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THESIS

EXPLORATION AND EXPLOITATION OF THE CONTINENTAL SHELF IN THE MEDITERRANEAN SEA THROUGH THE PRISM OF INTERNATIONAL ENVIRONMENTAL LAW

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DECLARATION

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ABSTRACT – ACKNOWLEDGMENTS

In this dissertation, is attempted an extensive analysis of the institution of the continental shelf, through the historical and institutional development of the Law of the Sea, as a fundamental international legal framework that regulate the rights and obligations of states in marine environments.

In particular, attention is focused on the exploration and exploitation of the continental shelf in the region of the Mediterranean Sea, as a promising and highly energy-intensive region, given the vast natural gas deposits discovered in the Eastern Mediterranean Sea in recent years.

At the same time, the most important environmental threats are recorded as a result of the rapid development of energy interest in the region and the reckless exploitation of newly discovered energy resources, while is attempted the record of the institutional framework for the protection of the marine environment, with reference to the most important international conventions and international protocols.

At this point, I would like to thank my supervising professor of this dissertation, Mr. Petros Liacouras for his valuable help and guidance and also professors Mr. Aristotle Tziabiris and Mr. Nikolaos Farantouris, who accepted to be members of the evaluation committee. In addition, I would like to thank them for all the valuable help and knowledge they passed on to me during this educational trip.

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Contents

INTRODUCTION

Legal science has been systematically penetrating the seabed since progress in science and technology have allowed not only deep exploration but also the exploitation of the seabed's natural resources on a large scale.

The first positive steps are taken in the 1940s and especially during World War II, when increased needs for oil led the scientific community to the energy sources of the seabed. For the last, at least 70 years, the activity for the extraction of ores or hydrocarbons contained in the soil and subsoil of the seabed in all latitudes has increased significantly.

For centuries, the doctrine of *freedom of the seas* prevailed in the oceans. But since the 1960s, technological advances in navigation, fisheries, and ocean exploration combined with the population explosion have dramatically changed human access to and use of the seas. Tensions arose between the states over conflicting demands for their oceans and resources, and pollution threatened the seas. It eventually became clear that a common global effort was needed to maintain order in the seas, to guide proper use and to manage marine resources.

Also, the result of these increasing changes is the engagement with new facts that need a thorough scientific study, as well as the creation of new problems that need immediate identification and effective solution.

For example, before the 1950s, there was not even a morphological map of the Mediterranean Sea, which historically, was the center of European civilization. Since the times of Ancient Egypt, Rome and Greece the Mediterranean Sea has connected the countries of Southern Europe, Africa and Near East by shipping routes which played a major role in the development of trade and international relations between countries, unfortunately including numerous conflicts and wars.

Therefore, a great effort is made by international organizations, state and private bodies for the scientific investigation of the sea as well as the morphology and the content of the seabed.

The mission of legal science to clarify the rights and obligations of states and the international community in general at the bottom of the sea and beyond is obvious. The law must divide the roles, settle disputes and organize and promote international cooperation. But regardless of the great economic and political interests that conflict on the seabed, we need to focus on solving many more scientific and technical problems in that field, the

solution of which is a precondition for the establishment of effective rules of international law.

1. BRIEF INTRODUCTION TO INTERNATIONAL LAW OF THE SEA

1.1. Geographical definition of the sea

Life itself arose from the sea. The sea, in the broadest sense of the term, is all the salty parts of the hydrosphere, which communicate with each other and cover 3/4 of the surface of our planet. According to this definition, freshwater aquifers or saltwater areas that do not physically communicate with each other on the planet's marine mass are not regarded as sea. In the broader definition of the sea, the oceans covering 140 million square miles (71% of the planet) could not be missing, as vast waterways between the continents, as well as temporary ice-covered areas, but not areas where the aquatic element is permanently ice-solid, as in the case of the Arctic and Antarctic. In any case, the legal status of these latter areas is not governed by International Law of the Sea. In addition, the concept of the seabed is of great importance for International Law of the Sea. The average depth of all seas is approximately about 3,700 meters while the deepest ocean is estimated at 10.984 meters (unrepeated measurements place the deepest portion at 11,034 meters)[1]. Depending on its depth and location, the seabed is a rich source of minerals and deposits, as will be discussed further.

1.2. Historical retrospection of the law of the sea

The economic, social and political importance of the sea to human societies is linked to the history of mankind. In antiquity and until the Renaissance, open sea navigation was unhindered and free for everyone. Roman jurists even considered the freedom of the seas was given by nature. However, from the late Medieval Period, the states of that time gradually began to claim parts of the seas, such as the Republic of Venice, which was claim1ed by other naval forces to be the sovereign of the entire Adriatic, or England, which sought its authorization for fishing across the North Sea. These claims were exacerbated by the practice of Spain and Portugal, following the discovery of America, to prohibit the sailing of foreign ships in extensive offshore areas adjacent to the new territories. At the

[1] Volumes of the World's Oceans from ETOPO1, NOAA

beginning of the 16th century, a particular problem arose in the Indian and Pacific Oceans with Spanish and Portuguese claims.

At the beginning of the 17th century the above contradictions caused an ideological dispute between the Netherlands and England. The year 1606 in the Netherlands, the legal expert of the time, who is also considered the father of international law, Hugo Grotius prepared the study *"Mare Liberum"*, in which he provided a legal basis for Dutch notions of freedom of the seas. Grotius basic positions were that ships of all states have the right to sail on the high seas, in the territorial sea the coastal state merely exercised jurisdiction and the extent of the territorial sea is determined by the possibility of effective occupation. In contrast, England with the jurist's John Selden work *"Mare clausum seu de dominio maris "*, endeavored to prove that the sea was in practice virtually as capable of appropriation as terrestrial territory[2].

Alongside the conflict between the two theories of *mare liberum* and *mare clausum*, the issue of the limits of territorial sea was remaining unclear since 17th century. Subsequently supported theories argued that the territorial sea extends to the spot of the horizon, where a ship is visible from the shore. Gradually, the concept of the territorial sea as a safety zone rather than a zone of occupation by the coastal state has led to the establishment of a 3-mile distance as an acceptable limit, although there is no general assumption that the coastal state had no jurisdiction beyond that limit.

In any case, at the first quarter of the 19th century the principle of freedom of the high seas had been established in the practice of states and in theory, while the concept of territorial sea and the relevant powers of the coastal state, although it had already appeared in international practice, began to form only in the 19th century.

The early 20th century found International Law of the Sea in a state of relative balance at least with regard to freedom of the high seas, which constituted a generally recognized customary rule. However, the issue of territorial waters' boundaries with the nature of the coastal state's jurisdictions in that maritime zone remained the subject of much controversy. The first attempt to conclude a general multilateral treaty on International Law of the Sea was made within the framework of the Society of Nations (SdN) or League of Nations (LoN). On 27 September 1927 the Convention of the Society of Nations decided to convene a Conference in The Hague on the codification of International Law, the work of which lasted from 13 March to 13 April 1930, with the participation of 40 States. The subjects of

[2] Κ. Ιωάννου-Α. Στρατή, (2000) Δίκαιο της Θάλασσας, Β' Έκδοση, σελ. 3

this conference included the significant issue of the range of territorial waters. The Conference failed to reach a positive result, but adopted a recommendation to the Society of Nations to convene a new conference specifically on this issue.

Following the establishment of the United Nations (UN), in 1956 the Committee on International Law drafted a 73-article Convention Draft, but it soon became clear that developments in the field of Law of the Sea required a more in-depth codification.

The General Assembly of the United Nations decided to convene a conference to examine the draft law of the International Law Committee by its decision 1105 (XI) of 21st February 1957. The first United Nations Conference on the Law of the Sea (UNCLOS I) convened in Geneva between February and April 1958 with the participation of 85 States. Its final product was four treaties included the Convention on the Territorial Sea and Contiguous Zone (1964), Convention on the High Seas (1962), Convention on Fishing and Conservation of Living Resources of the High Seas (1966) and the Convention on the Continental Shelf (1964). Although UNCLOS I was considered a success, it left open the important issue of breadth of territorial waters.

In 1958, the General Assembly of the United Nations convened the Second United Nations Conference on the Law of the Sea (UNCLOS II) with the hope that agreement on the extent of territorial waters would eventually be reached. The Conference, with the participation of 88 States, met in Geneva between March and April 1960, but without profound result.

During the 1960s the international environment changed significantly. The number of states has increased and a large group of developing and underdeveloped countries, generally called as the Third World, has begun to play an important role in the international legal process. At the same time, claims of secession began to emerge from the coastal states of large seas, which until then were considered as open sea. Also, the relatively small number of States that acceded to the Geneva Conventions showed that International Law of the Sea could not be developed without a new codification effort, especially with states' constantly diverging views on the exploitation of maritime zones that could lead to international conflicts. At the same time, other developments have led to the need for new regulations, such as environmental issues, which have been exacerbated by the continuous pollution of the seas and at the same time technology that has allowed the access to the seabed in a depth of 5,000 meters allowing the prospect of exploiting deposits. In addition, the failure of the UNCLOS II led many states to establish exclusive 12-mile fishing zones, a

lawful practice recognized by the International Court of Justice *in Fisheries Jurisdiction case* (1974) [3].

The above conditions and developments have inevitably led to the preparation of a new Conference during which diplomat Arvid Pardo laid out the historical outline of the new codification effort. On December 18, 1967 the UN General Assembly adopted the establishment of an Ad Hoc Committee to study the peaceful uses of the sea-bed and the ocean floor beyond the limits of national jurisdiction.

A year later, on December, 1970 the General Assembly solemnly declared that the *sea-bed and ocean floor, and the subsoil thereof beyond the limits of national jurisdiction (referred to as the area), as well as the resources of the area are the common heritage of mankind*[4]. At the same time it was established that *the area shall not be subject to appropriation by any means by States or persons, natural or juridical, and no State shall claim or exercise sovereignty or sovereign rights over any part thereof* [5]. Subsequently, on 17 December 1970, the General Assembly decided by resolution 2750 C (XXV), to convene a third conference on the law of the sea in 1973, and instructed the Committee on the Peaceful Uses of the Sea-Bed and the Ocean Floor beyond the Limits of National Jurisdiction to act as preparatory body for the conference.

The Third UN Conference on the Law of the Sea (UNCLOS III) lasted from December 1963 to April 1982, making it the longest coding conference in the history of international law. The Final Act of the Third Conference included a draft Convention and four resolutions. The new Convention was signed in the city of Montego Bay, Jamaica on 10 December 1982 and remained open for signature until 9 December 1984. The Convention entered into force on 16 November 1994 and today, it is the globally recognized regime dealing with all matters relating to the law of the sea.

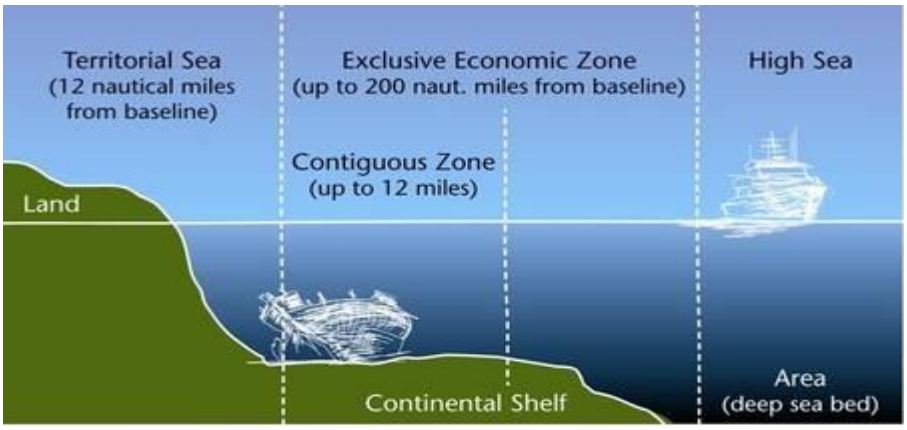
Furthermore, by resolution 48/263 of 28 July 1994 the UN General Assembly adopted the Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, known as The New York Agreement. The New York Agreement was adopted precisely to facilitate global participation in the Convention and the implementation of a new international public order in the oceans. The Agreement was ratified by a number of states, including many Mediterranean States like Greece, and entered into force on 28 July 1996.

[3] Κ. Ιωάννου-Α. Στρατή (2000), Δίκαιο της Θάλασσας, Β' Έκδοση, σελ. 8
[4] 1967 UN General Assembly Resolution 2340 (XXII)
[5] 1970 UN General Assembly Resolution 2749 (XXV)

Today, International Law of the Sea, and in particular the UNCLOS, applies to all maritime regions of our planet. The most specific objective application of Law of the Sea is directly related to any particular maritime or submarine area. So in order to identify which rules apply in each case we distinguish between different maritime and submarine zones. These areas are distinguished by two criteria, one factual and one legal. The factual criterion is the distance of a marine area from the coast. The legal criterion is the jurisdiction conferred by international law on States, and in particular coastal States, in relation to a given maritime or submarine region. The result of this distinction is that the marine and submarine space of our planet is governed by different legal regimes depending on the maritime or submarine zone. The *maritime zones* include**:** ***a)*** Internal waters, ***b)*** Territorial sea, ***c)*** Archipelagic waters, ***d)*** Contiguous zone, ***e)*** Exclusive economic zone and ***f)*** High Seas.

Additionally, *the submarine zones* include: ***a)*** The seabed of internal waters, the territorial sea, archipelagic waters and the exclusive economic zone, ***b)*** The continental shelf and ***c)*** The Area.

International Law of the Sea applies and regulates all activities in the maritime and submarine zones, a necessity driven by the increasing economic exploration and exploitation of maritime zones for the production of energy that significantly changes the geopolitical conditions of the regions. The exclusive exploration and exploitation of the seabed and subsoil resources of the states give priority to the necessary compliance with the legal regimes in the Law of the Sea, while creating an imperative need for monitoring and study.



Source: UNESCO / C.Lund

2. ANALYSING THE INSTITUTION OF THE CONTINENTAL SHELF

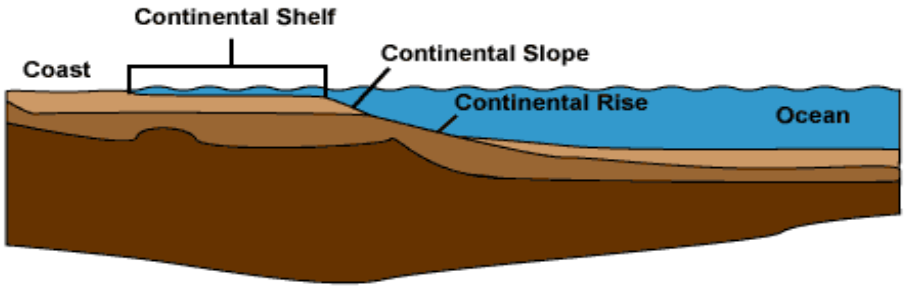
2.1. Geological definition of the continental shelf

The continental shelf is a geological phenomenon[6]. The terrestrial soil, the land, after its contact with the sea on the shores, continues below its surface and forms the seabed. The seabed, as the natural extension of the land under the sea, extends at various depths from the shore and has the characteristic of lowland, which continues to the point where there is a steep slope to the ocean abyss. The various parts of the seabed from the coast to the ocean abyss have various names in geology, usually depending on the depth. The whole area of the seabed from the shores to the point of inclination to the ocean abyss is called ***continental margin***.

