the "constitution for the oceans" due to its enormous scope of control and nearly universal acceptance.[5]

[1] P. Senthil Kumar, G. Prasannamedha.2021. Biological and chemical impacts on marine biology. *Modern Treatment Strategies for Marine Pollution*, 11-27
[2] *Ibid*
[3] Karolina Letniowska. 2020. The Role of Cooperation in the Protection and Preservation of the Marine Environment and its realization in the Baltic Sea Region. *Maritime Law,* vol. XXXVIII
[4] *Ibid*
[5] Y. Tanaka.2015. "The International Law of the Sea", Second Edition, Cambridge University Press, p. 30.

Moreover, the entire Part XII of this Convention has been committed to the conservation and preservation of the maritime environment.[6] Part XII created a complete worldwide constitution on the issue, rather than just unifying existing regulations. The UN Secretary-General's 1989 special report highlighted this innovative component.[7]

One component of Part XII that calls for special mention is its "umbrella" function. Part XII aimed to balance the competing aims of protecting the maritime environment and maintaining freedom of passage. The comprehensive method was chosen to strike a balance between the flag state's exclusive jurisdiction and the coastal state's overall power. This approach assumes that international ecological and navigational systems are interconnected and prioritizes universal norms and guidelines over national laws and regulations.[8]

Furthermore, pollution management must extend beyond national jurisdictions, since the effective pollution control is only possible at the global level. But the strategy for marine pollution management should not be exclusively on a global scale. There are cases where particular geophysical characteristics of a marine area may pose unique pollution challenges to coastal States, which thus face a common environmental challenge.

As a result, laws regulating the conservation and preservation of the maritime environment cannot be developed independently of their context; rather, they must take into consideration regional differences. Consequently, international environmental treaties frequently transfer the job of defining region-specific laws, standards, and suggested procedures to states maintaining a shared environment and obligate them to collaborate in this aspect.[9]

Currently, the United Nations Environmental Program's (UNEP) Regional Seas Program has been developing regional responses to curb marine pollution. UNEP's Regional Seas Program has been the most significant regional mechanism of UNEP for marine and coastal protection since its inception in 1974. It is an actions-based program that helps to develop region-

[6] Law of the sea Convention
[7] Report of the Secretary-General, *United Nations, Law of the Sea: Protection and Preservation of Marine Environment*, 18 September 1989,. 5.
[8] Franckx, E. 1998. Regional Marine Environment Protection Regimes in the Context of UNCLOS. *The International Journal of Marine and Coastal Law*, 13(3), 307-324
[9] Letniowska.(n 3)

specific framework conventions and other tools by engaging stakeholders, including governments, scientific societies and civil community[10].

Today there is hardly any marine area that is not affected by marine pollution, and it would be impossible to describe the cases in all areas in one thesis.

Which will lead us to the object of the thesis, that is the analysis of regional protection of marine environment from pollution, in order to find the most effective ways to tackle wit pollution on regional level. In this work regional and international perspectives regarding marine environmental protection from pollution will be covered and compared. Specifically such regions as Baltic and Caribbean and legal frameworks covering them, will be discussed. The research will seek to understand the core elements, similarities and differences in the legal frameworks that define the regulatory approach to marine preservation and environmental resilience in these two different geographical regions.

The research problem of the thesis lies in the presence of the challenges to the issue of marine pollution and how this problem is regulated on regional levels. As the level of pollution grows, the need to create new frameworks that would help to eliminate this problem grows as well. Although there is universal acknowledgment of the urgent need to preserve the marine environment, there is a lack of comprehensive research which compares the legal frameworks regulating this protection in diverse regional environments. The main problem of this thesis is the analysis of existing regional conventions, namely Convention on the Protection of the Marine Environment of the Baltic Sea Area 1992 (hereafter Helsinki Convention 1992) and Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (hereafter Cartagena Convention), identification of actual problems in the marine environment of these regions, and comparison of these conventions on how effective they are in performing their functions, the results of which will give us lessons to prepare the most effective framework to deal with pollution problem.

The Baltic Sea is among the most contaminated waters in the world. The list of poisonous and persistent materials entering the Baltic Sea is very long.[11] Meanwhile, the proper state of

[10] UNEP Regional Seas Programme: Oceans, Seas and Coasts, available at: https://www.unep.org/explore-topics/oceans-seas/what-we-do/regional-seas-programme

its marine environment is essential for the coastal states due to the fact that the sea has economic values, such as fishing, tourism, transportation, and thus provides opportunities for commercial activities for many inhabitants of the coastal states.[12]

The ecological sensitivity of the Baltic Sea is determined by a number of specific features of this water body. First and foremost, the Baltic Sea is categorized as an enclosed or semi-enclosed sea.[13] The Baltic Sea is only exchanged with the World Ocean through the narrow and shallow Skagerrak and Kattegat Straits which lead to the North Sea. As a result, water renewal is extremely slow, and it takes an average of 30-50 years for the water to be completely renewed.[14]

The above-mentioned feature of the Baltic Sea should be taken into account that if pollutants are released into its waters, they move within the water areas in all directions. This motivates the states located within the basin of one sea to cooperate in order to improve the environmental condition in the whole region and requires a special set of actions and solutions closely coordinated at the international and regional levels.[15]

The next region to be examined is the Caribbean sea. Over the past 10-15 years, marine pollution and the degradation of the coastal zone in the Caribbean have risen to become severe and critical problems. Degradation of water conditions has made numerous beaches unusable for swimming; oil spills have affected tourism temporarily; the collapse of coral reefs has exposed some shorelines to coastal erosion; and the clearance of mangroves has rendered many essential fish feeding grounds permanently unavailable[16].

More than 35 different economies in the region rely on marine environmental systems for food and jobs through tourism, fisheries, shipping and ports. However, marine pollution,

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[11] Malgosia Fitzmaurice. 1993. The New Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area. *Marine Pollution Bulletin*, Volume 26, No. 2, 64-67

[12] T.G. Ezova. 2012. Sotrudnicestvo Rossii i Evropejskogo Sojuza v oblasti ohrany morskoj sredy Baltijskogo Morja ot zagrjaznenija. Vestnik Baltijskogo federal′nogo universiteta im. I. Kanta. Vyp. 3, 166—173.

[13] Kirillova N. A. 2004. Ponjatie zamknutyh i poluzamknutyh morej v mezdunarodnom morskom prave. Juridiceskaja Rossija.

[14] Kabelkajte Ju.A. 2003.Ekologiceskie problemy i mezdunarodnoe sotrudnicestvo v regione Baltijskogo morja. Geografija, 3-12

[15] T.G. Ezova (n 12)

[16] Avril Siung-Chang. 1997 .A review of marine pollution issues in the Caribbean. *Environmental Geochemistry and Health* , 19, 45-55,

involving plastics, sewage, agricultural wastes, oil and chemicals, represents a severe risk, especially to tourism, contributing 15% of the GDP of the region, and to the fishing industry, that supplies income and food safety to the region's poor communities. In Caribbean waters, thousands of plastic debris can frequently be spotted, accounting for almost 80% of the overall amount of garbage[17].

Papers regarding the analysis of both regions have been published by scholars, but it is difficult to find a paper solely focusing on comparison of two regions in order to find the best way to tackle the pollution problem regionally. The thesis's originality resides in its comparative research of Baltic and Caribbean regional frameworks.
The research makes a contribution to the scholarly discussion in a number of ways. Although there is an extensive amount of research on marine environmental protection and its implementations, there are fewer studies that provide a comprehensive comparative examination of how two separate regions approach the identical issue of marine pollution.

By delving into the distinctions between the Baltic and Caribbean, the thesis reveals fresh light on the distinctions in methods to maritime environmental protection against pollution. The thesis also addresses gaps in academic discourse by studying the Helsinki and Cartagena Conventions. The thesis's major conclusions have the potential to give relevant insights into the efficacy of the frameworks in the analyzed states. The research aims to propose various strategies in order to promote the development of stronger regional frameworks for marine environmental protection from pollution as well as determine the most efficient ways to address the problem.

Considering the complexity of the issue, author has defined three research questions and research hypothesis. The hypothesis of this study is that the presence of transboundary environmental challenges, such as marine pollution, lead to differential impacts on the development and implementation of marine environment protection laws in the Baltic and Caribbean regions,

The performance of marine environmental protection in the Baltic and Caribbean regions significantly varies due to differences in the legal frameworks defining environmental policy, implementation mechanisms, and interaction between stakeholders. A thorough comparative analysis of these legal frameworks will highlight the distinctive features that affect the

[17] World Bank report: *Marine Pollution in the Caribbean: Not a Minute to Waste*, 2019

successful regional approaches to marine conservation and sustainable development in these two geographically different regions.

As for the research questions, the following questions are discussed in this thesis:

1. What are key differences and similarities in the legal frameworks governing marine environment protection in the Baltic and Caribbean regions?
2. What are the specific challenges each region faces concerning marine environment protection, and how do the legal frameworks address these challenges?
3. What lessons can be learned from the comparison of the legal frameworks of the Baltic and Caribbean regions and how can these conclusions be used to develop more effective and region-specific strategies for the protection of the marine environment on a regional and global scale?

The author of this thesis used various research methods in this work, such as comparative method and analytical method.

The thesis is divided into three chapters that are intended to address all of the research questions posed in the study and to reach the objective.

The first chapter focuses on the Baltic Sea region and is divided into three parts. The first part describes the region as a whole and its main maritime issues. The second part deals with the convention covering the region and the history of its creation. Since there are two variations of the convention, for a complete understanding the points from the original version will also be touched upon. But the main focus will be on the latest version. Which is exactly what is described in the last part of the chapter. This part is also divided into sub-parts in order to fully and accurately address the main factors of the convention. And so the part starts with a short description of the articles and smoothly moves on to more detailed parts describing such factors as: precautionary principle, PPP, pollution from land-based sources and etc.

The second chapter is structured in the same way only focusing on the Caribbean region. There are also three distinct parts. The first will respectively deal with the region itself and its main problems. The next part will be about the convention itself and its creation. That will

lead us to the next part, which is a look at the individual factors of the convention. Since there are three protocols connected to this convention, the sub-parts will focus on them separately.

As for the third chapter, it will summarize what has been discussed previously. The chapter will conclude the thesis by analyzing all the described functions of the conventions. The analysis will identify the benefits and disadvantages of both conventions, thus paving the way for further identification of the most effective regulations that should be in regional instruments for the protection of maritime space.

Keywords: marine environmental protection, marine pollution, land-based pollution, oil pollution, dumping.

I. LEGAL FRAMEWORK FOR THE PROTECTION OF THE BALTIC MARINE ENVIRONMENT

This chapter will focus on the situation in the Baltic Sea Region and on analyzing the main regional instrument in this area of the Helsinki Convention. The chapter will be divided into three sections. The first will be the discussion of the marine environment of the Baltic Sea Region, namely a short description of the region itself, the main problems related to marine pollution and why it should be of interest to consider this region. This will be followed by a review of the history of the Helsinki Convention, which will mainly focus on the latest version, namely the 1992 Helsinki Convention and its Annexes. The last sub-chapter will look at the most relevant provisions of the Convention. It will also analyze how the convention deals with land-based pollution, pollution from ships and dumping and will identify the most important factors and why they play an essential role.

1.1 Overview of environmental situation in the Baltic region

The international community is paying increasing attention to the protection of the environment, and in particular the marine environment, from pollution. The long-standing erroneous belief that the seas have a limitless capacity to assimilate any pollution has led to a long period of inaction in the maintenance of the marine environment.[18] As a result, many marine areas have become extremely affected by pollution[19]. The Baltic Sea is a vivid example of such a development.

One of the main reasons making this region fascinating, is that the ecological balance of the Baltic Sea is extremely delicate owing to a variety of natural elements[20]. To begin with, the Baltic Sea is only connected to the rest of the world's seas via the sounds and belts, which are narrow and shallow[21]. This restricts the interchange of water with the North Sea, the same water can stay in the Baltic Sea for up to 30 years, implying that many sorts of environmental

[18] T.G. Ezova (n 12)

[19] *Ibid*

[20] Skirmantė Klumbytė .2007. Comparative Analysis of 1974 AND 1992 Convention on the Protection of the Marine Environment of the Baltic Sea Area. *Jurisprudencija*. Vol 4, 67-73

[21] HELCOM, The Baltic Marine Environment 1999- 2002. Baltic Sea Environment Proceedings No. 87, 2003

disruptions are long-lasting. Second, the majority of the water entering the Baltic Sea comes from surrounding rivers, and this inflow typically carries significant amounts of pollutants from inland sources. Third, the low salinity of the Baltic Sea's brackish water tends to heighten biological sensitivity among many species, because their native habitats are usually the sea or inland lakes[22]. Human activities, both on the Baltic Sea itself and notably across its drainage region, have placed significant strain on its marine ecology during the previous centuries[23].

The greatest risks to the Baltic Sea ecology include eutrophication[24], severe fishing pressure, toxic chemicals and marine traffic, including the introduction of alien species, illicit oil spills, and the potential of a large oil catastrophe[25].

It must be emphasized that the Baltic Sea is particularly vulnerable to oil pollution, not only given the distinctive characteristics of its ecology mentioned above, as well as because of its comparatively cold water, in which bacterial oxidation is slow and oil spilled there lasts much longer than in warmer seas[26].

The spectacular oil spills caused by wrecked ships and offshore drilling have demonstrated the damage that oil pollution can inflict to marine life and the recreational potential of coastal regions[27]. Oil pollution from activities, such as pumping out cargo and ballasting tanks with salt water, has also been increasing[28].

