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Sea Level Rise and Maritime Zones and Boundaries

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CHAPTER 1
INTRODUCTION

1.1. Background on sea level rise and its effects on the law of the sea

Whilst climate change has gained much attention since the late 20th century, its true effects on our environment are still being discovered. Sea-level rise has become in recent years a subject of increasing importance for a significant part of the international community – more than 70 States are or are likely to be directly affected by sea-level rise, a group which represents more than one third of the States of the international community. The Intergovernmental Panel on Climate Change ("IPCC") has stated that the sea is rising at a rapid rate. In a recent report, the IPCC has predicted an increase in sea levels in the region of 0.52 – 0.98 m by 2100.[1] Taken to its extreme, global sea levels could rise by 70 meters, should major ice sheets melt completely.[2]

The general consequences of such sea level rise and the obvious loss of land will inevitably affect the sovereignty and jurisdiction of all coastal States. However, some States are particularly vulnerable to sea level rise for several reasons. They are vulnerable due to their geographical location, size and topography. Large areas of low-lying States will be submerged, and the low-lying areas that are not entirely submerged will be particularly exposed to extreme weather conditions and vulnerable to periodic floods. Saline intrusion will impact agricultural land and contaminate freshwater sources.[3] Coastal ecosystems, coastal infrastructure and human settlement are at risk. This rise has already begun to affect low lying coastal and island states and their baselines. Low-lying islands

[1] Intergovernmental Panel on Climate Change 'Climate Change 2013: The Physical Science Basis. Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change' (2013) available at http://www.climatechange2013.org/images/report/WG1AR5_ALL_FINAL.pdf, at 25.

[2] C. Schofield, "Shifting Limits? Sea Level Rise and Options to Secure Maritime Jurisdictional Claims," (2009) 4 *Carbon & Climate Law Review*, p. 406.

[3] S. V. Busch, "Sea Level Rise and Shifting Maritime Limits: Stable Baselines as a Response to Unstable Coastlines," (2018) 9 *Arctic Review on Law and Politics* 174-194, pp. 178-9.

are in an even more critical position, as they also risk experiencing a significant reduction in the spatial extent of marine areas subject to national jurisdiction.[4]

These factual consequences of sea-level rise prompt several questions of international law. For instance, "what are the legal implications of the inundation of coastal areas and of islands upon their baselines, upon maritime zones extending from those baselines and upon delimitation of maritime zones, whether by agreement or adjudication? What are the consequences for statehood under international law should the territory and population of a State disappear? What protection do persons directly affected by sea level rise enjoy under international law?"[5]

At its seventy-first session, in 2019, the International Law Commission (ILC) decided to include the topic "Sea-level rise in international law" in its programme of work, on the basis of the recommendation[6] of the Working Group on the long-term programme of work.[7] Naturally, the consequences of sea-level were identified in three main areas: a) law of the sea; b) statehood; and c) protection of persons affected by sea-level rise.

Such inclusion in the ILC agenda marks the fact that this topic reflects new developments in international law and pressing concerns of the international community as a whole, as well as that it is at a sufficiently advanced stage in terms of State practice to permit progressive development and codification.

1.2. Structure of the dissertation

This dissertation aims to provide a timely and comprehensive analysis of the legal implications of sea level rise on the law of the sea. Issues of statehood and human rights will remain outside the scope of the present analysis. So will issues of protection of the environment, climate change *per se*, causation, responsibility and liability.

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[4] C. Schofield and D. Freestone, "Options to Protect Coastlines and Secure Jurisdictional Claims in the Face of Global Sea Level Rise," in M. B. Gerrard and G. E. Wannier, *Threatened Island Nations Legal Implications of Rising Seas and a Changing Climate* (Cambridge University Press, 2013) 141-166, p. 144.

[5] *Sea-level rise in relation to international law*, 2018 recommendation of the Working-Group on the long-term programme of work, A/73/10, p. 326.

[6] *Ibid*.

[7] The topic of sea-level rise was initially examined by the International Law Association (ILA) Committee on Baselines under the International Law of the Sea, while in 2012 the ILA established a new Committee on International Law and Sea Level Rise. That Committee decided to focus its work on three main issue areas: the law of the sea; forced migration and human rights; and issues of statehood and international security.

The ultimate goal of the dissertation is to overcome the normative obstacles, both conventional and of general international law, and to determine which is the best solution in order for coastal States to maintain their current maritime entitlement and avoid loss of maritime spaces otherwise allocated to them.

Thus, the next two chapters are devoted to the normative obstacles in preserving present maritime entitlement. The second chapter focuses on the legal framework as it established in the United Nations Convention on the Law of the Sea (LOSC) and the ways this system will upset maritime entitlement, while the third chapter will exclusively deal with the principle that "the land dominates the sea" in order to establish whether it poses limitations to maintaining current maritime entitlement.

Once the normative obstacles are overcome, the fourth chapter features options to address the consequences of sea level rise on the law of the sea, with a focus on remedies that are legal in nature and can address the uncertainty in the law in the long term. Fixing the baselines will be prominent throughout this analysis. There will also be a critical analysis of all viable legal remedies available along with recommendations on the means to address the legal uncertainty that exists.

CHAPTER 2

ENTITLEMENT TO MARITIME ZONES UNDER THE CURRENT LEGAL FRAMEWORK AND THE NEED FOR DEPARTURE

2.1. Overview of the LOSC regime: the problem of the shifting of maritime spaces due to sea level rise

To date, there is no legal instrument to specifically address the effects of sea level rise on maritime entitlements. Naturally, the drafters of the LOSC did not consider such scenarios when drawing up the system of entitlement within the constitution of the oceans. It is thus necessary to evaluate the current legal framework as established in the LOSC, which admittedly requires the existence of land in the sense of a low-water line along the coasts.[8] It therefore carries the risk of shifting the baselines and maritime zones in light of changes in the sea levels.

2.1.1. Maritime zones

Four major maritime zones are provided for in the LOSC which are of particular relevance to the issue under consideration: the territorial sea,[9] the contiguous zone,[10] the exclusive economic zone,[11] and the continental shelf.[12]

The *territorial sea* is the maritime area seaward of the baselines, with a breadth not exceeding 12 nautical miles from the baselines.[13] The territorial sea falls under the sovereignty of the coastal State[14] which is limited by the right of innocent passage enjoyed

[8] K. Trümpler, "Article 5" in A. Proelss (ed.), *The United Nations Convention on the Law of the Sea: A Commentary*, (C.H. Beck/Hart/Nomos: 2017), p. 59.
[9] LOSC, Art. 3.
[10] *Ibid.*, Art. 33.
[11] *Ibid.*, Art. 55.
[12] *Ibid.*, Art. 76.
[13] *Ibid.*, Art. 3.
[14] *Ibid.*, Art. 2(1).

by ships of all States,[15] while in cases of international straights within the territorial sea sovereignty is also limited by the right of transit passage.[16]

The *contiguous zone* is a maritime area under the functional jurisdiction of the coastal State which may not extend beyond 24 nautical miles from the baselines from which the breadth of the territorial sea is measured.[17] Within the contiguous zone the coastal State may exercise certain law-enforcement powers, in order to prevent and punish infringements of its customs, fiscal, immigration or sanitary law and regulations within its territory or territorial sea. By virtue of LOSC Art. 303(2), the coastal State also enjoys authority over objects of an archaeological or historical nature which are located on the seabed.

The *exclusive economic zone* (EEZ), also an area under functional jurisdiction, extends beyond and adjacent to the territorial sea and comprises the water column, the seabed and subsoil, with a breadth not exceeding 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.[18] Thus, the EEZ overlaps with the contiguous zone. In this zone the coastal State enjoys sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, and for the purpose of the economic utilization of the zone, such as the production of energy.[19] Certain jurisdiction is also accorded to the coastal State regarding the establishment and use of artificial islands, installations and structures, the conduct of marine scientific research, and the protection and preservation of the marine environment.[20] However, under LOSC Art. 58, all States enjoy the freedom of navigation and overflight and of the laying of submarine cables and pipelines in another State's EEZ.

The *continental shelf* of a coastal State comprises the seabed and subsoil of the 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

[15] *Ibid.*, Art. 17.
[16] *Ibid.*, Arts. 34-44.
[17] *Ibid.*, Art. 33(2).
[18] *Ibid.*, Art. 57.
[19] *Ibid.*, Art. 56(1)(a).
[20] *Ibid.*, Art. 56(1)(b).

where the outer edge of the continental margin does not extend up to that distance.[21] The outer limit of the continental margin can in certain cases be located at a distance of several hundred nautical miles beyond the 200 nautical mile limit.[22] The coastal State exercises over the continental shelf sovereign rights for the purpose of exploring it and exploiting its natural resources, that is the mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to sedentary species.[23]

The generation of these zones is dependent on the baselines and their associated low-water line. A landward relocation of the baselines would naturally drift these zones landward as well, and would re-adjust the reality of two more: the maritime internal waters[24] and the archipelagic waters, in the case of archipelagic States.

The *maritime internal waters* comprise waters landward of the baseline, having an open connection with the ocean. The internal waters are subject to the territorial sovereignty of the coastal State, exactly as its land territory, while only in very certain cases do foreign ships enjoy the right of innocent passage in some parts of the internal waters.

Similarly, the *archipelagic waters* include waters enclosed by archipelagic baselines and fall under the territorial sovereignty of the archipelagic State.[25] However, sovereignty is limited by the right of innocent passage and, where applicable, the right of archipelagic sea lanes passage for foreign ships and aircraft.[26]

2.1.2. Baselines

It follows that the entire system of maritime entitlement is based upon the baselines, and that changes to the baselines will affect the location and extent of maritime zones. In turn, the LOSC provides for two main types of baselines, the normal baseline (Art. 5) and the straight baselines (Art. 7).

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[21] *Ibid.*, Art. 76(1).

[22] *Ibid.*, Art. 76(2)-(8).

[23] *Ibid.*, Art. 77.

[24] *Ibid.*, Art. 8.

[25] According to LOSC Art. 46, an archipelago is defined as "a group of islands, including parts of islands, interconnecting waters and other natural features which are which are so closely interrelated that such islands, waters and other natural features form an intrinsic geographical, economic and political entity, or which historically have been regarded as such", while an archipelagic State is a State constituted wholly by one or more archipelagos and may include other islands.

[26] LOSC, Arts. 52-54.

The *normal baseline* is constituted by the low-water line along the coast,[27] which is marked on large-scale charts officially recognized by the coastal State. The coast of islands is also included here. LOSC Art. 121(1) defines the island as "a naturally formed area of land, surrounded by water, which is above water at high tide." This means that every high tide feature, even the tiniest, generates a baseline.[28] When located within or partly within the 12 nautical miles from the baselines 'low-tide elevations'[29] may also be used as baselines for the determination of the outer maritime limits. However, low-tide elevations located outside the territorial sea do not contribute to the baseline, nor do low-tide elevations located within a part of the territorial sea generated solely by a qualifying low-tide elevation.[30] In the case of islands situated on atolls or of islands having fringing reefs, the baseline for measuring the breadth of the territorial sea is the seaward low-water line of the reef, as shown by the appropriate symbol on charts officially recognized by the coastal State.[31] The reference to the low-water line means that some part of the reef must be above water at low-tide in order for this exception to apply.[32]

With respect to the normal baseline, the ILA Committee on Baselines has concluded that:

> "the normal baseline is ambulatory, moving seaward to reflect changes to the coast caused by accretion, land rise, and the construction of human-made structures ... and also landward to reflect changes caused by erosion and sea level rise. Under extreme circumstances the latter category of change could result in total territorial loss and the consequent total loss of baselines and of the maritime zones measured from those

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[27] In order for hydrographers to determine a low-water line, the adoption of a low-water datum is required. This is not specified in the LOSC, but in practice States mostly use the lowest astronomical tide (LAT) datum or a datum close to the LAT. See Beck, pp. 48-51.

[28] A.H.A. Soons, Addendum to 'Climate Change: Options and Duties under International Law,' (2018) *Mededelingen van de Koninklijke Nederlandse Vereniging voor Internationaal Recht* 145, p. 95.

[29] LOSC Art. 13 defines a low-tide elevation as "a naturally formed area of land which surrounded by and above water at low tide but submerged at high tide."

[30] *Maritime Delimitation and Territorial Questions between Qatar and Bahrain,* Merits, Judgment, ICJ. Reports 2001,, para. 207.

[31] Art. 6 LOSC.

[32] C. G. Lathrop, "Baselines" in D. R. Rothwell, A. G. Oude Elferink, K. N. Scott and T. Stephens, *The Oxford Handbook of the Law of the Sea*, (Oxford University Press, 2015), p. 75.

baselines. The existing law of the normal baseline does not offer an adequate solution to this potentially serious problem."[33]

The *straight baselines* are imaginary lines which connect appropriate fixed geographical points along the coast and are to be employed instead of the normal baseline only in exceptional circumstances set forth in LOSC Art. 7. Specifically, this method may be employed in localities where the coastline is deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity. The drawing of straight baselines must not depart to any appreciable extent from the general direction of the coast, and the sea areas lying within the lines must be sufficiently closely linked to the land domain to be subject to the regime of internal waters. Although the text is not explicit, appropriate points are assumed to be points on the low-water line of mainland or island territory, that is, points on the normal baseline.[34] Straight baselines shall not be drawn to and from low-tide elevations, unless lighthouses or similar installations which are permanently above sea level have been built on them or except in instances where the drawing of baselines to and from such elevations has received general international recognition. Where the method of straight baselines is applicable, account may be taken, in determining particular baselines, of economic interests peculiar to the region concerned, the reality and the importance of which are clearly evidenced by long usage.[35]

Straight baselines may also be employed in cases where a coastline which is highly unstable because of the presence of a delta or other natural conditions is involved. In this case, appropriate points may be selected along the furthest seaward extent of the low-water line and, notwithstanding subsequent regression of the low-water line, the straight baselines shall remain effective until changed by the coastal State.[36] Furthermore, straight lines can be drawn across the mouths of rivers which flow directly into the sea, and between the natural entrance points of a bay, when the distance between them does not exceed 24 nautical miles and other conditions are met.[37]

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[33] ILA, 75th Conference (Sofia, 2012), *Final Report of the International Committee on Baselines under the International Law of the Sea*, at 31.
[34] Lathrop, *supra* note 32, p. 86.
[35] LOSC, Art. 5(3)-(5).
[36] *Ibid.*, Art. 7(2).
[37] *Ibid.*, Arts. 9-10.

