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Sea-Level Rise and Coastal States' Maritime Entitlements: A Cautious Approach

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Structured Abstract

Article Type: Research Paper

Purpose—The aim of this paper is to assess the proposals to “freeze” the maritime entitlements of coastal States in the face of sea-level rise.

Approach—The paper first places sea-level rise in the context of climate change in the Anthropocene and briefly looks at the international community's responses, identifying the particular concerns of small island developing States. It then examines the current law of the sea on baselines and maritime zones, and responses within the law to mitigate the impact of sea-level rise. The paper then turns to solutions recommended in academic circles, as well as official calls within international bodies, to fix the outer limits of maritime zones to ensure they remain unaffected by sea-level rise. The paper argues that several crucial aspects of such solutions are left undetermined, and cautions that thorough, balanced and carefully designed solutions are needed.

Findings—Concerted solutions are necessary to respond to the current (and future) plight of affected States, particularly low-lying island States. While the permanent fixing of the limits of maritime spaces is a possible solution, the question remains whether it is currently the most appropriate solution, and what safeguards may be envisaged to prevent possible perverse or unintended consequences.

Practical Application—This paper is intended as a fresh contribution to the current debate on the legal effects of sea-level rise on coastal States' maritime entitlements.

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Value—While there is a plethora of academic writings breathlessly advocating for the permanent fixing of coastal States’ maritime entitlements, there is a shortage of critical and balanced analyses.

Keywords: climate change, coastal States, International Law Association, maritime jurisdiction, sea-level rise, United Nations Convention on the Law of the Sea

I. Introduction

Sea-level rise raises long-term issues that are, perhaps, even more critical than the preservation of maritime spaces. Recent writings have been examining such questions as the continuity of the legal personality of “de-territorialized” States, the transfer of populations onto artificial islands or the displacement or migration of populations as a result of environmental disaster.¹

Yet sea-level rise is also predicted to impact of States’ maritime entitlements, by regression or even disappearance of the coastline. This paper focuses on the UN Convention on the Law of the Sea (Convention),² analyzes the current law and critically evaluates the proposals to “freeze” maritime entitlements. Such proposals are made in academic writings and by learned societies such as the International Law Association at its 2018 Sydney Conference. They are also raised within international bodies and have attracted enough attention for the International Law Commission to put the topic “Sea-level rise in relation to international law” on its agenda. Nevertheless, some States are also calling for careful assessment and caution in approach. The following analyses are intended as a fresh contribution to the current debate and, in particular, assesses the International Law Association’s recommendation.

II. Coastal States and Sea-Level Rise

2.1. *Climate Change as Identified Factor*

In his 2017 Report on the Oceans and the Law of the Sea, the UN Secretary-General indicated that “[h]uman-induced warming of the atmosphere and oceans is unequivocal.”³ The same Report emphasized that during the past four decades, 75 percent of sea-level rise can be attributed to glacier mass loss and ocean thermal expansion.⁴ The fifth Report of the Intergovernmental Panel on Climate Change (IPCC) deemed it “extremely likely” that human influence has been the dominant cause of the observed warming since the mid-20th century, and “very likely” that there is a substantial anthropogenic contribution to the global mean sea-level rise since the 1970s, causing glacier mass loss and ocean thermal expansion.⁵ While sea-level rise may also be influenced by natural factors such as winds and ocean currents, vertical movements of the land, isostatic adjustment of the levels of land and coastal erosion,⁶ it remains highly likely that less than 50 percent of the sea-level rise

observed in the 20th century would have occurred in the absence of global warming.⁷ It is estimated that global mean sea-level rise has risen by 0.19 meters over the period 1901–2010, and that the mean rate of sea-level rise was 1.7 mm/year between 1901 and 2010. Between 1993 and 2010, the rate was very likely higher at 3.2 mm/year.⁸

While sea-level rise is far from affecting solely nations in the South Pacific,⁹ the UN emphasized that it poses a significant risk to

small island developing States and other low-lying States... including through the loss of territory for some.... Low-lying islands provide no possibility of retreat from sea level rise, leaving their populations with no other alternative than moving elsewhere, threatening their survival and viability.¹⁰

2.2. Small Island Developing States as Particularly Vulnerable

At least as early as the 1989 Male Declaration, small coastal and island States warned against the effects of sea-level rise. The Declaration also called on industrialized States to adopt mechanisms to assist small affected States.¹¹ Similar calls were made in Rio in 1992.¹² Chapter 17 of Action 21 (protection of the oceans) identified Small Island Developing States (SIDS) as extremely vulnerable to sea-level rise.¹³ From 1990, small coastal and island States formed a coalition, “AOSIS,”¹⁴ an ad hoc group of small island and low-lying coastal developing States, giving them a voice within the UN system. The sub-group of Pacific SIDS (PSIDS) has also materialized.¹⁵ The Barbados Conference acknowledged that SIDS “are among those that contribute least to global climate change and sea-level rise, [yet] they are among those that would suffer most from the adverse effects.”¹⁶ It was acknowledged that the “inundation of outlying islands ... may result in loss of exclusive economic rights.”¹⁷

In the following twenty years, the international community reminded itself of the grave concerns of the SIDS for their own survival.¹⁸ Sea-level rise and the threat it causes to SIDS occupied an important place again in Rio in 2012.¹⁹ In Samoa, in 2014, the impact of sea-level rise on maritime spaces seems to have been on the minds of the participants, for the Heads of States called for support for the efforts of SIDS to “improve the baseline monitoring of island systems ... to enable better projections of the future impacts on small islands.”²⁰ Yet, nothing indicates that the protection of baselines would be undertaken by anything other than material and prophylactic measures, within a capacity-building framework and the UN Framework Convention on Climate Change (UNFCCC).²¹ Recently, the UN General Assembly welcomed the “continuing commitment of the international community to take urgent and concrete action to address the vulnerabilities of [SIDS].”²² Legal solutions pertaining specifically to baselines and maritime zones are not identified.