Given all of the previously mentioned, it is apparent that the environmental condition in the Baltic Sea is exceedingly sensitive, determining the importance of this research. Without tight coordination between coastal governments and active tangible actions to regulate and prevent pollution, conditions would worsen year after year, rendering the Baltic Sea unfit for exploitation while simultaneously damaging the marine ecology.

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[22] *Ibid*

[23] Backer, H., Leppänen, J. M., Brusendorff, A. C., Forsius, K., Stankiewicz, M., Mehtonen, J., Pyhälä, M., Laamanen, M., Paulomäki, H., Vlasov, N., & Haaranen, T. (2010). HELCOM Baltic Sea Action Plan--a regional programme of measures for the marine environment based on the Ecosystem Approach. *Marine pollution bulletin*, *60*(5), 642–649.

[24] Eutrophication, the gradual increase in the concentration of phosphorus, nitrogen, and other plant nutrients in an aging marine ecosystem.

[25] Helsinki Commission Baltic Marine Environment Protection Commission , *Voluntary Report on Implementation of the Programme of Work on Marine and Coastal Biological Diversity*. 2008.

[26] Boczek, Boleslaw A. 1978. International Protection of the Baltic Sea Environment Against Pollution: A Study in Marine Regionalism. *American Journal of International Law* 72(4): 782–814.

[27] E. Leppakoski. 1973.Effects of an Oil Spill in the Northern Baltic. *Marine Pollution Bulletin* (No. 6) 93

[28] *Ibid*

Effective control of marine pollution clearly necessitates international and regional collaboration, particularly in the case of a sea as distinctive as the Baltic. By the early 1970s, all Baltic coastal governments, like other industrialized nations, were aware of the hazards of pollution and the necessity to create and enhance legal and organizational measures implementing pollution control policies[29]. This activity was supplemented by marine scientific research aimed at improving our understanding of the Baltic environment and determining the extent of pollution in the Baltic, as well as the role of humans in its degradation[30].

These actions continued with the incorporation of the Baltic Sea Region countries and the signing of a regional convention, which will be discussed further below.

1.2 Genesis of the Helsinki Convention

The process of research on the self-purification potential of water bodies and wastewater treatment options began in the early twentieth century.[31] Following World War II, tremendous developments in water protection occurred across the world, including in the Baltic Sea region. Municipal and industrial wastewater treatment plants have been established to lessen the pollutant load in the Baltic Sea[32].

In the mid-1960s, rising pollution of the Baltic Sea caused by discharges from rivers, estuaries, outfalls, and pipelines became one of the most critical issues in the Baltic Sea states. After extensive preparation, the Convention on the Protection of the Baltic Sea's Marine Environment was ultimately signed by the seven Baltic Sea governments which are Denmark, Finland, the German Democratic Republic, the Federal Republic of Germany, Poland, Sweden and the Union of Soviet Socialist Republics, on March 22 1974, and went into effect in 1980.[33] The 1974 Convention aimed to tightly manage and restrict

[29] Siegel, R. L. 1977. Comparing public policies: United States, Soviet Union and Europe. Homewood, Ill. : Dorsey Pr.
[30] Boczek, (n 26)
[31] Lääne A. 2001. Protection of the Baltic Sea: the role of the Baltic marine environment protection commission. *Ambio*, *30*(4-5), 260–262.
[32] *Ibid*
[33] Helsinki Convention 1974

contamination of the Baltic Sea's marine ecosystem by removing hazardous compounds from land-based sources. Since then, the Baltic Marine Environment Protection Commission's Contracting Parties have strived to provide suggestions on methods to achieve the Convention's aims[34].

Furthermore, the Contracting Parties are required to receive, process, summarize, and distribute essential scientific, technical, and statistical information obtained from various sources, as well as to support scientific and technological research. The signing of the Helsinki Convention in 1980 had a significant influence on the implementation of technical applications aimed at improving conditions in the Baltic.[35]

The Baltic Marine Environment Protection Commission, frequently referred to as the "Helsinki Commission" or "HELCOM" was founded in 1974 according to and concurrently with the Helsinki Convention.

Nonetheless, the Commission has long debated whether the Convention should be transformed. It was determined that the regulations had been beneficial in principle, but in regard to advances in international environmental law, international maritime law, and general experience since the 1970s, a number of modifications and enhancements appeared desirable. The evaluation found that several revisions were required, hence a revision of the Convention was deemed suitable.[36]

Revision of the 1974 Convention began in the late 1980s and was completed in 1992. The New Convention[37] was signed by the ten contracting parties, namely Denmark, Estonia, the European Union, Finland, Germany, Latvia, Lithuania, Poland, Russia and Sweden, on April 9 1992, at the 13th HELCOM Meeting.[38] The 1992 Convention was approved by all Contracting Parties and entered into force on January 17, 2000.[39]

The new Convention varies greatly from the old one in that it establishes the key principles for protecting the Baltic Sea Area. The two most important principles used by Contracting

[34] Lääne (n 31)
[35] *Ibid*
[36] Ehlers, P. 1993. The Helsinki Convention, 1992 Improving the Baltic Sea Environment. *The International Journal of Marine and Coastal Law, 8*(2), 191-243
[37] Helsinki Convention 1992
[38] HELCOM Intergovernmental activities in the framework of the Helsinki Convention 1974-1994. Baltic Sea Environ. Proc. No. 56, 141-185, 1994
[39] HELCOM, about us: The Helsinki Convention main facts available at: https://helcom.fi/about-us/convention/

Parties are the precautionary principle and the PPP. In addition to the requirement to reduce discharges from land-based sources following the basic principles, the revised Convention specifies methods for doing so. According to Article 3 Paragraph 3, in order to avoid and eradicate pollution in the Baltic Sea, the Contracting Parties must encourage the application of best environmental practice (BEP) and best available technology (BAT). The 1992 Convention has seven Annexes as well, some of which will be discussed further with other main important factors.

1.3 General objectives of the Helsinki Convention 1992

This section will examine the general features of convention. Starting with aspects such as the Convention's region of application and objects, the types of crafts it regulates, and the primary goals. Following this basic overview, key components of the Convention, as the precautionary principle, the PPP, land-based pollution, will be discussed in separate parts.

A helpful way to begin is to state that, the Convention addresses all sorts of pollution once more, but for the first time, it also considers environmental protection[40]. Furthermore the Convention encompasses the whole Baltic Sea, specifically one of the few important things is that internal waters have been officially included in the Convention[41], recognizing that dangerous chemicals frequently reach the Baltic Sea through them[42]. However, the Contracting Parties retain the right to set the landward boundary of their internal waters. Each Contracting Party must notify the Depositary of its internal waters when the document of ratification is deposited[43].

The Convention protects the water column and seabed of the Baltic Sea, which includes its living resources and other types of marine life[44]. However it is not binding to any warship, other ship, or aircraft owned or controlled by a state that is being utilized only for government non-commercial purposes. Each Contracting Party must guarantee that such

[40] Lääne (n 31)
[41] 1992 Helsinki Convention, Article 1
[42] Ehlers (n 36)
[43] 1992 Helsinki Convention, Article 1 part 2
[44] 1992 Helsinki Convention, Article 4(1)

ships and aircraft act in a way compatible, so far as is rational and possible, with the Convention[45]. It is also interesting that the Convention also considers pleasure crafts, as most of the cases these types of vessels are too small to catch attention of coastal states, stating that parties should take specific measures to reduce the negative impact of pleasure vessel operations on the Baltic Sea's marine ecosystem.[46]

The Contracting Parties' essential duties in the updated version have been set in more explicit words, and their range has been expanded[47]. The Contracting Parties must individually or collectively adopt every necessary legislative, administrative, or other applicable measures to avoid and eradicate pollution[48]. The declared objective of the actions is no longer merely to protect and improve the marine environment; instead, the emphasis is on promoting ecological restoration and the maintenance of the Baltic Sea Area's ecological balance.[49] The definition of "pollution" has also been reinterpreted. According to the updated version of the Convention[50], pollution is defined as the introduction of chemicals that are likely to cause harm, implying that the potential danger is more important than the proven impacts. Which is proven to be similar to the definition of pollution in LOSC.[51]

The Convention outlines principles and duties regarding various kinds of pollution. To reduce Baltic Sea pollution, states must develop and use the BAT and follow BEP by taking precautions, conducting impact assessments, and monitoring. Which will lead us to further discussion of such important principles as precautionary principle and PPP.

1.3.1 Precautionary principle

According to the paragraph 2 of the article 3 of the Convention the Contracting Parties must apply the precautionary principle. It implies taking preventative steps if materials or energy

[45] 1992 Helsinki Convention, Article 4(3)
[46] 1992 Helsinki Convention, Article 9
[47] 1992 Helsinki Convention, Article 3
[48] *Ibid*
[49] Ehlers (n 36)
[50] 1992 Helsinki Convention, Article 2(1)
[51] According to article 1 para. 4 “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 uses of the sea, impairment of quality for use of sea water and reduction of amenities”

introduced into the marine environment may pose risks to human health, biodiversity, ecosystems, amenities, or legitimate uses of the sea, even if there is no definitive proof of an association between components and their suspected impacts.[52]

The precautionary principle has gained in importance since, in many cases, scientifically identifying cause and effect is a difficult task, frequently resembling an ineffective investigation into an infinite series of episodes.[53]

The precautionary principle is an innovative way to environmental preservation, particularly for the Baltic Sea's marine ecology, which is growing into an increasingly essential factor in this area.[54] It provides guidance and support in the establishment and implementation of global environmental law where there is scientific dispute.[55]

The concept is intriguing because it integrates pollution prevention strategies for the marine environment while reducing the requirement for scientific data. As a result, the precautionary principle should be used whenever there is cause to believe that the environment may be affected. Precautionary principle does not highlight that damage to nature must be "significant and irreparable", which leads to accusations of excess regulation and a type of trouble in maintaining this concept in practice.[56]
The initial international texts supporting the precautionary principle did not exist until the mid-1980s, following the establishment of LOSC.[57]

The Helsinki Convention is one of two[58] effective instances of the use of the precautionary principle in regional treaties.[59] The Convention emphasizes the precautionary principle, in order to safeguard the marine environment by avoiding and eradicating pollution, preserving human health, and guaranteeing a healthy marine ecosystem in its designated maritime region, the Baltic Sea.[60]

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[52] 1992 Helsinki Convention, Article 3
[53] Marr, S. 2003. The Precautionary Principle in the Law of the Sea. Leiden, The Netherlands: Brill | Nijhoff.
[54] *Ibid* 46-99
[55] Sands, P. 2003. Principles of International Environmental Law.2nd edition Cambridge University Press, Cambridge
[56] S. A. Atapattu.2007. Emerging principles of international environmental law. *Leiden| Brill*, 44-45
[57] Churchill, R., Lowe, V., &; Sander, A. 2022. The law of the sea (4th edition) Manchester University Press.
[58] Second one is The Convention for the Protection of the Marine Environment of the North-East Atlantic (the OSPAR Convention)
[59] Runyu Wang.2011. The precautionary principle in maritime affairs. *WMU Journal of maritime affairs*, vol. 10
[60] *Ibid*

All appropriate legislative, administrative or other relevant prevention steps must be taken when there is reason to believe that pollutants or energy introduced into the marine environment could pose hazards to human well-being, impact living resources and marine ecosystems, damage amenities, or mess with other legal uses of the sea, even if there is insufficient proof of a link between the two[61].

As a result, the Baltic Sea States must take preventative measures as soon as possible, without being able to argue that convincing scientific conclusions are still pending. Because of its broad effects, the precautionary principle has sparked widespread confusion and dispute. On the one hand, environmentalists think it offers a foundation for prompt international legal proceedings to address human behavior that is anticipated to have a negative impact on the environment.[62] Critics, on the other hand, argue that the idea has the potential for excessive restriction, which limits human activity.[63]

In the Helsinki Convention, the precautionary principle is a legally binding requirement for each party.

Furthermore to conclude, contracting parties have an active and affirmative responsibility to take prompt actions to conserve the maritime environment, even if there is a shortage of comprehensive scientific data,[64] which in other words mean, that the contracting parties must adopt the precautionary principle before actual damage to the environment happens.[65]

1.3.2 Polluter Pays Principle

[61] 1992 Helsinki Convention, Article 3(2)
[62] Ellen Hey.1992. The Precautionary Concept in Environmental Policy and Law: Institutionalizing Caution. *Georgetown International Environmental Law Review*, vol.4, 303-318, p. 308
[63] William Burke.1993. UNCED and the Oceans. *Marine Policy*, vol.17, 519-533
[64] Frank B. Cross.1996. Paradoxical Perils of the Precautionary Principle, *Washington & Lee Law Review*, vol. 53,. 851
[65]1992 Helsinki Convention, Article 2(1)

The Helsinki Convention mentions in its paragraph 4 of article 3 that all contracting parties should use (PPP).[66]

The PPP has been an essential element of environmental policy at both the national and international level after its acceptance by the Organization for Economic Cooperation and Development in 1972 as one of the core values of environmental policies.[67]

The PPP is widely regarded as a way of paying for the expense of pollution avoidance and management.[68]

Simply put, the PPP lays the expense of pollution abatement on polluters instead of on governments. The expense is subsequently passed on to the customer. As a result, the actual cost of pollution can be seen in the product's price.[69]Several regional and international accords on pollution involve the PPP.[70]

Nevertheless, with the importance of resolving the problem expanding, and since we currently live in a climate-changed world, the adoption of the PPP in a number of its different forms is strongly on the agenda of many nations, including the biggest polluters.[71]

The Convention requires parties to use the "polluter-pays" concept. However, the issue of its implementation into reality is not tackled. The Contracting Parties ought to verify that calculations and measurements of inputs are executed out in a scientifically acceptable method in order to figure out the status of the marine environment and determine the execution of this Convention[72].