The continental margin is divided into three parts. The first part that starts from the shore and continues to the point where there is a significant slope of the bottom, is called in geology, ***continental shelf***. This point is usually located at a distance of 42-45 miles from the shore, depending on the areas and its maximum depth is about 150-200 meters. At this point, where the geological continental shelf ends, (at the point where there is a significant change in the slope of the bottom), begins the second geological part of the continental margin defined by the angle of inclination of the seabed in relation to the depth. This part is called ***continental slope*** and extends 10-20 miles from the point, where the geological continental shelf ends. The depth of this part is usually 3,000-4,000 meters.

It is followed by the ***continental rise***, which extends for 620 miles from the end of the continental slope and is followed by the oceanic abyss, which is a relatively flat area (***abyssal plain***) with a maximum depth of 11,034 meters in the Pacific Ocean[7].

[6] Κ. Ιωάννου-Α. Στρατή (2000), Δίκαιο της Θάλασσας, Β' Έκδοση, σελ. 154
[7] Κ. Ιωάννου-Α. Στρατή (2000), Δίκαιο της Θάλασσας, Β' Έκδοση, σελ. 154



Source: Wikipedia

The geological terms described are used by the UNCLOS, but in any case it is necessary to identify the legal definition. This is especially necessary for the concept of the continental shelf, where the geological category includes areas of the seabed, such as the seabed of territorial waters, which are not a continental shelf in legal terms. Correspondingly, the legal concept of the continental shelf includes areas such as the continental slope and the continental rise, which are not geologically a continental shelf.

The determination of the peculiarity of the legal institution of the continental shelf against the geological one was made by the International Court of Justice in the case concerning the *Continental Shelf Tunis. v. Libyan Arab Jamahiriya (1982*) "*the "continental shelf" is an institution of international law which, while it remains linked to a physical fact, is not to be identified with the phenomenon designated by the same term - "continental shelf" - in other disciplines. It was the continental shelf as "an area physically extending the territory of most coastal States into a species of platform" which "attracted the attention first of geographers and hydrographers and then of jurists" (I.C.J. Reports 1969, p. 51, para. 95) ; but the Court notes that at a very early stage in the development of the continental shelf as a concept of law, it acquired a more extensive connotation, so as eventually to embrace any sea-bed area possessing a particular relationship with the coastline of a neighbouring State, whether or not such area presented the specific characteristics which a geographer would recognize as those of what he would classify as "continental shelf"*"[8].

[8] Continental Shelf (Tunis. v. Libya), 1982 I.C.J. 18 (Feb. 24)

2.2. Legal regime of the continental shelf and its historical evolution

Until the early 20th century, international law had relatively clear rules on the issue of state power on terrestrial land, but it did not provide for regulations on the seabed. The first issues about the exploitation of its seabed and subsoil in areas beyond the jurisdiction of the coastal state arose in relation to drilling in the 1920s, as well as in relation to the fishing of certain sedentary species (organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil)[9].

The international practice of the time regarding the legal title that would allow the exploitation of marine land and subsoil was not articulate. In general, the consensus was the British perception, in which the seabed beyond the territorial sea was *res nullius* [10] and therefore subject to occupation and domination. In short, each state could seize parts of the seabed and exploit them, and that uninterrupted and perpetual occupation would be a title of domination over that particular part.

In the decade of 1940, technology was significantly developed for the extraction of oil and minerals from areas of the seabed beyond the coastal zone. A pioneer in this technology, the United States has argued that legal uncertainty has discouraged large investments in this area. The President of the United States, Harry S. Truman, on September 28, 1945, issued no. 2667 Proclamation, known as Truman Proclamation, entitled " Policy of the United States with respect to the Natural Recourses of the Subsoil and Seabed of the Continental Shelf", which is now considered the historical starting point for the legal regulation of the continental shelf. The highlights of the Truman Proclamation were that a) it did not contain a claim for full territorial sovereignty over the continental shelf, b) it founded the right of the coastal state to the fact that the continental shelf is the natural extension of the mainland, c) it introduced the concept of "principles of fairness" in delimitation and caused a series of future contradictions and d) finally for the first time, it treated the continental shelf as a new legal institution[11]. The Truman Proclamation was followed by numerous similar claims from

[9] Κ. Ιωάννου-Α. Στρατή (2000), Δίκαιο της Θάλασσας, Β' Έκδοση, σελ. 156
[10] Κ. Ιωάννου-Α. Στρατή (2000), Δίκαιο της Θάλασσας, Β' Έκδοση, σελ. 156-157
[11] Κ. Ιωάννου-Α. Στρατή (2000), Δίκαιο της Θάλασσας, Β' Έκδοση, σελ. 158-159

other States. The nature of the claims varied from jurisdiction and control over the resources of the continental shelf to full sovereignty of the shelf as such[12].

Between 1945 and 1950 there was a strong theoretical challenge to the establishment and legal nature of the rights of coastal states. The British J. Brierly introduced the idea that the continental shelf belonged to the coastal state *ipso jure*, during discussions in the International Law Commission (ILC), which was established by the United Nations General Assembly (UNGA) to promote the progressive development of international law and its codification. In 1953, the International Law Commission introduced the concept of *sovereign rights* in order to bridge the British view of *sovereignty* with the American view of the Truman Proclamation on *jurisdiction and control*.

Already during International Law Commission's first session in 1949, the continental shelf was made a subject on its own, suggesting that the continental shelf had become an instant customary law. The ILC took the view that the coastal state could exercise control and jurisdiction over the sea-bed and subsoil situated outside of its territorial sea in relation to the exploration and exploitation of natural resources, but it held that the area where jurisdiction was exercised should be limited. After working on codification of customary international law for ten years, the ILC submitted its report to the United Nations General Assembly in 1957, upon, which decided to convene an international conference for the law of the sea[13].

Only thirteen years after the Truman Proclamation, the concept that the continental shelf is subject to national jurisdiction had become part of State practice and fulfilled itself in treaty law. The UNCLOS I on 29 April 1958 adopted the Convention on the Continental Shelf with 15 articles. The International Law Commission's negotiated definition of the juridical continental shelf was reflected in Article 1(a) of the Convention on the Continental Shelf, according to which, *" the term "continental shelf" is used as referring (a) to the seabed and subsoil of the submarine areas adjacent to the coast but outside the area of the territorial sea, to a depth of 200 meters or, beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the natural resources of the said areas; (b) to the seabed and subsoil of similar submarine areas adjacent to the coasts of islands."*

[12] Busch S.V., (2016), Developing a Legal Regime for the Continental Shelf and Its Limits, In *Establishing Continental Shelf Limits Beyond 200 Nautical Miles by the Coastal State: A Right of Involvement for Other States?*, Chapter 2, pp. 12-29

[13] Busch S.V., (2016), Developing a Legal Regime for the Continental Shelf and Its Limits, In *Establishing Continental Shelf Limits Beyond 200 Nautical Miles by the Coastal State: A Right of Involvement for Other States?*, Chapter 2, pp. 13

The Geneva Convention, in order to identify the continental shelf as an object of sovereign rights, adopted the criterion of a depth of 200 meters and the criterion of exploitation. Simultaneously with the legal definition of the continental shelf, the UNCLOS I established the concept of the sovereign rights of the coastal State as exclusive rights of exploration and exploitation. Thus, the notion of the inherent of sovereign rights was conventionally established and finally included the living organisms belonging to sedentary species (that is to say, organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil[14]) in the object of exploitation, expanding the Truman Proclamation. The Convention on the Continental Shelf was certainly a conventional one of limited scope, although it undoubtedly managed to make an entry, with relative accuracy, the various prevailing views on the continental shelf. However, at the same time, it created quite serious interpretive problems, especially in relation to the context of exploitation.

The International Court of Justice has given an answer to many questions regarding the legal doctrine of the continental shelf with the paramount significance North Sea Continental Shelf cases – Judgment of 20 February 1969, which was a milestone in the development of the institution of the continental shelf. In particular the International Court of Justice elaborated in recital 19 of its judgment that : " *More important is the fact that the doctrine of the just and equitable shares appears to be wholly at variance with what the Court entertains no doubt is the most fundamental of all the rules of law relating to the continental shelf, enshrined in Article 2 of the 1958 Geneva Convention, though quite independent of it, - namely that the rights of the coastal State in respect of the area of continental shelf that constitutes a natural prolongation of its land territory into and under the sea exist* ***ipso facto*** *and* ***ab initio****, by virtue of its sovereignty over the land, and as an extension of it in an exercise of sovereign rights for the purpose of exploring the seabed and exploiting its natural resources. In short, there is here an inherent right. In order to exercise it, no special legal process has to be gone through, nor have any special legal acts to be performed. Its existence can be declared but does not need to be constituted. Furthermore, the right does not depend on its being exercised. To echo the language of the Geneva Convention, it is "exclusive" in the sense that if the coastal State does not choose to explore or exploit the areas of shelf appertaining to it, that is its own affair, but no one else may do so without its express consent."*

[14] Art. 2 (4) Convention on the Continental Shelf (1958)

Also, ICJ elaborated in recital 43 of the same judgment that " *what confers the ipso jure title which international law attributes to the coastal State in respect of its continental shelf, is the fact that the submarine areas concerned may be deemed to be actually part of the territory over which the coastal State already has dominion. – in the sense that, although covered with water, they are prolongation or continuation of that territory, an extension of it under the sea. From this it would follow that whenever a given submarine area does not constitute a natural – or the most natural –extension of the land territory of a coastal State, even though that area may be closer to it than it is to the territory of any State, it cannot be regarded as appertaining to that State".*

In short, in the above thoughts of the judgment of the International Court of Justice is pinpointed the contemporary theory of the legal nature of the continental shelf, which has been incorporated into the UNCLOS III, which in turn constitutes the new and current conventional regime of the continental shelf.

In addition, on 19 December 1978 the International Court of Justice in the Aegean Sea Continental Shelf case (Greece v. Turkey) stated that "*continental shelf rights are legally both an emanation from and an automatic adjunct of the territorial sovereignty of the coastal State. It follows that the territorial regime-the territorial status — of a coastal State comprises, ipso jure, the rights of exploration and exploitation over the continental shelf to which it is entitled under international law."*

However, even with the institutionalization of the concept of the geological link between the territory of the coastal state and the continental shelf, which is essentially a prolongation or continuation of the land under the sea and the finding that the legal title of the coastal state on the continental shelf exists ipso jure and ab initio and is exclusive and independent of any act of occupation, the legal horizon was still unclear, especially in relation to delimitations.

The new conventional regime of the continental shelf was formed within the framework of the UNCLOS III and in particular was regulated in Part VI and in article 76 through the article 85 of the Convention. This new framework established the methods for determining the boundaries of the continental shelf, responding to the new technological advancements.

The Article 76 (1) of the Convention on the Law of the Sea introduced a complex legal definition of the continental shelf. According to this provision, *the continental shelf of a coastal State comprises the seabed and subsoil of submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of*

the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance. Already since the Geneva Convention there has been a diversification of the legal concept of the continental shelf with geological data. In the context of the UNCLOS, the determination of the continental shelf by the coastal State can be done by choosing between two criteria. The first one is the distance criterion and the second is the geomorphological criterion, if there is contribution of the geological conditions. In any case, regardless of the criterion to be adopted, the continental shelf, as a legal institution, begins from the point of the seabed that corresponds to the outer edge of the territorial sea. This is because the seabed of the territorial sea falls under the full control of the coastal state.

However, in order to understand the application of these two criteria, it is necessary and important to distinguish between the limits of the continental shelf, its internal and external limit.

2.3. Boundaries of the continental shelf

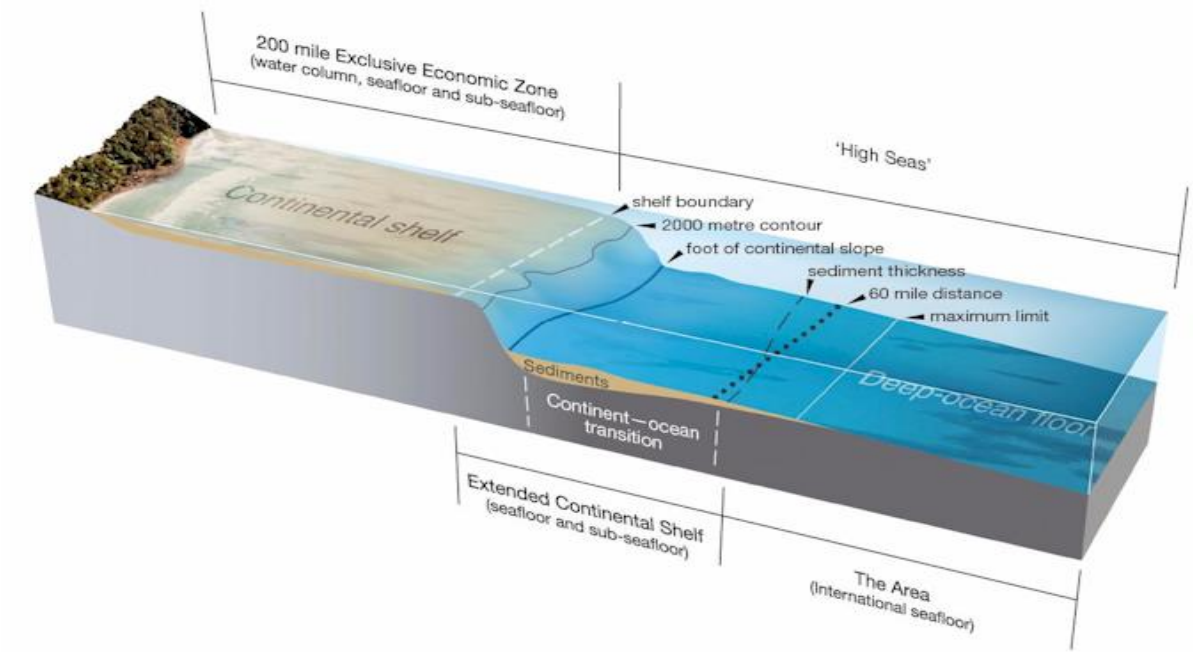
As mentioned above, the continental shelf, as a legal institution, starts from the point of the seabed that corresponds to the outer edge of the territorial sea. The seabed below the territorial sea undoubtedly belongs to the full sovereignty of the coastal state. This point is the internal boundary of the continental shelf, which as mentioned above deviate from the geological definition as according to it, the continental shelf starts from the shore.