Finally, an archipelagic State may draw straight archipelagic baselines joining the outermost points of the outermost islands and drying reefs of the archipelago provided that within such baselines are included the main islands and an area in which the ratio of the area of the water to the area of the land, including atolls, is between 1 to 1 and 9 to 1. The drawing of such baselines shall not depart to any appreciable extent from the general configuration of the archipelago and their length shall, generally, not exceed 100 nautical miles.[38] An interesting question in this regard is whether dependent archipelagos of non-archipelagic States can generate archipelagic baselines despite not being, by themselves, States, thus rendering the provisions of Article 47 inapplicable.[39] Nonetheless, many continental States have drawn baselines around their dependent archipelagos, which has been viewed as practice indicative of a considerable trend in international law towards the formation of a rule of customary law.[40]

Coastal States must deposit charts and geographical coordinates that show straight baselines or the outer limits of the territorial sea, the exclusive economic zone, and the continental shelf derived therefrom with the United Nations Secretary-General.

2.2. Situations where maritime boundaries have not been established

As a consequence of sea level rise the low-water line will retreat landward. Thus, since this line moves, the legal baseline will move. Indeed, the baseline has been found to be 'ambulatory,' in the sense that it follows the geographic reality of the coast.[41] Accordingly, the outer limits of the territorial sea, the contiguous zone, and the EEZ will also shift landwards, affecting the location of their inner and outer limits and not necessarily their breadth and extent.[42]

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[38] *Ibid*., Art. 47.

[39] During UNCLOS III the question of baselines around archipelagos of non-archipelagic States was debated and ultimately resolved by excluding those archipelagos from LOSC, n 6, Art 47. See Virginia Commentaries, Vol II, 407–15.

[40] S. Kopela, *Dependent Archipelagos in the Law of the Sea* (Martinus Nijhoff, Leiden: 2013), p. 259.

[41] Busch, *supra* note 3, at p. 176.

[42] D. D. Caron, "When Law Makes Climate Change Worse: Rethinking the Law of Baselines in Light of Rising Sea Level," (1990) 17 *Ecology Law Quarterly* 621-53, p. 634; A.H.A. Soons, "The Effects of a Rising Sea Level on Maritime Limits and Boundaries," (1990) 37 *Netherlands International Law Review* 207-232, pp. 216-8.

The most severe effects of shifting maritime limits will probably occur when an area that was previously part of the EEZ becomes high seas. When part of the former EEZ becomes high seas, stocks that primarily occurred within the EEZ of the coastal State will occur both within the EEZ and the adjacent high seas. In such cases, the coastal State and other States fishing the same stock are obligated to agree upon the measures necessary for the conservation of the stock in the adjacent area. Likewise, transboundary stocks and straddling stocks previously traversing between the EEZ and the high seas may stop occurring in the EEZ, which would require the coastal State to adjust its total allowable catch and quotas and could have severe economic implications.[43]

To the contrary, the continental shelf is likely to remain insusceptible to rising sea levels. Specifically, continental shelf Art. 76(9) provides that:

> "The coastal State shall deposit with the Secretary-General of the United Nations charts and relevant information, including geodetic data, *permanently* describing the outer limits of its continental shelf."

Unlike this provision which suggests that, once declared, the continental shelf is permanently fixed,[44] the provisions concerning the other maritime zones do not employ similar wording. By implication, these zones are indeed to shift landward once sea levels rise, while it seems that the breadth of the continental shelf will increase despite later regression of the baselines.

As far as the extended continental shelf is concerned, where the outer limit extends beyond 200 nautical miles, geological and geomorphological factors are taken into account, which are not affected by sea level rise. Given that Art. 76(8) provides that the limits of the shelf established by a coastal State on the basis of the recommendations of the Commission on the Limits of the Continental Shelf shall be final and binding, it follows that said outer limit will remain.

Despite ostensible clarity, different interpretations have been put forward regarding which outer limit is fixed by virtue of Art. 76(9), i.e. only the limit beyond 200 nautical miles, or the limit of exact 200 nautical miles as well. The ILA Committee on Legal Issues

[43] Busch, *supra* note 3, p. 177.
[44] *Ibid.*, p. 178.

of the Continental Shelf in its 2006 Report interprets the outer limit of Art. 76(9) as solely encompassing the outer limit beyond 200 nautical miles.[45] However, this view was not unanimously shared by Committee members, some of them advancing the opinion that the outer limit of Art. 76(9) included both the limit of exact and beyond 200 nautical miles.[46] Publications are not unanimous on the interpretation of this article either.[47] Both sets of opinions have some merit, although it would seem unreasonable to treat the two continental shelf limits differently, bearing in mind that the rationale behind permanently fixing continental shelf limits is legal security for the sake of holders of concessions of mining activities.[48] In any event, worst case scenario prevailing, the result would be a landward relocation of jurisdictional zones the breadth of which will be preserved, but areas previously under the regime of the territorial sea will come under the regime of the continental shelf, the EEZ etc.

The picture radically changes when the source of maritime entitlement is not the mainland, but an island or a low-tide elevation which disappears completely. If the land features from which baselines may be drawn disappear, there will be no baselines from which to define the internal waters, territorial sea, contiguous zone, exclusive economic zone, and continental shelf zone.[49] It should be noted that islands differ from low-tide elevations in that they remain above water at high tide, while low-tide elevations are submerged at high tide, thus not rising to the status of islands in terms of generation of maritime zones.[50] It is possible that if sea level rises, some islands may become submerged

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[45] ILA TORONTO REPORT 2006, pp. 16-17.

[46] ILA TORONTO REPORT 2006, p. 16.

[47] Some authors suggest that Art. 76(9) applies on both limits (see Soons (1990), *supra* note 42, at 216-217; Virginia Commentary, M.H. Nordquist (general ed), *United Nations Convention on the Law of the Sea 1982; A Commentary*, (6 Volumes) (Martinus Nijhoff Publishers, Dordrecht: 1985, 1989, 1991, 1993; The Hague: 2002), Vol. II, 882), while other sources restrict its application to outer limits beyond 200 nautical miles (see R.R. Churchill and A.V. Lowe, *The law of the sea,* 3rd (Manchester University Press, Manchester: 1999) at 149; M. Hayashi, "The Role of the Secretary-General under the LOS Convention and the Part XI Agreement," (1995) 10 *International Journal of Marine and Coastal Law* 157-164 at 159; *Oceans and Law of the Sea; Report of the Secretary General* (Doc. A/57/57 of 7 March 2002) at 18, para. 78).

[48] Soons (2018), *supra* note 28, p. 100.

[49] S. Sefrioui, "Adapting to Sea Level Rise: A Law of the Sea Perspective" in G. Andreone (ed.), *The Future of the Law of the Sea: Bridging Gaps Between National, Individual and Common Interests*, (Springer, 2017), pp. 12-3.

[50] A. J. Roach and R. W. Smith, "Straight Baselines: The Need for a Universally Applied Norm," (2000) 31 *Ocean Development & International Law* 47, p. 73.

at least at high tide and become mere low-tide elevations resulting in major changes in previous entitlement status.

These situations are particularly relevant when neighboring coastal States are either absent or, although present, no delimitation agreements between them are in force. Either way, the shifting of the baseline as will cause changes to the outer limit established in its pursuance. If, for example, two coastal States are situated less than 24 nautical miles from each other the limit will be the median line,[51] which as Soons states, will shift if baselines shift in an asymmetrical way.[52] Accordingly, the same could apply to the boundary between EEZs and continental shelves, although in such cases the median line is much less prominent.[53] The situation in such cases can be very complex, and the circumstances are unique in every case. Therefore it is impossible to arrive at any general conclusions.

2.3. Situations where maritime boundaries have been established

Turning to maritime boundaries, established either by an agreement on delimitation or by an ICJ judgment or decision of an arbitral tribunal under the LOSC, the general understanding shall be that they are inviolable.[54] However, some scholars have suggested that sea level rise may prescribe "renegotiation of maritime boundary agreements based on the principle of equidistance to correspond with new geographic realities; re-evaluation of both equity and equidistance principles by international courts and tribunals in settling boundary disputes; or finally, reversion of highly disputed exclusive economic zone claims to the legal status of high seas."[55] Against this background, the standing of already delimited boundaries shall be examined.

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[51] LOSC, Art. 15.

[52] Soons (2018), supra note 28, p. 102.

[53] LOSC, Art. 73.

[54] J. Lisztwan, "Stability of Maritime Boundary Agreements," (2012) 37/1 *The Yale Journal of International Law* 154-199 at 180.

[55] K. J. Houghton, A. T. Vafeidis, B. Neumann and A. Proelss, "Maritime boundaries in a rising sea" (2010) 3/12 *Nature Geoscience* 813-816 at 813-814.

2.3.1. Agreements on delimitation

Delimitation agreements may involve the formal establishment of the equidistance or median line between the two coastal States as the boundary line (or a boundary based on this line).[56] Moreover, special circumstances such as the geographical configuration of the coastlines or the presence of islands may warrant the establishment of another line as the boundary, while sometimes both systems are combined.

Especially the equidistance or median line, which is the line most commonly used, may be incorporated in the boundary agreement in two ways. The method almost always used is to establish the equidistance line (at least, a boundary line based on that line) by way of lines drawn between points the exact location of which has been established by geographical coordinates. Another, only occasionally used method involves the mere reference in the agreement to the equidistance line as forming the agreed-upon boundary line.[57]

The question may arise what will be the consequences for the boundaries established by such agreements if changes of the original circumstances on which the agreed boundary was based occur. Where maritime boundaries are calculated from the shape and configuration of the coast, the inundation of large areas of the coastline or asymmetrical changes could inevitably affect maritime boundary delimitation.[58] This might be especially problematic in cases where the delimitation agreement establishes boundaries for which no coordinates were specified, but rather a method of calculation.[59] For example, if the agreement is explicitly based on equidistance it follows that to the extent that the baselines of the States involved change asymmetrically this would affect the location of the equidistance line. It has even been suggested that in such a case the States concerned have

[56] Soons (2018), supra note 28, p. 103.

[57] See for example the maritime delimitation treaty between Tonga and France (Wallis and Futuna) of 11 January 1980.

[58] S. Kaye, "The Law of the Sea Convention and Sea Level Rise after the *South China Sea Arbitration*," (2017) 93 *International Law Studies Series US Naval War College* 423-445 at 436.

[59] The maritime boundary between Tuvalu and France in respect of Wallis and Futuna was an example where only a method is specified. See *Exchange of Notes between France and Tuvalu Constituting an Agreement Concerning Provisional Maritime Delimitation between the Two Countries, France - Tuvalu,* August 6, 1985 - November 5, 1985, 1506 U.N.T.S. 1987.

'deliberately opted for a (potentially) fluctuating boundary line.'[60] On the contrary, it must be in principle deduced that when agreeing upon a fixed by geographical coordinates boundary line, the States concerned accepted that sea level rise (or any other circumstance) would not result in changes in this boundary line.

Adjustment of the boundary line by mutual agreement aside,[61] it must be examined whether one of the parties involved may demand said adjustment or even unilaterally terminate the agreement on delimitation. This analysis shall naturally not include agreements which explicitly provide for a definitive boundary, notwithstanding subsequent changes in the baselines.[62] However, it involves delimitation agreements based on methods such as equidistance and delimitation agreements where the boundary line is fixed by geographical coordinates, if the latter were agreed upon on the basis of a method such as equidistance.

In general, a State can invoke a fundamental change of circumstances in order to terminate a treaty, albeit in exceptional cases. The conditions for a successful invocation of the *rebus sic standibus* doctrine are laid down in Art. 62 of the Vienna Convention on the Law of Treaties (VCLT) which provides that:

> "1. A fundamental change of circumstances which has occurred with regard to those existing at the time of the conclusion of a treaty, and which was not foreseen by the parties, may not be invoked as a ground for terminating or withdrawing from the treaty unless:
> (a) The existence of those circumstances constituted an essential basis of the consent of the parties to be bound by the treaty; and
> (b) The effect of the change is radically to transform the extent of obligations still to be performed under the treaty.

[60] Soons (2018), supra note 28, p. 104.

[61] The establishment of a new boundary is of course possible by mutual agreement.

[62] This was the case of the *Agreement between the Government of the Kingdom of the Netherlands and the Government of the United Kingdom of Great Britain and Northern Ireland relating to the delimitation of the Continental Shelf under the North Sea between the two Countries* (London 6 October 1965; Trb. 1965, No. 191) which in fact involved the fixing of the boundary line in a way that it was not subsequently affected despite the up to over 7 kilometres landward retreat of the Dutch baselines due to both natural and artificial processes.

2. A fundamental change of circumstances may not be invoked as a ground for terminating or withdrawing from a treaty:

(a) *If the treaty establishes a boundary;* [...]"[63]

The exceptional character and the high threshold of *rebus sic standibus* is given away by a first reading of this provision.[64] Applying it in the context of maritime boundaries poses an extra burden, since the doctrine cannot be invoked to terminate a treaty establishing boundaries. There is some scholarship, however, advancing that the view that VCLT Art. 62(2)(a) only refers to land boundaries, not encompassing maritime boundaries as well.[65] This view is based on the *travaux préparatoires* of the VCLT during which the ILC solely referred to land boundary case law, such as the *Free Zones* Case,[66] as well as on the fact that by the time of the adoption of the VCLT there were very few maritime boundary cases and almost no maritime delimitation agreements.[67] This view is not entirely convincing; after the LOSC was drafted, the ILC considered whether certain lines of maritime delimitation were boundaries for the purposes of Art. 62[68] although it ultimately deemed that it was not in a position to interpret the VCLT and the LOSC.[69]

Today, there is little doubt that the territorial sea boundaries fall under the notion of Art. 62 boundaries, since they delimit areas under the sovereignty of States. However, it could be argued that the EEZ and continental shelf boundaries do not *stricto sensu* constitute territorial boundaries, given that they demarcate areas for the purpose of exercising sovereign rights and jurisdiction, rather than sovereignty.[70] Again this argument can be overturned by reference to an ICJ *obiter dictum* in the *Aegean Sea Continental Shelf* case,

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[63] (Emphasis added)

[64] O. Dörr and K. Schmalenbach (eds.), *Vienna Convention on the Law of Treaties: A Commentary*, 2nd (Springer, Berlin: 2018), pp. 1153-4.