1.3.3 Land based pollution

[66] 1992 Helsinki Convention, Article 3(4)
[67] Karina Tatek Benetti, Pavla Vrabková. 2014. Polluter Pays Principle Principles Guiding Idea of Legislative Regulation of Environmental Policy. *Pressacademia*
[68] Gregory Wetstone, Armin Rosencranz. 1984. Transboundary Air Pollution; The Search For An International Response. *Harvard Environmental Law Review.* Vol 8
[69] *Ibid*
[70] Munir Muhammad. 2013. History and Development of the Polluter Pays Principle. *SSRN Electronic Journal*
[71] Khan MR.2015. Polluter Pays Principle: The Cardinal Instrument for Addressing Climate Change. *Laws.* Vol.4, 638-653
[72] 1992 Helsinki Convention, Article 3(5)

The part dealing with land-based pollution has been considerably amended, including the idea of 'discharges', which has been substituted by 'point or diffuse inputs' and extra drafting to include pollution from purposeful dumping under the seabed along with access from land by tunnel, pipeline, or other methods.[73]

Land-based pollutants and activities tend to pose serious risks to the marine environment.[74] The vast majority of marine pollution is caused by anthropogenic activities associated with land-based metropolitan areas, industrial, docklands, and agricultural land.[75] Pollution from land-based sources form 70-90 percent of the total contamination of the Baltic Sea.[76]

LOSC, while containing provisions relating to land-based marine pollution, lacks comprehensive environmental criteria and is mostly aspirational. Article 207 compels nations to implement laws to prevent and manage land-based causes of marine pollution. It also encourages governments to create global and regional guidelines and practices.[77]

The Helsinki Convention establishes a set of principles and duties regarding pollution from land-based sources.[78] Thus, in order to prevent Baltic Sea contamination, states must develop and implement BAT and BEP, employ a precautionary approach, perform environmental impact assessment, and evaluate the pollution levels.[79] The setting up of steps to avoid Baltic Sea pollution from land-based sources begins with the recognition of compounds that potentially impair the marine ecosystem. Thus, it is vital to evaluate the progress of identifying hazardous materials under the Helsinki Convention.

At first, dangerous compounds entering the Baltic Sea were recognized using the black/grey list technique, which was initially proposed in Articles 4 and 6 of the Helsinki Convention 1974. This technique classified harmful compounds into two main groups: blacklisted objects which were banned and grey-listed item, which needed a specific authorization from a

[73]Ronald Barston.1994. The Helsinki Convention (1992): New Approaches. *Ocean and Coastal Management*. Vol.22, 249-253

[74] Ann Powers & David L. VanderZwaag. 2008. The Protection of the Marine Environment from Land-Based Pollution and Activities: Gauging the Tides of Global and Regional Governance. *International Journal of Marine & Coastal Law*. Vol.23, 423-452

[75] L.A. Kimball.2001. International Ocean Governance: Using International Law and Organisations to Manage Marine Resources Sustainably.

[76] Janina Ciechanowicz.1998. The Helsinki Conventions 1974 and 1992: Implementation in Poland. The *International Journal of Marine and Coastal Law*. Vol. 13, No. 3. 403-412

[77] LOSC, Article 207

[78] Ehlers (n 36)

[79] *Ibid*

specified national authority. Yet, this strategy was challenged for two primary reasons. First, the entire core of such a strategy clearly violates the primary purpose of reducing Baltic Sea pollution. States were not required to take substantial precautions to prevent substance abuse on the grey list from entering the sea. As a result, the mere presence of such "grey" compounds demonstrates their harmful influence on the marine ecology.[80]

The new system manages the flow of hazardous compounds from land-based sources without separating States' duties or designating materials as very dangerous or slightly harmful. Thus, for each substance specified in the Helsinki Convention 1992, according to article 2.4, strict preventative actions must be adopted.Particular concern centered on pollution from land-based sources given the following reasons.[81]

First of all, the idea of pollution from land-based sources was expanded to include toxins reaching the water from scattered sources.[82] Second, according to the 1992 Helsinki Convention, in the case of land-based pollution, preventative measures must be implemented inland. Article 6, which requires the parties to prevent and remove contamination of the Baltic Sea region from land-based sources, states that "the relevant measures to this end shall be taken by each Contracting Party in the catchment area[83] of the Baltic Sea". Figure 1 shows the map of the catchment area. Consequently, the breadth of governments' duties under the 1992 Helsinki Convention in this regard is greater compared to that of the 1974 Helsinki Convention.[84]

[80] D. J. Attard. 2016. The IMLI Manual on International Maritime Law: Marine environmental law and Maritime Security Law. *Marine Environmental Law and Maritime Security Law.* Oxford University Press. Vol 3, 152-153

[81] Ciechanowicz. (n 76)

[82] *Ibid*

[83] The total Baltic Sea catchment area comprises 1,729,500 km² being more than four times larger than the surface area of the Baltic Sea

[84] Malgosia Fitzmaurice. 1998. The Helsinki Conventions 1974 and 1992. *The International Journal of Marine and Coastal Law*, Vol. 13, No. 3. 379-395

Figure 1: Baltic Sea Region Catchment Area defined by HELCOM for Land-based sources of pollution.[85]

Lastly, the extent of processes and actions that governments must follow in relation to land-based pollution substantially surpasses the solutions agreed by the 1974 Helsinki Convention.[86]

The 1992 Convention strengthens and specifies strategies to prevent pollution from land-based sources. The obvious goal is to avoid and eradicate pollution, whereas the initial proposal called for simply control and reduction[87].

This will be accomplished using the best environmental practices and technology available. As in the past, the Contracting Parties must cooperate in the creation and implementation of particular programs, guidelines, standards, or rules governing pollutants and inputs to water and air, environmental quality, and goods containing dangerous chemicals and materials, and their usage[88]. The methods and measures are described in a new Annex III. For instance municipal sewage water must be handled using biological or other technologies that

[85] HELCOM, about us: Contracting parties + map available at: https://helcom.fi/about-us/contracting-parties/
[86] *Ibid*
[87] Ehlers (n 36)
[88] 1992 Helsinki Convention, Article 6

effectively reduce important variables, and to minimize waste water, industrial enterprises should use closed water systems or high circulation rates, also industrial waste waters should be treated individually before being combined with diluting waters[89] and etc.

1.3.4 Pollution from ships

The 1992 Helsinki Convention stands out from other regional marine treaties in that it prioritizes ship pollution reduction.[90]

The Contracting Parties are once again reminded of their responsibility to work within the IMO to promote the creation of international regulations that are consistent with the goals of the Helsinki Convention.
In terms of pollution from ships, the 1992 Helsinki Convention states that contracting parties must apply the requirements of the annexes to MARPOL 73/78, regardless of if they adopted them.[91]

It merely states that the Contracting Parties must follow the terms of the MARPOL 73/78 Annexes, albeit this time it doesn't limit itself to oil pollution.[92]

In accordance with the Convention's new principles, this involves the employment of BAT and BEP.[93]The new Convention requires Contracting Parties to cooperate in the Baltic Sea Area to ensure the effective and coordinated application of IMO rules. Contracting Parties have to cooperate in examining violations of anti-pollution rules. This involves inspecting the oil record books, shipment records, and other books, as well as collecting oil tests[94].

Furthermore, it requires the Contracting Parties to design and implement universal rules for the establishment of receiving facilities for ship-generated garbage, taking into account, among other things, the particular demands of passenger ships that sail within the Baltic Sea

[89] 1992 Helsinki Convention, Annex III, Regulation 2
[90] Barston (n 73)
[91] *Ibid*
[92] Jonas Ebbesson . 2000. A Critical Assessment of the 1992 Baltic Sea Convention. *German Yearbook of International Law.* Vol 43, 38-64
[93] 1992 Helsinki Convention , Annex IV regulation 1
[94] 1992 Helsinki Convention , Annex IV regulation 2

Area[95]. In addition to enforcing the rules of this Convention that are applicable to pleasure craft[96], the Contracting Parties must adopt additional steps to mitigate the negative impact of pleasure vessel operations on maritime environments. In addition to proper welcoming facilities, the new Convention requires steps to address air pollution, noise, and hydrodynamic consequences[97].

1.3.5 Dumping

Notwithstanding the fact that dumping waste at sea accounts for just 10% of the waste entering the seas, it constitutes a significant hazard to the marine ecosystem since this type of waste is frequently extremely toxic and regarded too risky for burial on land.[98]

The dumping of such uncontaminated materials can pose environmental difficulties solely in regards to the amount of sediments laid down on the sea bottom, the increased visibility of the coastal waters around the discharge site, and the likely creation of problematic deposits on the sea floor.[99]

The Convention extends to any chemicals that are brought to sea and discharged. According to the original article from the 1974 Helsinki Convention, the restriction solely covered rubbish disposal. It did not include burning using incineration vessels since such kind of disposal was not yet recognized as an issue in 1974.[100] The modified Convention mirrors this stance, explicitly prohibiting both incineration[101] and dumping[102] at sea. Simultaneously, the territorial scope of the restriction has been expanded to cover internal waterways.

[95] 1992 Helsinki Convention , Article 8 paragraph 2
[96] 1992 Helsinki Convention , Article 9
[97] *Ibid*
[98] Rachel Jane Baird.1998 .Ocean Dumping - an Overview of the International and Domestic Regulatory System. *Environmental and Planning Law Journal*. Vol.15, 174-189, p.177.
[99] Gorsline, D.S., 1979. Shelf-sediment dynamics and solid-waste disposal. In: Palmer, H.D., Gross, M.G. (Eds.), Ocean Dumping and Marine Pollution. Dowden, *Hutchinson & Ross*. 9–16
[100] Ehlers (n 36)
[101] 1992 Helsinki Convention , Article 10
[102] 1992 Helsinki Convention , Article 11

Dredged material can still be exempted from the disposal prohibition, as previously stated. Annex V of the Convention specifies the terms under which such waste may be discarded. Dumping salvaged material that includes hazardous substances listed in Annex I requires a special permit from the relevant national authority. This permit can be issued within the Contracting Party's internal waters and territorial sea. Upon agreement it can also be issued in the contracting Party's Exclusive Economic Zone.[103]

The necessary local authority shall distribute the special permits, maintain documentation of the kinds and numbers of substance enabled to be dumped as well as the spot, time frame, and technique for dumping and also gather accessible data regarding the nature and the amount of the material that has been dumped in the Baltic Sea Area lately[104].

A permit for dredged material comprising dangerous chemicals can only be provided in accordance with the rules established by the HELCOM. This is done to guarantee conformity with global requirements and set limitations on values[105].

1.3.6 Offshore activities

The term "offshore activity" refers to the exploration and exploitation of oil and gas by a fixed or floating offshore station, including any related operations[106].

Following years of exploitation of offshore resources, the issue of maintaining and removing platforms and installations built for this purpose arises immediately. The amount of installations nearing the end of their life cycle is growing.[107]

Since the 1980s, there has been a growing concern about eliminating old platforms and setups. Technological advancements in the oil and gas sectors have expanded resource

[103] 1992 Helsinki Convention , Annex V regulation 1
[104] 1992 Helsinki Convention , Annex V regulation 2
[105] HELCOM Guidelines for the Disposal of Dredged Spoils, Recommendation 13/1
[106] 1992 Helsinki Convention , Annex VI regulation 1(1)
[107] Seline Trevisanut . 2020. Decommissioning of Offshore Installations: a Fragmented and Ineffective International Regulatory Framework. The Law of the Seabed. Brill|Nijhoff, Chapter 18

development to unprecedented levels and distances, raising the number of facilities in the sea and their consequences on the seabed.[108]

The 1992 edition of the Convention has more detailed rules for offshore activity.[109] Each Contracting Party must take all necessary precautions to protect the maritime environment from contamination caused by the exploration or exploitation of the seabed and subsoil, as well as any connected activities. Proper readiness is required for quick reaction activities against pollution issues[110]. The essential processes and actions are written down in a new Annex VI, that calls for the Contracting Parties to implement the principles of BAT and BEP for offshore activities[111].

The application of oil-based drilling fluids or muds containing other hazardous compounds should be limited to rare occasions and only upon a prior permit. Oil-based drilling solutions and cuttings should be carried onshore rather than dumped into the Baltic Sea. Cuttings caused by the use of water-based drilling mud may not be discharged in vulnerable areas of the Baltic Sea. In addition, the disposal of water-based mud and cuttings requires approval from the competent national body[112]. Chemicals and supplies utilized must be transported onshore. Only in extraordinary circumstances may they be dumped into the sea with prior permission from the relevant national authorities[113].

Further laws address reporting methods[114], emergency preparation[115], and the interchange of information[116]. A unique element is that Contracting Parties must guarantee that abandoned, unused, and inadvertently destroyed offshore installations are completely dismantled and brought onshore under the owner's obligation, and that disused drilling wells be sealed[117].

1.3.7 Conservation of marine biodiversity and cooperation

[108] *Ibid*
[109] Klumbytė (n 20)
[110] 1992 Helsinki Convention , Article 12
[111] 1992 Helsinki Convention , Annex VI regulation 2
[112] 1992 Helsinki Convention, Annex VI regulation 4
[113] 1992 Helsinki Convention , Annex VI regulation 5
[114] 1992 Helsinki Convention , Annex VI regulation 6
[115]1992 Helsinki Convention , Annex VI regulation 7
[116] 1992 Helsinki Convention , Annex VI regulation 9
[117] 1992 Helsinki Convention , Annex VI regulation 8

Nature protection and biodiversity are among the main principles outlined in the 1992 Helsinki Convention. The Contracting Parties must take all reasonable steps to safeguard the Baltic Sea Area and its impacted coastal ecosystems, as well as to maintain natural habitats and biological diversity. Measures must also be done to guarantee the sustainable use of natural resources in the Baltic Sea region.