As for the distance criterion, which determines the external boundaries of the continental shelf, the continental shelf extends over the natural expansion of the land under the sea at a distance of 200 miles from the baseline. For many States, the location of all or part of their adjacent continental shelf is certain as a result of bilateral agreements with neighbouring States or, as set out in Article 76(1) of the UNCLOS, a State's legal continental shelf ends at the 200 n.m. limits. For an ever-increasing number of States, however, it is apparent that all or part of their legal continental shelf extends well beyond 200 n.m., with it not being immediately obvious where the outer limit of a State's legal shelf is located.[15]

[15] McDorman Ted, The Continental Shelf, 2015, The Oxford Handbook of the Law of the Sea, Edited By: Donald R. Rothwell, Alex G. Oude Elferink, Karen N. Scott, Tim Stephens, chapter 9, pp. 2

The distance is measured on the surface of the sea. Therefore, regardless of any geomorphological features, in any case, the continental shelf of a coastal state extends up to 200 miles from the baselines, at a distance, which coincides with the maximum range of the *Exclusive Economic Zone (EEZ)*. However, it does not constitute continental shelf the whole seabed up to 200 nautical miles. The legal concept of continental shelf is of practical importance only if the coastal state has not declared an EEZ, as the external boundary of the EEZ coincides with that of the continental shelf and the coastal state has sovereign rights in the seabed of the EEZ. In cases, where there is an EEZ, the legal meaning of the continental shelf is of practical importance, when the continental shelf extends beyond 200 nm, so the geomorphological criterion can be applied. Nevertheless, the concept of the continental shelf is dominant as the rights of the coastal state at the seabed and subsoil of the EEZ are defined in reference to the continental shelf according to Article 56(3) Part V of UNCLOS.

Regarding the relationship between the continental shelf and the Exclusive Economic Zone, the judgment of the International Court of Justice in the case of *Continental Shelf Libyan Arab Jarnahiriya v. Malta (1985)* is of paramount importance. Specifically, the Court stated that *"...even though the present case relates only to the delimitation of the continental shelf and not to that of the exclusive economic zone, the principles and rules underlying the latter concept cannot be left out of consideration. As the 1982 Convention demonstrates, the two institutions - continental shelf and exclusive economic zone - are linked together in modern law. Since the rights enjoyed by a State over its continental shelf would also be possessed by it over the sea-bed and subsoil of any exclusive economic zone which it might proclaim, one of the relevant circumstances to be taken into account for the delimitation of the continental shelf of a State is the legally permissible extent of the exclusive economic zone appertaining to that same State. This does not mean that the concept of the continental shelf has been absorbed by that of the exclusive economic zone; it does however signify that greater importance must be attributed to elements, such as distance from the Coast, which are common to both concepts".* Also, the ICJ stated in the same judgment that "*the institutions of the continental shelf and the exclusive economic zone are different and distinct, the rights which the exclusive economic zone entails over the sea-bed of the zone are defined by reference to the régime laid down for the continental shelf. Although there can be a continental shelf where there is no exclusive economic zone, there cannot be an exclusive economic zone without a corresponding continental shelf".*



2.4. The sovereign rights of the coastal state on the continental shelf: concept, nature, extent and restrictions.

The concept of sovereign rights was introduced in 1953 by the International Law Commission in order to harmonize the various views of the time on the nature of the rights of the coastal state on the continental shelf. This terminology was adopted by the Geneva Convention on the continental shelf (UNCLOS I) in Article 2 (1) and was incorporated into the legal vocabulary of the Law of the Sea. The same term is adopted in Article 77 (1) of the Third Convention on the Law of the Sea (UNCLOS III), which stipulates that the coastal State exercises sovereign rights over the continental shelf for the purpose of exploration and exploitation of its natural resources.

It is important to distinguish the concept of sovereign rights from the concept of sovereignty. Thus, the original meaning of sovereignty is related to the idea of superiority. In legal and political theory, the sovereign is the holder of the ultimate power and in the modern world this power is the State. Sovereignty and more specifically territorial sovereignty is called all the powers that the state exercises in its territory and manifests itself

as the absolute, complete and exclusive power of the state to control, through the internal legal order, the persons and objects in its territory. This power is multidimensional - legislative, judicial, administrative[16]. Besides, respect for territorial sovereignty is an essential foundation of international relations, as the International Court of Justice has observed in 1949 in the Corfu Channel case.

Subsequently, the sovereign right is a right of special purpose, usually functional, related to territorial sovereignty, but with one essential difference, as territorial sovereignty implies the exercise of all the powers of the state, while sovereign right is clearly limited and concerns specific purposes. Territorial sovereignty, moreover, is directly linked to its effective exercise, while sovereign right does not depend on its exercise[17].

On the continental shelf, coastal states do not exercise full sovereignty, as in their territorial sea, but have limited functional purpose and extent, which concerns only the *exclusive* sovereign rights of exploring and exploiting its natural resources, for purely economic reasons, according to Article 77 (1, 2). Thus, the sovereign rights exercised by the coastal State on the continental shelf are exclusive, which means that no other state can claim them, even if the coastal state does not exercise their rights in practice. In other words, its sovereign rights do not depend on real or imaginary occupation or any express proclamation (Article 77 (3)). It could be said that this regulation is a continuation of the nature of sovereign rights, as rights that exist ipso facto and ab initio, which means that the coastal state does not need to take any action to exercise or maintain these rights, while respectively these rights have existed since sovereignty over the coastal state.

The sovereign right of the Coastal State over the exploration of the continental shelf is regulated by the provisions of Part XIII of the Convention and is specified in the right of the coastal state in the exercise of its jurisdiction, to regulate, authorize and conduct marine scientific research in its exclusive economic zone and on its continental shelf (Article 246). A marine scientific research in the exclusive economic zone and on the continental shelf shall be conducted with the consent of the coastal State, which can be implied and coastal State in turn shall establish rules and procedures in order to ensure that such consent will not be delayed or denied unreasonably. However, if there is a research on the continental shelf beyond 200 nm from the baselines from which the breadth of the territorial sea is measured, the coastal state cannot deny its consent, with the exception of specific areas, which coastal

[16] Εμμανουήλ Ρούκουνας (2006), Διεθνές Δίκαιο, Τεύχος Δεύτερο, Το κράτος και το έδαφος-Το δίκαιο της θάλασσας, σελ. 29
[17] Κ. Ιωάννου-Α. Στρατή (2000), Δίκαιο της Θάλασσας, Β' Έκδοση, σελ. 177

state may at any time publicly designate as areas in which exploitation or detailed exploratory operations focused on those areas are occurring or will occur within a reasonable period of time.

Regarding coastal state's sovereign right to exploit the natural resources of the continental shelf should be acknowledged that the concept of exploitation of the continental shelf refers to the mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to sedentary species, organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil, as defined in Article 77 (4) of the UNCLOS.

The continental shelf is a region with enormous economic value and potential and its living and non-living resources already contribute to traditional subsistence economies and modern industrial economies. Clearly, when it comes to the natural resources of the continental shelf, the focus is mainly on the traditional energy resources, as oil and gas deposits, hydrocarbons or gas hydrates as a future energy resources, which undeniable constitute the most significant sources of exploitation and a bone of contention among states.

The sovereign right of the coastal State to exploit the natural resources of their continental shelf does not take over archaeological and other cultural goods located at the seabed and the consent of the coastal state to conduct archaeological research on the continental shelf is not required. In practice, however, many states require at least an announcement of the intention to conduct an archaeological exploration of their competent authorities in order to ensure that their sovereign rights to explore and exploit the natural resources of the continental shelf are not violated. Contrary to this principle, in 2001 the UNESCO Convention on the Protection of the Underwater Cultural Heritage does not guarantee the right of the coastal state to be informed of such activities, merely recognizing in the coastal state a coordinating role. In short, the 2001 Convention provides for methods of cooperation among states but does not go beyond the provisions of the 1982 UNCLOS on the issue of the separate jurisdiction of the coastal State. In fact, this regulation is the reason why several states, including Greece, are not parties to the specific UNESCO Convention.

Furthermore, Article 78 establishes restrictions on the exercise of the sovereign rights of the coastal state over the continental shelf, stipulating that the rights over the continental shelf do not affect the legal status of the superjacent waters or of the air space above those waters and the exercise of that rights must not infringe or result in any unjustifiable

interference with navigation and other rights and freedoms of other States. In short, these restrictions balance the extension of the coastal state's exclusive rights strictly to the continental shelf with the need for unhindered international navigation and by providing a legal framework for third countries to exercise, under specific restrictions and always with respect to coastal state's jurisdiction, their rights to lay submarine cables and pipelines on the continental shelf (article 79) or to conduct marine scientific researches.

In addition to the sovereign rights of the coastal state over the continental shelf for the purpose of exploring and exploiting its natural resources, also, it exercises the right to drill, tunnel and place artificial islands, facilities and other structures on the continental shelf.

2.4.1. The rights of drilling and tunneling

According to Article 81 of the UNCLOS the coastal state has the exclusive right to authorize and regulate drilling on the continental shelf for all purposes. The phrase "*for all purposes"* extends the right to drill for purposes other than exploring and exploiting the continental shelf. Therefore, it could be argued that drilling by a third state in the context of sealing a sea pipeline on the continental shelf, in accordance with Article 79 (1) of the Convention, is subject to exclusive control and possibly discretion of the coastal state. It is clear that this interpretation would create many problems in practice, as a possible non-approval of drilling by the coastal state would essentially be tantamount to revoking the right of pipeline plumbing, creating serious problems in relations among the states.

With regard to the coastal state's right to exploit the subsoil resources of the continental shelf through underground tunnels, the provisions of the Convention certainly do not infringe this right by allowing the exploitation of the subsoil regardless of the depth of the adjacent waters. Especially, in oil and gas field development as an extremely difficult technological task is difficult to produce effective methods of field development of the continental shelf fields as a result of sharp differences of depths and a difficult relief of a seabed define the choice of design decisions on field development. The last decades the form of construction of a tunnel by tunneling shield way constitutes a modernization in constructions and is offered as a perspective and expedient method of developing fields of the continental shelf especially in the Arctic seas. The modernizations of marine oil and gas

field development will allow the reduction of capital investments and expenses of time and will permit the increase efficiency of development of sea oil and gas fields[18].

2.4.2. The right of placement of artificial islands, installations and structures on the continental shelf

Related to the rights of drilling and tunneling is the exclusive right of the coastal State to construct, authorize and regulate the construction, operation and use of facilities for the exploitation of natural resources of the continental shelf, as platforms, storage tanks, etc. and to establish reasonably 500-meter safety zones around these facilities. According to Article 60 of the UNCLOS concerning the jurisdiction of the Coastal State over artificial islands, installations and structures in the Exclusive Economic Zone, applies *mutatis mutandis* to artificial islands, installations and constructions on the continental shelf (Article 80). However, the coastal state must refrain from placing such facilities if the international navigation, fishing, the protection of the marine environment and the rights and duties of other States are prevented. According to Articles 60 (3) and 80 of the Convention on the Law of the Sea, removal is provided for facilities that have been abandoned, disused or are not used for maritime safety reasons, taking into account generally accepted and applicable international standards. It is also imperative that there must be appropriate publicity to the depth, position and dimensions of any installations or structures that are not entirely removed.

2.4.3. The right of laying submarine cables and pipelines on the continental shelf

Continental shelf is undoubtedly the most important zone concerning the issue of pipelines and submarine cables and the right of their laying is directly linked to energy policy and is a subject of public debate among states. Especially, pipelines, as one of the means of transportations, are so popular nowadays that thousands of kilometers of them are employed in transferring oil products from one state to another. The most significant reasons for exploiting this means of transportation are the continuity and the security in transporting

[18] VA Perfilov, DS Parkhomenko and MS Pletnev, 2019, Method of Oil and Gas Fields Construction on the Continental Shelf of the Arctic Seas, IOP Conference Series: Earth and Environmental Science, Volume 272, Issue 2

hydrocarbons as well as its lower cost compared to giant oil tanks. In addition to these advantages, the environmental hazards pipelines induce are considerably less compared to the tankers.

By the introduction of the 1958 Conventions of the Law of the Sea, the pipelines officially entered into the codified international law of the sea. However, since at the time pipelines were neither considered very significant nor were they vastly used, International Law Commission added the word pipeline simply as a patch to the articles on the submarine cables, which had a well-established regime since the nineteenth century. The reason of that generalization lies in the similarities that the International Law Commission believed existed between submarine cables and submarine pipelines. An instance of this similarity is, inter alia, the same area of usage being considered as a means of energy transportation and bridging one coast to the other.

As a result, pipelines and submarine cables are covered by the same legal framework and do not benefit from specific, tailor-made rules and prescriptions. This negligence toward technical and maintenance issues between submarine cables and submarine pipelines is the root of the present gaps and ambiguities in the conventional international law of the exploitation of the pipelines, which continued into the 1982 Convention of the United Nations for the Law of the Sea[19].

Article 79 (1) of the Convention on the Law of the Sea stipulates that all States are entitled to lay submarine cables and pipelines on the continental shelf, while in paragraph 2 of the same article of the Convention explicitly states that the coastal state cannot impede the laying or maintenance of such cables or pipelines.

However, this general rule is subject to a number of restrictions and reservations of the coastal state, as are listed in the continuation of the article. In particular, the coastal state has the right to take reasonable measures to ensure that the laying or maintenance of cables and pipelines does not impede its rights to explore and exploit the natural resources of the continental shelf and as regards the delineation of the course for the laying of such pipelines on the continental shelf, it shall be subject to the consent of the coastal state.

These regulations do not affect the right of the coastal state to establish conditions for cables and pipelines, which entering its territory or territorial sea and correspondingly, the

[19] Saeed Hashemi Lalehabadi (2018), Legal problems of submarine pipelines in the continental shelf and the exclusive economic zone/Ocean and Coastal Management, https://doi.org/10.1016/j.ocecoaman.2017.12.023

jurisdiction of the coastal State over the cables and pipelines constructed or used in connection with the exploration of the continental shelf or the exploitation of its natural resources or the operation of artificial islands, installations and constructions under its jurisdiction is not affected. Finally, when laying cables and pipelines, states must take into account the already in position pipelines and cables.

Therefore, the coastal state on whose continental shelf the cable or pipeline will be laid has the right to demand the application of certain conditions for the performance of these tasks in order to ensure its sovereign rights to explore the continental shelf and exploit its natural resources. In case that the third state, in the exercise of such right, causes problems in the national security of the coastal state or infringes on its sovereign rights on the continental shelf, it is a matter of international responsibility, possibly misuse of power, which should be resolved in accordance with the relevant provisions of the UNCLOS, taking into account all the real facts.

Image: A pipeline project. Photo: courtesy of outgunned21/Freeimages.com.

3. DELIMITATION OF THE CONTINENTAL SHELF AND OTHER MARITIME ZONES

3.1. Delimitation process

For the best possible understanding of the discretion and limits of a state in the exploration and exploitation of the continental shelf, it is of great significance to mention and analyze the delimitation of maritime zones and specifically the delimitation of the continental shelf, as a research subject of this dissertation.

Historically, maritime zone delimitations began around the end of the 19th century with the delimitation of the territorial sea, where the coastal state exercised full sovereignty and the high seas as an open sea, where no state had sovereignty and it was *res communis omnium,* with other word was open for exploration and exploitation by all states. The next historical phase was the creation of the continental shelf in 1945 and then the need to delimit this submarine zone. The first rules were enacted by the 1958 Geneva Conventions, which were followed by a rich case law of the International Court of Justice and the International Arbitration Courts. Articles 74 (1) and 83 (1) of the Convention on the Law of the Sea on the delimitation of the Exclusive Economic Zone and the continental shelf, respectively, refer directly to International Law, which has been largely shaped by the jurisprudence and practice of states.