The SIDS are not satisfied with the pace of progress: in 2002, Tuvalu’s Prime Minister threatened to sue the U.S. and Australia before the International Court of Justice (ICJ) over their emissions of greenhouse gases. This was abandoned in 2006

for lack of evidence of a causal link between sea-level rise affecting Tuvalu and the two countries' emissions.²³ In 2011, Palau requested that the General Assembly seek an advisory opinion from the ICJ on the responsibility of States under international law to ensure that activities under their jurisdiction emitting greenhouse gases not damage other States.²⁴ Enquiries about international climate change litigation (and the difficulties involved) are increasing.²⁵ Up to now, the international community has fixed emissions targets and mitigation and adaptation goals in the 1992 UNFCCC, the 1997 Kyoto Protocol and the 2016 Paris Agreement.²⁶ The 23rd annual Conference of Parties to the UNFCCC (Bonn) in 2017 reaffirmed the international community's support of regional initiatives, such as the Framework for Resilient Development in the Pacific, developed by the Pacific Islands Forum.²⁷ "Ocean Pathway" was launched by the presidency of the Conference (Fiji), stressing the link between oceans and climate change.²⁸

III. Maritime Zones and the Impact of Sea-Level Rise

3.1. *Are Baselines Ambulatory?*

It is a core principle that "the land dominates the sea." This, in fact, means that the coastal State's maritime zones and its rights over the sea are a consequence of its sovereignty over the landmass. This has been repeated many times in case law and by writers.²⁹ While the Convention does not expressly mention the principle, it says that the relevant maritime zones' outer limits are measured from the "baseline,"³⁰ that is, the juridical representation of the coastline (*terra firma*).

The Convention distinguishes between four types of baselines from which the breadth of the territorial sea (and, by implication, the other maritime zones) is measured:

- the "normal baseline" is described as the low-water line along the coast.³¹ The coast may be continental or insular but artificial islands, installations and structures do not possess the status of islands; hence, they have no territorial sea of their own.³²
- coastal States may draw a "straight line" across the mouths of a river between points on the low-water line of its banks, and may also draw a "closing line" between the low-water marks of the natural entrance points of a bay or a "straight baseline" within the bay, depending on the circumstances.³³
- "Straight baselines" may be employed by joining appropriate points (on the low-water line), where the coastline is deeply indented and cut into, or where there is a fringe of islands along the coast, or also where the coastline is highly unstable because of a delta and other natural conditions.³⁴
- Archipelagic States may draw "straight archipelagic baselines" joining the outermost points (on the low-water line) of the outermost islands and drying reefs of an archipelago.³⁵

It should also be noted that the outer limit of the continental shelf may not exceed either 350 nautical miles from the baselines, or 100 nautical miles from the 2,500-meter isobath.³⁶

An essential question is whether the baselines are ambulatory, that is, whether they are affected by, and move along with, physical changes of the coastline, notably brought by sea-level rise. For normal baselines, Article 5 of the Convention indicates that the low-water line is that “marked on large-scale charts officially recognized by the coastal State.” Other types of baselines are either shown on charts or designated by geographical coordinates of points.³⁷ The vast majority of writers, with only a few exceptions,³⁸ agree that charts and lists of coordinates are not the source of the State’s entitlement to maritime spaces, but only a representation of the physical reality. Only it may be the basis on which the baselines for international law purposes are derived.³⁹ When Article 5’s predecessor⁴⁰ was debated by the International Law Commission (ILC), the assumption was that coastal States would not excessively move their low-water lines on charts.⁴¹

The International Law Association (ILA) committee on baselines looked at numerous domestic laws, many of which make no reference to charted lines in the definition of baselines. Some States refer to the role of charts and the weight to be given to them, as evidence of the baseline; the weight varies from “mere evidence” to “conclusive evidence.”⁴² The committee agreed that conclusive evidence is not sustainable in the case of outdated charts.⁴³ International cases equally confirm that it is the physical reality, and contemporary evidence that seeks to establish it, that count.⁴⁴ Having reviewed available scholarship, the committee on baselines of the ILA concluded that “the normal baseline is ambulatory” as a matter of *lex lata*, as it moves with the low-water line.⁴⁵ Coastal States may not “protect and preserve territory through ... the legal fiction of a charted line that is unrepresentative of the actual low-water line.”⁴⁶ Only a minority of writers considers that the charted line, regardless of coastal changes and until updated by the coastal State, is the Article 5 normal baseline; for the ILA committee, the normal baseline is the actual low-water line.⁴⁷ The *lex lata* has not changed and the most recent publications do not suggest it has.⁴⁸ The committee on baselines opined that the existing law does not offer an adequate solution to the potentially serious problem of sea-level rise; therefore, it recommended that the issue be considered further by a committee established for this specific purpose.⁴⁹ That committee, the committee on sea-level rise, expressly acknowledged that its proposals were made *de lege ferenda*.⁵⁰

Ambulation also applies to the other types of baselines, in the light of their mode of construction identified earlier.⁵¹ Hence, the outer limits of maritime zones are equally ambulatory, given that they are defined by way of a specified distance from the baseline. The two exceptions to this principle (one relating to straight baselines under Article 7[2], the other concerning the outer limit of the continental shelf according to Article 76[8]) will be examined later.⁵²