Article 15 of the 1992 Helsinki Convention focuses on preserving nature and the protection of marine biodiversity. It requires the parties to the agreement to take all required efforts to safeguard natural habitats and biological variety, as well as to protect environmental processes in the Baltic Sea area and its coastal eco systems that are impacted by the Baltic Sea.[118] The 1992 Helsinki Convention establishes specific rules for reporting and exchanging information amongst contracting governments and HELCOM.[119]

The 1992 Helsinki Convention also has extensive clauses governing scientific and technical cooperation. This collaboration focuses on science, technology, and other areas of study, as well as the exchange of data and scientific information. In Article 24, the Parties, in order to promote research and monitoring operations, undertake to coordinate their policies with respect to permit processes to enable such activities. The Contracting Parties are urged to partner with other international organizations. This Article established a very beneficial provision on the harmonization of policy with respect to permit processes. Previously, monitoring programs have been hampered by a lack of coordination in this regard.[120]

The Baltic Sea States have long cooperated under the Helsinki Convention to efficiently fight environmental issues. The ideals of such cooperation are reiterated in the amended 1992 edition. Notification and consultation, which were formerly frequently practiced, are now mandatory. As in the first version of the Convention, the Contracting Parties must take all necessary steps, either individually or collectively, to retain enough capabilities to react to pollution events.[121]

[118] 1992 Helsinki Convention , Article 15
[119] Klumbytė . (n 20).
[120] Fitzmaurice (n 11)
[121] Ehlers (n 36)

The original Helsinki Convention designated the Baltic Marine Environmental Protection Commission, or HELCOM, in Helsinki as the final authority for decision-making in regard of all marine environmental problems. HELCOM is made up of representatives from all ten parties.

HELCOM works with a wide scope of sectors and themes such as fisheries, agriculture, industrial releases, monitoring and assessment and many more. One of them is also establishing of Marine Protected Areas(MPA). The coastal and marine Baltic Sea protected areas seek to safeguard significant marine and coastal ecosystems in the Baltic Sea. This is accomplished by designating locations with certain natural values as protected zones and regulating human activity inside those areas. Each location has its own management plan. The first 62 HELCOM MPAs were constructed in 1994, and there are currently 176. They have a total size of 54 266 km2, including both coastal and marine regions. The majority of HELCOM MPAs are located around the coastlines of the Baltic Sea, with just 8,679 km2 in open sea.[122]

Human activity inside HELCOM MPAs can be limited by management plans or procedures designed to avoid conflicts of interest and guarantee that certain nature protection goals are met. Management plans control or compensate harmful human activities through a variety of actions, including limiting activities during specific times or in specific areas, outright prohibiting specific behaviors, recovering degraded areas, preserving environmentally sound and traditional use when appropriate, and replacing less harmful materials or substances. HELCOM MPAs govern activities such as building, dredging, aquaculture, wind farm setup, hunting, and fishing. As previously stated, each HELCOM MPA must have a specific management plan or management measures developed for the region in problem. Furthermore, several MPAs have tailored management strategies for specific areas inside the MPA. Of the 176 existing HELCOM MPAs, 127 (72%) now have a management plan in place, and 39 (22%) have a management plan in development.[123]

[122] HELCOM, Action areas: Main Facts about Marine Protected Areas available at: https://helcom.fi/action-areas/marine-protected-areas/basic-facts/
[123] HELCOM, Action areas: Management of HELCOM MPAs available at: https://helcom.fi/action-areas/marine-protected-areas/management-of-helcom-mpas/

The HELCOM organizational framework has evolved over the last 25 years in accordance with shifts in work focus. As collaborative efforts have evolved, HELCOM has developed into a major center of both regional scientific and policymaking activity.[124]

With the signing of the first Helsinki Convention 50 years ago, the Baltic Sea's hazardous pollution burden has been drastically decreased; further eutrophication has been prevented by significantly lowering nutrient discharges; and the numerical abundance of the primary Baltic cod species has returned to normal. The Baltic Sea's tremendous importance as a natural resource has been preserved for the residents of its coastline nations.[125]

Nonetheless, numerous severe concerns persist: possibly harmful chemicals stay in levels of focus in both wildlife and fish catches, and new ones are being introduced; undesirable eutrophication signs are still visible in numerous coastal areas; deep-water shortage of oxygen has reached new heights. There has been little meaningful effort made to lower pollution levels, which means that most of the work is yet to be done.[126]

To finalize this chapter, it can be said that the Helsinki Convention covers a sufficient number of clauses on the protection of maritime space from pollution. Important facts such as precautionary principle and PPP have been emphasized. The Convention includes such important issues as land-based pollution, pollution from ships, dumping, offshore activities and more, that have also been discussed in this chapter. The chapter concludes that despite the fact that the Baltic Sea is one of the most polluted seas in the region, legislation is still in place that to some extent contributes to the fight against pollution.

[124] VanDeveer, S. D. 1997. Normative force: the state, transnational norms, and international environmental regimes. University of Maryland, College Park.
[125] Elmgren, R., Blenckner, T., & Andersson, A. (2015). Baltic Sea management: Successes and failures. *Ambio*, *44*, 335-344.
[126] *Ibid*

II. LEGAL FRAMEWORK FOR THE PROTECTION OF THE CARIBBEAN MARINE ENVIRONMENT

This chapter will be structured very similarly to the previous chapter in that it will also cover the main points of the region and the legislation that governs it, except that in this chapter the region will be the Caribbean. This chapter will be divided into three parts. The first one will describe the overall picture of the region and its biggest problems with regard to marine pollution.

Further, the next part will describe the establishment of a Convention covering the region, namely the Cartagena Convention. The final part will focus on the specific points of the convention itself, namely the additional protocols of the convention that cover such specific topics as oil pollution, pollution from land-based sources and specially protected areas and wildlife.

2.1 General overview of the region

The Caribbean Sea is not as polluted as the Baltic, but growing coastal pollution around urban and industrial regions is putting increasing stress on the region's coastal and marine resources[127].

First of all it is important to outline the definition of Caribbean Region. The Wider Caribbean Region(WCR) includes the Caribbean Sea's coastal and open seas, the Gulf of Mexico, and nearby Atlantic Ocean waters. The coastal areas include those of East Mexico, the Atlantic beaches of Central America and Panama, the Bahamas and the Antillean Archipelago, the northern tier countries of South America from Colombia to French Guiana, and the Gulf portions of the United States[128].

The WCR is a semi-enclosed body of water made up of many deep basins divided by massive sills. The Region's seas are shared by 27 nations, as well as other territories and dependencies. These states are characterized by a great range in cultural and historical

[127]Arsenio Rodriguez. 1981. Marine and Coastal Environmental Stress in the Wider Caribbean Region. *AMBIO*. Vol. 10, 283-294
[128] *Ibid*

backgrounds, natural resource endowments, political organization, and levels of socioeconomic development[129].

The Caribbean Sea serves as a significant transshipment route, providing a direct link to the Panama Canal, a major cargo shipping hub. It is also a main source of fish and fishery products, which provide socioeconomic prospects through direct and indirect employment.[130]

The region's climate and beaches contribute to its status as one of the world's top tourist attractions.[131]

The WCR has the potential to be one of the world's major oil producing locations. Existing and planned production regions onshore and offshore are found around the shores of Venezuela, Trinidad & Tobago, and the Gulf of Mexico.[132]

According to previous experience, pipeline accidents, blowouts, platform fires, overflows, malfunctions, and other less significant mishaps can cause around 6.7 percent of total offshore output to leak into the maritime environment.[133]

Aside from offshore production sites, oil refineries and related infrastructure contribute to regional oil pollution. The region's most important economic activity is centered on the entire spectrum of petroleum production, from oil discovery to purification and transportation.[134]

Every day, around 5 million barrels of oil are moved across the WCR, resulting in quite high tanker activity. Tanker movements via restricted channels and near specific ports enhance the risk of maritime accidents in such locations. In addition to catastrophic oil spills caused by tanker catastrophes, considerable amounts of oil are discharged into local Caribbean ports as a result of ballasting, ship cleaning, tank washing, docking and undocking activities.[135]

[129] *Ibid*
[130] C. Andrea Clayton , Tony R. Walker b , Joana Carlos Bezerra , Issahaku Adam .2021. Policy responses to reduce single-use plastic marine pollution in the Caribbean. *Marine Pollution Bulletin*. Vol.162,
[131] Marine pollution in the Caribbean: not a minute to waste. World Bank Group, Washington D.C.
[132] Ocmi, and Pnuma. 1979. Status of oil pollution control in the Wider Caribbean Region
[133] *Ibid*
[134] UNEP, *Development and Environment in the Wider Caribbean Region: A Synthesis* , U.N. Doc.16, (Sept. 16, 1980)
[135] Rodriguez.(n 127)

With such a profitable climate for growth, there is a rising understanding of the economic value of the sea as a natural asset.[136]

The countries in the WCR have recognized that its conservation is critical to the expansion of the tourist business and industrial base. The current pace of economic and social growth, however, might severely damage the maritime ecosystem.[137]

The deterioration of the Caribbean Sea is connected to insufficient and poor waste management of all types (land and marine based) and excessive use of both living and non-living resources.[138]

Nevertheless, during the last two decades, a few Caribbean countries have begun to close the policy gap between their land and maritime resources. This is especially true for countries whose economy are heavily reliant on coastal environmental quality. Recent surveys illustrate the significant extent of management activities in the area and within nations, and the rising of regional campaigns replying to these concerns and causes.[139]

The following part will address management and its function in the Caribbean Sea.

2.2 Genesis of the Cartagena Convention

The WCR, as the Large Marine Ecosystem(LME) with a significant variety of geopolitical structures of government, maritime boundaries, and small-island developing nations, reflects a population united by their reliance on the Caribbean Sea for their sustenance. However, the sustainability of the ecosystems delivering these goods and services is endangered by the very income-producing activities that maintain economic stability, as well as the continuously rising consequences of climate change.[140]

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[136] Levine, B. B. 1981. Abundance and Scarcity in the Caribbean. *Ambio*, Vol.*10*, 274–282

[137] Gregg Bundschuh. 1984. Transfrontier Pollution - Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region - Agreement Involving Collective Response to Marine Pollution Incidents and Long Range Environmental Planning. *Georgia Journal of International and Comparative Law*, Vol.14, 201-216

[138] Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection. *Protecting the Oceans from Land-based Activities: Land-based Sources and Activities Affecting the Quality and Uses of the Marine, Coastal and Associated Freshwater Environment*. GESAMP Reports and Studies No. 71. Rome: FAO. 2001a

[139] Lemay, M. H. 1998. Coastal and Marine Resources Management in Latin America and the Caribbean.

[140] Regional Coordinating Unit of the United Nations Environment Programme Caribbean Environment Programme. Second Edition, 2002

As the level of challenges was increasing, nations in the region felt the pressure to take actions.

The WCR is one of 12 areas in the globe where UNEP, in conjunction with national governments, produced Action Plans to address environmental concerns by expanding understanding of marine and coastal habitats and strengthening environmental administration[141].

In 1981, the governments of the WCR, with the aid of the UNEP, founded the Caribbean Environment Programme (CEP) to encourage regional collaboration for the conservation and development of the maritime environment.

CEP's aims were described in an Action Plan, which was formally accepted by an intergovernmental summit in Montego Bay, Jamaica, in 1981. The main objectives are support to all countries in the region, recognition of the unique circumstances of the smaller island countries, coordination of international assistance operations, enhancing existing national and sub-regional structures, and technical collaboration in facilitating the utilization of the region's human, financial, and natural assets.[142]

The CEP Action Plan has multiple interrelated components aimed at promoting regional cooperation. Regional environmental agreements are created at the insistence of governments to promote cooperation among states in tackling recognized concerns in a WCR. They also provide a significant instrument for national policymakers to carry out national control operations. Management actions, which try to address current environmental issues while preventing the emergence of new ones, are one of the ways in which states fulfill their legal treaty commitments. Co-ordinated evaluation operations then continue to support governments by giving scientific knowledge through which to appraise if the legal agreements and management strategies are becoming successful.[143]

[141] UNEP, Regional Seas, Report and Studies No. l4, *Development, Environment in the Wider Caribbean Region: a synthesis*. 1982

[142] Action Plan for the Caribbean Environment Programme a Framework for Sustainable Development United Nations Environment Programme Caribbean Regional Coordinating Unit

[143] Regional Coordinating Unit of the United Nations Environment Programme Caribbean Environment Programme. Second Edition, 2002

The Caribbean Action Plan included activities such as marine pollution evaluation and control, coastal impact evaluation, fishing studies, watershed management, natural hazard effects evaluation, energy accounting system studies, coastal urbanization, capacity development, and training.

The Wider Caribbean Action Plan resulted in the 1983 acceptance of the Cartagena Convention in Cartagena de Indias, Colombia. The treaty, generally known as the Cartagena Convention, formally entered into force in 1986.
The Cartagena Convention is the sole regionally based legislative framework available to WCR Member States for their joint and/or solo efforts aimed at protecting and developing marine resources[144].