Each coastal state usually adjusts in its municipal law the limits of the maritime zones that surround it up to the maximum permitted by international law. When the geographical location of a particular coastal state allows the expansion of the acceptable maximum widths of each marine or submarine zone without the possibility of overlapping a zone, the delimitation, unilateral in this case, does not create problems. However, in most areas, states are required to share marine areas, each of which is entitled to them. So is it is necessary to delimit imaginary marine or submarine border lines, which define the respective maritime zones of the neighboring coastal states. The border delimitation for example, on the continental shelf between adjacent states is a detailed definition of the extent of the seabed to which each is entitled one of them. In the Fisheries case (1951) between United Kingdom and Norway the International Court of Justice pronounced its famous thought on the nature of maritime delimitation, emphasizing that delimitation of sea areas is always governed by

international law and specifically "*the delimitation of sea areas has always an international aspect*;" in the sense that it cannot depend solely on the will of the coastal State, as it is expressed in its municipal law. Although delimitation, as mentioned above, is a unilateral legal act (because only the coastal state can do so), its validity in relation to third states depends on international law[20]. In the absence of any relevant agreement, the procedure may not increase, decrease or cancel this right.

The delimitation of maritime zones presents several difficulties compared to territorial delimitations and constitutes a complex task. Maritime delimitations are a particularly difficult task, because in the sea there are no natural elements that could be boundary points. In particular, in the submarine areas it is relatively impossible and particularly difficult to diagnose the geomorphology of the land. For this reason, delimitation is necessarily occurred with geographical coordinates. The delimitation between the coastal state and the international community is especially important for the continental shelf. This concerns cases, where the coastal State determines the external limits of its continental shelf beyond 200 nm from the baselines, in which case it must, comply with the relevant recommendations of the Commission on Limits of the Continental Shelf in accordance with Article 76 (8) of the Convention on the Law of the Sea. However, there are many who argue that in this case there is literally no delimitation but a joint delimitation of the outer limit of the continental shelf.

The delimitation consists in the selection of a maritime limit, an imaginary line, in which the sovereignty or jurisdiction of a state ceases and the jurisdiction of another one begins. The problems of delimitation consist in the process of selecting the appropriate maritime limit, in the decision on that limit, in the making process and final depiction of the imaginary line in the internal waters, territorial sea, contiguous zone, continental shelf and Exclusive Economic Zone.

The main process of delimitation of maritime zones is actualizes by agreement between the interested coastal states. The lack of an agreement does not necessarily lead to controversy or dispute, as interested states may accept a geographical line as a de facto delimitation line. However, in case of states' inability to reach an agreement, international disputes arise, which are considered by definition legal and therefore is subject to legal

[20] Fisheries Case (United Kingdom v. Norway), 1951 I.C.J. Summary 1951/3 (Dec. 18)

settlement, international tribunal or arbitral tribunal, as the International Court of Justice has ruled in its decision on the Aegean continental shelf[21].

According to the international law, a zone of jurisdiction is established by a unilateral act by the coastal state and applies to other states provided that the applicable rules of international law are complied with. The case of the continental shelf is a special issue, on which the rights of the coastal state, as already stated in this dissertation, exists ipso facto and ab initio, which means that is not required any explicit declaration by the coastal state for the exercise of these rights. If the geography of the area does not allow for the full expansion of the maritime zone, there is a controversy of delimitation with neighboring states, which in principle is implemented by agreement between the interest states. States often establish the median line as the outer limit of their maritime zones, namely the line at which each point has equal distance from the nearest points of the base lines from which the range of the maritime zone of each of the two states is measured. According to the International Court of Justice in its decision of 20 February 1969 on the continental shelf of the North Sea case "*delimitation is a process which involves establishing the boundaries of an area already, in principle, appertaining to the coastal State and not the determination de novo of such an area. Delimitation in an equitable manner is one thing, but not the same thing as awarding a just and equitable share of a previously undelimited area, even though in a number of cases the results may be comparable, or even identical".*

Therefore, the importance of international jurisprudence, which clarifies the principles and rules governing the delimitation of maritime zones and especially the continental shelf's, is particularly important. The law of maritime delimitation consists mainly of the accumulated case law of the International Court of Justice and the arbitral tribunals. The numerous jurisprudences of the international judicial bodies, which have a legal status, considered in this prism as the main source of the law of delimitations, hold a primary position. For this reason, it is necessary to study in detail the evolving process of maritime law delimitation through the practice of international judicial bodies, along with the advancement of scientific theory.

[21] Κ. Ιωάννου-Α. Στρατή (2000), Δίκαιο της Θάλασσας, Β' Έκδοση, σελ. 317

3.2. Delimitation methods

The arrangements and disputes of the states for maritime zones as a whole focus on four basic principles. These are the principles of the equidistance and the median line, the special circumstances and that of equitable principles[22]. These often include the issue of the integration of the islands in the respective delimitation[23].

The principle of equidistance was established as a basic method of delimitation with the first United Nations Convention on the Law of the Sea (UNCLOS I) in 1958. Article 6 (1) of the Convention on the continental shelf provided that in case that the continental shelf is adjacent to two or more states, whose coasts are opposite each other, then maritime boundaries are determined by the median line method, in the absence of agreement and special circumstances. The same regulation provided in the same Article (2) for the continental shelf of two adjacent states, where the boundary are determined by application of the principle of equidistance from the nearest points of the baselines from which the breadth of the territorial sea of each state is measured.

The median line is the line, each point of which has the same distance from the nearest points of the base lines, from which the coastal zone is measured. The concept of the median line is used, when referring to opposite coasts of two states, in order to be used in delimitation. In essence, with the delimitation of the median line, the coastal states share exactly the maritime or submarine area between them. While it often seems that the equidistance and the median line are two different methods, in fact the method is one and is the method of equidistance. What actually happens is that this method is applied differently in cases of adjacent or opposing states.

For non-contracting parties to the Geneva Convention, the second paragraph of Article 6 shall not apply. This is the case in adjacent states where the line of equidistance is not covered by customary law. However, the median line between opposite states may be

[22] Εμμανουήλ Ρούκουνας (2006), Διεθνές Δίκαιο, Τεύχος Δεύτερο, Το κράτος και το έδαφος-Το δίκαιο της θάλασσας, σελ. 252-253

[23] According to article 121 (2) of the UNCLOS, as with customary law, all islands, with the exception of rocks which cannot sustain human habitation or economic life of their own, have all maritime zones. Therefore, there should be no question of delimitation specifically for the islands. However, in the practice of delimitation and in international jurisprudence, islands are a burning issue. In the international case law of delimitations, there is a distinct treatment of islands in terms of their effect or on the determination of maritime zones. A typical example is the long-standing difference between Greece and Turkey for the delimitation of the continental shelf in the Aegean and the effect of the Aegean islands on it.

binding on non-contracting parties as well as between the parties to the Convention, in which the inherent rights of the two states are met and intertwined. These views may be limited, as mentioned above, only in the case of adjacent states, leaving at some distance probably a privileged position in the case of the states concerned. Every reference at the principle of equidistance was abandoned at the Third United Nations Conference on the Law of the Sea, which adopted a single criterion of leniency for delimitation between opposite and adjacent states for delimitation of the continental shelf as well as for the Exclusive Economic Zone (EEZ) (Articles 74 and 83) of the 1982 Convention. Nevertheless, equidistance continues to play an important role in the negotiations on temporary limit regulation and the delimitation of the EEZ and fishing zones that provide fewer areas of dispute than the continental shelf.

The above methods could be said to derive from the general perception that the fairest distribution between two states of a maritime zone overlaid by each other is the delimitation, right in the middle of the relevant area.

In addition to the principle of equidistance and the median line, which are mentioned above, the principle-method of special circumstances is a widely used concept in the international jurisprudence of delimitations. The reference to circumstances, affecting the law of delimitations, was first made in the Conventions of the First Conference of the United Nations and specifically in Article 12 (1) of the Convention on the Territorial Sea and Contiguous Zone and in Article 6 (1) and (2) of the Convention on the Continental Shelf. Despite the inclusion of the term in conventional texts, the reference to special circumstances has been widely used by the International Court of Justice and we could say that it must be considered that it has entered customary law as a special parameter of limitations set by the UNCLOS.

Special circumstances are considered special geomorphological data mainly of the area that is going to be delimitated. In 1954, the International Law Commission used geomorphological data, as well as navigation and fisheries interests as examples of special circumstances. Both the decisions of the International Court of Justice, as well as the international arbitral tribunals and bodies, present a difficulty in accurately defining or accurately enumerating of such special circumstances, and this differs greatly in how they are interpreted by these judicial authorities. Therefore, there is a great deal of ambiguity as to the exact definition of these special circumstances in the process of delimitation. However, many cases such as, North Sea Continental Shelf, Libyan Arab Jamahiriya/Malta

Continental Shelf, Tunisia/Libyan Arab Jamahiriya Continental Shelf, recognize as special circumstances geographical features and issues of defense and security, but always intertwined with issues of geography of the region, while the international jurisprudence does not take into account as special circumstances issues of economic and social development of coastal states.

Essentially, special circumstances are taken into account when the principle of equidistance, as a standard boundary rule, can create inequalities. Therefore, in order to avoid an unequal and therefore unfair result in delimitation, special circumstances must be taken into account as a most balanced method, by the parties or the competent judicial bodies. After all, the purpose of the international legislator is to mitigate the strict application of the median line and to allow it to deviate from it at those points of delimitation, where special circumstances apply.

In the UN Conventions on the Law of the Sea, as well as in international jurisprudence we will also confront the concept of equitable principles or the concept of equity. However, despite the extensive reference, it is not clear enough what the equitable principles are, what their function is in the delimitation process, and what their interpretation is. The legal nature of the principles is not clear, as we cannot speak with certainty about either rules of law or interpretive methods or other forms of judicial reasoning. The notion of equity is at the heart of the delimitation entered into the delimitation process with the 1945 Truman Proclamation, concerning the delimitation of the continental shelf between the Unites States and adjacent states. The starting point for the application of the concept of equitable principles was the widely-repeated landmark decision of the ICJ of 20 February 1969 on the continental shelf of the North Sea case. In this case the Court decided that during the delimitation process the equitable principles are applied while parties taking all the circumstances into account. In this way, the equitable principles became primary rule of delimitations despite the lack of any basis in the practice of the states.

The definition of equitable principles is closely related to the idea of *unicum*, which means that geographical features of each delimitation case varied so greatly that it is difficult, if not impossible, to posit any fixed principles applicable for the establishment of maritime boundaries between states. The idea of the uniqueness of each boundary finds significant support in the jurisprudence of the ICJ and arbitral tribunals.

However, the element that can be safely ascertained in the relevant international jurisprudence is that with the application of equitable principles first is attempted a

temporary, trial delimitation, and then the result is controlled into the prism of the relevant circumstances, which are chosen to be applied by the judicial authority.

3.3. Delimitation of the continental shelf

The delimitation of the continental shelf between states with opposite or adjacent coasts has been the occasion for the creation of fierce confrontations and conflicts and has led to an abundance of conventional arrangements and case law. The three fundamental elements that compose the basic rule of delimitation of the continental shelf are determined in Article 83 (1) of the UNCLOS. These key elements are the agreement, the basis of international law and the equitable solution.

3.3.1. Conclusion of an Agreement

As it was mentioned, the main process of delimitation of maritime zones is actualized by agreement between the interested coastal states. Therefore, the delimitation of the continental shelf requires an agreement between the interested states and in no case can it be carried out by a unilateral act of one of the coastal states. In practical terms, the provision transfers to the field of delimitation a general rule of conduct for transnational relations. The conclusion of an agreement presupposes meaningful negotiations between the states with a view to arriving at an agreement. The parties are under the obligation to enter into negotiations not merely to go through a formal process of negotiation as a sort of prior condition for the automatic application of certain method of delimitation in the absence of agreement. They are obliged to conduct themselves that the negotiations are meaningful, which will not be the case when either of them insists upon its own position without contemplating any modification of it[24].Therefore, the states concerned must take a conciliatory stance in the negotiations, always defending their rights, otherwise the outcome of the negotiations will be undoubtedly fruitless.

The obligation to negotiate the conclusion of a delimitation agreement does not constitute an obligation to conclude an agreement, as no rule of international law imposes on states the obligation to reach an agreement. After all, such an act would be contrary to the notion of

[24] North Sea Continental Shelf Cases (Federal Republic of Germany/Denmark), 1969, I.C.J. Judgment of 20 February 1969, Par.85 (a)

state sovereignty. However, according to international jurisprudence, there is a violation of international obligations when states do not conduct negotiations in good faith, which primarily means that they are conducted in accordance with the relevant substantive rules of international law or when they enter them with strictly immovable and immutable positions. An example of smooth negotiations in good faith that led to the conclusion of the agreement is the very recent delimitation agreement of the Exclusive Economic Zone between Greece and Italy on June 9, 2020 and which is based on the boundary line for the continental shelf determined by the 1977 Agreement between the Hellenic Republic and Italian Republic for the delimitation of the respective continental shelves.

In any case, if no agreement can be reached within a reasonable period of time, the States concerned shall resort to the procedures provided for in the Convention. Pending agreement, the States concerned in a spirit of understanding and cooperation, will make every effort to conclude provisional arrangements of a practical nature.

3.3.2. The International Law

The reference to Article 83 of the Convention on the Law of the Sea in international law introduces into the delimitations the whole framework of conventional and customary provisions, general and specific. In fact, this referral is not of particular legal importance because delimitation is in any case an international litigation, so international law is a pre-existing element. However, the provision of Article 83 (1) is emphatically applicable to the implementation of customary law on delimitations, as it has enshrined in international jurisprudence.

According to the provision of Article 83 (1) the application of the customary law of delimitations introduces into the potential delimitations the whole debate on the content of the equitable principles, which have been analyzed in this Chapter. The basic elements of the customary rules of international law regarding delimitations have been repeatedly recorded by the International Court of Justice in several of its judgments, with the decision of the Delimitation of the Maritime Boundary in the Gulf of Maine Area case between Canada and United States of America being particularly characteristic. On 25 November 1981, Canada and the United States notified to the Court a Special Agreement whereby they referred to a Chamber of the Court the question of the delimitation of the maritime boundary dividing the continental shelf and fisheries zones of the two Parties in the Gulf of Maine area. This

Chamber was constituted by an Order of 20 January 1982, and it was the first time that a case had been heard by an *ad hoc* Chamber of the Court[25].

According to the decision of 12 October 1984, maritime delimitation between states with adjacent or adjacent coasts is not carried out unilaterally by one of the parties but the demarcation must be sought and carried out by agreement, following negotiations conducted in good faith and with the real intention of achieving a positive result

According to the decision of 12 October 1984, maritime delimitation between states with opposite or adjacent coasts is not carried out unilaterally by one of the parties but the delimitation must be aimed for an agreement, following negotiations conducted in good faith and with the real intention of achieving a positive result. If the parties have not reached agreement on the extension of the maritime boundary, either party may notify the other of its intention to submit the question of the seaward extension of the maritime boundary for decision by a binding third party settlement procedure. In any case, the delimitation of a single maritime boundary requires the application of equitable principles, taking into account the relevant circumstances in the area, to produce an equitable solution.

Therefore, if the customary law of delimitation is what is recorded by the International Court of Justice, then the final finding of Article 83 shows that the application of the equitable principles or criteria is a legal requirement of customary law, while at the same time the consideration of the relevant circumstances is legitimized, even if they are not explicitly mentioned in the rule of Article 83 (1).