3.2. Remedial Responses to Threats to Baselines Caused by Sea-Level Rise

3.2.a. *Threats to Baselines.* The most serious threat is of course the disappearance of the land. In Micronesia, where the mean sea-level rise was 10–12 mm/year between 1993 and 2012, several islands either disappeared or were affected by sea-level rise.⁵³ When an island or part of an island disappears, the low-water line and hence, the baseline, disappear with it. The disappearance of a low-tide elevation (LTE) situated wholly or partly at a distance not exceeding the breadth of the territorial sea from the mainland or an island, means that the LTE's low-water line may no longer be used as the baseline for measuring the breadth of the territorial sea.⁵⁴ The disappearance of islands may also modify the configuration of a fringe of islands along the coast, to the detriment of the use of straight baselines under Article 7(1). Further, the States which have declared themselves archipelagic under Part IV of the Convention, all of which being SIDS except Indonesia and the Philippines,⁵⁵ may see the drawing of straight archipelagic baselines affected by the disappearance of some basepoints.⁵⁶ In addition, while Articles 7(4) and 47(1) allow the use of LTE as basepoints under certain conditions, they may no longer be used if completely submerged at all times.

Total disappearance of territory and its appurtenant maritime spaces is only the last stage of threats. But sea-level rise could, for instance, affect the indentation of a bay or the distance between the low-water of its natural entrance points and, hence, the closing line (Article 10). While the regression of the coastline means more generally the regression of maritime zones, the impact of sea-level rise on a zone as large as the exclusive economic zone (EEZ) may be minimal.⁵⁷ Nevertheless, marine transgression may affect the status of land formations themselves. A low-lying island⁵⁸ could become an LTE, affecting the drawing of baselines. Sea-level rise could affect the ability of the State to rely on Article 6⁵⁹ or Article 47(7)⁶⁰: if, for instance, a fringing reef is incomplete as a result of submersion in some places, to what extent may gaps be joined by straight lines?⁶¹

The question may be asked whether an island could also become a “rock” if the consequence of sea-level rise render it unable to sustain human habitation or economic life of its own and, hence, unable to generate an EEZ or continental shelf.⁶² Interestingly, the Arbitral Tribunal in the *South China Sea* drew a distinction between the intrinsic capacity of a feature to sustain human habitation, and habitation that can no longer be sustained because of intervening forces such as “[w]ar, pollution or environmental harm.”⁶³ Yet, the Tribunal does not expressly say that the feature in these circumstances will remain a fully-entitled island. It could all depend on whether the feature, in its natural state, will eventually remain capable of sustaining human habitation; while war or pollution may be temporary phenomena (even if prolonged), sea-level rise is more likely to be enduring.⁶⁴

3.2.b. *SIDS' Maritime Spaces: A Crucial Economic Issue.* It may be thought that the SIDS of the Pacific received disproportionate advantages under the Convention:

for instance, Tuvalu has a landmass of 26 km² and an EEZ of 749,790 km²; Nauru's EEZ is almost 15,000 times larger than its landmass.⁶⁵ Yet, fisheries and tourism are a large part of these nations' economies, and their GDP per capita are among the world's lowest. Thus, the export of fishing products constitutes more than 60 percent of the Marshall Islands's GDP; Kiribati's 2018 budget indicates a Government Revenue of A\$ 204 million, 134 million being generated by fishing licensing revenue and fishing transshipment fees.⁶⁶ Fifty-eight percent of tuna caught in the Western Pacific come from SIDS.⁶⁷ Further, these nations count on the revenue generated by sustainable tourism, and by the mineral resources of their continental shelves.⁶⁸

3.2.c. *Physical Protection of Baselines.* Nothing prevents States from taking coastal prophylactic measures. For instance, the Dutch Government indicated at the Security Council that it would continue to take action to secure itself from the effects of further rises in sea level, and that it was willing to share its knowledge with other delta countries, particularly in the developing world.⁶⁹ While the outermost permanent harbor works forming an integral part of the harbor system are regarded as forming part of the coast,⁷⁰ the ILC considered that jetties and coast protective works are assimilated to harbor works.⁷¹ Even when protective works (such as moles and seawalls) are not part of the harbor system, it seems that practice has taken them to form part of the coast.⁷² A recent UN report mentions 133 projects assisting SIDS in the Pacific, notably coastal protection.⁷³ Coastal protection, however, is not without its detrimental impacts⁷⁴ although these, too, need careful overall assessment.⁷⁵

Similarly, nothing prevents States from reinforcing or fortifying an island or an LTE, so long as this is done in good faith to protect the existing feature's status rather than to change a feature's status to the State's advantage.⁷⁶ Ultimately, the costs involved will need to be assessed against the benefits brought by the portion of maritime zone which the land concerned generates.⁷⁷

IV. Maintaining Maritime Spaces as Legal Solution

4.1. *Sea-Level Rise and Law of the Sea: Recent Enquiries at the UN*

Legal consequences of sea-level rise are less well documented than material ones. Apart from the question of industrial States' liability identified earlier,⁷⁸ it is noteworthy that the UN Secretary-General raised the following:

Neither the [Convention] nor customary international law addresses the impact of a total or partial loss of land territory that may result from sea-level rise on maritime limits. Specified in the Convention are the maximum breadth of maritime zones and the sovereignty, sovereign rights and jurisdiction that coastal States can exercise therein.... As a consequence of sea-level rise, the land territory of coastal States may be dramatically diminished or, in extreme cases, disappear.