[65] S. Arnadottir, "Termination of Maritime Boundaries due to a Fundamental Change of Circumstances," (2016) 32 *Utrecht Journal of International & European Law* 94-111 at 108-9; Kaye, *supra* note 58, p. 438.

[66] *Free Zones of Upper Savoy and the District of Gex (France v. Switzerland),* 1932 P.C.I.J. (ser. A/B) No. 46, at 120 (June 7).

[67] Kaye, *supra* note 58, pp. 438-9.

[68] T. Giegerich, "Article 62" in O. Dörr and K. Schmalenbach (eds.), *Vienna Convention on the Law of Treaties: A Commentary*, 2nd (Springer, Berlin: 2018), p. 1168-9.

[69] *Report of the Commission to the General Assembly on the work of the thirty-fourth session,* A/CN.4/SER.A/1982/Add.l (Part 2), YBILC 1982, Vol. II, Part two, at p. 61.

[70] Soons (2018), *supra* note 28, p. 106.

where it was held that continental shelf boundaries do fall under the Art. 62 exception.[71] All the more, and particularly relevant to present analysis, the Arbitral Tribunal in the *Bay of Bengal* case stated that:

> "maritime delimitations, like land boundaries, must be stable and definitive to ensure a peaceful relationship between the States concerned in the long term […] In the view of the Tribunal, neither the prospect of climate change nor its possible effects can jeopardize the large number of settled maritime boundaries throughout the world."[72]

It shall, therefore, be concluded that the invocation of a fundamental change of circumstances for the termination of maritime boundary agreements due to sea level rise is not possible and the majority of scholarship coincides in this regard.[73]

2.3.2. Judicial decisions on delimitation

The same conclusion may equally apply to maritime boundaries established through international adjudication.[74] Indeed, boundaries established by international adjudication are considered final, binding and not appealable.[75] However, the possibility of revision of maritime boundary delimitation judgments shall be briefly addressed.

Applications for the revision of decisions of international courts and tribunals, although provided for in certain instances, are extremely hard to be accepted. For example, under Art. 61 of the ICJ Statute, should a matter come to light of which the Court was until then unaware, and which is of such a nature as to be a decisive factor, either party may request that the judgment be revised. It would be plausible to interpret this provision so as to encompass climate change and induced sea level rise enabling parties to maritime delimitation cases (especially those adjudicated prior to any relevant scientific knowledge)

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[71] *Aegean Sea Continental Shelf*, Judgment, I.C.J. Reports 1978, p. 3, para. 85.

[72] *Bay of Bengal Maritime Boundary Arbitration between Bangladesh and India*, PCA Case 2010-16. Award of 7 July 2014, paras. 216-7.

[73] V. Blanchette-Seguin, "Preserving Territorial Status Quo: Grotian Law of Nature, Baselines and Rising Sea Level," (2017) 50 *New York University Journal of International Law & Politics* 227-263 at 250-2; Lisztwan, *supra* note 54, p. 192; K. R. Lal, "Legal Measures to Address the Impacts of Climate Change-Induced Sea Level Rise on Pacific Statehood, Sovereignty and Exclusive Economic Zones," (2017) 23 *Auckland University Law Review* 235-268 at 256.

[74] *Bay of Bengal*, *supra* note 72, para. 217.

[75] Lisztwan, *supra* note 54, p. 180.

to apply for the revision of those judgments. However, the procedural time frame of Art. 61(4) complicates matters, that is which point in time would be appropriate to apply for revision. It should be noted that to date, no application for revision has ever been upheld.[76]

In any event, the author posits that the issue has been resolved by the ICJ in the *Qatar v. Bahrain* case when discussing the fact that Qatar had not declared itself as an archipelagic State, therefore delimitation would not be carried out on the basis of archipelagic baselines. The Court considered that a change in the baselines of one party would not affect the delimitation it effected:

> "The Court can carry out this delimitation only by applying those rules and principles of customary law which are pertinent under the prevailing circumstances. The Judgment of the Court will have binding force between the Parties, in accordance with Article 59 of the Statute of the Court, and consequently could not be put in issue by the unilateral action of either of the Parties, and in particular, by any decision of Bahrain to declare itself an archipelagic State."[77]

It is submitted that even in the case of naturally induced changes of the legal baseline (due to sea level rise for example), the *Qatar v. Bahrain* judgment guarantees the non-appealable character of maritime boundary delimitation judgments, which cannot be subsequently contested by the States concerned.

2.4. Grounds for maintaining the *status quo* on entitlement: Stability and Equity

The practical implications of sea level rise to maritime limits and boundaries are or could be evident on all instances analyzed above. The diverse effect sea level rise will have on different situations will inevitably create a complex scale where certain States will be severely affected and others much less or hardly.

Of course, one solution is to proceed in a state of inaction, allowing nature to determine the course of events. In such a scenario, the seas would slowly move in and determine the equilibrium. While this would save countries the trouble of diverting scarce economic

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[76] International Court of Justice Handbook at p. 79, https://www.icj-cij.org/files/publications/handbook-of-the-court-en.pdf

[77] *Qatar v. Bahrain*, *supra* note 30, p. 40, para. 183.

resources and spending huge amounts of money constructing costly barriers to the sea, this approach has several disadvantages, and would thus shake considerations of stability and equity to their core.

The Preamble of the LOSC stresses from the outset that the Convention "will contribute to the strengthening of peace, security, cooperation and friendly relations among all nations in conformity with the principles of justice and equal rights and will promote the economic and social advancement of all peoples of the world, in accordance with the Purposes and Principles of the United Nations as set forth in the Charter."[78] Maritime zones have significant resource and geopolitical value, and uncertainty around them can generate lengthy and contentious disputes between States.[79]

The international community has always placed particular importance on the stability of boundaries. For example, in the *Grisbadarna* the Arbitral Tribunal had stated that "it is a settled principle of the law of nations that a state of things which actually exists and has existed for a long time should be changed as little as possible."[80] The Permanent Court of International Justice reiterated the international policy of territorial stability by concluding that Greenland belonged to Denmark because that country "maintained territorial stability over the disputed territory for a considerable period of time."[81] These are some among the numerous decisions in which international tribunals stressed the importance of territorial stability.[82] Such principles of finality, stability and effectiveness have always characterized the work of the international courts and tribunals.[83]

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[78] LOSC, Preamble, para. 7.

[79] Lisztwan, *supra* note 54, p. 165.

[80] *Grisbadarna Case (Norway v. Sweden)*, Award, 1909, 11 RIA 155.

[81] *Legal Status of Greenland* (Denmark v. Norway), Judgment, 1933 P.C.I.J. (ser. A/B) No. 53 (Apr. 5), at 46-54.

[82] *Continental Shelf* (Tunisia/Libyan Arab Jamahiriya), Judgment of 24 February 1982, ICJ Reports 1982, 61, at 65-66; *Temple of Preah Vihear* (Cambodia v. Thailand), Judgment, 1962 I.C.J. Reports 6, at 34 ("In general, when two countries establish a frontier between them, one of the primary objects is to achieve stability and finality."); *Bay of Bengal*, *supra* note 72, para. 217 ("maritime delimitations, like land boundaries, must be stable and definitive to ensure a peaceful relationship between the States concerned in the long term").

[83] H. Lauterpacht, *Development of International Law by the International Court* (Cambridge University Press, 1982), p. 241.

Caron has correctly argued that ambulatory baselines would undermine international peace and stability because States could constantly challenge each other's maritime claims.[84]

The rising sea level will affect States in a very different manner depending, *inter alia*, on whether they are coastal or land-locked, have steep or gradual shores, and whether they possess the technical and financial means to artificially prevent their coastal areas from being flooded.[85] For instance, Bangladesh, a poor and very low-lying country, could lose up to 10% of its land territory due to a rise of only three feet of the mean sea level. For its part, the Netherlands, a rich low-lying country, is able to invest billions of dollars to build massive seawalls and storm surge barriers. Because wealthy countries will be in better positions to protect their shores, the moving baselines thesis is susceptible to increasing the existing inequalities between States.[86]

When it comes to Small Island States, it is widely known that they have contributed the least to climate change, and therefore it is profoundly inequitable that they should suffer the worst impacts of climate change and sea level rise. On the grounds of equity and fairness, such states shall definitely be allowed to retain their rights over maritime zones and the valuable resources contained therein.[87] Such considerations of fairness and equity dictate that coastal and archipelagic States affected by sea level rise must be able to maintain their maritime entitlements without having to resort to the (often prohibitive) expenditure of huge amounts of money for artificially maintaining their baselines.[88]

Such an approach aligns with the principles of fairness and equity, since a freeze of the current *status quo* would not erode any of the entitlements and jurisdictional rights that coastal nations enjoy over their maritime spaces and resources.

Concerns have been voiced, however, that fixing the perimeters of maritime zones undermines other important principles, such the principle that "the land dominates the sea"

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[84] D. D. Caron, "Climate Change, Sea Level Rise and the Coming Uncertainty in Oceanic Boundaries: A Proposal to Avoid Conflict" in: S-Y. Hong and J. M. Van Dyke (eds), *Maritime Boundary Disputes, Settlement Processes, and the Law of the Sea* (Boston: Brill/Martinus Nijhoff, 2009), at 13.

[85] Blanchette-Seguin, *supra* note 73, p. 261.

[86] *Id*.

[87] T. G. Puthucherril, "Rising Seas, Receding Coastlines, and Vanishing Maritime Estates and Territories: Possible Solutions and Reassessing the Role of International Law," (2014) 16 *International Community Law Review* 38-74, p. 59.

[88] Soons (2018), *supra* note 28, p. 119.

(which will be extensively dealt with in the next Chapter) and the common heritage of mankind.[89]

As far as the latter is concerned, Lisztwan argues that since, under the LOSC, coastal States can claim adjacent seas, and the remainder belongs to the international community as the common heritage of mankind, then when a coastline recedes or an island disappears, either the coastal state or the international community is entitled to the new expanse of ocean.[90] However, it should be noted that that granting this additional ocean to the coastal State does not disrupt the bargain struck at UNCLOS III. According to Caron, "no State under a system of fixed boundaries would gain any more than it presently possesses."[91]

Consequently, and provided that possible limitations of the principle that "the land dominates the sea" are surpassed, it is suggested that the current *status quo* on entitlement shall be maintained by freezing maritime zones, against ambulatory baselines.

[89] Lisztwan, *supra* note 54, p. 165.
[90] *Ibid.*, p. 170.
[91] Caron, *supra* note 84, p. 16.

CHAPTER 3
LIMITATIONS OF PRINCIPLE: THE PRINCIPLE THAT "THE LAND DOMINATES THE SEA" IN THE CONTEXT OF SEA LEVEL RISE

3.1. Overview of the standing of the principle

There can be no more appropriate starting point for the analysis and, eventually, the determination of the true effects of the principle that "the land dominates the sea" than its famous formulation by Prosper Weil:

> "From the moment States were recognised as having rights over areas of sea -that is to say, for as long as there has been such a thing as the territorial sea- these rights have been based on two principles which have acquired an almost idiomatic force: *the land dominates the sea* and it dominates it *by the intermediary of the coastal front*; these two ideas fuse in the concept of adjacency."[92]

This passage is extensively referred to in relevant scholarship, which may come as no surprise given that it was so eloquently put that it almost describes an axiom of international law. Yet when it comes down to applying this axiomatic principle in the context of sea level rise, it is not at all of the same clarity as when within this passage. Characteristically enough, the ILA Committee on Sea Level Rise concluded in its 2018 Report that it would be useful "to set out the origins, scope, and current application of this principle and to consider the legal consequences of its application in the context of the impacts of sea level rise" and that "a paper should be developed on the principle that 'the land dominates the sea' as a part of the further work by the Committee."[93] This Chapter is thus devoted to this compelling task.

3.1.1. Reflections of the principle in international jurisprudence

The first case to touch upon the principle that 'the land dominates the sea' was the first case the Permanent Court of Arbitration (PCA) rendered regarding maritime boundary

[92] P. Weil, *The Law of Maritime Delimitation—Reflections* (Cambridge University Press, 1989), p. 51.
[93] Report of the ILA Committee on International Law and Sea Level Rise (2018), Sydney Conference, p. 16.

delimitation and marine resource conflicts caused by overlapping jurisdictional claims. As it was held in the *Grisbadarna*, the "maritime territory is a necessary dependency of the land territory."[94] Another early judicial formulation of the principle can be found in *North Atlantic Coast Fisheries* Arbitration, where the Arbitral Tribunal stated that:

> "The old rule of the cannon-shot, crystallized into the present three marine miles measured from low water mark, may be modified at a later period inasmuch as certain nations claim wider jurisdiction [...]. There is an obvious reason for that. The marginal strip of territorial waters based originally on the cannon-shot, was founded on the necessity of the riparian State to protect itself from outward attack, by providing something in the nature of an insulating zone, which very reasonably should be extended with the accrued possibility of offense due to the wider range of modern ordnance."[95]

Subsequently, the principle was further elaborated in the jurisprudence of the second half of the twentieth century. It seems that the first time the ICJ dealt with it was in the 1951 *Anglo-Norwegian Fisheries* case. Referring to "the close dependence of the territorial sea upon the land domain," the ICJ stated that it would be "the land which confers upon the coastal State a right to the waters off its coasts."[96]

However, the *North Sea Continental Shelf* cases, the principle's judicial imprimatur, [97] is the first time the principle was cast in the precise terms it is referred to today. In a comprehensive passage of the judgment the ICJ went on to explain that:

> "The doctrine of the continental shelf is a recent instance of encroachment on maritime expanses which, during the greater part of history, appertained to no-one. The contiguous zone and the continental shelf are in this respect concepts of the same kind. In both instances *the principle is applied that the land dominates the sea;* it is

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[94] *Grisbadarna, supra* note 80, p. 159.