3.3.3. The equitable solution

In the Article 83(1) for the delimitation of the continental shelf is mentioned the element of the equitable solution, a reference quite vague and without substantial content. It could be argued that the above wording is a guiding principle for the negotiating states to be guided in the direction of an equitable outcome, when concluding a delimitation agreement, while it could be interpreted as a requirement for the international judge to ensure the reliability and the validity of international justice in the field of delimitation. In any case, achieving an equitable solution underscores the goal, the outcome of which must be achieved by delimitation efforts.

[25] Delimitation of the Maritime Boundary in the Gulf of Maine Area (Canada/United States of America) icj-cij.org/en/case/67

3.4. Delimitation of the continental shelf in relation with the Exclusive Economic Zone

With the establishment of the institution of the Exclusive Economic Zone by the Convention on the Law of the Sea and because of its close relationship with the continental shelf, the issue of the delimitation of a single maritime boundary has been raised, namely a single delimitation of the two zones. In one view, according to the case law, the line of the continental shelf always coincides with the delimitation line of the Exclusive Economic Zone and vice versa, while it is implied that the coastal zone is the line of the exclusive economic zone. States, which have already delimited their continental shelf in the delimitation of the exclusive economic zone should apply the same principles and rules in order to achieve the above-mentioned identification of the delimitation lines.

Accordingly, the delimitation of the EEZ should follow the delimitation of the continental shelf, because within the EEZ the coastal State is recognised as having sovereign rights on the seabed, as they apply on the continental shelf. The legal nature of the two regimes requires the delimitation of the continental shelf to take precedence.

3.5. Delimitation of maritime zones in the Mediterranean Sea

Some of the most significant cases of delimitation in the Mediterranean Sea are the recent agreements between Greece and Italy and Greece and Egypt.

As mentioned above, in a bilateral agreement signed in Athens on 9 June 2020, Greece and Italy delimited their maritime zones, including their future exclusive economic zones (EEZs), based on the map that had delimited their continental shelf by bilateral agreement on 24 May 1977. The new agreement reaffirmed in principle the 1977 agreement, but in addition stated that both countries recognise the relevant provisions of UNCLOS, which was signed five years later on 10 December 1982. Italy and Greece showed diplomatic flexibility by applying the principle of equidistance, while the coordinates were recognised in a way that would not cause complications in the delimitation of the exclusive economic zones with the neighbouring states, namely Albania, Libya and Malta.

Also, in a bilateral agreement signed in Cairo on 6 August 2020, Egypt and Greece partially delimited their exclusive economic zones (EEZs). As the two countries had never signed a continental shelf agreement, this was the first agreement to delimit their maritime

borders. In its preamble, both parties declared their respect for UNCLOS and stressed the importance for each party of the delimitation of their exclusive economic zone. Both Parties agreed to a partial delimitation, adding that if either Party enters into negotiations with a third State sharing a maritime boundary with both Parties, that Party should inform and consult with the other Party before reaching an agreement with the third Party. It was further agreed that where natural resources extend into the exclusive economic zones of both parties, the two countries will cooperate to reach agreement on the modalities of exploitation of these resources. It should be noted that by this agreement the Parties seek to resolve any dispute arising from the interpretation or application of this agreement through diplomatic channels in a spirit of understanding and cooperation.

In addition, the decisions of the International Court of Justice have a very decisive role in the delimitation of the Mediterranean maritime zones. Some of the most significant ones are the decision of 24 February 1982 in the dispute over the delimitation of the continental shelf between Libya and Tunisia[26]. The structure of the decision and its content were determined by the agreement of the two states, which was submitted to the ICJ. The task of the Court was to determine the principles and rules of Public International Law, which could be relevant for the delimitation of the continental shelf between the two states. The Court took into account the geographic characteristics of the territory, principle of equity and the new trends, which were crystallized in the Third United Nations Conference on the Law of the Sea. Also, the court focused on considerations of equity and on the special circumstances of this case, as the course of the coast, the position of the Kerkennah Islands (Tunisia), the course of the land border, the practice of allocation of drilling concessions before 1974, as well as the relation of the length of the coast to the extent of the continental shelf area.

Similarly, on 3 June 1985, the International Court of Justice published its judgement on the continental shelf dispute between Libya and Malta, in which it formulated the principles, were the fundamentals of its decision[27]. The delimitation of the continental shelf should conform with equitable principles, as put forth by the ICJ in the North Sea Continental Shelf cases. The principle of equity is also enshrined in Articles 74 and 83 of the UNCLOS. Thereupon, the Court abstained from getting guidelines from the principle, that the continental shelf is the natural prolongation of the land under water. In his decision, the

[26] Case Concerning the Continental Shelf (Tunisia/Libyan Arab Jamahiriya), 1982, I.C.J. Judgment of 22 February 1982

[27] Case Concerning the Continental Shelf (/Libyan Arab Jamahiriya/Malta), 1985, I.C.J. Judgment of 3 June 1985

Court referred to the general configuration of the coasts, their length in relation to each other and their distance to each other. In addition, the Court saw an additional criterion in the relation of the coast length and the respective extension of the areas of the continental shelf. Both parties agreed that the UNCLOS established partly customary law. The two parties suggested different legal bases, as Libya referred to the principle of prolongation of the land under water and Malta on the criterion of equidistance.

The Court concluded that an equitable result could be achieved by drawing a median line where every point is equidistant from the low-water mark of the respective coast of Malta and the low-water mark of the respective coast of Libya. This line became subject to adaptation in consideration of the mentioned circumstances and factors, so a more equitable result for Libya could be achieved.

4. THE INSTITUTION OF THE CONTINENTAL SHELF IN THE MEDITERRANEAN SEA THROUGH ENERGY CHALLENGES

4.1. The importance of Mediterranean

The Mediterranean has been known since ancient times as *mare magnum* according to the Romans, a great closed sea, located between three continents, Europe, Asia and Africa, or in other word an example of a semi enclosed sea, according to the definition given in Article 122 of UNCLOS, encouraging the bordering states to cooperate directly or through appropriate regional organizations in several areas, such as the conservation and exploitation of sea resources, protection of the marine environment, and coordination of marine research[28].

The Mediterranean is a sea connected to the Atlantic Ocean to the west by the Gibraltar Strait and to the Red Sea to the east by the Suez Canal, surrounded by the Mediterranean Basin and almost completely enclosed by land. It is surrounded on the north by Southern Europe and Anatolia, on the south by North Africa and on the east by the Levant. Although the sea is sometimes considered a part of the Atlantic Ocean, it is usually referred to as a separate body of water. Geological evidence indicates that around 5.9 million years ago, the Mediterranean was cut off from the Atlantic and was partly or completely desiccated over a period of some 600.000 years (the Messinian salinity crisis) before being refilled by the Zanclean flood about 5.3 million years ago[29].

It covers an area of about 2.500.000 km^2 (970.000 sq mi), representing 0,7% of the global ocean surface and has an average depth of 1.500 m (4,900 ft) with the deepest recorded point in the Calypso Deep in the Ionian Sea, which is 5.267 m (17.280 ft).

The Mediterranean constitutes a region with sub-regions or as an interface or bridge between coherent regions (for example, between Europe and the Middle East and North Africa - MENA). In the case of the former, the Mediterranean embody at least parts of Turkey, southern European Union member states – Italy, Spain, France, Malta, Cyprus,

[28] Natalino Ronzitti, (2010) The Law of the Sea and Mediterranean Security, Mediterranean Paper Series, September 2010

[29] Dominic Fenech, Michelle Pace, 2017, The historical construction of the Mediterranean from: Routledge Handbook of Mediterranean Politics Routledge, Part I, pp 13

Greece, Portugal to an extent and Algeria, Libya, Mauritania, Morocco, and Tunisia, as well as Egypt, Israel, the Occupied Palestinian Territories, Jordan, Lebanon and Syria. The most important is that the Mediterranean has been central to the development of humanity since known history began, and while it ceased to be a primary junction of global convergence after the late Medieval Period, it remained a focal point of international affairs, whether as subject or as object.

The importance of Mediterranean is due to the fact that it is a sea of passage and a sea of land powers – it is a commercial crossroad with strong geopolitical appeal and political dynamic. In particular, when referring to the Mediterranean, attention is focused on the region of Southeast Europe, the Eastern Mediterranean, the Caucasus and the Caspian Sea, which is becoming increasingly important for European energy policy and is the focus of crucial geopolitical developments and critical geostrategic choices in energy supply. In the case of Southeast Europe, the point of friction is the differentiation of the energy sources of the states through the sources of the Caspian Sea, while in the case of Southeast Mediterranean the large hydrocarbon deposits between Greece, Cyprus and Israel, as will be analyzed below.

In every case, the continental shelf is the institution of the law of the sea in which the exploitation of energy deposits takes place, as the coastal state exercises its sovereign rights and safeguards its acquis. It is precisely for this reason that the delimitation of the continental shelf is of the utmost importance, much less the establishment of baselines, the boundaries of which determine the extent of the other maritime zones, including the continental shelf.

4.2. Energy challenges in the Mediterranean Sea

The Mediterranean and especially the region of Eastern Mediterranean has become a hotspot of international energy discussions in recent years, as a result of sizable discoveries in the offshore of Israel, Cyprus and Egypt and undeniably constitute the focal point of a significant energy revolution. Between 2009 and 2011 the interest in the area arose when the three large fields of Tamar and Leviathan in offshore Israel and the Aphrodite in offshore Cyprus were discovered. A few years later, in 2015 the discovery of the large Zohr gas field in offshore Egypt was followed, which consists until today the largest gas field ever discovered in the Mediterranean Sea, (among the twenty largest deposits discovered in the world), estimated at 30 trillion cubic feet (equivalent to 5.5 billion barrels of oil), 30% larger than the Israeli Leviathan, which has held the top spot so far. As it was expected the international energy markets focus on the region in order to exploit the possible energy and therefore economic prospects. Also, these large scale discoveries turned the region's fate of being a long-term energy importer, reliant on neighboring Arab and Russian suppliers, into prospective net exporters. That vast and relatively newly discovered energy reserves in the region have reshape the balances in the energy market and have all the potential to change and transform the dynamic not only of the Eastern Mediterranean countries, but also the dynamic of Europe. After all, energy issues are matters of strategic importance and geopolitics. The discovery of energy deposits create momentum and upgrade a country overall, but at the same time creates tensions and involves international forces in an area, where interests are not only economic, but determined by the international environment.

The Eastern Mediterranean's discoveries since 2009 and after were not the first offshore exploratory successes in the Levant Basin. Gas was discovered in 1999 and 2000 at Israel's offshore Noa and Mari-B fields, as well as in offshore Gaza. These first discoveries were small, and triggered little of the notable attention the region has received more recently. The region's first offshore discoveries were as much the result of economic stubbornness, as they were of politically conceived economic need[30]. Israel's historical political and economic isolation among its Arab neighbors has motivated the country's on-and offshore exploration

[30] Andoura S. and Koranyi D., (2014), Energy in the Eastern Mediterranean: Promise or Peril?, joint report by the Egmont Institute and the Atlantic Council, Egmont paper 65

efforts for decades, with the strategic aim to reduce its import dependence for energy reaching back as early as the 1970s.

While Mari-B provided Israel with small volumes of domestically produced gas for a limited period of time, subsequent years saw disappointing exploration results, reinforcing both Israel's and the wider region's expectations of remaining reliant on energy imports for the foreseeable future. Eventually, new gas was discovered in 2009, again in Israeli waters, and this time the discoveries were large, followed by the 2010 landmark discovery of the giant Leviathan field.

In more detail, the wealth of the eastern Mediterranean caught the attention of the world in 2009, when a joint venture led by the American Noble Energy discovered the Tamar field in offshore Israel. It was the largest natural gas field ever found in the area. With a proven and potential reserve of about 320 billion cubic meters, the Tamar gas field would bring self-sufficiency to the Israeli gas market. Just a year after Noble's first discovery, the company made an even bigger discovery. The new field, called Leviathan, had nearly 600 billion cubic meters of proven and potential reserves. The new stocks would give Israel enough resources not only to meet domestic demand, but also to become a major exporter.

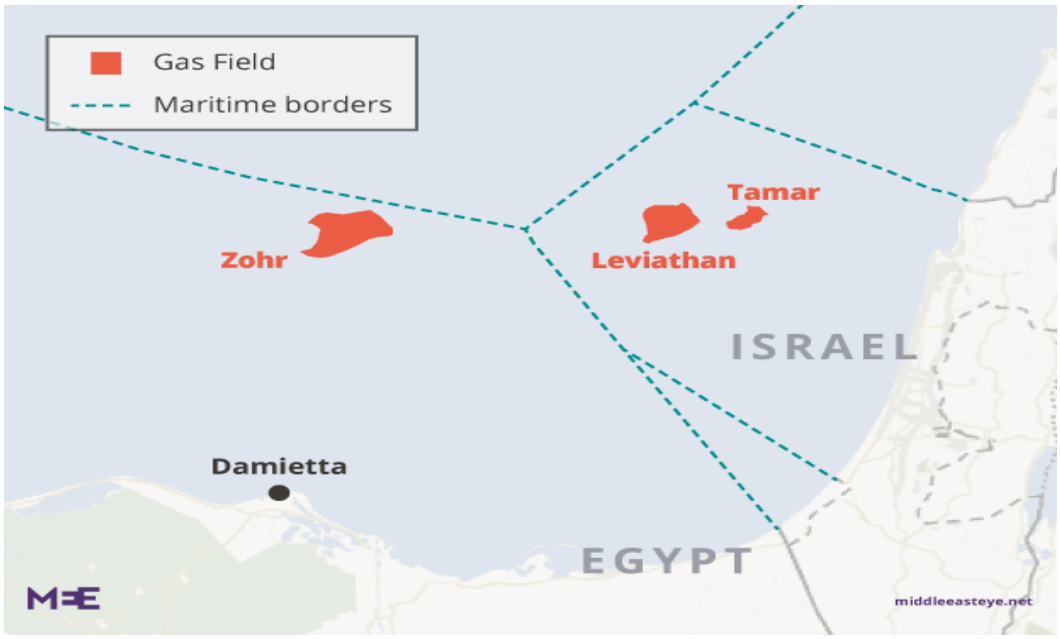
Noble's fortunes continued the following year, this time in Cypriot waters. About 30km northwest of Leviathan, the US Company has discovered another field, the Aphrodite gas field with 130 billion cubic meters of gas. Energy officials estimated that the three deposits could produce a total of 40 billion cubic meters per year, with total reserves of almost 1 trillion cubic meters.

After the discovery of the Tamar and Leviathan fields, Israel started to examine the various policy options to exploit the newly discovered gas resources and also the optimal policy for the country's future gas industry. Before the discovery of the Tamar and Leviathan bodies, Israel depended on natural gas from neighboring Egypt. However, this dependence has created major problems, especially for Israel, as the country has sought to ensure its self-sufficiency in various areas, especially in the energy sector, in order to gain a strategic advantage. In addition, domestic unrest, which included attacks on pipelines that prevailed in Egypt after the Arab Spring, threatened a steady supply of energy in Israel.