Baselines that may have been fixed and deposited with the Secretary-General, and the outer limits of maritime zones or delimitation lines measured therefrom, may represent the configuration of the coastline before sea-level rise. With the exception of article 7 (2), ... the Convention does not pertain to variations in coastal geography.⁷⁹

The topic of focus of the eighteenth meeting of the UN Open-Ended Informal Consultative Process on Oceans and the Law of the Sea in 2017 was: “The effects of climate change on oceans.” There, many delegations expressed concern about the possibility of total or partial loss of territory as a result of sea-level rise and its effect on maritime zones and boundaries, in particular for low-lying islands and coasts.⁸⁰ Some delegations called for the issue of sea-level rise and its legal implications for SIDS to be discussed by the Sixth Committee of the General Assembly or the ILC. However, concern was also expressed regarding those proposals.⁸¹

Further, in June 2017 during the high-level UN Conference to Support the Implementation of Sustainable Development Goal 14, Tuvalu’s prime minister sought clarification of the implications of sea-level rise for baselines and, hence, the territorial sea and EEZ, and also wished to refer the matter to the ILC. He believed that Tuvalu’s baselines and maritime zones, once established, “should remain in time, irrespective of the effects of sea-level due to climate change.”⁸² The Conference took no further action. The ILC, at its seventieth session in 2018, decided to include the topic “Sea-level rise in relation to international law” in its long-term program of work.⁸³ The topic, suggested by five ILC members, would examine the law of the sea, statehood and the protection of persons affected by sea-level rise. They emphasized, in particular, that the topic “will not propose modifications to existing international law, such as the [Convention].”⁸⁴ At the Sixth Committee of the General Assembly later in the year, delegates responded positively to the new inclusion.⁸⁵ However, some opined that the ILC should focus on how to reconcile the changing circumstances resulting from sea-level rise within the existing law-of-the-sea regime.⁸⁶ Others considered that sea-level rise was a scientific and political topic, and should not be tackled by the ILC.⁸⁷ For Slovakia, while sea-level rise “might well reflect the needs of some States in respect of the progressive development and codification of international law, [it] was not convinced that it was at a sufficiently advanced stage in terms of State practice to permit progressive development and codification.”⁸⁸

4.2. *Unstable Coastlines*

It is sometimes argued that Article 7(2) of the Convention may be used in the context of sea-level rise.⁸⁹ This seems incorrect. Article 7(2) says:

Where because of the presence of a delta and other natural conditions the coastline is highly unstable, the 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 in accordance with this Convention.

Even if one agrees that Article 7(2) is to be read independently from, and not cumulatively with, Article 7(1),⁹⁰ it is difficult to sustain that the coastline is rendered “highly unstable” by sea-level rise, a very slow phenomenon. Further, instability must be caused by a “delta *and* other natural conditions” (emphasis added).⁹¹ While regression of the low-water line may be caused by sea-level rise, Article 7(2) eventually requires the State to *change* its baselines.⁹²

4.3. “Freezing” Titles to Maritime Spaces

4.3.a. *Can a Practice Be Identified?* SIDS in the Pacific have recently embarked on the task of defining baselines and also the outer limits of maritime zones, with geographical coordinates and usually also illustrative maps.⁹³ Some have claimed that this constitutes a “coordinated regional effort to secure the maritime boundaries of the Pacific [SIDS] potentially threatened by sea-level rise.”⁹⁴ But such a purpose is not expressed as such in the laws concerned.⁹⁵ Some States in the region have long designated the outer limit of their EEZ.⁹⁶ In addition, States must, in any event, show their baselines (or the limits derived therefrom) on charts or by means of lists of coordinates; States must also deposit these charts or lists with the UN.⁹⁷ The same duty applies to delimitation lines between States with adjacent or opposite coasts.⁹⁸

Some recent official publications and declarations have addressed the designation of outer limits of maritime spaces and the impact of sea-level rise. Thus, in the 2014 Palau Declaration, leaders of the Pacific Islands Forum called for “strengthened regional efforts to fix baselines and maritime boundaries to ensure that the impact of climate change and sea-level rise does not result in reduced jurisdiction.”⁹⁹ In 2015, Polynesian leaders called upon States Parties to the UNFCCC to acknowledge the importance of EEZ for Polynesian Islands States and “permanently establish the baselines ... without taking account of sea-level rise.”¹⁰⁰ In 2017, the Commonwealth Secretariat indicated that depositing information on baselines and maritime limits “will put [Pacific islands] in a stronger position in the face of potential loss of maritime space due to rising sea levels.”¹⁰¹ In March 2018, eight Pacific islands leaders agreed to “pursue legal recognition of the defined baselines established under the [Convention] to remain in perpetuity irrespective of sea-level rise.”¹⁰² The ILA committee on sea-level rise saw in all this (including the relevant domestic laws) “strong evidence of emerging State practice in the Pacific region regarding the intent of many island States to maintain their maritime entitlements in the face of sea-level rise.”¹⁰³ There certainly is a practice identifying the grave concerns of the relevant coastal States; one may also be inclined to read in the above statements a wish by certain States in the region to have their maritime zones recognized as “fixed” despite sea-level rise. But one would need to exercise caution before identifying a consistent regional (or international) practice to “freeze” maritime zones simply by adopting baselines and outer limits (leaving aside the permanent seaward limit of the continental shelf under Article 76 identified below).¹⁰⁴ Even if the rudiments of such practice existed, the enquiries at the UN¹⁰⁵ currently show no *opinio juris* on the matter and, hence, no rule of customary international law.¹⁰⁶ It is equally impossible at this

stage, despite the ILA committee's allusions,¹⁰⁷ to identify a "subsequent practice in the application of the [Convention] which establishes the agreement of the parties regarding its interpretation."¹⁰⁸ In any event, the presumption is that subsequent practice does not amend or modify the treaty.¹⁰⁹