[95] *North Atlantic Coast Fisheries Case* (Great Britain, United States), Arbitral Award of 7 September 1910, Reports of International Arbitral Awards (RIAA) XI, 167, 205.

[96] *Fisheries Case (United Kingdom v. Norway),* Judgment of 18 December 1951, ICJ Reports 1951, 116,, para. 133.

[97] B. B. Jia, "The Principle of the Domination of the Land over the Sea: A Historical Perspective on the Adaptability of the Law of the Sea to New Challenges," (2014) 57 *German Yearbook of International Law* 1-32 at 5.

consequently necessary to examine closely the geographical configuration of the coastlines of the countries whose continental shelves are to be delimited. This is one of the reasons why the Court does not consider that markedly pronounced configurations can be ignored; for, since the land is the legal source of the power which a State may exercise over territorial extensions to seaward, it must first be clearly established what features do in fact constitute such extensions. Above all is this the case when what is involved is no longer areas of sea, such as the contiguous zone, but stretches of submerged land; for the legal *régime* of the continental shelf is that of a soil and a subsoil, two words evocative of the land and not of the sea."[98]

In the *Aegean Sea Continental Shelf* case, where the Court is considered to have repeated[99] or further elaborated on the principle,[100] it was stated that rights over maritime areas "are legally both an emanation from and an automatic adjunct of the territorial sovereignty of the coastal State," and that the land territory regime "comprises, *ipso jure*, the rights of exploration and exploitation over the continental shelf."[101]

In the Libya continental shelf cases the ICJ first stated that "the coast of the territory of the State is the decisive factor for title to submarine areas adjacent to it,"[102] while it subsequently declared that "[l]andmass has never been regarded as a basis of entitlement," that continental shelf rights derive "not from the landmass, but from sovereignty over the landmass," and that "it is by means of the maritime front of this landmass [...] that this territorial sovereignty brings its continental shelf rights into effect."[103] Later on, in the *Jan Mayen* case it noted "that the attribution of maritime areas to the territory of a State [...] is a legal process based solely on the possession by the territory concerned of a coastline."[104]

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[98] *North Sea Continental Shelf Cases* (Federal Republic of Germany/Denmark; Federal Republic of Germany/Netherlands), Judgment of 20 February 1969, ICJ Reports 1969, 3, para. 96.

[99] Jia, *supra* note 97, p. 12.

[100] N. M. Antunes and V. Becker-Weinberg, "Entitlement to Maritime Zones and Their Delimitation: In the Doldrums of Uncertainty and Unpredictability" in A. G. Oude Elferink, T. Henriksen and S. V. Busch (eds.), *Maritime Boundary Delimitation: The Case Law; Is It Consistent and Predictable?*, Cambridge University Press, 2018), p. 64.

[101] *Aegean Sea Continental Shelf, supra* note 71, para. 86.

[102] *Tunisia v. Libya, supra* note 82, para. 73.

[103] *Case concerning the Continental Shelf* (Libyan Arab Jamahiriya/Malta), Judgment, ICJ Reports 1985, 13, para. 41.

[104] *Maritime Delimitation in the Area between Greenland and Jan Mayen* (Denmark v. Norway), Judgment, ICJ Reports 1993, 38, para. 74.

In 2002, the Court referring to the principle that "the land dominates the sea" in the exact terms, further explained that:

> In previous cases the Court has made clear that maritime rights derive from the coastal State's sovereignty over the land, a principle which can be summarized as "the land dominates the sea" [...]. It is thus the terrestrial territorial situation that must be taken as starting point for the determination of the maritime rights of a coastal State. In accordance with Article 121, paragraph 2, of the 1982 Convention on the Law of the Sea, which reflects customary international law, islands, regardless of their size, in this respect enjoy the same status, and therefore generate the same maritime rights, as other land territory."[105]

In the *Nicaragua v. Honduras* case, channeling its previous jurisprudence,[106] the Court reiterated the principle and further explained, admittedly on a more procedural level,[107] that "maritime rights derive from the coastal State's sovereignty over the land, a principle which can be summarized as "the land dominates the sea" [...]. Following this approach, sovereignty over the islands needs to be determined prior to and independently from maritime delimitation"[108] and that "taking into account the principle that the "land dominates the sea" [...], the legal nature of the land features in the disputed area must be assessed at the outset."[109]

Later in the *Black Sea* case, the Court considered that "the title of a State to the continental shelf and to the exclusive economic zone is based on the principle that the land dominates the sea through the projection of the coasts or the coastal fronts."[110] The same approach on projections was reaffirmed in both *Bay of Bengal* cases.[111]

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[105] *Qatar v. Bahrain, supra* note 30, para. 185.

[106] *Territorial and Maritime Dispute between Nicaragua and Honduras in the Caribbean Sea* (Nicaragua v. Honduras), Judgment, ICJ Reports 2007, 659, para. 103.

[107] Antunes and Becker-Weinberg, *supra* note 100, p. 66.

[108] *Nicaragua v. Honduras, supra* note 106, para. 126.

[109] *Ibid.*, para. 135.

[110] *Maritime Delimitation in the Black Sea* (Romania v. Ukraine), Judgment of 3 February 2009, ICJ Reports 2009, 61, para. 77. The ICJ repeated this passage in the *Territorial and Maritime Dispute* (Nicaragua v. Colombia), Judgment, I.C.J. Reports 2012, p. 624, at para. 140.

[111] *Delimitation of the Maritime Boundary between Bangladesh and Myanmar in the Bay of Bengal* (Bangladesh/Myanmar), Judgment, ITLOS Reports 2012, 1, paras. 61–62; *Bay of Bengal, supra* note 72, para. 79.

Another reference to the coast and coastline can be found in the very recent *Croatia v. Slovenia* Arbitration where the Arbitral Tribunal addressed Slovenia's claims for traditional maritime entitlements as follows: "As a sovereign coastal State, Slovenia's entitlement is to the maritime zones generated by its own coastline alone, limited as that might be. It is very well established that international law cannot refashion nature by allocating to a State a maritime entitlement other than that generated by its own coastline."[112]

In the *South China Sea* arbitration, the arbitral tribunal applied a two-pronged test to the jurisdictional question posed by a mixed dispute: (a) whether an explicit or implicit determination of sovereignty is a prerequisite for the resolution of the maritime claims; and (b) whether the actual objective of a State Party's maritime claims is to advance its position in the dispute over sovereignty.[113] As neither of these criteria was satisfied, the tribunal held that "the determination of the nature of and entitlements generated by the maritime features in the South China Sea does not require a decision on issues of territorial sovereignty."[114] Although the decision makes no reference to the principle of domination of the land over the sea, its position is consistent with the second thesis of the principle advanced by the Philippines,[115] which emphasized the relevance of geographical considerations by stating, "without land, there can be no maritime entitlements on the basis of historic rights or otherwise."[116]

Whether international jurisprudence was in all the above instances applying the principle begs, in fact, further examination. The conclusion can be reached that relevant jurisprudence can be more or less divided into two sets of judgments in terms of the way the principle was perceived and applied: a first set where the principle was used as a tool for maritime delimitation dictating that it is the geographical reality of the coasts which

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[112] *Arbitration Between the Republic of Croatia and the Republic of Slovenia*, Award, 2017, PCA Case 2012-04, para. 1006.
[113] *South China Sea Arbitration* (Philippines v. China), PCA Case No. 2013-19, Award on Jurisdiction and Admissibility, para. 153.
[114] *Ibid*., para. 180.
[115] H. Nasu, "The Regime of Innocent Passage in Disputed Waters," (2018) 94 *International Law Studies Series US Naval War College* [i] 242-283, p. 252.
[116] *South China Sea Arbitration*, Jurisdiction, *supra* note 113.

generates the coastal State's entitlement to maritime zones,[117] and a second set where the principle was roughly seen as preliminary issue dictating that sovereignty over land confers rights over maritime territory.[118] In reality, the possibility that such a principle could at the same time have very general and very special/specific connotations should be very thin.

3.1.2. Scholarly perception of the principle

Despite this inconsistency in jurisprudence, the question of the true content of the principle that "the land dominates the sea" has received relatively little attention in scholarship. Most scholars briefly and coincidentally touch upon the principle in their writings, while, despite the fact that there exists certain thus-oriented literature, no analysis of the principle in the context of sea level rise can be found in a single text.

Naturally, the members of the ILA Committee on Sea Level Rise discussed the issue, though strikingly much disagreement was raised among them regarding the application of the principle. According to the 2018 Report, some committee members pointed out that the phrase "the land dominates the sea" does not appear in the LOSC and that it is essentially a pragmatic judge-made axiom for use in maritime delimitation disputes and not necessarily relevant to sea level rise, while others considered the scope and impact of the "land dominates the sea" principle as of far broader reach under the general law of the sea, beyond being limited to international jurisprudence reflecting it.[119]

The most prominent work, on a scale of the treatise's relevance to the principle, is the paper by Bin Bin Jia, on the subject of "The Principle of the Domination of the Land over the Sea: A Historical Perspective on the Adaptability of the Law of the Sea to New Challenges."[120] Despite a much promising title, the paper does not address sea level rise when referring to new challenges. Jia focuses on two questions, namely whether the principle is a general principle of international law and whether it interplays with the LOSC

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[117] *Croatia v. Slovenia, supra* note 112; *Black Sea case, supra* note 110; *Bangladesh v. Myanmar, supra* note 111; *Bay of Bengal, supra* note 72; *North Sea Continental Shelf, supra* note 98; *North Atlantic Coast Fisheries, supra* note 95.

[118] *Nicaragua v. Honduras supra* note 106; *Qatar v. Bahrain supra* note 30; *Jan Mayen supra* note 104; *Libya v. Malta, supra* note 103; *Aegean Sea Continental Shelf, supra* note 71; *Anglo-Norwegian Fisheries, supra* note 96.

[119] ILA Sydney Report 2018, *supra* note 93, p. 16.

[120] Jia, *supra* note 97.

when it comes to mixed disputes involving the interpretation or application of a mix of substantive rules of the law of the sea and other branches of public international law.[121] Jia relies on the extensive use of the principle in international jurisprudence and submits that it is a principle of general international law, not restricted to the law of the sea; "it delineates the border between the law of the land and the law of the sea" and "it places the former before the latter in terms of precedence."[122] Jia further suggests that mixed disputes cannot be satisfactorily resolved without deciding all their aspects, top among which is the issue of territorial sovereignty of maritime features involved in these disputes.[123] Although Jia analyzes the procedural aspects of the principle, in examining whether it can serve a basis to prescribe jurisdiction over issues of territorial sovereignty he clearly seems to understand the principle as meaning that the sovereignty over land is what confers the coastal State entitlement to maritime zones.

A similar perception is found in another scholarly work, commenting that "in accordance with the principle 'that the land dominates the sea,' the Court had first to address the issues of territorial sovereignty,"[124] before effecting the delimitation between Costa Rica and Nicaragua in the Caribbean Sea and the Pacific Ocean. In this vein, Thirlway refers to the principle as a preliminary assertion of sovereignty over land and features.[125] Papanicolopulu is also of the view that "if there is (coastal) land territory then there is the right to have maritime zones, and, conversely, there is no right to maritime zones without land territory."[126]

Another principle-related treatise is the chapter of Nuno Marques Antunes and Vasco Becker-Weinberg who devote several pages the principle that "the land dominates the sea" under the discussion of entitlement and delimitation.[127] In the beginning of the relevant

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[121] *Ibid.*, p. 1.
[122] *Ibid.*, p. 31.
[123] *Ibid.*, pp. 31-2.
[124] G. Guez, "International Court of Justice: Maritime Delimitation in the Caribbean Sea and the Pacific Ocean (Costa Rica v. Nicaragua)," (2018) 33 *International Journal of Marine & Coastal Law* 827-835, p. 829.
[125] H. Thirlway, *The Law and Procedure of the International Court of Justice - Fifty Years of Jurisprudence* Volume II (Oxford University Press, 2013), pp. 1370-2.
[126] I. Papanicolopulu, "The land dominates the sea (dominates the land dominates the sea)," (2018) *Questions of International Law, Zoom-in* 47, 39-48, p. 39.
[127] Antunes and Becker-Weinberg, *supra* note 100, pp. 62-91.

section, they view the principle as an evolution of the notion of *dominium maris* and they move on to examine delimitation jurisprudence where the principle was relied on. They summarized that the maxim the land dominates the sea has always expressed the *vinculum juris* between land and sea. "All maritime entitlements stem from and depend upon sovereignty over land territory. The LOSC enshrines that principle in two ways: (i) by establishing the outer limits of maritime zones by reference to distance (basis of entitlement) from the baselines; or (ii) by reference to the legal notion of natural prolongation (basis of entitlement, as translated in geomorphologic, geologic, geophysical, and geochemical assessments) and distance from the baselines, which is an expression of geological proximity."[128] The consequential order between the two sentences inside the above quotation is unclear. The authors offer no supporting evidence that the principle is enshrined in the LOSC in the sense of 'closeness' between the land and the sea, all the more, that the LOSC enshrines the principle in the first place. However, it does follow that the element of sovereignty over land is perceived by the authors as central in the principle that "the land dominates the sea."