As Israel examined its gas strategy after the discovery of Tamar and Leviathan fields, Egypt tried to attract interest to its energy reserves through a series of reforms and to end the country's gas crisis. Gas did not represent a new element in Egypt's energy market, as it has played an important role in the region for almost four decades. After 2000, Egypt became a

major gas exporter, developing not only a large LNG infrastructure, but also two international pipelines that for years represented examples of regional economic and political cooperation driven by energy. These were the Egypt-Israel pipeline and the Arab Gas Pipeline. Egypt increasingly made use of its large gas reserves, which was estimated at 1.8 trillion cubic meters during the 1980s and 1990s, but really increased their exploitation only after 2000. Between 2000 and 2011, the country tripled its gas production, paving the way for considerable gas exports[31].

However, Egypt's gas production was severely hit by the Arab Spring, as the political turmoil blocked the inflow of essential upstream investments. Since 2011, country's gas production has dramatically decreased, resulting in massive powers cuts in 2012 and 2013. The turning point in terms of gas discoveries came in 2015, when the Italian multinational oil and gas company Eni, announced the discovery of the huge Zohr gas field in offshore Egypt. The discovery of Zohr completely changed the game in the eastern Mediterranean. Countries such as Israel and Cyprus were immediately forced to re-evaluate their strategies. In addition, Zohr gas field renewed the interest of the world's largest oil and gas companies, in order to discover the next huge gas field in the eastern Mediterranean. Not only did the interest in research in Egypt continue, but also the energy interest turned to Cyprus, which has paved the way for more research activities.



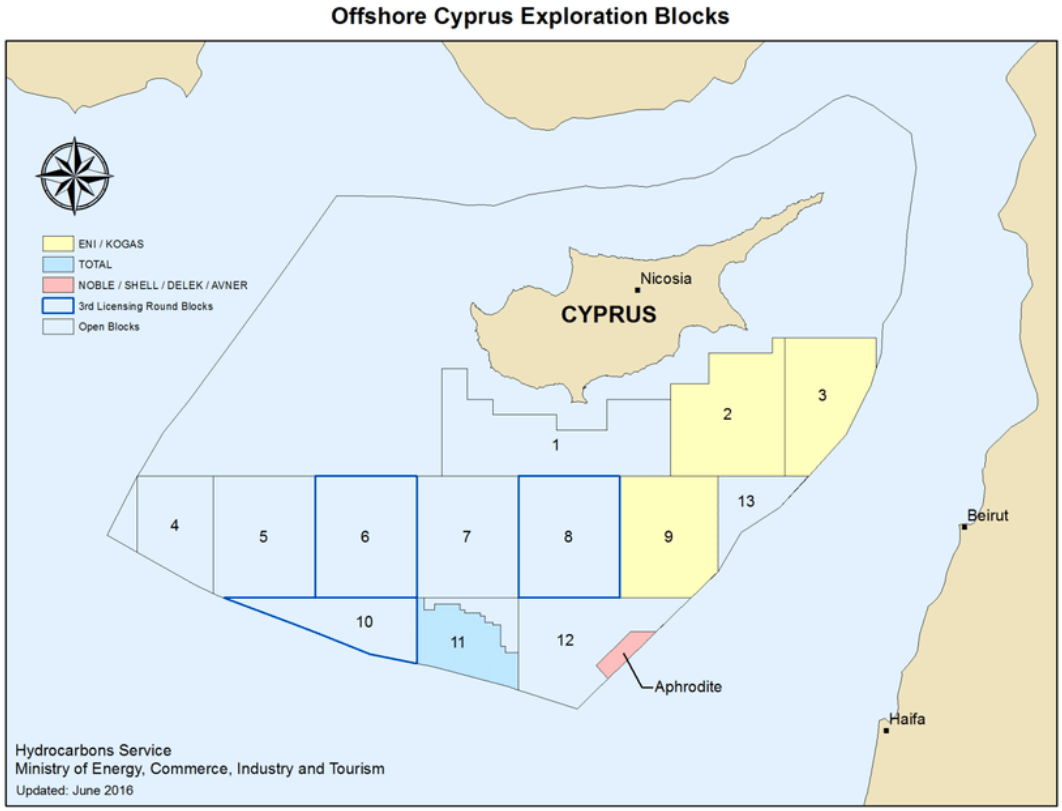
[31] European Parliament's Committee on Foreign Affairs, Energy: a shaping factor for regional stability in the Eastern Mediterranean?, 16 May 2017, pg 13

In 2011 the American company Noble Energy and the Israeli Delek discovered a natural gas reservoir in offshore Cyprus (Block 12), the Aphrodite field with a resource estimate, at the time, of up to 220 billion cubic meters. The Government of Cyprus immediately engaged with Noble Energy and Delek to design a development plan for the Aphrodite field, with the double aim of meeting the island's domestic gas demand for power generation and exporting part of the gas resources. However, the initial enthusiasm was abated after initial estimations of Aphrodite's resources were revised to 140 billion cubic meters in 2013. This amount could certainly be sufficient to satisfy Cyprus' domestic gas needs for several decades, but, due to the small size of the island's market, these gas resources could only be developed if partly devoted to exports. In November 2015, Noble Energy and Delek announced a farm-out agreement for a portion of its interest in Block 12 with the British BG International Company of oil and gas exploration and production. With this deal, BG (then acquired by Shell in February 2016) acquired a 35 % interest in Block 12[32]. In January 2013, the Italian Eni signed exploration and production sharing contracts with the Republic of Cyprus for Blocks 2, 3 and 9. The award of exploration licenses has been made by the Republic of Cyprus despite the objections of both the Turkish Cypriot community and of Turkey, as, both claim that the Republic of Cyprus does not have the sole authority holding exclusive rights concerning the island's natural resources until a settlement of the decades-old Cyprus issue is found[33].

A few years later, in 28 February 2019 Exxon Mobil and Qatar Petroleum (QP) consortium announced the natural gas offshore discovery at Glaucus gas field in block 10 located deep underwater more than 100 miles southwest of Cyprus and estimated to hold between 5 and 8 trillion cubic feet (tcf) of natural gas. The discovery is likely to lead to further work in the Calypso field to the east, which was discovered in Block 6 by ENI and the French Total a year ago of Glaucus discovery in 8 February 2018 and is estimated to contain 6 to 8 tcf.

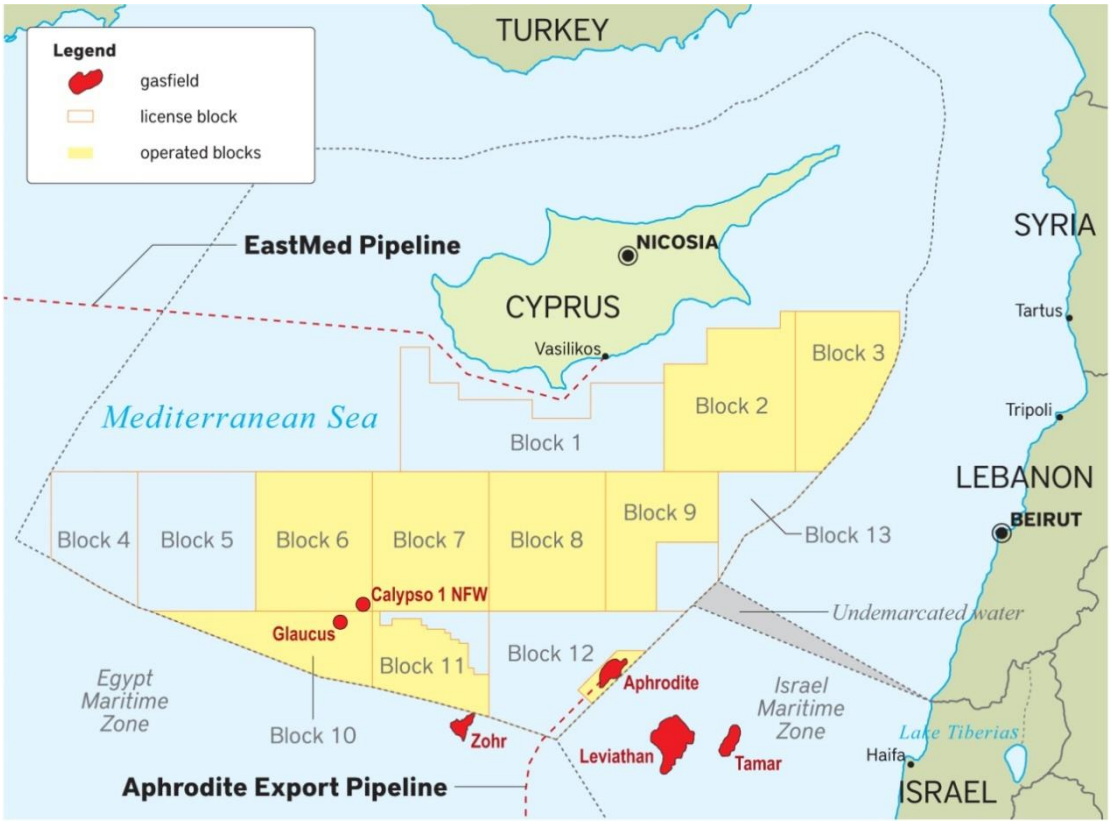
[32] Oil and Gas Journal (2015), BG farming into Aphrodite block off Cyprus, 23 November

[33] Although the Aphrodite deposit has never been a point of contention in the Cyprus issue, Eni's activities have often provoked the wrath of Turkey, because although it is off southern Cyprus, the northern part of Block 6 is located on the continental shelf, which claimed by Turkey. Turkey also claims that Block 3, located southeast of the mainland, should be managed by the self-declared TRNC (Turkish Republic of Northern Cyprus) and not by the Republic of Cyprus. In fact, the Turkish Cypriots gave the rights for a similar plot, overlapping Block 3, to the Turkish national oil company, Turkish Petroleum (TPAO), in 2011.



Even if these discoveries have controversial significance because of Turkish disputes, the Glaucus discovery could be a game changer discovery for the development of gas reserves of the Republic of Cyprus as secures the involvement of the Exxon Mobil-QP consortium, and this involvement increases the confidence of Eni and Total companies for the development of Kalypso.

All in all, Cyprus is an example of a region defined as much by long-standing political conflict as it is by economic difficulty, in which low-cost, regional gas supplies could play a strategic role. Eastern Mediterranean's gas offers a rare opportunity for the region to reengage in mutually beneficial trade relations that could underpin greater economic and political stability in one of the most politically volatile regions in the world.



4.3. The role of the continental shelf in the Greek-Turkish dispute

In the early 1970s, Turkey initiated a systematic policy of contentions and claims against the sovereignty, the sovereign rights and jurisdictions of Greece. The goal of this newly formed policy has been the changing of the territorial status quo provided for in international treaties (the Treaty of Lausanne being pivotal among these) and the legal status of maritime zones and airspace as they derive from international law and the law of the sea. The initiation of this policy ushered in a new chapter of tension in Greek-Turkish relations that lasts to this day, and was marked by the first claims on the Greek continental shelf.

Greek-Turkish dispute over the Aegean continental shelf date back to November of 1973, when the Turkish Government published a decision to grant the Turkish national petroleum company (TPAO) permits to conduct research in the Greek continental shelf west of Greek islands in the Eastern Aegean. Since then, the repeated Turkish attempts to violate Greece's sovereign rights on the continental shelf became a serious source of friction in the two countries' bilateral relations, even bringing them close to war (1974, 1976, 1987).

In 1976, Greece brought this very serious issue in the UN Security Council and unilaterally resorted to the International Court of Justice (ICJ) in The Hague. Turkey refused to come before the Court, invoking its non-recognition of the Court's jurisdiction. The ICJ did not examine the substance of the issue for reasons of formality, due to lack of competence. The two countries launched negotiations on the issue of the continental shelf and in November of 1976, signed the Berne procès-verbal setting out a framework for dialogue on the issue until it was submitted to the International Court. However, this dialogue was inconclusive and ended in 1981 due to Turkey's continuous vacillations and intransigent stance, thus the Berne procès-verbal - the validity and duration of which directly depended on the course of the negotiations – ceased to apply.

In March 2002, within the framework of the Greek-Turkish rapprochement inaugurated in 1999, the two sides agreed on a process of confidential exploratory contacts which are still ongoing, in order to find out whether and to what extent there is common ground and the conditions are in place to launch negotiations that might come to an agreement regarding the continental shelf in accordance with the Law of the Sea. In case it seems no common ground can be found within a reasonable amount of time, Greece's firm position, which coincides with international law, is to bring the issue before the ICJ for resolution. But given that Turkey has not recognized the Court's general, mandatory jurisdiction, a special agreement (an agreement to refer a dispute to arbitrators) is required that will constitute the legal basis for the ICJ's jurisdiction.

Greece's positions on the substance of the continental shelf issue and its limits are based on the applicable provisions of the Law of the Sea, both Contractual and Customary, which are the following:

• The United Nations Convention on the Law of the Sea provides for exclusive rights ipso facto and ab initio of a coastal state on its continental shelf which has a minimum breadth of 200 nautical miles, provided the distance between opposing coasts allows for this. Greece ratified this Treaty by Law 2321/1995, which according to the Constitution supersedes any provision to the contrary, and as the newest law takes precedence over any previous one.

• In accordance with Article 121 (2) of the Convention of the Law of the Sea all islands have a right to territorial waters, a contiguous zone, an exclusive economic zone and a continental shelf. These zones are determined in accordance with the

general provisions of the Convention, as those are implemented in mainland regions. This general rule is also customary law and is thus also binding for the states that are not signatories to Convention. Therefore, all the Greek islands have a continental shelf in accordance with the Law of the Sea.

• Within this framework, an issue of delimitation of the continental shelf is only raised between the coast of Greek islands across from Turkey and the Turkish coast.

• With regard to the delimitation method, Greece's firm position is that this delimitation must be based on international law, governed by the principle of equidistance/median line. In this respect, it is noted that, according to article 156 of Law 4001/2011 "For the operation of electricity and gas energy markets, for exploration, production and transmission networks of hydrocarbons and other provisions", in the absence of a delimitation agreement with neighboring States, the outer limit of the continental shelf is the median line between the Greek coasts and the coasts opposite or adjacent to those.

The Greek-Turkish dispute over the delimitation of the Aegean continental shelf is a vital issue for the foreign policy of the two neighboring countries and the resolution of this dispute should be a goal of both Greece and Turkey, so that the relations between them to normalize and give a fair solution to an issue that has caused huge problems in both countries.

The continental shelf as a maritime zone of the highest political and economic importance for each state, the delimitation of which is an extremely labyrinthine, politicized and often challenged issue (closely linked to issues of sovereignty and financial interests) that concerns the Mediterranean countries, especially the Eastern ones, has been the cause of fierce controversies and conflicts and has led to an abundance of contractual rules and jurisprudence. However, as the Eastern Mediterranean is in the midst of a significant energy revolution, which has been said to have given new impetus to the region, it is important to focus not only on issues of economic and political-geostrategic importance, but also on the way of exploiting the energy resources and their impact on the region's environment.

5. ECOLOGICAL IMPLICATIONS FROM THE EXPLORATION AND EXPLOITATION OF THE CONTINENTAL SHELF – THE CASE OF MEDITERRANEAN SEA

5.1. Sources of pollution

The institution of the continental shelf, as a predominantly maritime zone in which the coastal state has the sovereign right to explore and exploit its natural resources, was founded precisely by this need to exploit oil deposits and other seabed minerals, hence the Truman Proclamation of 1945 referred to the mineral wealth of the seabed.