The Cartagena Convention has been signed by 26 United Nations Member States in the WCR Region, which include Antigua and Barbuda, the Bahamas, Barbados, Belize, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, France, Grenada, Guatemala, Guyana, Honduras, Jamaica, Mexico, Netherlands, Nicaragua, Panama, St. Kitts and Nevis, Saint Lucia, St.Vincent and the Grenadines, Trinidad and Tobago, United Kingdom, United States of America and Venezuela.[145]

The Convention is intended to promote synchronized and balanced growth while minimizing environmental harm by using "all appropriate measures to prevent, reduce, and control pollution."[146]

The Convention strives to create a venue for a sharing of information, with the goal that it can grow from a simple declaration of policy principles to an operational agreement.[147]

[144] United Nations.Convention for theProtection, the Development of the Marine Environment of the Wider Caribbean Region—Protocol Concerning Co-operation in Combatting Oil Spills in the Wider Caribbean Region—United Nations Environment Programme (UNEP). P
[145] UNEP, Who we are: Main Facts about Cartagena Convention, available at: https://www.unep.org/cep/who-we-are/cartagena-convention
[146] Organization for Economic Cooperation and Development Environment Committee, Application of Information and Consultation Practices for Preventing Transfrontier Pollution. Transfrontier Pollution and the Role of the States, 73 (1981)
[147] UNEP, *The State of Marine Pollution in the Wider Caribbean* 14, U.N. D September 16, 1980

Despite most of the Convention provides for institutional structures, its principal objective is to act as a foundation for following agreements that are more specialized in character.[148] These specific agreements are obtained through a succession of protocols, bilateral and international treaties.

As the primary regional legal framework for the preservation and growth of the WCR, the Cartagena Convention and its Protocols concerning land-based sources of pollution (LBS), oil spills, and specially protected areas and wildlife (SPAW), supply a common base upon which can establish an effective regime with regard to enhanced control over marine and coastal resources.[149]

The Cartagena Convention Protocols are supplied by a number of Regional Activity Centres(RAC). RAC, is a financially independent international or regional organization, or regional or national organization with a regional focus, established by the Cartagena Convention's Contracting Parties to manage or carry out particular technical tasks and operations in support of the Convention, its Protocols, or any future Protocols. RACs provide planned regional and technical support to Contracting Parties in meeting their commitments under the Cartagena Convention and its Protocols.

They contribute to the sharing of information, the distribution of technical skills, and the creation and implementation of program and project activities. The RAC's goal is to improve the delivery of activities in support of the Convention and its Protocols by decentralizing work and bringing in human and financial resources from a member country, another UN or international organization, a non-governmental organization, or additional contributors.[150]

The Cartagena Convention is a substantial agreement that protects and develops the maritime environment. In compared to the Helsinki Convention, the Convention may have fewer provisions, but as previously indicated, it has three more detailed Protocols. in addition to the broad responsibilities and institutional arrangements, the Convention lists the sources of pollution identified by the Contracting Parties as requiring regional and national action for

[148] Bundschuh. (n 137)
[149] Regional Coordinating Unit of the United Nations Environment Programme Caribbean Environment Programme. Second Edition, 2002
[150] UNEP, Who we are: Main Facts about Regional Activities Center, available at: https://www.unep.org/cep/who-we-are/regional-activity-centres

management: pollution from ships, dumping, land-based sources, and sea-bed activities, as well as airborne pollution. The Convention also specifies environmental management challenges that require collaborative efforts, such as particularly protected areas and animals, emergency response, environmental impact assessment, and scientific and technological cooperation.

2.3 General overview of the Convention

First it is important to define the Convention area that is showed in Figure 2 which according to the paragraph 1 of article 2 means "the marine environment of the Gulf of Mexico, the Caribbean Sea and the areas of the Atlantic Ocean adjacent thereto, south of 30 deg. north latitude and within 200 nautical miles of the Atlantic coasts of the States referred to in article 25 of the Convention"[151]. And it is also crucial to note that Cartagena convention does not include internal waters into this specific area.[152]

The Convention focuses on such types of pollution as pollution from ships[153], pollution caused by dumping[154], pollution from land based sources[155], airborne pollution[156] and pollution from sea-bed activities[157].

[151] 1983 Cartagena Convention, Article 2
[152] 1983 Cartagena Convention , Article 1(2)
[153] 1983 Cartagena Convention , Article 5
[154] 1983 Cartagena Convention , Article 6
[155] 1983 Cartagena Convention , Article 7
[156] 1983 Cartagena Convention , Article 9
[157] 1983 Cartagena Convention , Article 8

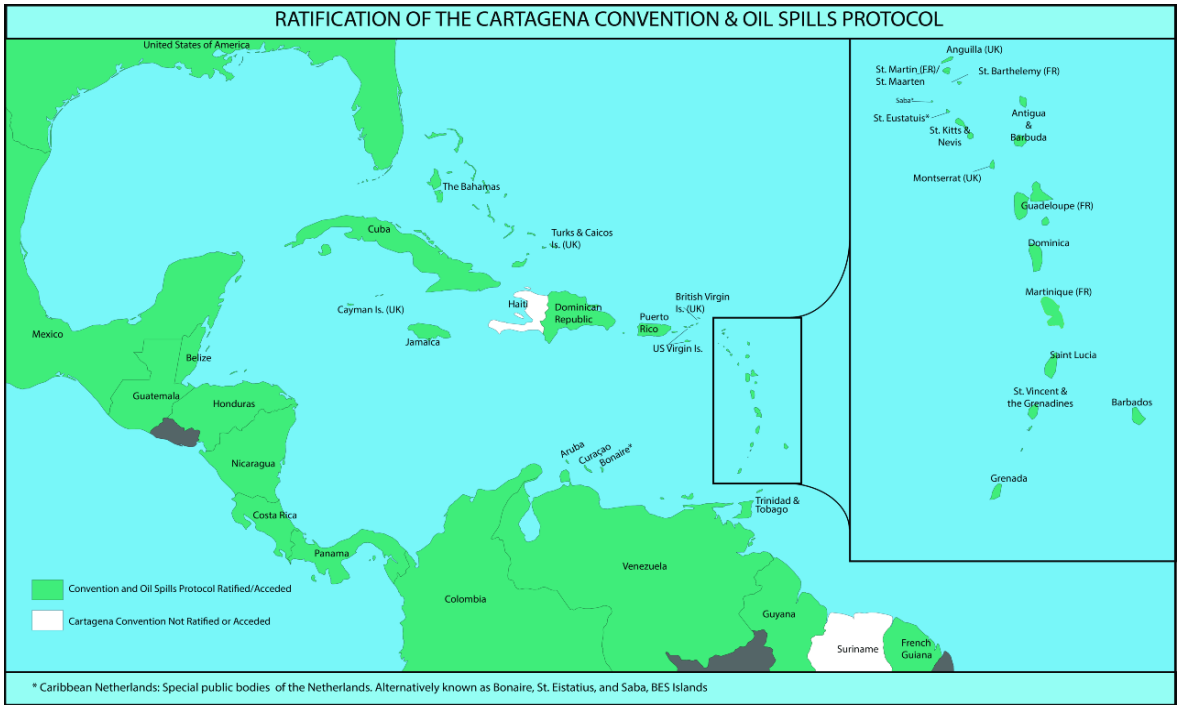

Figure 1: Area of Application of the Cartagena Convention 1983 and Oil Spills Protocol[158]

According to Convention should establish specially protected areas, in order to protect extremely fragile marine ecosystems, and its habitat.[159]

The Contracting Parties need to collaborate in order to develop suitable regulations and procedures in the areas of accountability and remuneration for damage caused by pollution in the Convention area that are consistent with international law.[160]

The Convention mainly serves as an umbrella convention that lays forth fundamental principles of law and acts as a framework for more comprehensive agreements tackling specific issue areas by creating protocols to the Convention.[161]

As it was stated before Convention has 3 main protocols and Annex on arbitration. The next sections will separately focus on those protocols.

[158] UNEP, Oil Spills Protocol: Cartagena Convention's area map available at: https://www.unep.org/cep/oil-spills-protocol

[159] 1983 Cartagena Convention , Article 10

[160] 1983 Cartagena Convention , Article 14

[161] James D. Spitzer. 1985. Developing Marine Pollution Response Capability in the Wider Caribbean Region. *International Oil Spill Conference Proceedings*, 127-134

2.3.1 Land-based protocol

Land-based marine pollution is complicated, population-dependent, costly to treat, and poses a hazard to both human and marine ecosystem well-being. It is one of the most challenging marine problems to face and properly handle.[162]

The collaboration of governments in avoiding and combating land-based pollution is of growing significance since land-based sources (industrial, municipal, and agricultural) generate about 80 percent of marine pollution on a worldwide scale.[163]

Over the years, the authors have divided land-based contaminants into many groups.[164] These pollutants are mostly emitted by cities as household and industrial debris, but they are also discharged by aquaculture facilities and other sorts of activities.[165]

Other developing sectors in the Caribbean, worsen the situation by dumping their waste straight into the ocean and adjacent ecosystems. Such discharges comprise not only organic materials and nitrogenous substances generated by the metabolism of microorganisms but also dissolved and suspended particles, significant doses of antibiotics employed in intensive agriculture.[166]

It is believed that fewer than 20% of waste gets cleansed in the Caribbean Sea region[167], with the majority of it running unprocessed into rivers and oceans[168].

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[162] Impacts of Land-based Marine Pollution on Ecosystems in the Caribbean Sea Implications for the EBM Approach in the Caribbean Diego L. Gil-Agudelo1 and Peter G. Wells

[163] Barbara Kwiatkowska (1984) Marine pollution from land-based sources: Current problems and prospects, *Ocean Development & International Law*, 14:3, 315-335,

[164] Islam, S. and Tanaka, M. 2004. Impacts of pollution on coastal and marine ecosystems including coastal and marine fisheries and approach for management: a review and synthesis. *Marine Pollution Bulletin* 48: 624-649.

[165] Loya, Y., H. Lubinevsky, M. Rosenfeld and E. Kramarsky-Winter 2004. Nutrient enrichment caused by in situ fish farm at Eilat, Red Sea, is detrimental to coral reproduction. *Marine Pollution Bulletin* 49 (4): 344-353.

[166] Gautier, D. 2002. The Integration of Mangrove and Shrimp Farming: A Case Study on the Caribbean Coast of Colombia. Report prepared under the World Bank, NACA, WWF and FAO Consortium Program on Shrimp Farming and the Environment. Work in Progress for Public Discussion. Published by the Consortium. 26 .

[167] Idelovitch, E. and K. Ringskog 1997. Wastewater Treatment in Latin America. Old and New Options. Series: Directions in development. *The World Bank, Washington D.C*. 68 .

[168] Martinelli, L.A, R.W. Howarth, E. Cuevas, S. Filoso, A.T. Austin, L.onoso, V. Huszar, D. Keeney, L.L. Lara, C. Llerena, G. Mcissac, E. Medina, J. Ortiz-Zayas, D. Scavia, D.W. Schindler, D. Soto and A. Townsend,

Fernandez[169] conducted a literature evaluation of many Caribbean pollutants, focusing on heavy metals. Heavy metals are commonly found around cities, harbors, and industrial activities throughout the region. Traces of several of these pollutants have been identified in distant locations around the region, with unclear consequences for these ecosystems. Olivero-Verbel[170] , amid others, demonstrated how pollutants may flow through and concentrate in food systems, including people, more than 30 years after the initial source of poisoning has been closed.

Deforestation and other poor land use practices can cause higher sediment charges into coastal areas, which can have serious consequences for shallow water creatures and ecosystems.[171]

Other forms of pollution exist in the region, including litter (plastic waste) and temperature contamination. Litter, primarily made of plastic, obtains on beaches and shallow seas and can harm turtles, birds, and mammals.[172] It can also harm fish along with other marine life by entanglement, suffocation, and consumption.

Aside from their effects on natural habitats, contaminants may have a significant influence on human activities and economy. The contamination of coastal seas, particularly by sewage, poses a direct hazard to human health. Untreated wastewater introduces a large number of

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2006. Sources of reactive nitrogen affecting ecosystems in Latin America and the Caribbean: current trends and future perspectives. *Biogeochemistry*. Vol. 79, 3-24

[169] Fernandez, A., A. Singh and R. Jaffé 2007. A literature review on trace metals and organic compounds of anthropogenic origin in the Wider Caribbean Region. *Marine Pollution Bulletin.* Vol.54, 1681-1691.