4.3.b. Modes of "Freezing" Maritime Spaces. The only exception to the ambulatory nature of outer limits is arguably the outer limit of the continental shelf. Beyond 200 nautical miles, the limits are established by the State on the basis of the recommendation of the Commission on the Limits of the Continental Shelf (CLCS), and "shall be final and binding" (Article 76[8]). This is arguably explained by the high costs involved in preparing a submission to the CLCS, and the need for legal certainty for investors,¹¹⁰ and for the Authority and contractors. The final limits therefore do not move with new geological surveys or changes in the coastline.¹¹¹ Similarly, if the edge of the margin does not extend up to 200 nautical miles, the outer limit is also "permanently" described on charts and relevant information deposited with the UN and the Authority (Articles 76[9] and 84[2]).¹¹² Still, it could be questioned whether the disappearance of an island does not impact on the permanence of the outer limit of its continental shelf.¹¹³ It is sovereignty over the landmass which generates sovereign rights over the continental shelf; neither LTE nor, *a fortiori*, submerged features, may be appropriated.¹¹⁴

Caron and Soons had, early on, suggested the development of a new norm (conventional or customary) that maritime spaces should be fixed at a certain point in time.¹¹⁵ The ILA committee on sea-level rise does not depart from past suggestions and, to a large extent, merely repeats them.¹¹⁶ It expressly concedes that these are *de lege ferenda*.¹¹⁷ Hence, it wondered whether either baselines or outer limits should best be maintained, and advanced arguments for and against.¹¹⁸ While the coastal State would be allowed to preserve its entitlements, the committee thought it appropriate to "minimize" changes to settled rules.¹¹⁹ It recommended:

States should accept that, once the baselines and the outer limits of the maritime zones ... have been properly determined in accordance with the detailed requirements of the [Convention] that also reflect customary international law, these baselines and limits should not be required to be readjusted should sea level change affect the geographical reality of the coastline.¹²⁰

While this proposal is laudable, it leaves some crucial matters to be sorted out:

Firstly, it does not distinguish clearly between regression of the coastline, disappearance of an island or disappearance of all islands (of an archipelagic State). Disappointingly, the committee on sea-level rise did not continue its discussions on total loss of territory in light of the "great sensitivity" of the question.¹²¹ Surely, the maintenance of maritime zones and the disregard for the ambulatory nature of baselines is of no lesser sensitivity.

Secondly, the recommendation does not say when maritime spaces' limits are fixed; it is unclear whether this is achieved by the due publicity given to charts and coordinates, or whether the State must express a will to fix. The ILA Conference,

when endorsing the committee's recommendation, also indicated that the State's existing claims must be made in compliance with the Convention and published "prior to physical coastline changes brought about by sea-level rise."¹²² This may prove difficult to apply in light of the gradual and unequal changes brought by sea-level rise. It is also unclear whether the State may subsequently modify its baselines or outer limits, such as when the coast accretes seaward through sedimentation. Of interest in that respect is the fact that the committee recommendation, and the ILA Resolution, allow for the baselines *and* the outer limits to be maintained. It is unclear whether the coastal State could elect to maintain one or the other.

Thirdly, the committee requires that existing maritime claims be in compliance with the Convention and duly published or notified to the UN.¹²³ Yet depositing charts or lists with the UN does not ensure the legality of the claims; hence, who will say whether a claim is in conformity with the Convention? Is it enough for one State or a group of States to protest against a baseline or a basepoint to prevent the "freezing" of outer limits? Should the dispute settlement mechanism be involved each time, and how will this be solved when, for instance, a State has made a declaration under Article 298(1)(a) (which deals with relevant optional exceptions to compulsory dispute settlement under the Convention)? Also under that provision, what about disputes involving the concurrent consideration of sovereignty over land?¹²⁴ Such disputes already exist between the Marshall Islands and the U.S. on Wake Island (Enenkio), and between France and Vanuatu on Hunter and Matthew Islands (Leka and Umaenupne).

Lastly, the committee does not investigate the causes of sea-level rise. In 2017, Soons opined that the findings of the committee on sea-level rise would apply to coastline changes irrespective of cause.¹²⁵ Yet, the committee introduced its work by extensive remarks on climate change in the Anthropocene.¹²⁶ It would, therefore, have been useful to identify the circumstances when the recommended rule applies, and when it does not.¹²⁷

The committee clearly sought to elaborate a rule of general application, not a regional rule or a rule benefiting certain States only. But it does not specify to what extent the geography of the coastline must be affected by sea-level rise for baselines and outer limits to be legitimately maintained, nor under which precise conditions sea-level rise must affect the coastline. One can easily imagine cases where sea-level rise could be used as a pretext to solidify claims to spaces with the intent to conceal a pre-existing dispute.¹²⁸ Creeping jurisdiction is nothing new.

4.3.c. "Freezing" Maritime Delimitation Lines. It is often claimed that maritime delimitation agreements, or delimitations decided by international courts and tribunals, are immune to changes brought by new geographical circumstances.¹²⁹ The oft-quoted exception are agreements which only stipulate the method used (such as equidistance).¹³⁰ Moving boundaries are well-known to international practice, when they are defined by reference to natural formations susceptible to change over time.¹³¹ A similar issue seems to be raised by maritime delimitation agreements which, although they stipulate geographical co-ordinates, rest expressly on equidistance to

the baselines from which the breadth of the territorial sea is measured: even though the line is not in itself “ambulatory,” there comes a time when the co-ordinates no longer correspond to the definition of the delimitation line. Such agreements include those between Micronesia and Palau (2006) and between the Cook Islands and Kiribati (2012).