However, the special processes and techniques of exploration, location, extraction, processing and transportation of energy deposits such as hydrocarbons, oil and gas and especially the flourishing of offshore activities, which was unprecedented and continues to grow as new geophysical and methodological research drilling and mining technologies are evolving, posing serious risks to biological resources, the marine environment and consequently to human health.

The concept of environmental abuse is so broad and encompasses such a wide variety of acts or omissions as the list of goods that constitute the environment. An outright violation of the environment is any act or omission that leads to its pollution, contamination or degradation and has adverse effects on both the environmental goods themselves and human beings, which depends on them for their survival and healthy and quality living and is the ultimate recipient of any insult.

According to international definitions *pollution* is the presence in the environment of pollutants, namely any kind of substances, noise, heat, radiation, or other forms of energy in quantity, concentration and duration, which can cause adverse effects on health, living organisms and generally make environment unsuitable for its desired uses. *Infection* is a form of pollution characterized by the presence of pathogenic microorganisms or signs that suggest the possibility of the presence of such microorganisms. Finally *degradation* is caused by human activities of pollution or other change in the environment, which is likely

to have negative effects on health, living organisms, ecosystems or material damage and generally make the environment undesirable for use[34].

The local and temporal extent of each exposure to the environment varies and is often impossible to determine in advance. Careful observation of environmental damage as a total phenomenon leads to the conclusion that harassment from a source of environmental impact affects various goods and humans in a variety of ways and its overall effect is impossible to predict and difficult to assess.

On the other hand, the examination of the different types of exposure leads to the conclusion that they come from the combination of many factors, with the result that it is difficult to either isolate or fight off their source.

From the above findings it can be concluded that the phenomena that cause disruption of the ecological balance have certain characteristics, which determine them in relation to the harmful effects on non-environmental goods and are the main guide for finding appropriate measures to prevent and the aftermath of environmental damage. These phenomena could be said to be scattered both in their manifestation and in relation to their consequences. In fact, this feature is the explanation of the need for a transnational, global mobilization and cooperation to address them. After all, the ecological disaster that takes place in a state is almost unlikely to be reduced within its borders, and therefore its prevention and treatment are of interest to both neighboring states and the international community.

Environmental insults are also collective in the sense that their direct and indirect harmful effects affect a large and often unspecified number of people. Therefore, the effective response of citizens to the deterioration of their environment presupposes their collective organization and its favorable treatment by law, in particular by securing collective judicial protection.

Furthermore, the effects of these phenomena are also timeless, as they affect not only the present but also the future generations, a fact which imposes the formation of protective mechanisms after study and design oriented towards both short-term and long-term problem solving. After all, ecological damage is not always immediately apparent and therefore both its existence and extent at a given point in time are difficult to prove.

Exploration and exploitation of the seabed and subsoil of the continental shelf can mainly lead to marine pollution. In particular, marine pollution is any event that is directly or

[34] Ιωάννης Κ. Καρακώστας, Περιβάλλον & Δίκαιο – Δίκαιο Διαχείρισης και Προστασίας των Περιβαλλοντικών Αγαθών, Δεύτερη έκδοση, σελ. 5

indirectly caused by humans and results in the onset or increase of the degradation of the physical, chemical, bacteriological and biological characteristics of the aquatic environment. At sea, the source of pollution is pelagic, coastal or even aerial[35].

The most common causes of pollution related to underwater exploration, extraction and exploitation of the seabed and subsoil minerals are oil and gas leaks from floating installations, namely pumping platforms and drilling rigs as well as from floating or fixed drilling rigs, from accidental blowouts, ship collisions, waste disposal (dumbing) and damage to submarine pipelines.

From the above causes, which contribute to the creation or even the deterioration of marine pollution, phenomena such as accumulation of salt water, lubricants and disturbance of the seabed are observed, leading to the destruction of natural resources and the wider marine environment.

In order to delineate the context in which marine pollution from offshore energy exploitation occurs, it is appropriate to clarify the conceptual term, which is fully articulated in Article 1 (4) of the UNCLOS III and in particular stipulate that "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.

It is therefore clear that processes and activities during offshore exploration, extraction, production and exploitation of oil and gas can lead to the deposition of substances or energy in the marine environment, which can lead to catastrophic consequences for biological resources, marine life and human health.

[35] Εμμανουήλ Ρούκουνας (2006), Διεθνές Δίκαιο, Τεύχος Δεύτερο, Το κράτος και το έδαφος-Το δίκαιο της θάλασσας, σελ. 227-228

An oil rig

5.2. Vulnerability of the Mediterranean Sea

The Mediterranean Sea covers an area of about 3 million km2 in comparison with Baltic and North Sea that together cover about 1 million km2[36]. It is characterised by large continental shelf surface, which is about 20%, low average depth compared to other oceans world-wide and extended continental shelves, especially in the Adriatic Sea. Mediterranean marine ecosystems present an idiosyncratic combination of characteristics, which make them very different from north European conditions. Critical points for potential impact of pollutants in the Mediterranean coastal systems are high temperatures, fresh water inputs, coastal morphology, biodiversity and anthropogenic pressure.

The Mediterranean is home to an average of 450 million people, and it is estimated that by 2025 this number will have reached 520 million, of which 150 will be concentrated in or near coastal areas. In addition, the Mediterranean is a popular tourist destination, attracting around 200 million visitors each year. However, in addition to this mass influx of visitors, the Mediterranean and its coasts are also home to unique plant and animal ecosystems, with pollution being one of the biggest threats.

[36] Danovaro, Roberto (2003) 'POLLUTION THREATS IN THE MEDITERRANEAN SEA: AN OVERVIEW', Chemistry and Ecology, 19:1, 15 - 32

As a semi-enclosed sea, the Mediterranean is an evaporation basin in which the limited water exchange through the Gibraltar strait and the limited freshwater input results in low water masses turnover rates. This is an important factor, which makes the Mediterranean highly vulnerable to pollution events, especially after the recent discoveries of significant oil and natural gas reserves in the Eastern side, analyzed in Chapter Four of this dissertation, that led to accelerated drilling and continuous exploration, exploitation and production efforts significantly increasing the risks of a potential spill.

In the Mediterranean about 600–800 million tons of hydrocarbons are transported per year[37]. Oil spills are still one of the major sources of organic contamination of the marine environment. Refinery wastes have the second place but important source of chronic oil pollution. Off-shore extraction activities further contribute to the release of hydrocarbons at sea, as about 300,000 tons of crude oil is dispersed in the Mediterranean every year. In 1976 a ban on the discharge of oily wastes proved to be effective and the quantity of tar in the Mediterranean Sea decreased drastically. However, the actual impact of oil on the structure and functioning of natural ecosystems is far from complete.

5.3. Oil spills and other pollution reports during offshore energy sources exploitation in the Mediterranean Sea.

Oil spills have disastrous consequences for society, economically, environmentally, and socially. As a result, oil spill accidents have initiated intense attention and political uproar and actions have been taken to reduce their impact, including oil spill monitoring.

Globally, the examples of accidents during the offshore exploitation of energy resources (hydrocarbons, oil, gas) are countless with the most characteristics, given the great environmental impact, the accidents at the Deep Water Horizon platform in 2010 and at the Ixtoc I platform in 1979, both in the Gulf of Mexico, an area extremely vulnerable and overburdened with exploration and exploitation of energy reserves.

Records on accidents from ships and related oil pollution in the Mediterranean Sea appeared mostly during the 1960s and major incidents with oil spills larger than 6,000

[37] Danovaro, Roberto (2003) 'POLLUTION THREATS IN THE MEDITERRANEAN SEA: AN OVERVIEW', Chemistry and Ecology, 19:1, 15 - 32

tonnes occurred almost yearly until 1981. Since then significant progress in technologies of ship construction, operation and routing resulted in a sharp decrease of a frequency of accidents with ships in the Mediterranean.

The first serious incident in the Mediterranean Sea dated on 15 May 1966 with the ship Fina Norvege and resulted in 6,000 tonnes oil being spilled close to Sardinia, Italy. On 1 November 1970 an incident with the ship Marlena resulted in 15,000 tonnes oil spilled near Sicily, Italy. About two years later on 11 June 1972 the next incident followed occurred with the ship Trader and resulted in a 37,000 tonne oil spill. Then, on 25 April 1976, came the next serious incident which was with the Ellen Conway which resulted in 31,000 tonnes oil spill close to the Port of Arzew in Algeria. The same year, on 30 June 1976 was recorded the Al Dammam spill with 15,000 tonnes oil spilled close to the region of Agioi Theodoroi in Greece. The following year, on 10 August 1977 a serious incident occurred with the URSS 1 in the Bosporus Strait and resulted in a 20,000 tonne oil spill. On 25 December 1978 came the Kosmas M. spill, when 10,000 tonnes of oil spilled close to Asbas, Antalya, Turkey.

At this point in the same year and specifically on 16 March 1978 the Liberian-flagged very large crude carrier (VLCC) Amoco Cadiz was en route from the Persian Gulf to Europe with more than 220,000 tonnes of crude oil, when an enormous wave hit the vessel, causing a steering failure and leaving the ship adrift towards the Breton coast in a heavy storm. Despite all the efforts, the Amoco Cadiz ran aground on a rock outcropping, near the small port of Portsall, on the northwest coast of France. The vessel broke and the first oil slicks quickly reached the coast. Within the next two weeks, the entire cargo of over 220,000 tonnes of light Iranian and Arabian crude oil and 4,000 tonnes of bunker fuel was released into heavy seas, polluting more than 300 km of European coast. The incident may not have taken place in Mediterranean Sea but in wider European waters, however, it is recorded as one of the world's worst maritime oil spill, putting another dark spot in the environmental impact and accounting for the largest loss of marine life ever recorded after an oil spill.

Also, the next year, on 2 March 1979 an incident occurred with the ship Messiniaki Frontis and resulted in a spill of 16,000 tonnes of oil close to Crete, Greece[38].

A more serious accident was with the MT Independența ("Independence"), a large Romanian crude oil carrier, which on 15 November 1979 collided with a Greek freighter at the southern entrance of Bosphorus Strait, Turkey, and exploded. It was estimated that

[38] Kostianoy A.G., Carpenter A. (2018) History, Sources and Volumes of Oil Pollution in the Mediterranean Sea

30,000 tons of crude oil burned and that the remaining 64,000 tons spilled into the sea. The wreck of the Independența burned for weeks, causing heavy air and sea pollution in the Istanbul area and the Sea of Marmara.

The following year and in particularly on 23 February 1980 another serious incident happened with the Greek tanker Irenes Serenade, loaded with a cargo of 102,660 tonnes of Iraqi crude oil, in Navarino Bay, Greece, where more than 100,000 tonnes of oil was spilled to the sea, causing extensive ecological disaster in the area.

After 1981 there were few major accidents including one of the biggest oil spill in the region of 144,000 tonnes of crude oil resulting from the very large crude carrier (VLCC) MV Haven accident off Genoa, Italy, on April 1991. The sister ship of Amoco Cadiz (1978), having the same fate almost thirteen years later, exploded, broke in two and sank after burning for three days, and for the next twelve years the Mediterranean coast of Italy and France was polluted, especially around Genoa and southern France.

Unfortunately, operational oil spills of a size of about 1-10 tones released by ships of different types occur almost daily in different parts of the sea and these remain a major oil pollution problem for the Mediterranean as their number may reach 1,500-2,500 every year. Finally, the latest years the Mediterranean Sea faces a new problem which is a recent intensification of oil and gas development in the Eastern Mediterranean that in the coming years potential oil pollution from these new sources should also be taken into account.

Amoco Cadiz oil spill in 1978

6. THE INSTITUTIONAL FRAMEWORK FOR THE PROTECTION OF THE MARINE ENVIRONMENT OF MEDITERRANEAN SEA.

6.1. The definition of the environment and the role of law in its protection.

The environment and its protection from the catastrophic effects of technological progress, unplanned economic development and the modern way of life are the subject of scientific elaboration, both of the positive sciences that study the composition, the relationship and the interactions between its elements, and of social sciences that deal mainly with the relation of human to the natural and artificial environment, but also of legal science through the rules of public and private law at national and international level. At the same time, environmental protection has become a major political issue, intertwined with policy choices and in other areas such as the economy and development.

The need to address acute environmental issues effectively raises serious social concerns, as the vital need for a sustainable, balanced and aesthetic environment has become commonplace.

The increasing use and frequent misuse of environmental goods, such as air, sea, running water and energy resources has led to the realization that these goods are neither inexhaustible nor invulnerable and that they should not be treated as tools in hands of human, who can use them recklessly to satisfy his needs. The constant, greedy and unplanned intervention in the environment upsets the balance between living organisms and their living space, a disorder that can reach the complete destruction of interconnected biological balances.

The overall view of the environmental problem leads to the conclusion that the requirement of respect for the environment, both independently and as an expression of the requirement of respect and protection of human life and value of human being, who is responsible and the ultimate recipient of its insults, is a condition for the survival of human and the maintenance of his health, as well as for the guarantee of his dignity, the consequence of which is the claim for quality of life.

Generally, the term environment is used to denote sets of goods and units of persons related to each other by the fact that they belong to the same circle or even that they are members of the same social group.

The human environment is made up of subjects of law, while the real environment is the object of law. Real environment means the natural environment formed by natural goods, such as water, sea, air, flora, fauna and generally everything that surrounds man and has been created without his intervention. Also, the most general view has been formulated according to which everything is environment. In this case, the legal protection of the environment also occupies the artificial environment, which is distinguished into residential and cultural and is formed by human creations.

In the context of the attempt to formulate an international legal definition of the environment, the question often arises as to whether the environment should be delimited in relation to human, as a precondition for the enjoyment of other goods or as an independent good. Basically, there is a distinction between anthropocentric and ecological concepts of the environment. However, accurate clarification becomes particularly difficult. But it is clear that the legal concept of the environment is related to human, who is also the recipient of the rules of law.

Law and its utilization is the most important weapon in the effort to prevent and restore environmental damage and preserve the ecological balance. Environmental law, whether considered as a separate branch of law or a set of different rules in all branches of law, which express and implement the fundamental principle of environmental protection, and the control of its application by the Judge, cannot be the solution in environmental problems but undoubtedly contributes significantly to the protection of the environment, preventing its free and reckless exploitation.

6.2. The international legal regime for the protection of the marine environment

For a more complete understanding of the framework for the protection of the marine environment from exploration and exploitation of the seabed and its subsoil, as analyzed in this dissertation through the institution of the continental shelf, it is necessary to refer to the most significant international legislative provisions on the protection of the marine environment.

I. International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL)

The first reports on the protection of the marine environment from the risk of pollution are found in the International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL), an International Treaty signed in London on 12 May 1954 (OILPOL 1954) and was updated in 1962 (OILPOL 62), 1969 (OILPOL 69), and 1971 (OILPOL 71). The OILPOL Convention recognised that most oil pollution resulted from routine shipboard operations such as the cleaning of cargo tanks. In the 1950s, the normal practice was simply to wash the tanks out with water and then pump the resulting mixture of oil and water into the sea. OILPOL 1954 prohibited the dumping of oily wastes within a certain distance from land and in special areas, where the danger to the environment was especially acute. Subsequent incidents with crude oil tankers and ships led to the revision of the original OILPOL 1954, which since 1959 is administered and promoted by the International Maritime Organization (IMO), a specialised agency of the United Nations responsible for regulating shipping.