Again in the context of a discussion on maritime delimitation, according to Stephen Fietta and Robin Cleverly, the principle that "the land dominates the sea" pervades the law of the sea and the modern law and practice of maritime delimitation. They suggest that every commonly used method of delimitation, which has often been by reference to the overriding importance of the 'geographical configuration' of the area to be delimited (particularly, the geographical configuration of the relevant coasts) relies on the principle.[129]

Similarly, it has been observed that the emphasis in the role of the principle appears to have shifted from the geographical justification for the extension of sovereign authority during the formative stage of the legal regime of maritime zones, to the centrality of geographical conditions to the determination and delimitation of maritime rights as the law of the sea regime has developed and been consolidated.[130]

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[128] Antunes and Becker-Weinberg, *supra* note 100, pp. 68-9.

[129] S. Fietta and R. Cleverly, *A Practitioner's Guide to Maritime Boundary Delimitation* (Oxford University Press, 2016), p. 27.

[130] Nasu, *supra* note 115, p. 251.

Tanaka has noted that although the substance of the phrase has been complicated by references to the concepts of adjacency, proximity, natural prolongation of the coasts, etc., legal title is, at present, expressed as the distance criterion.[131]

Another publicist suggests that certain LOSC rules, such as those relating to the sovereignty over the territorial sea the natural prolongation of the continental shelf, which codify customary law, reflect the basic rule that the land dominates the sea.[132]

The following scholarly examples include references to the principle in the context of sea level rise discussion, albeit those references were not central in each examination.

Directly drawing from Prosper Weil,[133] Vidas argues that:

> "Accordingly, the basis for all maritime coastal zones as today codified in the United Nations Convention on the Law of the Sea is just one line-a line that is, in each case, determined by reliance on coastal geography. That line is the baseline. It either directly follows the coast, in which case it is called the 'normal baseline;' or it depends on the specific configuration of the coastline and other coastal features (a chain of islands, fjords, and the like), in which case it is called the 'straight' baseline, and everything landward of it is considered the internal waters of a coastal state. From the baselines (whether normal or straight), different maritime zones are measured. This objective criterion, which relies on a given coastal geography, serves not only as the basis for the various maritime zones of a coastal state, it is also central to the delimitation of maritime boundaries between state."[134]

It is evident that Vidas understands that the principle is an expression of the baselines. So does Guilfoyle, when referring to the principle as mitigating in favor of ambulatory

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[131] Y. Tanaka, *Predictability and Flexibility in the Law of Maritime Delimitation*, Volume 8 in the series Studies in International Law (Hart Publishing, 2006), p. 139.

[132] V. D. Degan, "Consolidation of Legal Principles on Maritime Delimitation: Implications for the Dispute between Slovenia and Croatia in the North Adriatic," (2007) 6 *Chinese Journal of International Law* 601-634, p. 629.

[133] Weil, p. 51.

[134] D. Vidas, "Sea-Level Rise and International Law: At the Convergence of Two Epochs," (2014) 4 *Climate Law* 70-84, p. 74.

baselines,[135] and so does Busch.[136] Lathrop shares this view: "the juridical link between the State's territorial sovereignty and its rights to certain adjacent maritime expanses, is established by means of its coast."[137] According to him, the basis of maritime entitlement would be flipped on its head and the land would no longer dominate the sea if maritime rights and jurisdiction could persist after the permanent disappearance or destruction of the territory from which that title was derived.[138] The same logic is followed by Lisztwan.[139]

It is felt that the attempt to clarify the substance of the principle by recourse to scholarship proved to be rather unfruitful; the inconsistencies observed in international jurisprudence are inevitably transposed to corresponding scholarship. No safe conclusion can be extracted, although a common denominator throughout the scholarly views discussed above can be traced: the underlying concept of sovereignty over land concerned of a coast.

3.2. The origins of the principle: from Godly domain to sovereignty

The analysis so far leads to an inescapable assertion: in the attempt to encapsulate the content of the principle that "the land dominates the sea," jurisprudence and scholarship interchangeably use certain notions such as sovereignty, dominion, entitlement and coasts. This inevitably begs an examination through the history of the law of the sea in order to ascertain their relationship and possibly shed some light on the evolution of the principle.

3.2.1. Antiquity

In ancient history, disapproval of a *dominium maris* was tied to godly world: 'The Sea is His' as the Psalmist sings (Psalm 95: 5).[140] A similar attitude prevailed among Roman

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[135] D. Guilfoyle, "Canute's Kingdoms: Can small island states legislate against their own disappearance?," (February 20, 2019) Blog of the European Journal of International Law, EJIL: Talk!

[136] Busch, *supra* note 3, p. 176.

[137] Lathrop, *supra* note 32, p. 69.

[138] *Ibid*., p. 78.

[139] Lisztwan, *supra* note 54, pp. 166-9 ("As land moves or disappears, maritime entitlements should in principle move or disappear as well").

[140] D. E. Khan, "Territory and Boundaries" in B. Fassbender and A. Peters, *The Oxford Handbook of the History of International Law*, (Oxford University Press, 2012), p. 241.

writers,[141] albeit such divine warnings perfectly served the Mediterranean community's interest in free communication. Reasonably enough, many ancient Mediterranean nations considered the sea free and open to any legal and legitimate use, including for commercial and, occasionally, military purposes.[142] Thus, Antiquity hardly knew of any jurisdictional claims over parts of the sea, although there is evidence that maritime nations had at least a limited concept of jurisdiction over coastal waters. For example, Carthage is known to have restricted severely the use of her port by foreign vessels, while the city-state of Rhodes encouraged the use of what she considered her own waters.[143]

Even if, for security and economic reasons, claims may occasionally have been laid on certain very limited offshore waters, the maxim of *mare nostrum* was so generally accepted that the most comprehensive code of the law of the sea at the time, the *Rhodian Maritime Code*, recognized the right of all nations to use the seas for legitimate commerce. [144] This right became such an integral part of Roman law that Rome did not claim any sort of property right in the sea itself; its claim to *imperium* was not developed into a claim of *dominium*.[145] All the more, when the city of Byzantinum attempted to impose tolls on shipping passing through the Bosporus (220 BC), the Republic of Rhodes immediately declared war in response which was prevented only by the city's complete drawback from this 'audacious assault' on the freedom of the seas.[146]

3.2.2. Middle Ages and Renaissance

It was during the Middle Ages that European nations began to assert claims to ocean spaces in proximity to their land territories. The city-States of Genoa and Venice were variously referring to their control of maritime regions in the Ligurian and Adriatic Seas respectively, as a 'seignory', 'royalty', 'full jurisdiction', or even 'empire'. Similar claims

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[141] C. Phillipson, *The International Law and Custom of Ancient Greece and Rome* (Macmillan London 1911) vol 2, at 369 f: "the Romans regarded the sea with horror ... and so, to navigate it has usually thought to be an offence against the gods ... ."

[142] B. L. Florsheim, "Territorial Seas - 3000 Year Old Question," (1970) 36 *Journal of Air Law & Commerce* 73-104, p. 75.

[143] W. P. Gormley, *The Development and Subsequent Influence of the Roman Legal Norm of "Freedom of the Seas,"* (1963) 40 *University of Detroit Law Journal* 561 at 567.

[144] *Ibid.*, p. 566-8.

[145] P. T Fenn, *The Origin of the Right of Fishery in Territorial Waters*, (Cambridge, 1926) 5.

[146] *Historiai* (W. R. Paton translation) (Loeb Classical Library 1922) book 4, at 52.

were made by France, England, Denmark, and Sweden. Danish assertions of sovereignty to the Sound and Belts—the outlets of the Baltic into the North Sea— were a constant source of tension between that nation and other trading powers of the period (including the cities of the Hanseatic League). In England, claims of sovereignty to adjacent bodies of water were commenced during Saxon times, and then maintained and extended after the Norman conquest. [147]

Until the beginning of the 17th century, scholarship tended to support sovereign assertions of authority to maritime areas. For example, Henry de Bracton's treatise of 1260 was influential in the course of developing subsequent English claims, especially later in the Tudor period.[148] In a 1582 treatise, the French philosopher, Jean Bodin (1530–96), popularized a notion of State sovereignty that extended sixty miles from shore, an idea he ascribed to Baldus.[149] General practice in the late Fifteenth and early Sixteenth Centuries largely indicated that the seas were *res nullius* and subject to unilateral appropriation by any nation.[150] Indicatively, there was dispute between the great sea powers of that time, Spain and Portugal, over which of the two "owned" the Atlantic Ocean.

Such claims started to get opposed to at about the mid-16th Century; examples include the dispute of the Danish-Norwegian claims to the North Atlantic by the King of Poland and the reply issued by Queen Elizabeth I of England regarding Spanish demands that England ceased all hostile activities against Spanish interests on the seas. Elizabeth reportedly stated that:

> "[T]he use of the sea and air is common to all; neither can any title to the ocean belong to any people or private man, forasmuch as neither nature nor regard of the public use permitteth any possession thereof."

Thus was given one of the first clear statements on freedom of the seas since the end of Roman power in the Mediterranean.

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[147] D. J. Bederman, "The Sea" in B. Fassbender and A. Peters, *The Oxford Handbook of the History of International Law,* (Oxford University Press, 2012)p. 364.
[148] *Ibid*., pp. 364-5.
[149] D. P. O'Connell, *The International Law of the Sea* (Clarendon Press Oxford 1982) vol 1, at 2-3.
[150] Heizen, "The Three-Mile Limit: Preserving the Freedom of the Seas," (1959) 11 *Stanford Law Review* 597, at 598 T. Fulton, *The Sovereignty of the Sea* 338 (1911).

Strong objections were also voiced among early international law publicists towards the extraordinary claims of Spain and Portugal to maritime spaces in the East Indies. A prominent Spanish jurist, Fernando Vázquez y Menchaca, in his treatise *Controversiarum illustrium aliarumque usus frequentium libri tres* (1564), attacked Venice and Genoa's claims to dominion over parts of the Mediterranean, defending the principle of freedom of the seas.[151]

By the end of the 16th century two theories were prevailed, contrasting each other. The first concerns State practice assertive of claims to sovereignty over ocean areas, while the second, resisting to such claims, is the continued influence of intellectual traditions from antiquity (including the primacy of Roman law).[152]

3.2.3. "The Battle of the Books"

The question of authority over the sea came to prominence in the early 17th century with the explosion of colonial, maritime and trading pretensions by European States

In 1609, the Dutch jurist, Hugo de Groot (Grotius) wrote and published the first legal treatise concerning the law of the sea, *Mare Liberum*.[153] Grotius opined that the seas are *res communis* and not subject to unilateral appropriation by any nation, heavily relying on the Rhodian/Roman law and Mediterranean practice for his theories.[154] As a result, the Dutch, and later even the French, Spanish, and Portugese, joined the ranks of maritime nations adhering to the legal principle of freedom of the seas. Even at this time, however, there was clear evidence in diplomatic correspondence and other sources that certain areas of the sea were, and out of necessity should be, subject to some measure of control and domination by individual nations.[155]

The vigorous advocacy of Grotius for the open sea to be free for the use of all met with strong resistance by virtually the entire intellectual community of the time, including in particular his famous English counterpart John Selden.[156] John Selden's Mare Clausum

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[151] Bederman, *supra* note 147, p. 365.
[152] *Ibid*., p. 365.
[153] H. Grotius, *On the Freedom of the Seas* (Hogoffin, ed. & trans. 1916).
[154] Gormley, *supra* note 143, p. 587.
[155] Florsheim, *supra* note 142, p. 79.
[156] Khan, *supra* note 140, p. 244.

offered a countervailing theory to that of Grotius, positing that coastal States had a long history of exercising sovereignty over coastal waters.[157]

Grotius himself had admitted that: "The question at issue does not concern a gulf or a strait in this ocean, nor even all the expanse of sea which is visible from the shore" and in 1625 he clarified that "the empire of a portion of the sea ... [may reach] so far as those who sail in that part of the sea can be compelled from the shore as if they were on land."[158]

The "battle of the books" on freedom of the seas raged throughout most of the 17th century and resulted in a victory for Grotius and the principle of freedom of the seas,[159] at large because of the ascendancy of maritime powers (especially Britain, the Netherlands, and France) at the expense of both coastal State or territorial imperial interests.[160] But from the writings of this period it is apparent that there was an intellectual engagement with 'the competition between the exercise of governmental authority over the sea and the idea of the freedom of the seas'.[161]

3.2.4. Early territorial sea

In 1702 the Dutch jurist Cornelis van Bynkershoek (1673–1743) addressed the pending question of the extent of coastal States' sovereignty.[162] If the decisive element is possession, that is the concrete exercise of State authority accompanied by the intention to possess, the limit of sovereignty is given by the extent of waters that the coastal State can effectively possess. The effectiveness of possession can be granted by the continuous navigation by a fleet of a certain extent of waters. But, according to Bynkershoek, the control of the sea from the sea should be replaced by the control of the sea from land and he reasoned that the dominion of the sea "ends where the power of arms ends."[163] It follows that the limit of the sovereignty of the coastal State is the range of space that can be covered

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[157] R. P. Anand, *Origin and Development of the Law of the Sea: History of International Law Revisited* (Martinus Nijhoff Publishers, 1983), p. 105.

[158] Khan, *supra* note 140, p. 243.

[159] A. Powers and C. Stucko, "Introducing the Law of the Sea and the Legal Implications of Rising Sea Levels," in M. B. Gerrard and G. E. Wannier, *Threatened Island Nations Legal Implications of Rising Seas and a Changing Climate* (Cambridge University Press, 2013) 123-140, p. 125.

[160] Bederman, *supra* note 147, p. 369.

[161] O'Connell, *supra* note 149, at 1.

[162] Bynkershoek's treatise, *De dominio maris dissertatio*, was published in 1702, and later revised in 1744.