It is therefore crucial in each case to determine whether the parties intended to permanently fix the delimitation line.¹³² Such intention could, for instance, be found in agreements that only contain a list of coordinates when they define the delimitation lines between EEZ and continental shelves. Among the agreements that only contain coordinates and no method of delimitation, one may cite the agreement between the Marshall Islands and Micronesia (2006), Tuvalu and Kiribati (2012) or the U.S. and the Cook Islands (1980). The argument has indeed been made that, by opting for geographical coordinates, the “contracting parties protected the boundary line against natural variation.”¹³³ Some of the more recent treaties mention the possibility of adjusting the delimitation line by agreement between the parties, in case of significant shift in the location of islands used as basepoints,¹³⁴ or of the basepoint coordinates.¹³⁵ This plainly shows that, even though many agreements do not specify a method used, in the vast majority of cases they are based on equidistance, strict, simple or modified.¹³⁶ “Permanence” may therefore be relative.

Article 62 of the Vienna Convention on the Law of Treaties is often mentioned to prevent a party to a delimitation agreement from invoking a fundamental change of circumstances due to sea-level rise as a ground for withdrawing from it or terminating it; this would be evidence of the stability of maritime delimitation agreements.¹³⁷ It is certain that boundaries, land or maritime, need stability.¹³⁸ Stability is of course conducive to predictability of outcomes, which is essential to a vast array of transactions, and is generally acknowledged as promoting long-term peaceful relations. Yet, absolute stability may be less conducive to peaceful relations; there may be cases where the need for stability of boundaries may conflict with core legal principles, not the least being the principle that the land dominates the sea. In other words, “the principle of finality [of boundaries] has to be seen in conjunction with, and subject to, various factors.”¹³⁹ In each case, it is imperative to determine how the rule of law is best preserved.

One may be tempted to analogize maritime delimitation agreements to treaties establishing boundaries for the purposes of Article 62(2), arguing that they both share the same need for stability.¹⁴⁰ Yet, without giving a definitive answer, the ILC could conceive that “it is possible that the stabilizing effect of article 62 does not extend to certain lines of maritime delimitation.”¹⁴¹ One of the drawbacks of assimilating delimitation lines with boundaries is the creeping territorialization of maritime spaces where the State does not have full sovereignty. Reflecting such tendency, the ILA committee on sea-level rise referred to the “stability of territorial entitlements.”¹⁴² Nevertheless, it also took the view that it did not need to offer a definitive view as to whether maritime boundaries were intended to be, or should be, covered by the exception to the *clausula rebus sic stantibus* rule in Article 62(2).¹⁴³ It recommended that sea-level rise should not be regarded as a fundamental change of

circumstances.¹⁴⁴ Writers remain divided and often adopt opposing views on the negotiation of Article 62.¹⁴⁵ Further arguments against the invocation of a change of circumstances is that the change must not have been foreseen by the parties when the treaty was concluded; hence it is opined that, since sea-level rise was known at least since the mid-80s, agreements concluded thereafter could have taken it into consideration.¹⁴⁶ Yet, there is a distinction between foreseeable changes, and changes that the parties have foreseen in the treaty.¹⁴⁷ Furthermore, there exist other grounds for withdrawal from, or suspension of, a treaty.¹⁴⁸

Are judicially pronounced delimitations immune from change? Taking the ICJ here as an example, one must distinguish, on the one hand, the fact that its judgments are binding and final for the parties¹⁴⁹ and, on the other hand, that a judgment may be revised under strict conditions.¹⁵⁰ Further, nothing prevents a party from bringing before another court a claim of nullity of an ICJ judgment, for example on the ground of insufficient reasons or lack of reasons.¹⁵¹ Perhaps more importantly, there are three stages to maritime delimitation: establishment of a provisional delimitation line; adjustment of the line in order to achieve an equitable result; and confirmation that no great disproportionality of maritime areas is evident.¹⁵² The Court may select any delimitation method it sees fit.¹⁵³ Yet, if the delimitation line described in the operative part of the judgment no longer reasonably corresponds to the reasons which underpin it, and absent an agreement between the parties, one could imagine that one of the parties, now feeling prejudiced by changes brought by sea-level rise, might seek a fresh ruling.

Lastly, it is sometimes claimed that maritime delimitation agreements bind third States, as an “objective” situation and an exception to the *pacta tertiis* rule.¹⁵⁴ This may be questioned. Indeed, it may be argued that “objective” situations derive rather from elements outside of the agreement, such as acquiescence or recognition, and that treaty-based objective regimes are limited to territorial situations.¹⁵⁵ Further, while a maritime delimitation agreement necessarily impacts third States,¹⁵⁶ and while maritime entitlements must of course be respected, it should be asked whether a third State could argue that an area subject to the delimitation agreement has become high seas when the territory that generated the area concerned has become submerged. A State cannot maintain by delimitation agreement what it no longer has under general law.¹⁵⁷

V. Consequences and Conclusions

The ILA committee on sea-level rise did not expand on the possible sources of the new recommended rule but suggested, among others, and as writers had done in the past, an amendment to the Convention, a new agreement, a decision of the Meeting of States Parties to the Convention, or a protocol to the UNFCCC. A new rule of customary law has also been suggested.¹⁵⁸ All these solutions raise issues.

Amendment of the Convention is arguably not a preferred solution. In the Convention, the applicable procedures for the adoption and entry into force of amend-

ments are by no means easy.¹⁵⁹ This might explain why the procedures have, so far, never been used. Amendment of the Convention, perhaps more fundamentally, might be perceived as challenging the integrity of the Convention which needs to be maintained.¹⁶⁰ This also explains, perhaps, why a perceived new challenge such as the conservation and sustainable use of marine biological diversity beyond national jurisdiction (BBNJ) is currently being addressed in an instrument “under the Convention” and “without altering the existing legal order established therein.”¹⁶¹

A new agreement raises the question of its relation to the Convention, seen as “universal and unified.”¹⁶² Only the 1994 Agreement relating to the implementation of Part XI, concluded *before* the entry into force of the Convention and negotiated by those well-versed in the purposes of the Convention, says that it prevails in case of inconsistency (Article 2[1]). The Agreement was negotiated with a view to ensuring universal participation in the Convention itself.¹⁶³ Agreements concluded since its entry into force reaffirm their consistency with the Convention.¹⁶⁴ Negotiations currently undertaken on BBNJ have emphasized that the new agreement should be fully consistent with the Convention¹⁶⁵; yet some opposition of views remains on crucial aspects, including the relationship with the Convention.¹⁶⁶ Difficulties would no doubt be compounded with the negotiation of an instrument purporting to modify some core premises of the law of the sea.