II. United Nations Conference on the Law of the Sea (UNCLOS 1958)

The first United Nations Conference on the Law of the Sea (UNCLOS I) convened in Geneva between February and April 1958 with the participation of 85 States. Its final product was four treaties included the Convention on the Territorial Sea and Contiguous Zone (1964), Convention on the High Seas (1962), Convention on Fishing and Conservation

of Living Resources of the High Seas (1966) and the Convention on the Continental Shelf (1964). Although UNCLOS I was considered a success, it left open the important issue of breadth of territorial waters.

However, the Law of the Sea Convention defined the rights and responsibilities of nations with respect to their use of the oceans, establishing guidelines for businesses, the environment, and the management of marine natural resources, setting as an obligation the prevention of marine environmental pollution arising from offshore oil and gas exploration activities. In particular, in Article 5 (7) of the Convention on the Continental Shelf introduced for the first time the general obligation of the coastal state to *undertake, in the safety zones, all appropriate measures for the protection of the living resources of the sea from harmful agents.*

III. Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972)

The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972), commonly called the "London Convention" or "LC '72" and also abbreviated as Marine Dumping, is an agreement to control pollution of the sea by dumping and to encourage regional agreements supplementary to the Convention. It covers the deliberate disposal at sea of wastes or other matter from vessels, aircraft, and platforms. It does not cover discharges from land-based sources such as pipes and outfalls, wastes generated incidental to normal operation of vessels, or placement of materials for purposes other than mere disposal, providing such disposal is not contrary to aims of the Convention. It entered into force in 1975. The Convention was called for by the United Nations Conference on the Human Environment took place on June 1972 in Stockholm. The treaty was drafted at the Intergovernmental Conference on the Convention on the Dumping of Wastes at Sea on 13 November 1972 in London and it was opened for signature on 29 December 1972. It entered into force on 30 August 1975 when 15 nations ratified.

Since its entering into force, the convention has provided a framework for international control and prevention of marine pollution within which the contracting parties have achieved continuous progress in keeping the oceans clean.

IV. International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)

The International Convention for the Prevention of Pollution from Ships, which signed on 17 February 1973 and modified by the Protocol of 1978 (MARPOL 73/78) is one of the most important international marine environmental conventions. This Convention essentially replaced the Convention OILPOL and to this day constitutes the backbone of environmental law with regard to pollution from ships.

It was developed by the International Maritime Organization with an objective to minimize pollution of the oceans and seas, including dumping, oil and air pollution. The Convention consists of a general part and a series of Annexes, in which they are regulated prevention of pollution by oil and oily water, control of pollution by noxious liquid substances in bulk, prevention of pollution by harmful substances carried by sea in packaged form, pollution by sewage from ships and by garbage and prevention of air pollution from ships. The Convention may refer to pollution from ships, but a broad definition of ship is given, which may include fixed or floating mining platforms.

It also introduces stricter pollution control measures in internationally designated *special areas*, such as the Mediterranean Sea, the Baltic, Black Sea, Red Sea, North Sea, the Gulfs area, the Wider Caribbean Region and Antarctic Area.

V. The Convention for the Protection of the Mediterranean Sea Against Pollution (the Barcelona Convention - 1976)

The Convention for the Protection of the Mediterranean Sea Against Pollution (the Barcelona Convention) was adopted on 16 February 1976 by the Conference of Plenipotentiaries of the Coastal States of the Mediterranean Region for the Protection of the Mediterranean Sea, held in Barcelona. The Convention entered into force on 12 February 1978. The original Convention was modified by amendments adopted on 10 June 1995 by the Conference of Plenipotentiaries on the Convention for the Protection of the Mediterranean Sea against Pollution and its Protocols, held in Barcelona on 9 and 10 June 1995. The amended Convention, recorded as “Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean” entered into force on 9 July 2004.

The Barcelona Convention aims to protect the Mediterranean from any kind of pollution, a goal pursued through its protocols. Particularly, the protocols of the Convention are: a) **the Protocol for the Protection of the Mediterranean Sea against Pollution from Land Based Sources and activities**, which is the amended version of the "Land-Based Sources Protocol" held in 1996, b) **the Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean** held in Barcelona on June 1995 and also includes annexes, which were adopted by the Meeting of Plenipotentiaries held in Monaco on 24 November 1996, c) the **Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from the Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil**, which was a new Protocol that was adopted by the Contracting Parties at the Conference of Plenipotentiaries held in Madrid on October 1994, d) the **Protocol on the Prevention of Pollution of the Mediterranean Sea by Trans boundary Movements of Hazardous Wastes and their Disposal**, which held in 1996 and e) the **Protocol concerning cooperation in preventing Pollution from Ships and, in cases of Emergency, combating Pollution of the Mediterranean Sea** held on January 2002.

The Barcelona Convention clearly set out the term for the protection of the marine environment and was institutionally linked to the Mediterranean Sea. The Treaty developed a legal system aimed at a common Mediterranean Action Plan (MAP), which is the first Regional Maritime Protection Programme under the auspices of UNEP (United Nations Environment Program[39].

With the Barcelona Convention and in particular with the Protocol for the Protection of the Mediterranean Sea against Pollution Resulting from the Exploration and Exploitation of the Continental Shelf and the Seabed and its Subsoil is recognized that, taking into account the development of exploration and exploitation activities in the Mediterranean region that the pollution which may result therefrom represents a serious danger to the environment and to human beings and for this reason is erected a uniquely comprehensive institutional and legal framework integrating essential building blocks for sustainability in the Mediterranean.

[39] MAP was established in 1975 as a multilateral environmental agreement in the context of the Regional Seas Programme of the United Nations Environment Programme (UNEP). Mediterranean countries and the European Community approved MAP as the institutional framework for cooperation in addressing common challenges of marine environmental degradation. Under the auspices of UNEP/MAP, a framework convention dedicated to the Protection of the Mediterranean Sea against Pollution was adopted in 1976 and amended two decades later to encompass the key concepts adopted at the landmark 1992 Rio Conference and to include coasts in its scope. The Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) was adopted in 1995. www.unenvironment.org/unepmap

VI. United Nations Conference on the Law of the Sea (UNCLOS 1982)

The Third UN Conference on the Law of the Sea (UNCLOS III) lasted from December 1963 to April 1982, making it the longest coding conference in the history of international law. The Final Act of the Third Conference included a draft Convention and four resolutions. The new Convention was signed in the city of Montego Bay, Jamaica on 10 December 1982 and remained open for signature until 9 December 1984. The Convention entered into force on 16 November 1994 and today, it is the globally recognized regime dealing with all matters relating to the law of the sea.

Part XII of the Convention is the most important and comprehensive convention in force today for the protection of the marine environment. Its provisions are a record of the customary rules that underlie all the newer, more specific environmental protection systems. The UNCLOS III sought to fill certain legal gaps in the Geneva Convention in the field of offshore exploitation and extraction of energy resources, entrusting the fundamental obligation and responsibility to protect and preserve the marine environment to the States and requiring them to take all necessary measures to prevent, reduce and control marine pollution.

VII. International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC)

International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC) is an international maritime convention establishing measures for dealing with marine oil pollution incidents nationally and in co-operation with other countries. OPRC Convention was drafted within the framework of the International Maritime Organization (IMO) and adopted in 1990 entering into force in 1995. In 2000 a Protocol to the Convention relating to hazardous and noxious substances (HNS) was adopted (OPRC-HNS Protocol).

In accordance with this Convention and its Annex, States-Parties to the 1990 Convention undertake, individually or jointly, to take all appropriate measures to prepare for and respond to oil pollution incidents. According to the Convention ships and operators of offshore floating mining units are required to have emergency plans for oil pollution

incidents or similar arrangements to be coordinated with national systems for the rapid, promptly and effective response to oil pollution incidents.

Also, ships are required to report incidents of pollution to coastal authorities and all the parties to the convention are required to provide assistance to others in the event of a pollution emergency, while provision is made for the reimbursement of any assistance provided, thus promoting cooperation between States, which is, after all, a necessary precondition for the effective treatment of pollution incidents.

VIII. 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (London Protocol)

In 1996, the London Protocol was agreed to further modernize the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972", the "London Convention" for short and, eventually, replace it. Under the Protocol all dumping is prohibited, except for possibly acceptable wastes on the so-called "reverse list".

In addition its objective is to promote the effective control of all sources of marine pollution and to take all practicable steps to prevent pollution of the sea by dumping of wastes and other matter. The Protocol entered into force on 24 March 2006.

IX. The Energy Charter Treaty and Protocol

Last but not least is the reference to the Energy Charter Treaty (ECT), a multilateral agreement, was signed in December 1994 and entered into force on 16 April 1998. ECT created a multilateral framework for long-term energy cooperation between its members, designed to promote energy security through more open and competitive energy markets, respecting the principles of sustainable development and sovereignty over energy resources, based on the principles in the Energy Charter.

The Energy Charter Treaty was preceded by the European Energy Charter adopted in December 1991, under which the signatories undertook to pursue the objectives and principles of the Charter and to implement and extend their cooperation as soon as possible through negotiation in good faith of the basic agreement and protocols.

According to the Treaty parties agree to promote energy efficiency, and attempt to minimise the environmental impact of energy production and use. Also, the polluter should, in principle, bear the cost of pollution, including trans-boundary pollution, without distorting investment in the energy cycle or international trade.

6.2.1. The effect of international case law

The important place of the practice in the hierarchy of sources of international law is well known, as well as the special importance attached to the decisions of international courts, which, although binding only on the parties, often establish general principles of law. Although international environmental law is primarily contract law, the growing case law could not be ignored.

Decisions of environmental interest have been issued by all major international courts. A common feature of all this is the occasional reference to environmental law in view of another major difference. Even in cases where the object clearly falls within the scope of environmental protection, the legal characterization of the dispute involves other basic principles and rules of international law.

However, despite the rapid development of international environmental law, especially since 1972, cases of environmental interest, namely cases that have an environmental component or are related to the use and exploitation of natural resources, do not have a significant presence in the United Nations International Court of Justice.

Of the cases that have been submitted to the International Court of Justice for resolution since its erection, few have had as their main subject matter the interpretation and application of rules of international environmental law, while some other cases have raised issues of international environmental law, but the subject matter of the disputes it has not been purely environmental in nature.

The reasons for the limited use of the International Court of Justice to resolve environmental disputes can be attributed, in part, to the procedural restrictions to which the submission of international disputes to the United Nations Court of Justice is subject. As is well known, only states can appear as parties in the ICJ, to the exclusion of other entities such as international organisations (intergovernmental or non-governmental), companies or individuals. Moreover, the lack of compulsory jurisdiction in the international arena makes

the prior consent of the States concerned to submit a dispute to the ICJ a necessary condition.

One of the most important judgments of the International Court of Justice with indirect reference to the protection of the environment is the 1949 judgment concerning the Corfu Channel (United Kingdom of Great Britain and Northern Ireland v. Albania), in which the Court recalled the principle of the obligation of policing incumbent on every state, according to which no state may knowingly permit its territory to be used for acts contrary to the rights of other states (sic utere tuo, ut alienum non laedas). Although the judgment was not specifically concerned with the protection of the environment, but with the violation of the principle of freedom of navigation, it undoubtedly contributed to the development of international environmental law. The Court confirmed previous arbitral tribunal jurisprudence on the duty of States to exercise due diligence in the case of transboundary damage and linked it to general international law. This customary obligation was later codified and certain applications were identified in a number of texts of an environmental nature, such as declarations, conventions (Article 194(2) of the UNCLOS) or other texts of international institutions. This principle is now one of the fundamental principles of international environmental law.

In any case, the jurisprudence of the International Court of Justice recognises that the environment has a value that must be protected. The obligation, of customary origin, of protecting the environment incumbent on States is no longer limited to preventing damage to another State, but extends to the environment per se, as a collective good which must be protected. Apart from the general recognition of the protection of the environment as a collective good, as well as some subtle references to the concepts of sustainable development, the need to safeguard common natural resources and certain general principles of environmental protection, the jurisprudence of the International Court in relation to environmental protection issues cannot be considered to be characterised by the momentum it has experienced in other areas of international law, such as the law of the sea, where the contribution of the jurisprudence has been crucial to the further development and evolution of the relevant rules.

7. CONCLUSIONS

The economic, social and political importance of the sea to human societies is linked to the history of mankind. Therefore, as societies are evolving, it was a natural and logical consequence of the creation and evolution of an international legal framework that would regulate the rights and obligations of states in maritime environments.

Law of the sea serves precisely this purpose, as it regulates the rights and duties of states in marine environments such as navigational rights, sea mineral claims, and coastal waters jurisdiction. While drawn from a number of international customs, treaties, and agreements, modern law of the sea derives largely from the United Nations Convention on the Law of the Sea (UNCLOS), which is generally accepted as a codification of customary international law of the sea, and is sometimes regarded as the "constitution of the oceans".

The institution of the continental shelf, along with a number of other new institutions of the law of the sea, is a legislative product of the last just fifty years of our century. The continental shelf is a maritime zone of paramount significance as the coastal state has exclusive sovereign rights for the purpose of exploration and exploitation of its natural resources, while these rights exist ipso facto and ab initio, which means that the coastal state does not need to take any action to exercise or maintain these rights, while respectively these rights have existed since sovereignty over the coastal state.

The interest and systematic engagement with the continental shelf were identified at the point in time, where scientific and technological progress allowed the exploration and exploitation of the natural resources of the seabed at great depth and on a very large scale.

Respectively, the interest of the energy world has turned in recent years to the Mediterranean Sea, which it has always been a sea of passage and a sea of land powers, and in particular to the East Mediterranean, which is in the midst of a significant energy revolution, as a result of the sizable discoveries of natural gas in the offshore of Israel, Cyprus and Egypt.

However, with the intense attention in the Eastern Mediterranean of private energy actors and states, there is always the risk of widespread environmental catastrophe, as observed and recorded in the region over time by offshore exploration and exploitation, in an area already quite polluted.

Besides, human economic activity has been shown to affect and be affected by the natural environment. Under a liberal economy, it is fatal for individuals to deliberately ignore

economic growth in view of the need to preserve the natural environment, as it has evolved over time.

However, the economic development of individuals and the State must limit the urgent need to protect the natural environment. This ethic is based on certain scientific findings, which require the rapid adoption of legislative measures to protect nature from the economic activity of humans.

The role of the international institutional framework for the protection of the marine environment is extremely important, as it is part of and contributes to International Environmental Law, as analyzed.

While the grid of the institutional framework for the protection of the environment and especially the marine environment from exploration and exploitation of the continental shelf appears at first sight varied and sufficient, it becomes necessary and constant to revise it in order to follow the rapid technological developments, which in turn create new facts for scientific and legal study. Furthermore, the institutional framework for the international protection of the environment must ensure private and state interests, but at the same time must create a strong legal framework for environmental protection, not only for the region of Mediterranean Sea, but also for the entire planet, which is in greater need than ever.

After all, it should be understood that the protection of the environment does not mean a setback or an obstacle to economic development, which is associated with human evolution by many, but as a powerful tool, on the basis of which technological and economic development is possible if we gather our efforts in a kind of science and technology that will adapt to the unchanging aspects of human and nature.

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