[163] C. J. Colombos, *The International Law of the Sea*, 6th ed. (Longmans, London: 1967), at para. 102.

by the weapons placed on land which at the time was one marine league or three nautical miles (the so-called cannon shot rule).[164] The underlying idea, which is retained in international law of the sea until today, is that legal titles over coastal waters have an accessory character with respect to titles established on land.[165] Still today retained is the accommodation of enduring competing interests of maritime States on the one hand and those of coastal States on the other.[166]

Bynkershoek's position was reinforced later on. Following the Napoleonic Wars the law of the sea was shaped as follows: open trade, extremely limited coastal State authority and predictable rules of maritime captures.[167] State practice from the 18th and 19th centuries, as manifested in treaties, diplomatic correspondence, and prize or revenue decisions, seemed to concur that the waters immediately adjacent to a coastal State's land domain were considered as part of the territory of the sovereign.[168] As upheld in the *Bering Fur Seals Arbitration* (1893), property rights in natural resources and the territorial sea were coterminous.[169] Even after the First World War, the essential premises of the law of the sea were not materially changed, although with the League of Nations' attempt to codify international law the need to clarify the law of the sea arose. During the 1930 Hague Conference it was made clear that almost all nations were in agreement that the territorial sea forms a part of the actual territory of the claiming coastal state.[170]

3.2.5. Codification

Particularly in the 20th century, the phenomenon of 'creeping coastal State jurisdiction,' led to expanded coastal State authority both substantively and geographically (further

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[164] Florsheim, *supra* note 142, p. 79.

[165] T. Scovazzi, "The Origin of the Theory of Sovereignty of the Sea" in L. del Castillo, *Law of the Sea, From Grotius to the International Tribunal for the Law of the Sea* (Koninklijke Brill NV, 2015), p. 62.

[166] P. B. Potter, *The Freedom of the Seas in History, Law, and Politics* (Longmans Green New York, 1924), pp. 171, 188.

[167] Bederman, *supra* note 147, p. 372.

[168] *Ibid.*, p. 374.

[169] *Award Between the United States and the United Kingdom, Relating to the Rights of Jurisdiction of United States in the Bering's Sea and the Preservation of Fur Seals* (United States v. United Kingdom), Decision of 15 August 1893, RIAA XXVIII, 263.

[170] H. A. Smith, *The Law and Custom of the Sea*, 2nd edn. (London, Stevens & Sons Ltd., 1950), at. 33.

seaward), including through the establishment of various new coastal State maritime zones.[171]

Following the 1930 Hague Conference, in 1958, another attempt was made by the United Nations that resulted in four conventions generally endorsing open seas.[172] In 1960, the UN tried and failed to limit the principle of open seas by delimiting zones of maritime jurisdiction where coastal States could exercise varying degrees of sovereignty.[173] These goals were eventually realized in 1982 and incorporated in the LOSC.

Throughout the codification stages of the law of the sea, the principle that "the land dominates the sea" was neither discussed nor cast in such terms within the LOSC. As shown above (paragraph 3.1.1), it was the ICJ in the *North Sea Continental Shelf* case that first employed such wording.[174]

As a concluding remark, it can be pointed out that throughout the different stages of its development, the law of the sea gradually evolved so as to permit sovereignty over adjacent coastal waters.

3.3. Evaluation: conclusions and recommendations on the application of the principle in the context of sea level rise

In the attempt to ascertain the true content and substance of the principle that "the land dominates the sea," and to identify its multiple facets, it had to be broken down to its components: jurisprudence, doctrine, and history. Still, they cannot be re-assembled before establishing which parts are indeed relevant to the current analysis.

Thus, a short recap is necessary at this point. It cannot be ignored that the first time the exact phrase appeared in the international plane was in 1969. It is also a fact that, since then, it has been exclusively relied upon in maritime delimitation cases – or so is presented in relevant scholarship – in order to establish entitlement on the basis of the baselines. Yet, the principle is considered to have evolved from the notion of *dominium maris* and the

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[171] E. Franckx, "The 200-mile Limit: Between Creeping Jurisdiction and Creeping Common Heritage", (2005) 48 *German Yearbook of International Law* 117–149, at 119 and 125–130.
[172] Anand, *supra* note 157, p. 184.
[173] *Ibid.*, pp. 185-90.
[174] *North Sea Continental Shelf*, *supra* note 98, para. 96.

post-Grotius cannon-shot rule, which is paradoxical, given that before 1969, it naturally had nothing to do with delimitation, let alone methods of delimitation. It was a very distinct notion. The content of the principle, which was known as *dominium maris* was concerned of nations' capability to lawfully establish sovereignty over certain waters, which is far from the technical exercise that is delimitation. Therefore, it is plausible that some confusion or misunderstanding in theory occurred along the way that in reality triggered a corrupted perception of the content of the principle.

It is thus imperative to closely examine what the ICJ meant by the phrase, when it first introduced it in its 1969 judgment. At that time, scholarship was rather skeptical as to the existence of a right to continental shelf, and this was what motivated the Court's analysis before it effected the continental shelf delimitation. Thus, the basis of the coastal State's entitlement over the continental shelf, according to the Court, is its entitlement over the territory lying above the sea. To the extent that the state enjoys sovereignty over land territory, it enjoys title over the areas which, although covered by seawater, "may be deemed to be actually part of [that] territory," in the sense that they are an extension – a prolongation – of that territory under the sea.[175] As the Court stated: "The doctrine of the continental shelf is a recent instance of encroachment on maritime expanses which, during the greater part of history, appertained to no-one. The contiguous zone and the continental shelf are in this respect concepts of the same kind. In both instances the principle is applied that the land dominates the sea."[176] Therefore, the rights to the continental shelf are a mere application of the principle that the land dominates the sea.[177] Just like *dominium maris* and territorial waters and sea, the principle, as the Court put it, and the new maritime zones are the two sides of the same coin.

The confusing part of the judgment, that perhaps has provoked a different interpretation of the principle is the phrase which follows right after the principle: "In both instances the principle is applied that the land dominates the sea; it is consequently necessary to examine closely the geographical configuration of the coastlines of the countries whose continental

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[175] *North Sea Continental Shelf, supra* note 98, para. 43.

[176] *Ibid.*, para. 96.

[177] N. Panagis and A. Tzanakopoulos, "North Sea Continental Shelf (Federal Republic of Germany v Netherlands; Federal Republic of Germany v Denmark) (1969)," in E. Bjorge and C. Miles (eds.), *Landmark Cases in Public International Law* (Hart Publishing, 2017) 283-306, p. 301.

shelves are to be delimited."[178] However, this part of the judgment should not be perceived as corrupting the content of the principle as it was described immediately above. Just two paragraphs later, the Court clarifies:

> "A final factor to be taken account of is the element of a reasonable degree of proportionality which a delimitation effected according to *equitable principles* ought to bring about between the extent of the continental shelf appertaining to the States concerned and the lengths of their respective coastlines, these being measured according to their general direction in order to establish the necessary balance between States with straight, and those with markedly concave or convex coasts ,or to reduce very irregular coastlines to their truer proportions. The choice and application of the appropriate technical methods would be a matter for the parties. One method discussed in the course of the proceedings, *under the name of the principle of the coastal front,* consists in drawing a straight baseline between the extreme points at either end of the Coast concerned, or in some cases a series of such lines. Where the parties wish to employ in particular the equidistance method of delimitation, the establishment of one or more baselines of this kind can play a useful part in eliminating or diminishing the distortions that might result from the use of that method."[179] (emphasis added)

It is submitted that this passage distinguishes the principle that "the land dominates the sea" from the equitable principles which are to be taken into account during the process of delimitation. Clearly, the principle is of higher normative value for the Court, not blending it with technical methods of delimitation, but rather using it to state the obvious: the land is the legal source of maritime entitlement (because the land dominates the sea) thus it follows that the geographic configuration of such land will be a prominent part to the process of delimitation as an equitable principle (under the name of the principle of the coastal front).

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[178] *North Sea Continental Shelf, supra* note 98, para. 96.
[179] *Ibid.,* para. 98.

Another element which is completely ignored in scholarship when discussing the principle, is the legal concept of internal waters. As the Court stated in the 1986 *Nicaragua* judgment:

> "The Court should now mention the principle of respect for State sovereignty, which in international law is of course closely linked with the principles of the prohibition of the use of force and of non-intervention. The basic legal concept of State sovereignty in customary international law, expressed in, inter alia, Article 2. paragraph 1, of the United Nations Charter, extends to the internal waters and territorial sea of every State and to the air space above its territory. As to superjacent air space, the 1944 Chicago Convention on International Civil Aviation (Art. 1) reproduces the established principle of the complete and exclusive sovereignty of a State over the air space above its territory. That convention, in conjunction with the 1958 Geneva Convention on the Territorial Sea, further specifies that the sovereignty of the coastal State extends to the territorial sea and to the air space above it, as does the United Nations Convention on the Law of the Sea adopted on 10 December 1982. The Court has no doubt that these prescriptions of treaty-law merely respond to firmly established and *longstanding tenets of customary international law*."[180]

In support of the author's general argument that "land dominates the sea" means that "sovereignty over land entails sovereignty over adjacent waters", it is submitted that the above passage serves as a good example of the fact that the principle is not only found in delimitation cases. Rather, it constitutes proof that this 'longstanding and firmly established' custom corresponds to the longstanding notion of *dominium maris*, a.k.a. the principle that the land dominates the sea. Therefore, it is more than plausible that the principle has in fact been incorporated in the LOSC – not *verbatim* of course, but its very content. It is thus to be found within the incredible provision of Art. 2(1) and (2):

> "The sovereignty of a coastal State extends, beyond its land territory and internal waters and, in the case of an archipelagic State, its archipelagic waters, to an adjacent

[180] *Military and Paramilitary Activities in und against Nicaragua* (Nicaragua v. United States of America). Merits, Judgment. I.C.J. Reports 1986, p. 14, para. 212.

belt of sea, described as the territorial sea. This sovereignty extends to the air space over the territorial sea as well as to its bed and subsoil."

Regardless, the history of the law of the sea has shown that for maritime nations and coastal States it has always been an issue of whether sovereignty over the sea is possible. Today, that such issues have been resolved, one may as well agree with Caron's extreme position that the phrase "the land dominates the sea" is nothing but a "vestigial remnant of the naturalist position that the existence of land is the source of authority over the ocean."[181]

Nevertheless, it still retains much value in that it speaks of an undoubted truth: sovereignty over -coastal- land will always be preliminary to entitlement to maritime areas and coastal waters will always be accessory to land. Thus interpreting the content of the principle, it follows that it cannot be undermined by a freeze of maritime limits, since it merely refers to the source of maritime entitlement, being above the technical considerations on the generation of entitlement.

The technical considerations, the how and how far, have always been dependent on other factors – the constant being the specific interests defining each era. Such interests vary depending on the specific needs of the international community at each given time. As stated elsewhere:

"If the basic factor is the need of States, any limit could be overcome and replaced by another, as a consequence of new needs and changing circumstances. Yet the subsequent historical development of international law of the sea shows that most relevant changes in the rules are linked to claims to extend State sovereignty over waters in the light of new interests and concerns. In fact, also the principle of freedom of the sea has a relative character, as any other legal principle and, with the passing of time, it has undergone a process of progressive weakening."[182]

In a rapidly changing world of rising sea levels, the biggest interest will undoubtedly be such certainty as to avoid unnecessary conflict over maritime limits and boundaries already established. Therefore, in the event that one asserts that the content of the principle is in

[181] Caron, *supra* note 84, 1, 14.
[182] Scovazzi, supra note 165, p. 63.

fact the generation of entitlement through the baselines, then the principle will be naturally pushed away as outdated – not serving the interests of the international community – rather than becoming an obstacle in proceeding with what clearly constitutes the most desirable solution, i.e. the freeze of maritime zones and boundaries.

CHAPTER 4
TOWARDS MAINTAINING THE MARITIME *STATUS QUO*: RECOMMENDATIONS *DE LEGE FERENDA*

4.1. Some dubious solutions for the prevention of the loss of entitlements

Having surpassed the two major obstacles -the ambulating maritime entitlement *régime* of the LOSC and the possible limitations of the principle that "the land dominates the sea", this Chapter accumulates the most prominent of the proposed solutions towards maintaining the maritime *status quo*. For reasons to become apparent, the first section discusses some effective yet dubious solutions, while the second addresses the most prevailing in this regard.

4.1.1. Artificial preservation of the baselines

The most obvious way to prevent or reduce the negative effects of sea level rise is shoreline protection. As far as the low-water line is concerned, this means the construction or reinforcement of sea defences in order to artificially conserve the baselines.

Artificial conservation of the coastline is fully permitted under public international law and very common in State practice.[183] It is generally accepted that coastal States can, by implementing such measures, stabilize portions of their baselines and thereby preserve their associated maritime zone entitlements.[184] The question may arise here whether an island. i.e. 'a naturally formed area of land, surrounded by water, which is above water at high tide' can still comply with the requirement of being 'naturally formed' after it has disappeared but was artificially conserved. The practical implication in this case is that, according to LOSC Art. 60(8), artificial islands within the EEZ do not possess the status of islands and, thus, they have no territorial sea of their own and their presence does not affect the delimitation of the territorial sea, EEZ or continental shelf. It is submitted, however, the artificial conservation of an island which was once formed by nature does not

[183] Trümpler, *supra* note 8, p. 59.
[184] Schofield and Freestone, *supra* note 4, at p. 151.

deprive it of its legal status of an 'island.'[185] This is also the case if the artificial conservation was exclusively intended to preserve the baseline for the purpose of maritime entitlement. Also the artificial conservation of an island exclusively for the purpose of preventing it from degenerating, as a result of sea level rise, to the status of 'rock' as provided in Art. 121(3) LOSC (and thus no longer generating an EEZ) should be regarded as permissible.[186] The Award of the Arbitral Tribunal in the South China Sea Arbitration may offer some important insight in this regard: "the Tribunal considers historical evidence of conditions on the features [...] to represent a more reliable guide to the capacity of the features to sustain human habitation or economic life."[187]

In the case of straight baselines the question may be raised whether it is allowed to construct a lighthouse (or similar installation) on a disappearing island on which a connecting point for straight baselines is located, exclusively for the purpose of preserving the point for the drawing of straight baselines. It is submitted that, quite apart from the fact that it may be difficult to prove that the construction was exclusively for this purpose, such action may be regarded as permissible.[188] The current rules of the law of the sea on baselines and maritime entitlements in fact provide a perverse incentive to States to spend huge amounts of money on artificial conservation of the baseline purely for the purpose of maintaining maritime entitlements.