[170] Olivero-Verbel, J., B. Johnson-Restrepo, R. Baldiris-Avila, J. Güette-Fernández, E. Magallanes-Carreazo, L. Vanegas-Ramírez and N. Kunihiko 2008. Human and crab exposure to mercury in the Caribbean coastal shoreline of Colombia: Impact from an abandoned chlor-alkali plant. *Environment International*. Vol 34, 476-482

[171] GESAMP Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection. *Protecting the Oceans from Land-based Activities: Land-based Sources and Activities Affecting the Quality and Uses of the Marine, Coastal and Associated Freshwater Environment.* GESAMP Reports and Studies No. 71. Rome: FAO. 2001a

[172] GESAMP (Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection. *A Sea of Troubles*. GESAMP Reports and Studies No. 70. Rome: FAO. 2001b

microorganisms into the maritime environment. These microbes can contaminate food products, primarily fish and shellfish, triggering epidemics among human populations.[173]

While the development of the Cartagena Convention, it was anticipated that further protocols would be drafted, such as those sought by Article 7 of the convention, which controls pollution from land-based sources. Article 7 requires the Contracting Parties to take any necessary steps to avoid, minimize, and regulate pollution of the Convention area resulting from coastal disposal or emissions originating from rivers, lagoons, coastal companies, outfall constructions, or any other sources.[174]

Following view of the overall structure of Article 7 and the growing problem of marine pollution in the WCR, particularly resulting from land-based sources, which are predicted to account for up to 70% of all marine pollution, the need has been stated for the formation of a protocol to the convention regulating the land-based sources of marine pollution.[175]

The LBS Protocol was adopted in 1999 and entered into force in 2010. The Parties to the LBS Protocol are Antigua and Barbuda, the Bahamas, Barbados, Belize, Costa Rica, Dominican Republic, France, Grenada, Guyana, Honduras, Jamaica, Panama, Saint Lucia, Trinidad and Tobago and United States of America.[176]

The Protocol is the most substantial agreement of its type. It involves regional emission regulations for household wastewater (sewage), as well as the establishment of strategies to manage agricultural non-point causes of pollution.[177]

According to Protocol the term "land-based sources and activities" refers to those that pollute the Convention area through coastal disposal or releases from rivers, waterways, coastal

[173] Levins, R., Awerbuch, T., Brinkmann, U., Eckardt, I., Epstein, P., Makhoul, N., & Wilson, M. E. 1994. The emergence of new diseases. *American Scientist*, Vol. *82*(1), 52-60.
[174] 1983 Cartagena Convention , Article 7
[175] Land-based pollution protocol to Cartagena Convention UNEP Regional Coordinating Unit of the Caribbean Environment Programme
[176] UNEP, Who we are, Cartagena Convention: Parties to the LBS Protocol available at: https://www.unep.org/cep/who-we-are/cartagena-convention
[177] *Ibid*

organizations, outfall structures, or other sources on a Contracting Party's territory, which includes atmospheric pollution coming from sources on its territory.[178]

Every Contracting Party must, in compliance with its regulations, the terms of this Protocol, and international law, take suitable steps to prevent, minimize, and regulate pollution of the Convention area from land-based sources and operations by employing for this purpose the best practicable means at its disposal and according to its capacities.[179]

They must also create and implement suitable strategies, programs, and measurements. In such strategies, programmes, and measures, each Contracting Party must implement efficient ways of minimizing, preventing, or managing pollution of the Convention area from land-based sources and operations on its territory, which includes the application of the most appropriate technology and organizational strategies such as integrated coastal area management.[180]

Finally, they shall, if necessary, collaborate on creating sub-regional and regional plans, programs, and measures to avoid, mitigate, and regulate pollution of the Convention area from land-based sources and activities, taking into account their laws and their individual social, economic, and environmental characteristics, as well as the characteristics of a specific area or sub-region.[181]

Protocol also states, that Contracting Parties should collaborate, bilaterally or, where appropriate, on a sub-regional, regional, or international basis, or via relevant organizations, in the reduction, prevention, and management of contamination of the Convention area from land-based pollutants and operations.[182]

Following implementing the responsibilities stated in this Protocol, the Parties must encourage cooperation in such sectors, as surveillance operations carried out in compliance with Article VI, studies on the chemistry, fate, transport, and consequences of pollutants, exchange of scientific and technical knowledge, recognition and adoption of the most

[178] LBS Protocol, Article 1(d)
[179] LBS Protocol , Article 3(1)
[180] LBS Protocol , Article 3(2)
[181] LBS Protocol , Article 3(3)
[182] LBS Protocol , Article 5(1)

appropriate technologies[183] helpful to the particular source categories, operations, and pollutants listed in Annex I of this Protocol.[184]

The Contracting Parties must establish and implement environmental impact assessment instructions, as well as evaluate and amend them as needed. They should use these guidelines if there is a sufficient reasons to believe that a specific land-based activity will cause a pollution or a harmful effect.[185]

2.3.2 Oil spills protocol

Oil is frequently the most noticeable contaminant in the sea. Similarly, oil tanker incidents often turn out to be the single most major source of maritime contamination. [186] On an international level, the volume of oil accessing the marine environment as a result of accidents may be minor, but on a regional or local scale, the proportional impact of such an accident may be significantly larger.[187]

Oil leaks in semi-closed systems have the potential to compound the disastrous consequences, which is a serious issue. One such region is the semi-enclosed Caribbean Sea.[188]The Caribbean Sea is rated as one of the primary transit zones in the globe, with more than 90,000 port stops every year.[189]

This sea encounters a lot of interregional, intraregional, and worldwide transportation, which transports diverse products from ports and factories. The primary crude oil producing nations in the Caribbean Sea are Colombia, Mexico, Trinidad & Tobago, and Venezuela.[190] Aside

[183] LBS Protocol , Article 1(e)
[184] LBS Protocol , Article 5(2)
[185] LBS Protocol , Article 7
[186] Peet, G. 1994. International co-operation to prevent oil spills at sea: not quite the success it should be. *Green Globe Yearbook*, 41-54.

[187] *Ibid*
[188] Singh, A. 2008. Governance in the Caribbean Sea: Implications for sustainable development. *United Nations–Nippon Foundation Fellowship Programme*, 122.
[189] Girvan, N. 2002. The Caribbean Sea is special. *Association of Caribbean States*.
[190] OPEC, Annual Statistical Bulletin. 2012

from commercial transportation, the Caribbean Sea performs an important role in cruise ship tourism.[191]

Overall, the region is recognized as the most popular destination in the globe.[192]
This vast market, along with the large amount of cruise ships, has a chance to contribute to unintentional oil leaks, aggravating the oil pollution problem caused by other forms of shipping operations.

There might be various reasons why ships dump oil into the maritime environment. Ignorance of the consequences of doing so might be one of them, however it is difficult to see how any mariner could be uninformed of the ecological and economic devastation caused by oil at this time. A false feeling of economy is more likely to be a key factor in opting to release oil at sea, or in setting conditions in which catastrophic mishaps culminating in massive oil spills can take place.This incorrect sense of economics translates into the misconception that it is cheaper to dump oil at sea than to get rid of it properly; it transfers into the idea that it is more lucrative to run a ship at the lowest probable price of maintenance and personnel.[193]

Recognizing the scale of the problem, during the signing of the Convention itself, countries agreed that there was also a need to create an agreement that would focus on the issue of oil pollution itself.

Oil Spills Protocol was approved with the Cartagena Convention in 1983. The Parties to this Protocol are the same States as those to the Cartagena Convention in total. The Protocol's aims are to increase national and regional readiness and response capability of the nations and territories of the area, enable cooperation and mutual help in instances of disaster, and prevent and control significant oil spill occurrences.[194]

[191] Singh, A. 2005. SIDS, Sustainability and the Caribbean Sea. *SEOES Plymouth PhD, 269*
[192] Ocean Conservancy, 2002. Cruise Control: A Report on How Cruise Ships Affect the Marine Environment. *The Ocean Conservancy, Washington DC*, 64.
[193] Peet, G. (n 186)

[194] UNEP, Oil Spills Protocol: Main facts available at:
https://www.unep.org/cep/oil-spills-protocol

According to the Protocol "Oil spill incident" indicates a discharge, or a major threat of a discharge, of oil, nonetheless produced, of such scale that demands an immediate reaction or other urgent response for the goal of reducing its consequences or removing the threat.[195]

This Protocol extends to oil spill occurrences that have resulted in, or offer a major danger of, contamination to the marine and coastal environment of the WCR, or that negatively impact the relevant interests of one or more of the Contracting Parties.[196]

The Contracting Parties must collaborate, to the extent of their capacities, in implementing all necessary preventive and restoration steps to safeguard the marine and coastal environment of the WCR, especially the coastal areas of the region's islands, from oil spill accidents. They must, build and maintain, or guarantee that there is a functioning of, methods of reacting to oil spill occurrences, and shall make every effort to limit the risk thereof. Such methods shall include the enactment, where appropriate, of applicable legislation, the formulation of emergency plans, the recognition and creation of the capability to react to an oil spill event, and the establishment of an authority in charge of the execution of this Protocol.[197]

Every Contracting Party must develop suitable rules to guarantee that information on oil spill occurrences is notified as soon as practicable, and should take the following steps:

a) Expect its designated officials, owners of ships flying its flag, and individuals in control of offshore establishments functioning under its jurisdiction to notify to it any oil spill occurrence including their ships or facilities;

b) Request that owners of all ships and pilots of all aircraft that operate within proximity of its coasts update to it any oil spill event regarding which they are aware of.[198]

When a Contracting Party receives a report of an oil leak incident, it must promptly notify any other Contracting Parties whose interests are likely to be affected, as well as the flag State of any ship engaged in the incident. The Contracting Party shall additionally notify the appropriate international bodies. Moreover, as soon as possible, it should notify such

[195] Oil Spills Protocol, Article 1(4)
[196] Oil Spills Protocol , Article 2
[197] Oil Spills Protocol, Article 3
[198] Oil Spills Protocol , Article 5(1)

Contracting Parties and relevant international organizations of the steps it has taken to prevent or decrease pollution or the danger thereof.[199]

Each Party must offer support, within its powers, to other Contracting Parties that seek help in response to an oil spill event within the framework of cooperative emergency action agreed upon by or between the requesting and supporting Contracting Parties.[200]

Each Contracting Party must also, given its abilities, implement specified procedures to respond to an oil spill. Those steps are:

a) to conduct an initial evaluation of the incident, which includes the kind and scope of existing or probable pollution outcomes;

b) to immediately share data regarding the incident;

c) to determine its capacity to take effective measures to react to the incident and any support that could potentially be required;

d) to engage as needed with any additional Contracting Parties associated in the process of identifying the response that is required;

e) take the appropriate actions to prevent, lessen, or eliminate the consequences of the occurrence, that include monitoring the situation.[201]

The Protocol seeks to decrease the chance of a standstill by providing bureaucratic structures to shield joint response processes from any political influence that may hinder the effective resolution of oil spills.[202]

2.3.3 Protocol concerning specially protected areas and wildlife

[199] *Ibid* paragraph 2
[200] Oil Spills Protocol , Article 6
[201] Oil Spills Protocol , Article 7
[202] Bundschuh (n 137)

To fully understand the process of creation and implementation of legal accords such as the SPAW Protocol, it is necessary to grasp the variety and diversity of the WCR, as well as the Region's various environmental and developmental concerns.[203]

It is a large maritime region with significant strategic relevance to the global economy that is striving to accomplish its own economic development goals. The region has some of the world's most important physical and genetic diversity, and the nations differ greatly in terms of population size and resource base. A large amount of the economic activity in the Region is related to the marine and coastal assets.[204]

The region offers a high amount of biodiversity, even for a tropical location. It is residence to more than ten percent of the world's unique bird regions and includes nations among the most prosperous in biodiversity: Colombia, Mexico, and Costa Rica.[205]

The Cartagena Convention establishes fundamental responsibilities for the Parties in many areas of activity, such as pollution from ships, waste dumping in the ocean, pollution from land-based sources and sea-bed operations airborne pollution, particularly protected areas, crisis cooperation, environmental impact assessment, scientific and technological collaboration, and dispute settlement.

Article 10 of the Cartagena Convention obliges Parties to adopt "all appropriate measures" to safeguard and maintain exclusive or delicate ecosystems along with the habitats of exhausted endangered or vulnerable species and, to this purpose, create specially protected areas.[206] Which consequently led to the adoption by the State Parties of the SPAW Protocol.

The SPAW Protocol, implemented in 1990, is a regional agreement for the conservation and responsible utilization of coastal and marine biodiversity in the WCR. The State Parties to the Protocol include the Bahamas, Barbados, Belize, Colombia, Cuba, Dominican Republic,

[203] Vanzella-Khouri, A. 1998. Implementation of the protocol concerning specially protected areas and wildlife (SPAW) in the wider Caribbean region. *The University of Miami Inter-American Law Review*, 53-83.
[204] *Ibid*
[205] UNEP, CEP Technical Report. *Status of Protected Area Systems in the Wider Caribbean*, 1996
[206] Cartagena Convention, Article 10

France, Grenada, Guyana, Honduras, Netherlands, Nicaragua, Panama, Saint Lucia, St.Vincent and the Grenadines, Trinidad and Tobago, United States of America and Venezuela.[207]

Main focuses of this Protocol are marine protected areas and wildlife, marine and coastal ecosystems, threatened and endangered species, guidelines for protected areas and species.[208]

Overall the specific objectives of the SPAW Protocol are:

• to develop designated areas in the maritime environment and related ecosystems in order to conserve the natural resources of the WCR, as well as to protect unique and vulnerable ecosystems and habitats of endangered and exposed species;

• to conserve threatened and vulnerable species, their habitat, and the surrounding ecosystems.; and

• to encourage responsible preservation and usage of fauna and flora to avoid their endangerment.[209]

According to the Protocol, each Party must, when required, create designated areas within regions over which it performs sovereignty, or sovereign rights or jurisdiction, with the goal of maintaining the natural resources of the WCR, and promoting ecologically conscious and proper use, awareness, and enjoyment of these territories, in compliance with the purposes and distinctive features of each of them.[210]

Each Party to this Protocol should, in compliance with its laws and rules, as well as the requirements of the Protocol, take the appropriate steps to safeguard, maintain, and manage in a sustainable manner the areas of the WCR on over which it has sovereignty. Each Party must regulate and, where required, ban activities that have a negative impact on these regions and

[207] UNEP, Who we are, Cartagena Convention: Parties to SPAW Protocol available at: https://www.unep.org/cep/who-we-are/cartagena-convention
[208] UNEP, What we do, SPAW Protocol: Main facts available at: https://www.unep.org/cep/what-we-do/specially-protected-areas-and-wildlife-spaw
[209] Vanzella-Khouri, A. (n 203)

[210] SPAW Protocol, Article 4(1)

species. Each Party will make every effort to cooperate in the implementation of these regulations without jeopardizing the sovereignty, sovereign rights, or jurisdiction of other parties. Any steps taken by such Party to implement or seek to enforce the measures stipulated according to this Protocol will be confined to those within its authority and shall be in compliance with international law.[211]

Parties, implementing into consideration the characteristics of each protected area within which it has sovereignty, or sovereign rights or jurisdiction, shall, in accordance with its national laws and regulations and international law, gradually implement such actions as are essential and practical to achieve the goals that motivated the establishment of the protection area.[212]

They must identify endangered or vulnerable species of flora and wildlife in regions over which it has sovereignty, sovereign powers, or authority, and safeguard such species, and shall control and prohibit actions that have a negative impact on such species or their habitats and ecosystems in accordance with its laws and regulations, as well as carry out species rehabilitation, management, planning, and other efforts to ensure the species' existence. In accordance with its legal system, each Party must likewise take adequate measures to protect species from becoming endangered or vulnerable. Given the exception of protected species of flora and their parts and products, each Party, in accordance with its regulations and laws, shall control, and restrict all forms of damage and disruption including the gathering , cutting,, possession, or trade for profit in such species.[213]

The SPAW Protocol is an unique mechanism under the Cartagena Convention that establishes general aims, concepts, and directions for Parties while encouraging them to seek more specific protocols and accords. However, the Protocol goes outside of Article 10 of the Cartagena Convention and includes specific provisions tackling the creation of protected areas and buffer zones for in place preservation of wildlife, both national and regional partnerships for the protection of wild flora and fauna, the emergence of non-native or

[211] SPAW Protocol , Article 3
[212] SPAW Protocol , Article 5
[213] SPAW Protocol , Article 10

genetically modified species, environmental impact assessment, educational programs, and other matters.[214]

By implementing the SPAW Protocol, it is predicted that the biological variety and critical ecological services of the Region would be managed for the advantage of future generations.[215]

The focus of this chapter was to highlight the main problems in the Caribbean region and to analyze the principal legislation. The first part of the chapter revealed the key issues in the region, followed by the second part describing the process and reasons for the creation of the Convention. Whereas the last part concentrated more on the specific elements of the Convention. To summarize, it can be concluded that compared to the Helsinki Convention, the Cartagena Convention itself may appear to be relatively less impactful as it covers fewer clauses. But it was shown that it has more specialized protocols, which cover the problems of the region as well.