The Meeting of States Parties theoretically only exercises administrative functions.¹⁶⁷ While in practice it has taken some decisions without express legal basis, these involved issues of deadlines.¹⁶⁸

A Protocol to the UNFCCC does not seem an appropriate avenue: the ultimate objective of the UNFCCC and any related legal instrument is to achieve stabilization of greenhouse gas concentrations in the atmosphere (Article 2). While the Parties are guided by the special needs of developing countries particularly vulnerable to climate change, the maintenance of maritime zones should arguably be addressed, if at all, within the framework of the Convention.¹⁶⁹

A new rule of custom, as favored notably by Caron,¹⁷⁰ certainly also raises the question of the unified nature of the Convention and its integrity. Future analyses on the topic, in particular the work of the ILC, will undoubtedly need to enquire whether consistent and unambiguous general State practice as well as *opinio juris* may be identified.¹⁷¹ While the development of a rule of customary international law amending a treaty cannot be discounted as a matter of theory of sources of law,¹⁷² the threshold for the identification of a consistent practice and *opinio juris* will undoubtedly be very high. The Convention was precisely negotiated to stabilize the haphazard, and hard to control, escalating claims and counterclaims that had characterized the customary development of the law of the sea for centuries. “The only plausible basis for achieving stability in the law of the sea for the foreseeable future is respect for the rules set forth in the Convention.”¹⁷³

Ultimately, the most pressing issue is less one of the law of the sea than one of the tangible contemporary impacts of climate change on populations and infrastructures and the necessary ensuing international solidarity. Undoubtedly, sea-level rise and the loss of territory may result in disputes with neighbors over EEZs.¹⁷⁴ While

“freezing” maritime zones is currently not allowed, some justify it by the argument that nothing would be gained by coastal States or lost by third States.¹⁷⁵ But it needs to be asked whether the *status quo ante* (“*ante*,” when?) as a possible solution is the most stable and acceptable solution at this stage and whether carving out exceptions to the principle that the land dominates the sea is more acceptable than redistribution of resources (for instance when EEZ become high seas as a consequence of the baselines receding inland). The ILA committee on sea-level rise agreed 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.¹⁷⁶ Caron, in particular, considered that the principle that the land is the source of authority over the ocean assumed that baselines were relatively constant.¹⁷⁷ Others have also pointed that the Convention “was tailored to the geographical circumstances of its own time, not the ones yet to come.”¹⁷⁸ Yet, one would be well-advised to explore alternatives before suggestions are made that, when the sea begins to dominate the land by the mechanical action of sea-level rise, the sea itself, irrespective of a coastal front, becomes a sort of quasi-territorial source of rights. In that case, the Grotian argument that the sea is incapable of ownership since it is not occupiable might be resuscitated *a contrario* to justify claims to the sea under modern technological conditions.

Apart from the fact that the Convention itself in Article 89 prohibits sovereignty claims over the high seas (and EEZ), it should perhaps be remembered that jurisdictional claims to the sea, however extensive, were historically linked to coastal interests (and possibly supplemented by customs or treaties as in the case of Venetian claims to the Adriatic). The lines drawn by Pope Alexander VI from pole to pole and corrected in the Treaty of Tordesillas of 1494 were in essence land boundaries on water and were intended to define the respective spheres of influence of Portugal and Spain and to identify the land (not sea) areas that could be discovered and explored or traded with by each.¹⁷⁹ When the law of the sea already spent decades crafting a delicate balance between coastal and non-coastal interests over maritime zones, departure from the principle that the land dominates the sea is unlikely to be welcomed with open arms.¹⁸⁰

The Convention was conceived as an instrument capable of adapting to unforeseen circumstances and it contains certain means to accommodate change while preserving its integrity, be it through interpretation, incorporation of generally accepted international rules or perhaps malleable instruments like soft law.¹⁸¹ Hence, it also needs to be asked whether it is possible to look for alternative solutions for threatened nations such as special additional quotas over common resources, income or usufruct, without maintaining maritime spaces; and how the recommended legal adaptations to the benefit of coastal States will be combined with other forms of assistance, legal or material, to coastal or landlocked States victims of climate change. In that respect, the permanent fixing of maritime spaces, while justified for some, may not be so for others, for instance when oceans warming affects fish stocks.