However, this option has been considered as a major waste on resources.[189] Especially given the fact that since the coastal States most affected by sea level rise are the ones that have contributed the least to the causes of global warming and the ones lacking the resources to proceed to such major construction projects. Thus, although effective and fully permissible, this option cannot be generally accepted since it contradicts with considerations of equity. Therefore, other options should be pursued for ensuring that coastal States will retain maritime spaces that would be lost as a result of sea level rise

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[185] S. Talmon, "Article 121" in A. Proelss (ed.), *The United Nations Convention on the Law of the Sea: A Commentary*, (C.H. Beck/Hart/Nomos: 2017); C. R. Symmons, "Some Problems Relating to the Definition of 'Insular Formations' in International Law: Islands and Low-Tide Elevations," in C. Schofield and P. Hocknell (eds.), *Maritime Briefing*, vol. I, no. 5 (1995), p. 3.

[186] Soons (2018), *supra* note 28, p. 108.

[187] *The South China Sea Arbitration* (The Republic of the Philippines v. The People's Republic of China), Award, 12 July 2016, PCA Case Nº 2013-19, para. 578.

[188] Soons (2018), *supra* note 28, pp. 108-9.

[189] Caron (1990), *supra* note 42.

These options are legal in nature, not involving high construction costs, and will be reviewed in the following paragraphs.

4.1.2. Conclusion of delimitation agreements

As already seen, in paragraph 2.3.1, boundary treaties may not be unilaterally terminated thus maritime delimitation agreements cannot be terminated on the basis of VCLT Art. 62. Consequently they shall be considered as permanently fixing entitlements therein.

Therefore, another obvious solution is for States to conclude maritime delimitations with their neighbouring States in order to secure their maritime entitlements notwithstanding subsequent regression of the baselines. This consideration may have played a role in the recent conclusion of a series of maritime boundary agreements in the Pacific.[190]

Again, this solution has some problematic points. First, it does not apply to simple cases of entitlement, i.e. situations where no neighbouring States are present. Secondly, it might not be always feasible, since it naturally depends on the willingness of both parties to enter into such negotiations and reach an agreement. And, in any event, if the agreement refers to EEZs or continental shelves, a loss of entitlement may still be observed with respect to the territorial sea, provided that sufficient distances are in play. Therefore, other solutions must be considered, serving the interests of every State involved.

4.1.3. Amendment of the LOSC / Implementing Agreements

Since the problem is caused by the current rules on baselines and maritime entitlement it would seem logical to be to try and change these rules. Such conventional rules are included in the LOSC, thus the obvious option would be to amend the relevant provisions by way of the formal amendment procedures of the LOSC.[191] An alternative option would

[190] Such is the agreement between Indonesia and the Philippines for the delimitation of their respective EEZs, which was ratified very recently, in June 2019. The agreement establishes an EEZ boundary line by express reference to geographic coordinates.

[191] The LOSC provides for two possible amendment procedures. The regular procedure (Art. 312) involves holding a conference to consider proposed amendments if, within 12 months after one or more parties have proposed specific amendments, at least one half of the parties have supported such request. The decision-making procedure applicable at the amendment conference shall be the same as that applicable at the Third UN Conference on the Law of the Sea, unless otherwise decided by the conference. The conference should make every effort to reach agreement by consensus and these should be no voting until all efforts at consensus

be to negotiate a separate instrument for this purpose (an "Implementing Agreement'). Other options that have been suggested are the adoption of a Protocol to the UNFCCC, or an entirely separate treaty, either on a global or on a regional basis.[192] Because any amendment passed under these procedures would bind all Convention parties, either procedure could supply a mechanism for creating explicit international law to protect the legacy maritime rights of the sinking States.[193] However, the disadvantages and dangers of these options at this stage are such that they offer few prospects for success, in particular because intergovernmental negotiations on these sea level rise issues may not remain isolated and could trigger the inclusion of other, more controversial, issues.

It follows why all solutions proposed above can be characterized as dubious. Therefore, informal ways of changing the current *régime* are preferable: developing the interpretation of the current LOSC provisions in practice or/and the development of new rules of customary international law.

4.2. The prevailing responses: fixing the baselines v. freezing the outer maritime limits

Numerous scholars have argued that there is merit in permanently fixing the boundaries of all maritime zones so as to divest them of their ambulatory character.

Judge Jesus opined that, for the sake of stability, the baselines established and given publicity to, in accordance with the relevant provisions of the LOSC, should be seen as permanent, irrespective of changes.[194] Caron has suggested that "States should move toward permanently fixing ocean boundaries and away from the current regime of

have been exhausted. The other, simplified procedure (Art. 313) involves a proposed amendment which is considered adopted if, after twelve months from the date of the circulation of the proposal, no State party has objected. In both cases the proposed amendment may not relate to activities in the Area; such proposed amendments are subject to the procedure in Art. 314.

[192] Soons (2018), *supra* note 28, pp. 110-1.

[193] J. L. Johnsen, "Protecting the Maritime Rights of States Threatened by Rising Sea Levels: Preserve Legacy Exclusive Economic Zones," (2018) 36 *Berkeley Journal of International Law* 166-189, p. 178.

[194] J. L. Jesus, "Rocks, New-born Islands, Sea Level Rise and Maritime Space," in J. A. Frowein et al. (eds.), *Negotiating for Peace-Liber Amicorum Tono Eitel* (Springer 2003), pp. 579, 601. Similarly Schofield, *supra* note 2, p. 416.

ambulatory boundaries."[195] Rayfuse is also in favor of the view of freezing baselines.[196] Soons suggests that States prevent negative consequences of sea level rise by contributing towards the creation of a new rule of customary international law which allows coastal States in case of sea level rise to maintain the original outer limits of their maritime zones."[197]

Therefore, two different sets of options for dealing with the effects of sea-level rise on maritime entitlements currently exist. The first suggestion concerns a rule that would permanently fix the boundaries of all maritime zones on the basis of presentably accepted baselines. The second involves the establishment of a new rule freezing the outer limits of maritime zones where they were located at a certain moment in accordance with the general rules in force at the time. Either of these options can be, fully or partially, fulfilled by actions taken in accordance with existing law, or by developing new rules of international law.[198]

4.2.1. Interpreting the LOSC in the light of sea level rise

Interpretation of certain LOSC provisions in the context of sea level rise may offer possibilities of adapting to the consequences of climate change and sea level rise whilst operating within the current legal regime, without subjecting it to any amendment or modification.

The major weakness of the LOSC admittedly is the rule on ambulatory baselines. Thus, a first suggestion relates to normal baselines under LOSC Art. 5 which provides that "the normal baseline [...] is the low water line along the coast as marked on large scale charts *officially recognized* by the coastal State." The language implies that the key requirement is that the chart be recognized by the coastal States.[199] Consequently, it is plausible that if

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[195] Caron, *supra* note 84, at 14.

[196] R. Rayfuse, "Sea Level Rise and Maritime Zones: Preserving the Maritime Entitlements of 'Disappearing' States," in M. B. Gerrard and G. E. Wannier, *Threatened Island Nations Legal Implications of Rising Seas and a Changing Climate* (Cambridge University Press, 2013) 167-191, at p. 191.

[197] Soons (1990), *supra* note 42, pp. 207, 216, 231.

[198] R. Rayfuse, "International Law and Disappearing States," (2011) 41 *Environmental Policy and Law* 281-287, p. 282.

[199] C. Schofield and D. Freestone, "Options to Protect Coastlines and Secure Jurisdictional Claims in the Face of Global Sea Level Rise," in M. B. Gerrard and G. E. Wannier, *Threatened Island Nations Legal Implications of Rising Seas and a Changing Climate* (Cambridge University Press, 2013) 141-166, p. 162.

States do not update their charts to reflect the loss of land territory or basepoints they can preserve their baselines notwithstanding sea level rise. Thereto, a dual charts system of official charts for maritime jurisdictional purposes and navigational charts has been proposed in order to make up for the inaccuracy of the initial charts and to protect seafarers from potential dangers posed by this inaccuracy.[200] However, one must not forget that under international law, other States can contest the validity of baselines, as it was stated by the ICJ in the *Anglo-Norwegian Fisheries* case,[201] which is of particular relevance in the present context if the above interpretation is deemed to be arbitrary in the particular instances. Although relevant State practice indicates that outdated charts seemingly find no opposition by other States,[202] which has been perceived as States' willingness to accept a less frequent update,[203] this does not necessarily imply that no objections will exist in the face of major changes in the coasts.

Bird and Prescott have suggested that in order to minimize the negative effects of sea level rise, States will likely resort to LOSC Art. 7.[204] As already mentioned, the LOSC also provides for a special regime of straight baselines in areas where a delta and other natural conditions render the coastline highly unstable.[205] This begs the question whether sea level rise induced changes in the coastlines can fit into this provision through appropriate interpretation. In this regard, the following questions need to be addressed: a) which are those "other natural conditions", b) how is a "highly unstable coastline" defined, and c) are such baselines permanent or ambulatory?

In its study on baselines, the United Nations Office for Ocean Affairs and the Law of the Sea observed that "paragraph 2 of the Article refers to 'a delta and other natural conditions' so that for this paragraph to apply there must be a delta."[206] This interpretation

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[200] *Id*.

[201] *Anglo-Norwegian Fisheries, supra* note 96, para. 137.

[202] In fact, while pointing out that many coastal states 'have yet to deposit charts of lists of geographical coordinates with the Secretary-General,' the Oceans and the law of the sea report of the Secretary-General of the United Nations makes no reference to the submitted ones being outdated: GA, Oceans and Law of the Sea: Report of the Secretary General, UN Doc. A/69/71/ADD.1 (2014), 6 (para. 14).

[203] Trümpler, *supra* note 8, p. 59.

[204] E. Bird and V. Prescott, "Rising Global Sea Levels and National Maritime Claims," (1989) 1 *Marine Policy Reports* 177, p. 189.

[205] Art. 7(2) LOSC.

[206] UNDOALOS, *Baselines: An Examination of the Relevant Provisions of the United Nations Convention on the Law of the Sea*, 24.

is based on a strict literal interpretation of the provision, in which the word "and" suggests that the conditions are cumulative. Churchill and Lowe assert that the inclusion of the phrase 'and other natural conditions' "appears to refer to causes of coastal instability other than deltas."[207] This suggests that the presence of a delta or other natural conditions rendering the coastal line highly unstable is an alternative criterion. Roach and Smith similarly replace the phrase "and other natural conditions" with "or other natural conditions" (emphasis added), suggesting that they interpret them as two alternative reasons for highly unstable coastlines.[208] All the more, according to Schofield and Freestone, this provision has been recognized as potentially applicable in the context of sea level rise.[209] However, as Busch correctly observes, scholars who suggest that, in response to sea level rise, States are permitted to draw such straight baselines, tend not to provide any justifications for such assertions.[210]

When it comes to conceptualizing a "highly unstable coastline", it has been noted by Hoque that the phrase is not well understood and that it is not clear which criteria should be used to measure such instability.[211] The threshold for a high degree of instability is rather unclear, but climate change research clearly indicates that sea level rise will have severe consequences for a number of low-lying and island-States, risking partial or complete submergence of mainland or island territory and thereby also the loss of large maritime areas currently subject to national jurisdiction.[212] Without concluding on the exact threshold of a high degree of instability, it seems clear that the predicted and experienced sea level rise are well above what constitutes a high degree of instability, and can therefore be concluded that this uncertainty accords coastal States which experience a highly unstable coastline due to sea level rise the right to establish straight baselines subject to Art. 7(2).[213]

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[207] RR Churchill and AV Lowe, *The Law of the Sea*, 37.
[208] Roach and Smith, *supra* note 50, p. 51.
[209] Schofield and Freestone, *supra* note 4, p. 159.
[210] Busch, *supra* note 3, p. 184.
[211] M. N. Hoque, "The Legal and Scientific Assessment of Bangladesh's Baseline in the Context of Article 76 of the United Nations Convention on the Law of the Sea" (2006).
[212] Busch, *supra* note 3, p. 185.
[213] *Id*.

It is also provided for under LOSC Art. 7(2) that straight baselines shall "remain effective" notwithstanding subsequent regression of the low-water line. According to Rayfuse, the LOSC does provide for the permanent fixing of baselines in this particular instance.[214] Pursuant to Art. 7(2), straight baselines drawn around deltas or other areas of unstable coastline remain fixed, as a geographical matter, unless changed by the coastal States.[215] However, Soons observes that it was not the intention of the provision to grant the coastal State discretionary power in this respect, since at some point it will have to bring its baselines in accordance with the new factual situation.[216] It is further argued that the fact that the provision sanctions the continued validity of outdated baselines only until they are changed by the coastal State "in accordance with this convention" asserts that Art. 7(2) is far from fixing the baselines of unstable coasts.[217]

Another crucial point of discussion, is whether Art. 7(3) offers any indication as to when a coastal State shall change such baselines. According to Prescott and Schofield the paragraph 3 requirement under which the "drawing of straight baselines must not depart to any appreciable extent from the general direction of the coast" equally applies to baselines established both under paragraph 1 and 2.[218] It is in such a case of dramatic sea level rise induced change that, as stated by Soons, the coastal State must update its baselines, in order for them not to depart from the general geographic configuration of the coast.[219]

It should be noted at this point, that the ILA Committee on Baselines has considered that a strict interpretation of paragraph 3 may undermine the purpose of paragraph 2, since sometimes the mere difficulty in ascertaining the general direction of the coast is what would render it highly unstable.[220] Thus, some margin of appreciation must be accorded to such coastal State seeking to draw straight baselines.[221]

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[214] Rayfuse, *supra* note 196, p. 172. Similarly, Johnsen, *supra* note 193, p. 185.
[215] *Id*.
[216] Soons (1990), *supra* note 42, p. 220.
[217] J. Grote Stoutenburg, *Disappearing Island States in International Law* (Brill Nijhoff, 2015), p. 132.
[218] C. Schofield and V. Prescott, *The Maritime Political Boundaries of the World*, 2nd ed. (Leiden, Netherlands: Martinus Nijhoff Publishers, 2005), p. 156.
[219] Soons (1990), *supra* note 42, p. 220.
[220] International Law Association, Committee on Baselines under the International Law, Washington Conference (2014), para. 62.
[221] *Id*.