[214] UNEP, Report of the Meeting, Workshop to Assist with the Formulation of National Legislation to Implement the SPAW Protocol in the Common Law Countries of the Wider Caribbean Region, 13/5 (1993)

[215] Vanzella-Khouri, A.(n 203)

III. ANALYSIS OF THE STRENGTH AND WEAKNESSES OF BOTH LEGAL REGIMES

This chapter, based on the important facts mentioned in previous chapters regarding both conventions, will highlight advantages and disadvantages of both. Unlike the previous chapters, there will not be a detailed description of the data, only the highlighting of specific points. In addition to highlighting the pros and cons, this chapter will also compare the specifics of the conventions with each other, thus helping to investigate the topic in more detail. And the most important feature of this chapter is that, besides comparing the data already available, it will also investigate how all this data can be used to create a more effective regional instrument to regulate marine pollution.

3.1. Advantages and limitations of the Helsinki Convention.

Previously, the first chapter dealt with the Baltic Sea Region itself and described the history of the Helsinki Convention and its most important points. In this part, based on the previous analysis, the most important advantages and disadvantages of the Helsinki Convention and the main points that distinguish it from the Cartagena Convention will be identified.

3.1.1. General provisions addressed by Convention

It is worth starting from the fact that the Helsinki Convention 1992 is a comprehensive regional instrument that includes a sufficient number of provisions concerning the protection and preservation of the maritime space of the Baltic Sea region, and further elaborates on some of the facts in its Annexes. For the Baltic Sea region, the Helsinki agreement was the first framework treaty to embrace all elements of the marine environment and its preservation, and it still stands out in its comprehensiveness today.[216]

[216] Kern, K. 2011. Governance for sustainable development in the Baltic Sea region. *Journal of Baltic Studies*, Vol. *42*(1), 21-35.

But despite all the regulations that this Convention covers, it has certain both advantages and disadvantages.

In many ways, the 1992 Helsinki Convention improves on its predecessor from 1974. The HELCOM's conclusions and experiences, as well as new eco-political developments since then, are taken into account on a wide scale, eliminating the original's weaknesses. One of the primary benefits is the integration of internal waters and the spread of preventative measures across the catchment area. Environmental protection requirements for offshore industries have been made more solid, which must be considered as a significant improvement.[217]

The 1992 Baltic Sea Convention addresses a wide range of operations and pollution sources, that include all forms of industry, agriculture, and forest management, as well as sewage treatment facilities, various boats, offshore setups, waste disposal, and incineration. Given the large number of military setups in the Baltic Sea catchment area, as well as the environmental threats posed by such installations, the Convention provides a potentially useful, but previously unutilized, instrument for environmental security and control over such installations and activities in the Baltic Sea Area.[218]

Furthermore, while not immediately applicable to warships, military aircraft, and other ships and aircraft employed for governmental and private uses, the parties must guarantee that such ships and aircraft operate in accordance with the Convention.[219]

The introduction of a law for nature conservation and biodiversity promotes efforts to adopt a broader view of environmental preservation. Furthermore, the mandate to collect data, disclose, and share information would increase transparency for both the Commission and the general population, as well as enhance the foundation on which results are formed.

[217] Ehlers, P. 1994. The Baltic Sea area: convention on the protection of the marine environment of the Baltic Sea area (Helsinki Convention) of 1974 and the revised convention of 1992. *Marine pollution bulletin*, Vol. *29*, 617-621.
[218] Ebbesson .(n 92)

[219] *Ibid*

Despite the foregoing, it is believed that several aspects warrant consideration. In addition to broad principles and criteria, identifying particular land-based causes of pollution and implementing related rules would have increased the Convention's comprehensiveness. For example, more specific laws are required to ensure the decrease of airborne inputs, which are a major cause of marine pollution. Agriculture is a major source of diffuse emissions, and more comprehensive mitigation measures would have been advantageous. Fishing is another environmentally sensitive activity. Overfishing and other destructive fishing tactics have a significant negative impact on the marine ecosystem. Therefore, it would have been appropriate to implement preventive measures for fisheries.[220]

3.1.2. Main benefits and disadvantages of precautionary principle, BAT and BEP

To a certain extent, the 1992 Baltic Convention makes a difference by establishing fundamental principles of substance that strengthen state legal requirements and/or limit the opportunity for self-serving interpretations. It excludes several concepts of international environmental law and policy developed in the 1980s and early 1990s (e.g., public involvement, environmental impact assessment, and compliance control), but it does prescribe a few principles that represent the theories of the 1980s and early 1990s.[221]

The precautionary principle is one of the notions created in the 1980s that is now legally obligatory under the 1992 Convention. Despite some confusion over proportionality, or how to weigh risks against the necessity for preventative actions, the precautionary principle is an essential component of not only policy regarding the environment, but also environmental law. The idea applies, for example, when permit applications are reviewed, preventative actions are sought by supervisory agencies, and a corporation is taken to court by members of the public or, if permitted by the legal system, by public officials. Even though the precautionary principle is used in light of the Convention's goal, a strict interpretation of the criteria appears to preclude structures that impact water flow, unless they also transfer chemicals or energy into the environment. This weakness is not accounted for by the need to

[220] Ehlers (n 217)
[221] Ebbesson (n 92)

use the precautionary principle in connection with two other key concepts of the Convention, namely the use of "best available technology" (BAT) and "best environmental practice".[222]

The concept is based on the idea that BAT would evolve throughout time in response to technology improvements, economic and social variables, and changes in scientific knowledge and understanding." While the BAT requirement establishes a baseline for actions to be conducted, this idea also allows for some balancing against competing interests. When evaluating whether BAT is appropriate for a certain circumstance, several specified elements should be taken into account. One of the most important considerations is the technology's "economic feasibility." When establishing the degree of BAT, the greatest available technology is used wherever it exists; no geographical limitations are assumed. The second question is whether the offered technology is commercially feasible. The 1992 Convention defines BAT as allowing for the use of a cost-benefit analysis. However, the Convention offers no direction on how to determine what is practical. The definition is vague on whether this aspect refers simply to the economy of the economic branch in question or the possibility that it also includes concerns for the sensitivity of the environment.[223]

While BAT is specifically meant for, but not restricted to, point sources, the notion of "best environmental practice" includes a larger variety of sources.[224]

As with BAT, some BEP requirements are important to the legal status of the subjects under the parties' control. Even yet, BEP cannot be used to determine what should be developed or avoided in the parties' national systems, but it may be used to identify problems to explore in order to arrive at the best possible compromise. Furthermore, unless HELCOM takes an active role in establishing the norm of BEP, each party retains discretion in determining the degree of aspiration for BEP for itself.[225]

Regardless, a genuine and relevant topic in terms of environmental protection is: What happens if even the finest possible technology or environmental practice does considerable

[222] Jonas Ebbesson, 1996, Compatibility of International and National Environmental Law, *Springer*, 19-23
[223] *Ibid*
[224] HELCOM Recommendation 17(1), BSEP No. 62, 1996.
[225] Ebbesson (n 92)

harm to the environment? Allowing any action as long as BAT is used risks overlooking the environment's sensitivity. This would undoubtedly go opposed to the goal of restoring ecology and balance.[226]

Nations should consider the fact of technology and practice being outdated throughout years. Thus they must deal with standards that evolve with time, and sources of the problem.

The recent innovations in Baltic Sea protection, which are being carried out with the cooperation of a wide range of financial and other organizations, provide grounds for careful confidence. It is worth noting that 25% of the necessary funds were granted within the first three years of the 20-year programme's execution. However, improvement is not fairly dispersed across the region. Certain locations, like as St Petersburg and Kaliningrad, as well as the upper portions of the Daugava, Nemunas, Narva, Odra, and Vistula river basins, do not have effective planning and finance.[227]

It is determined that the new Helsinki Convention is an effective legal tool that allows for active protective actions. Its success depends on how quickly the relevant steps are completed. One of the Commission's primary responsibilities will be to further up its oversight of the Convention's implementation. The reporting duties of the contractual parties will allow the Commission to do so. Its efficacy would undoubtedly have enhanced if it had inspection and control powers, but this appears to be irreconcilable with the conceptions of sovereignty held by member nations.
However, the Convention's value as a modern, progressive legal instrument that may enhance the preservation of the maritime environment has not decreased.[228]

Overall, from the analysis it can be observed that main advantages of the Helsinki Convention 1992 are: precautionary principle, PPP, the fact of including the pleasure craft, BEP and BAT. While the main problems are the lack of enforcement ant investment.

[226] *Ibid*
[227] Fitzmaurice (n 85)

[228] Ehlers (n 217)

3.2. Advantages and limitations of the Cartagena Convention.

This part will be similar to the previous one, in that the Cartagena Convention will be discussed in the same way. Based on the preceding analysis, the most important benefits and disadvantages of this Convention will be identified, as well as the main points that distinguish it from the Helsinki Convention.

UNEP regularly ranks the Cartagena Convention as one of the most active, visible, and successful legal instruments within the regional seas initiative. While the Convention text is primarily concerned with the control of marine pollution from all sources, the Preamble recognizes, among other things, the Contracting Parties' obligation to protect the marine environment of the WCR for the well-being and enjoyment of future generations as well as present, and they believe the protection of marine ecosystems to be one of their key goals. [229]

It is vital to note that this Convention is an umbrella convention. This is one of the main distinctions between the Conventions. The Helsinki Convention, as previously said, is a comprehensive regional legislation that incorporates a significant number of provisions pertaining to the protection and preservation of the maritime environment. In contrast, the Cartagena Convention has just a few general provisions in its primary body and concentrates on specialized protocols, placing it in the umbrella category.

According to the preceding chapters, the key points affecting the procedures are listed first. The fundamental reason for this is that, in comparison to the Helsinki Convention, the key provisions do not go into detail about issues like the precautionary principle or the PPP. This is one of the convention's downsides. As can be seen from the preceding chapters, the Convention contains broad sections on pollution from ships, land-based pollution, airborne pollution, pollution from dumping, and pollution from seabed operations, which have parallels with the Helsinki Convention.

[229] Lausche, B. 2008. Wider Caribbean Region—A pivotal time to strengthen regional instruments for biodiversity conservation. *The International Journal of Marine and Coastal Law*, Vol.*23*(3), 499-530.

The mere fact that one of the protocols is dedicated to land-based pollution control and that the Helsinki Convention has one of its annexes dedicated to it can also be interpreted as a resemblance, implying that both areas place a high priority on this issue. The next major distinction is that one of the Cartagena protocols is primarily focused on pollution prevention from oil spills.
The following sections will focus on the protocols' benefits and downsides.