General State practice on Art. 7 demonstrates that most coastal States have relied on a liberal interpretation of the provision,[222] while despite the fact that straight baselines must not depart from the general direction of the coast, State practice exists to the contrary.[223] Analyzing this general practice, Churchill concludes that practice is diverse and does not point to any particular way in which straight baselines should be drawn, despite the substantial number of non-conforming States - a number which nevertheless indicates that the normative status of the Article has weakened.[224] The ILA Committee has suggested that, even if such practice is not sufficient to create a new customary rule, it still must be taken into account for the interpretation of the provision, given this flexible approach (which has weakened the normative value of the Article) derives from the practice of directly interested States.[225] In this regard, the argument can be made that such interpretative flexibility may offer a solution for coastal States in the face of sea level rise.

Turning to the last type of baselines, it is evident that archipelagic baselines are in a different category from normal baselines. It has been suggested by Guilfoyle that "there is a textually plausible (if not necessarily compelling) reading of the relevant provision of the convention, Article 47, which suggests that once declared, mapped and deposited with the UN Secretary General archipelagic baselined might be considered final.[226] Although he does not provide any reasoning as to why such a reading of Art. 47 is 'compelling.' However, it can be assumed that the basis for this justification is the absence of the "effective until changed by the coastal State" element, employed in the corresponding straight baselines Art. 7. Therefore, it may be deduced that, *a contrario*, once declared, archipelagic baselines are permanently fixed.

Interpretation thus far concerned provisions relating to baselines and the possibility that they may be seen as fixing those. It seems that the only example of a LOSC provision capable of being interpreted as fixing an outer limit notwithstanding regression of its

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[222] Hoque, p. 36.

[223] Roach and Smith, *supra* note 50; Rayfuse, *supra* note 196, p. 172.

[224] R. R. Churchill, "The Impact of State Practice on the Jurisdictional Framework Contained in the LOSC Convention" in A. G. Oude Elferink (ed.), *Stability and Change in the Law of the Sea: The Role of the LOSC Convention* (Martinus Nijhoff Publishers, 2005), pp. 108-9.

[225] International Law Association, Committee on Baselines under the International Law, Washington Conference (2014), para. 41.

[226] Guilfoyle, *supra* note 135.

corresponding baseline, is the provision on the outer limits of the continental shelf. Pursuant to Article 76(9), coastal States are to deposit with the Secretary-General of the United Nations charts and relevant information, including geodetic data, that permanently describe the outer limits of their continental shelf.[227] It can be argued, however, that the continental shelf is the 'natural prolongation' of a State's land territory, and thus if that land has disappeared a State should no longer have a claim to a shelf.[228]

4.2.2. Formulating customary international law

Since a sea level rise driven interpretation of the certain LOSC provisions may only partially secure maritime entitlement of coastal States, it seems more logical that a new rule of customary law be developed. This approach is not without criticism though. As stated by Rayfuse, the "adoption of new rules through the normal process for the development of customary international law is probably both too slow and too impractical, particularly given that some States may physically disappear before sufficient practice and *opinio juris* is accumulated."[229]

Despite that, certain State practice can be traced, although two things should be clarified from the outset: that such practice is far from being considered as sufficient in order for one to ascertain the existence of a new rule of customary law and that such practice mostly revolves around the permanent fixing of baselines.

Pacific States are so far pioneers in the evolution of State practice towards dealing with the consequences of sea level rise. As a first note, a very clear *opinio juris* of those States on the matter can be observed. On 16 July 2015, seven leaders of Polynesian States and Territories signed the Taputapuātea Declaration on Climate Change at Papeete, in Tahiti. This Declaration by Polynesian leaders was made in advance of the Twenty-first Session of the Conference of the Parties to the UN Framework Convention on Climate Change (UNFCCC COP 21) in Paris and, *inter alia*, called upon the parties to the UNFCCC to:

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[227] Rayfuse, *supra* note 196, p. 172.
[228] Guilfoyle, *supra* note 135.
[229] Rayfuse (2011), *supra* note 198, p. 284.

"acknowledge, under the United Nations Convention on the Law of the Sea (UNCLOS), the importance of the Exclusive Economic Zones for Polynesian Island States and Territories whose area is calculated according to emerged lands and *permanently establish the baselines* in accordance with the UNCLOS, without taking into account sea level rise."[230] (emphasis added)

In March 2018, eight Pacific island leaders attending the second Leaders' Summit of the Parties to the Nauru Agreement (PNA) signed *The Delap Commitment on Securing Our Common Wealth of Oceans – reshaping the future to take control of the fisheries*.[231] Acknowledging the importance of regional cooperation, the challenges presented by unique vulnerability of these States, the threat to the integrity of maritime boundaries and the existential impacts due to sea level rise, they agreed "to pursue legal *recognition of the defined baselines established* under the United Nations Convention on the Law of the Sea to remain in perpetuity irrespective of the impacts of sea level rise."[232]

This practice in reality dates back to the *Framework for a Pacific Oceanscape,* whose Strategic Priority 1 concerns jurisdictional rights and responsibilities and which states at that the Pacific Island Countries should, "in their national interest," deposit with the UN coordinates and charts delineating their maritime zones.[233] Also, Action 1B entitled "Regional Effort to Fix Baselines and Maritime Boundaries to Ensure the Impact of Climate Change and Sea-Level Rise Does Not Result in Reduced Jurisdiction of PICTS" states:

"Once the maritime boundaries are legally established, the implications of climate change, sea-level rise and environmental change on the highly vulnerable baselines

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[230] Taputapuātea Declaration on Climate Change, Papeete, Tahiti, 16 July 2015. Signed by the leaders of French Polynesia, Niue, Cook Islands, Samoa, Tokelau, Tonga and Tuvalu. Text available at: <http://www.presidence.pf/files/Polynesian_PACT_EN_15-07-15.pdf>

[231] *The Delap Commitment on Securing Our Common Wealth of Oceans – reshaping the future to take control of the fisheries,* signed in Majuro, Marshall Islands on 2 March 2018 by the heads of State or their representatives of The Federated states of Micronesia, Republic of Kiribati, Republic of the Marshall Islands, Republic of Nauru, Republic of Palau, Independent State of Papua New Guinea, Solomon Islands and Tuvalu.

[232] *Ibid.*, para 8 (emphasis added).

[233] C. Pratt and H. Govan, *Our Sea of Islands, Out Livelihoods, Our Oceania. Framework for A Pacific Oceanscape: a catalyst for implementation of ocean policy* (Pacific Islands Forum Secretariat, November 2010), p. 57.

that delimit the maritime zones of Pacific Island Countries and Territories should be addressed. This could be a united regional effort that establishes baselines and maritime zones so that areas could not be challenged and reduced due to climate change and sea-level rise."[234]

In a coordinated regional effort to secure their maritime boundaries, Pacific small island developing States, potentially threatened by sea-level rise, have in recent years declared the outer limits of their EEZs.[235] Examples include the Cook Islands, Samoa, Fiji, Kiribati, Nauru, Niue, Palau, Tuvalu and the Marshall Islands.[236] Pacific State practice follows a relatively common scheme of removing from national legislation any reference to the low-water line as the baseline for measuring maritime zones and replacing it with a system of fixed geographic coordinates.[237] This in conjunction with the general regional guides and practice may constitute a claim that baselines will not retreat or be redrawn with rising sea levels, and by accretion of such Sate practice, baselines may become "fixed" at the geographical coordinates expressed in domestic legislation'[238]

This regional State practice in the Pacific may, in theory, develop into rules of regional customary international law. The problem with such regional customary international law on a topic as this is that it does not bind States outside the region, unless in their practice and expressed opinions they were to accept the Pacific States' conduct. If such practice is also adopted by States in other regions, and accepted by third States, this could lead to the development of rules of general customary international law which would better suit the topic. Nevertheless, so far no objections have been raised against this emerging practice.

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[234] *Ibid.*, p. 58.

[235] D. Freestone and C. Schofield, "Republic of the Marshall Islands: 2016 Maritime Zones Declaration Act: drawing lines in the sea," (2016) 31 *International Journal of Marine and Coastal Law* 720–746, p. 740.

[236] The list of countries that have deposited information on their baselines and maritime limits with the UN can be found at http://www.un.org/Depts/los/LEGISLATIONANDTREATIES/depositpublicity.htm.

[237] Guilfoyle, *supra* note 135.

[238] Rayfuse, *supra* note 196, p. 185.

4.2.3. Evaluation: stable baselines as a response to sea level rise

In assessing these approaches, it is important to appreciate the different legal ramifications that result from a permanent fixing of baselines versus a permanent fixing of the outer limits of maritime zones.

An initial observation is that at least in terms of evolution at a normative stage, the stable baselines doctrine finds support, however limited, in State practice. And, putting the creation of a new rule of customary law aside, the LOSC framework on entitlement is so dependent on baselines, that more interpretative options are available to the stable baselines doctrine within the LOSC. Thus at this point, it seems that, even for practical reasons, this option is more plausible. Hayashi also concludes that the baselines approach is the preferable, not only as a matter of fairness, but because it does not involve the need to amend the rules on the breadth of the territorial sea and the EEZ.[239] Freezing of baselines would, in any event, by necessary implication, have the effect of freezing the outer limits of maritime zones as well.[240]

The permanently fixed baseline thesis has the strength of accounting for equitable considerations related to the developing States most heavily impacted by sea level rise, and carries significant policy advantages of stability, certainty, and public order.[241] Equitable considerations are, on the other hand, less present in the freezing outer limits thesis. Since it will only benefit States who have declared such limits, it would be against considerations of fairness to opt for a solution which would not apply to all affected parties involved.

Also, baselines, because they have legal meaning and not only a geographical meaning, are characterized by legal stability and should not be moving with the geography.[242] In any case, artificial preservation of the coasts is permitted under international law. By fixing the baselines, this right is retained by coastal States, in order for them to exercise it in the future, after coastal land has been submerged. And since this land, which is now under

[239] Hayashi, *supra* note

[240] Sefrioui, *supra* note 49, p. 18.

[241] Lathrop, *supra* note 32, p. 78.

[242] Sefrioui, *supra* note 49, p. 18.

water, was the land territory of the coastal State, it makes good sense to have baselines permanently fixed.[243]

In this sense, fixed baselines would not detrimentally affect the existing rights of landlocked States since the maritime territories of coastal States will only expand at the same rate as the shorelines retreat, leaving therefore the size of the high seas unchanged.[244]

In any event, the argument can be made that States realistically expected to fix boundaries of a permanent nature, given that when they could foresee unstable coast (delta) they provided for a mechanism to fix durable baselines.[245] It may be safe to assume that, had they predicted sea level rise when negotiating the LOSC, the picture would have been different.

[243] Puthucherril, *supra* note 87, p. 57.
[244] Caron (1990), *supra* note 42, 648.
[245] Blanchette-Seguin, *supra* note 73, p. 260.

CHAPTER 5
FINAL REMARKS AND CONCLUSION

World mythology is replete with stories of catastrophic inundations.[246] Sadly, the 21st century will inevitably see such stories manifest when rising sea levels submerge coastal land of low lying States and islands. Climate change will have an enormous impact on world history over the next century. Seemingly no area of human activity – whether political, economic, environmental, or other – will remain unaffected.[247] The international community, having the power of knowing the inevitable, now has the opportunity to preemptively address most sea level rise induced consequences, especially those relating to the law of the sea.

From a legal point of view, sea level rise poses problems to the complicated maritime zone regime developed by the LOSC. Since zones are measured from coastal baselines, any changes in coastline configuration and land inundation could have serious effects on these zones. The question thus arises, whether the current legal framework stands as an obstacle to resolving the issues of loss of entitlement. Or whether principles of law, such as the principle that "the land dominates the sea" in fact preclude departure from current rules on entitlement.

Both questions have been answered in the negative. The LOSC was extensively argued as potentially flexible enough to accommodate informal changes in the framework of entitlement through interpretation. On the other hand, the principle that "the land dominates the sea" was found to be a general principle of high normative value, distinct from the technicalities of the generation of entitlement, and thus not necessarily relevant in the context of sea level rise.

Even in the event that the answer to the above was affirmative, the flexibility of the international legal system in general would be able to accommodate the desirable solutions, notwithstanding conventional limitations or limitations of principle. For one, international customary law inevitably evolves, and every solution may seem possible, even those

[246] See, e.g., Genesis 6:9 (King James) (Noah's flood in Christianity); Qur'an 11:38-45 (Noah's flood in Islam).
[247] Johnsen, *supra* note 193, p. 188.

bypassing or contradicting conventional or customary rules. The needs of the international community are so prominent that when conflicting with general principles, the principles will become relative; their content can easily acquire other meaning. Or they can be completely pushed away, depending on the circumstances.

It has been argued that all normative obstacles towards maintaining maritime entitlement *de lege ferenda* have been surpassed. When faced with all options which have been suggested at times, one must align with the one which serves the interests of the affected parties in a fair manner. This option is concerned of fixing the baselines from which maritime zones are measured. This way stability of boundaries and limits is ensured, contributing to the avoidance of conflict.

In any case, the effects of sea level rise will force States to begin to use some of the opportunities that scholarship have already established to retain their existing maritime zones, even if physical land is submerged. If the issue becomes pressing, the political organs of the United Nations are likely to become involved, especially now that the ILC has got ahold of the issue.

All in all, it is submitted that such a pressing matter will not remain unnoticed by the interested parties. Inevitably, the law is to evolve in the years to come, and it is interesting to see towards which direction this will be achieved.

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