3.2.1. Advantages and flaws of SPAW Protocol

It is worth mentioning that the SPAW Protocol has certain modifications that reflect contemporary biodiversity and conservation ideas.[230] Furthermore, the Protocol has a broader scope than previous similar Protocols, extending landward up to the fresh water limit of water courses that empty into coastal waters, thereby protecting watersheds, estuaries, and wetlands that may have an impact on the marine and coastal ecosystems. The descriptions of threatened and endangered species were likewise wide, ranging to populations and other species that may become vulnerable because they are confined or poorly distributed and hence potentially prone to decline and possibly endangerment.[231]

Furthermore, a brief but strong reference in the SPAW Protocol (unique among such protocols) includes a responsibility for bio diversity and preservation of ecosystems broadly by providing, first in Article 3, that each party, in accordance with its legal system, must preserve its flora and fauna through the objective to avoid species from becoming harmed or threatened and then once more in Article 10, that all parties shall "take necessary steps to avoid the extinction of species. [232]

3.2.2. Main benefits and downsides of Oil spills and LBS protocols

[230] *Ibid*
[231] *Ibid*
[232] SPAW protocol, Article 3

Regarding the oil spill procedure, it is obviously useful to have a dedicated document handling this form of contamination. Nevertheless, the Protocol does not define the important words "protection" and "preservation."[233]

Without a concrete explanation of these key words, the agreement as a legal document fails to appropriately connect to the substantive concerns that it assumes to solve.[234]

A significant absence of scientific and technical assistance is another problem in the writing. For instance, each Party is to offer assistance outside its abilities; but, the Protocol fails to define the phrase within its capabilities; hence, each Party may exercise its freedom to assess the amount of its pledge of resources to a disaster response.[235]

Without an obligatory norm, some countries may retain a low level of reaction capability despite having financial capacity to increase it. A more significant deficiency concerns damages. According to Article XIV, the Contracting Parties must collaborate in order to develop suitable rules and procedures in the areas of accountability and reimbursement for harm caused by contamination of the Convention area that are consistent with international law.[236]

As a result, victims of pollution accidents do not now have a legal recourse against the responsible party under this convention. The challenge is exacerbated by the fact that no specific strategy in previous public conventions provides guidelines for building an effective conflict settlement mechanism.[237]

Because the protocol is adaptive, the conflict resolution process may be evaluated more realistically and reasonably as a success within the confines of the region's political,

[233] Bundschuh.(n 137)

[234] Thomas A. Mensah, 1976, International Environmental Law: International Conventions Concerning Oil Pollution at Sea, *Case Western Reserve Journal of International Law*, Vol.8, 110-130

[235] Organization for Economic Cooperation and Development Secretariat, 1981, Possible Role of International Financial Transfers in Preventing and Controlling Transfrontier Pollution, in Transfrontier Pollution and the Role of the States 36

[236] Article 14 of convention

[237] deMestral A.L.C. 1979. The Prevention of Pollution of the Marine Environment Arising from Offshore Mining and Drilling. *Harvard International Law Journal* , Vol.20 , 469-513

economic, and social reality, rather than as a failure to create a maximal objective system of control.[238]

Using talent, effort, and inventive thinking. Controlling land-based causes of marine pollution is becoming increasingly included into regional development programs. Despite the establishment of a land-based sources protocol to the Cartagena Convention is a topic of regional concern, the successful implementation of the projects required for managing land-based sources of marine pollution necessitate collaboration with institutions and groups at both national and regional levels, particularly regional governments and non-governmental organizations.[239]

Community-based groups must have easy access to private sector, international, and government entities' knowledge, resources, and data. This would contribute significantly to improving environmental management and establishing environmental management as a top national priority. Conservation, recycling, and re-use have enormous potential for lowering waste streams that pollute both the land and marine environment.[240]

Governments should employ financial incentives along with disincentives to encourage the use of recycled and recyclable goods, therefore reducing the usage of pure metals and minerals. This would conserve energy and prevent environmental deterioration caused by the exploitation of these resources. Throw-away items such as unrecyclable containers and disposable diapers should be subjected to landfill charges since they harm the environment excessively due to their one-time intended use. Governments should thus seek policies and programs that discourage the production and use of environmentally damaging items and encourage society to choose for more ecologically sound alternatives.[241]

Nevertheless these possible flaws, the Convention and its Protocol represent a significant accomplishment since they explain previous meetings. The strategies for regulated long-term

[238] Bliss-Guest, Patricia A. 1981. The Protocol Against Pollution from Land-Based Sources: A Turning Point in the Rising Tide of Pollution. Stanford Journal of International Law, Vol. 17, 261-280
[239] Land-based pollution protocol to Cartagena Convention UNEP Regional Co-ordinating Unit of the Caribbean Environment Programme
[240] *Ibid*
[241] *Ibid*

development and a combined contingency reaction offer a holistic approach to raising consciousness about the environment and combating marine pollution. If the Caribbean nations are able to reduce political and economic differences in relation to the Convention, the agreement will evolve from a collection of mutual policy prescriptions to a workable strategy for cooperative action.[242]

3.3. Lessons learned: What to include in order to craft the best regional agreement.

Over the last several decades, evidence supporting a regional strategy to managing transboundary ocean space, particularly inside enclosed and semi-enclosed seas, has grown.[243]

More recently, increasing organizational capacity at the regional level has been acknowledged as vital for meeting the United Nations 2030 Agenda for Sustainable Development.[244]

Furthermore, the advantages of countries embracing a regional strategy to addressing transnational issues, particularly those impacting shared live marine resources, and promoting marine ecosystem-based management have been acknowledged.[245]

The reality that environmental challenges are interconnected and transcend national borders has paved the way for advocating for regional-level initiatives. Many scientists and practitioners argue that because environmental challenges are transboundary, the essential processes influencing the formation and function of biological communities may be handled on a regional scale, as a result, the necessity of regional frameworks and intervention

[242] Bundschuh.(n 137)
[243] Fanning, L., Mahon, R., Compton, S., Corbin, C., Debels, P., Haughton, M., & Toro, C. 2021. Challenges to implementing regional ocean governance in the wider Caribbean region. *Frontiers in Marine Science*
[244] UN (2015). United Nations, Transforming Our World: the 2030 Agenda for Sustainable Development, UNGA Resolution A/RES/70/1. New York: United Nations
[245] Fanning, L., Mahon, R., & McConney, P. 2011. *Towards marine ecosystem-based management in the wider Caribbean . Amsterdam University Press.*

collaboration is emphasized. This also aligns with the LME approach to studies on live marine resources and their administration.[246]

The LME method acknowledges the value of an ecosystem's completeness, which cannot be split by human-made national lines, as well as the intricate links between elements and sections of a shared environment that is not restricted to a single national jurisdiction. As a result, such an approach adds to regional thinking, compelling governments in a shared ecosystem to collaborate and coordinate on environmental preservation, as the LME is frequently viewed as a shared resource. This method focuses mostly on the scientific community and the intergovernmental procedure, with some demonstrative actions at the local and community levels.[247]

Overall, a certain number of lessons can be drawn from the previous chapters. As it has been realized, an effective convention must include certain specific factors. Among those mentioned above, we can start with emphasizing the precautionary principle and PPP. As can be seen, one of the aforementioned conventions does not place a high value on these provisions; yet, previous research demonstrates that an effective regional convention ought to incorporate them.

The next point is that after evaluating these two differently built agreements, it is clear that for regional agreements, it is preferable if they are in one primary document form, since it has been demonstrated that a single agreement may incorporate more particular principles.

The following clauses address broad issues such as pollution from land-based sources, pollution from ships, dumping, and so forth. The study reveals the inclusion of these general clauses in both agreements. However, a glance into the Cartagena Convention reveals that the provisions in it do not clarify items about such kinds of contamination. This leads to additional debate about how the effective convention should contain a more complete explanation of various sorts of pollution.

[246] Ricklefs, R. E. 1987. Community diversity: relative roles of local and regional processes. *Science*, Vol. *235*(4785), 167-171.
[247] Chen, S., & Ganapin, D. 2016. Polycentric coastal and ocean management in the Caribbean Sea Large Marine Ecosystem: harnessing community-based actions to implement regional frameworks. *Environmental development*, Vol.*17*, 264-276.

However, it is crucial to note that because the agreements are regional in nature, marine pollution concerns may differ by location. This leads us to the conclusion that, in addition to general rules, an effective regional agreement should include more region-specific clauses. As previously discussed, the fishing problem in the Baltics is significant; nevertheless, the Convention lacks adequate mechanisms to address this issue.

The types of ships covered by the treaty were the next key topic mentioned before. As previously discussed, pleasure vessels are subject to the Helsinki Convention. Including explicitly enjoyment craft is a comprehensive strategy that should be observed in all regional agreements and can increase efficiency.

The marine environment, its assets, and its biodiversity are under boosting human pressure, which includes climate change and acidification of the oceans, sea-based and land-based pollution, loss of habitat, inadvertent or deliberate introductions of alien species, over-exploitation of natural resources, and destructive fishing practices.[248]

Each of these concerns needs independent attention and response at all government levels, from local to global. While coastal states have gradually created specific laws and regulations, the recent decades have seen an increase of multilateral environmental agreements, which considerably help solve ocean governance concerns that need international coordination and collaboration.[249]

In particular, since not every worldwide environmental issue needs to be addressed on a global scale[250], over recent years, one of the most significant legal developments has been the regionalization of international environmental law and policy.[251]

Compared to the global strategy for ocean governance, the additional benefit of regional ocean governance structures may be summarized by the keywords: "closer, further, faster".[252]

[248] Halpern, B. S., Walbridge, S., Selkoe, K. A., Kappel, C. V., Micheli, F., d'Agrosa, C., ... & Watson, R. 2008. A global map of human impact on marine ecosystems. *Science*, Vol.*319*(5865), 948-952.
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[251] Hayward, P. 1984. Environmental protection: regional approaches. *Marine Policy*, Vol.*8*(2), 106-119.
[252] Rochette, J., Billé, R., Molenaar, E. J., Drankier, P., & Chabason, L. 2015. Regional oceans governance mechanisms: A review. *Marine Policy*, Vol.*60*, 9-19.

Whatever amount of help regional structures give, it is important to note that implementation is mostly up to states. However, many of them, particularly in the developing world, continue to encounter structural obstacles. In many circumstances, public administrations, whether national or local, lack the competence and resources to develop and implement solid environmental laws, which obviously undermines the efficacy of regional government. Where states and administrations are comparatively stronger, inadequate coordination and even opposing aims amongst sectoral programs are frequent barriers to the execution of MEAs.[253]

Unfortunately, economic challenges, growing populations, and a variety of other obstacles have pushed maritime environmental conservation to the back burner in favor of development concerns. Nonetheless, the region's governments are increasingly conscious that the two parts cannot be addressed separately. The protection of the maritime environment cannot be carried out successfully without significant expenditure, and where are these resources to be found if not via continued development? Similarly, development initiatives must properly consider environmental considerations; otherwise, any advantages may be short-lived and ultimately prove to be losses. Thus, government agencies, ordinary individuals, assistance and lending organizations, and the business sector must collaborate not just to integrate a concern for the maritime environment in development initiatives, but also to take into account a commitment for development in projects to conserve the marine environment.[254]

[253] *Ibid*
[254] Land-based pollution protocol to Cartagena Convention UNEP Regional Co-ordinating Unit of the Caribbean Environment Programme

Conclusion

Taking into account all that has been discussed in earlier chapters, we can conclude that the problem of marine pollution is widespread and has affected every part of the world. This brings us to one of the thesis's core ideas: diverse regions face the same problem, which is marine pollution.

Although two very different regions were chosen, the problem is the same, and this thesis begins by demonstrating how two very independent regions deal with the same problem in a regional approach. Each chapter describes a specific region, with the final chapter concluding by describing all of the characteristics of these regions' legal frameworks, as well as all of the positive and negative aspects, in order to identify the most effective regional-level strategies for combating marine pollution.

The thesis addresses the three main questions posed in the introduction. The analysis identifies the main problems of the regions, which are in the Baltic pollution from land-based sources and eutrophication, while Caribbean mostly deals with oil pollution. However, frameworks of both regions tackle such kinds, as pollution from ships, dumping, airborne pollution and offshore pollution as well. Thereby answering the question of what are the specific challenges each region faces concerning marine environment protection, and how do the legal frameworks address these challenges. The most relevant principles that are described or not included in the documents have also been identified.

The thesis also demonstrates a research problem, which involves the presence of challenges to the matter of marine pollution and how this issue is addressed on regional levels, and the examination of existing regional conventions, namely the Helsinki Convention 1992 and the Cartagena Convention, identification of real issues in the marine environment of these regions, and comparison of these conventions on how effective they are in carrying out their duties, in order to obtain lessons to prepare the most effective regional framework to tackle with pollution problem. The problem was handled by identifying the primary issues in both regions concerning marine pollution and examining both of the aforementioned regulatory frameworks. Later, this analysis assisted in identifying the key benefits and limits of both regional frameworks, leading us to the final stage of issue resolution, which is identifying the ideal rules that should be included in the regional framework for it to be effective. Further paragraphs will give more detailed overview for the solution.

The last chapter serves as a culmination of the preceding two. Using the information included in them, namely regarding the conventions themselves, this chapter presents the key advantages and disadvantages of both texts, as well as a comparison. Thus, while the Helsinki Convention, for example, includes nearly all of the most successful methods of pollution management, some things are still not completely disclosed, which might lead to disagreements in reality. The agreement might also address more specific geographical issues, such as fishery control, however this is not the case.

The last part of this chapter leads to the result of why regional treaties and what points they should have in order to be more effective. Using an analysis of both regions and their legislations, the following conclusions can be made.

To be successful, a document must include the key concepts of maritime law, such as the precautionary principle or the PPP, which were identified in Helsinki Convention. Also, we should not overlook the standard elements that every document should include about marine pollution and its prevention, such as land-based pollution, ship pollution, pollution from dumping, pollution from offshore operations, and so on. It is also important to consider the sorts of ships that travel through or operate in a certain region's marine spaces. The form in which document should be prepared as in whole or umbrella, also was touched upon, which revealed that it is beneficial for a regional agreement to be drafted as one main document.

Despite all of these broad suggestions, keeping in mind that some geographical issues necessitate more specialized solutions. This brings us to the conclusion that, in addition to the broad considerations mentioned above, regions should consider particular challenges peculiar to their location when developing a convention and include specific legislation to address these issues.

Another crucial point was made as a consequence of determining what must be included in a regional document for it to be regarded effective: countries in a certain region would not be able to accomplish outcomes unless they collaborate. This leads to the conclusion that by identifying the key points that should be included in the convention and truthfully cooperating on the terms of this document, countries belonging to a specific maritime region can rid the maritime space of pollution and contribute to its preservation.

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