“Le mieux est l’ennemi du bien” — Voltaire, La Bégueule

Notes

1. On the latter, see the recent efforts of the international community such as the Agenda for the Protection of Cross-Border Displaced Persons in the Context of Disasters and Climate Change (2015) and the Global Compact on Migration (2018) and, for learned societies, the International Law Association's 2018 Sydney Declaration of Principles on the Protection of Persons Displaced in the Context of Sea Level Rise.
2. 1833 UNTS 3, adopted December 10, 1982 and entered into force November 16, 1994.
3. UN Doc. A/72/70 (March 6, 2017), para. 4.
4. *Ibid.*, para. 17.
5. IPCC, *Climate Change 2013: The Physical Science Basis. Summary for Policymakers* (Cambridge: Cambridge University Press, 2013), pp. 17, 19.
6. See UN Doc. A/70/112, *Summary of the First Global Integrated Marine Assessment* (July 22, 2015), p. 16, para. 48.
7. Robert Kopp et al., "Temperature-Driven Global Sea-Level Variability in the Common Era," *Proceedings of the National Academy of Sciences of the United States of America* 113(11) (March 2016), p. E1438, <https://doi.org/10.1073/pnas.1613396113>. Certainly, gaps persist in understanding sea temperature, sea-level rise, etc., and in the use of sea-level data in models to determine changes in shorelines: UN Doc. A/72/70, p. 21, para. 56.
8. IPCC, *Climate Change 2013: The Physical Science Basis. Technical Summary* (Cambridge: Cambridge University Press, 2013), p. 46.
9. For Asia, Africa, Latin America and the Caribbean, see World Bank, *The Impact of Sea Level Rise on Developing Countries: A Comparative Analysis Policy (Research Working Paper 4136)* (Washington, 2007). In Europe, it has been projected that the average global relative sea-level rise would be around 21 and 24 cm by the 2050s under representative concentration pathways RCP4.5 and RCP8.5; it is projected to accelerate, reaching 53 and 77 cm respectively by the year 2100. The largest increases in mean sea-level are projected along North Sea and Atlantic coasts: Michalis Vousdoukas et al., "Extreme Sea Levels on the Rise Along Europe's Coasts," *Earth's Future* 5 (2017), p. 308, <https://doi.org/10.1002/2016EF000505>. In 1990, it was estimated that four highly populated developing countries (India, Bangladesh, Vietnam and Egypt) are especially vulnerable to sea-level rise because their low lying coastal plains are already suffering the effects of flooding and coastal storms: J. Dronkers et al., *Strategies for Adaption to Sea Level Rise* (Geneva: IPCC, 1990), p. iv.
10. UN Doc. A/72/70, para. 20.
11. Text in Doc. OIC/OPC-IV/Inf.2, Fourth session of the OIC Committee on Ocean Processes and Climate (Paris, February 27–March 1, 1991).
12. Doc. A/CONF.151/26/Rev.1, Report of the UN Conference on Environment and Development (Rio de Janeiro, June 3–14, 1992), vol. III, *Statements Made by Heads of State or Government*.
13. *Ibid.*, vol. I, *Resolutions Adopted by the Conference*, p. 271, para. 17.126. UNCTAD was the first body of the UN, in 1972, to recognize the particular challenges facing SIDS: see UNCTAD Doc. TD/B/64/9 (July 10, 2017). UNCTAD lists 28 SIDS for statistical purposes: <https://unctad.org/en/pages/aldc/Small%20Island%20Developing%20States/UNCTAD%C2%B4s-unofficial-list-of-SIDS.aspx>, accessed September 10, 2019. The UN Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and SIDS established its own list: <http://unohrrls.org/about-sids/country-profiles/>
14. "Alliance of Small Island States": see <http://aosis.org>.
15. E.g., <https://sustainabledevelopment.un.org/index.php?page=view&type=6&nr=980&menu=139>, accessed September 10, 2019.
16. UN Doc. A/CONF.167/9, Report of the Global Conference on the Sustainable Development of Small Island Developing States (Bridgetown, April 25–May 6, 1994), Resolution I, Annex I (Declaration of Barbados), p. 3.
17. *Ibid.*, p. 10, para. 18.
18. E.g., UN Doc. A/CONF.207/11, Annex II (Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of SIDS), p. 9, para 16 (2005); UN Doc. A/RES/65/2, Outcome Document of the High-level Review Meeting on the Implementation of the Mauritius Strategy (2010), para. 6.

19. Doc. A/CONF.216/16, Report of the UN Conference on Sustainable Development (Rio de Janeiro, June 20–22, 2012), Resolution I, “The Future We Want,” para. 178.

20. UN Doc. A/CONF.223/10, Report of the Third International Conference on SIDS (Apia, September 1–4, 2014), Resolution I (Samoa Pathway), p. 13, para. 44(b). As at Rio in 2012, sea-level rise is described as an adverse impact of climate change: *ibid.*, p. 11, para. 32.

21. *Ibid.*, pp. 12–13, paras. 41–43.

22. Doc. A/RES/72/217 (December 20, 2017), para. 4. See also UN Doc. A/RES/71/312 (July 6, 2017), Annex, “Our Ocean, Our Future: Call for Action,” para. 13(k) for adaptation and mitigation measures. On September 27, 2019, the General Assembly will hold a one-day high level review of the progress made in addressing the priorities of SIDS.

23. Hunt Janin and Scott Mandia, *Rising Sea Levels: An Introduction to Cause and Impact* (Jefferson, NC: McFarland, 2012), p. 86.

24. https://www.un.org/press/en/2012/120203_ICJ.doc.htm, accessed September 10, 2019.

25. E.g., Philippe Sands, “Climate Change and the Rule of Law: Adjudicating the Future in International Law,” *Journal of Environmental Law* 28 (2016), p. 19, <https://doi.org/10.1093/jel/eqw005>.

26. See notably the Warsaw Mechanism for Loss and Damage (2013), “subject to the availability of financial resources”: Doc. FCCC/CP/2013/10/Add.1, Decision 2/CP.19 (November 23, 2013), para. 17. Under Article 9(1) of the Paris Agreement, “developed country Parties shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations under the Convention.” For the measures needed, see, e.g., <http://aosis.org/wp-content/uploads/2018/06/AOSIS-Submission-on-22type-and-nature-of-actions-to-address-loss-and-damage-for-which-finance-may-be-required22-1.pdf> (February 26, 2018), accessed September 10, 2019.

27. See *Framework for Resilient Development in the Pacific: An Integrated Approach to Address Climate Change and Disaster Risk Management 2017–2030*, Suva, Pacific Community (2016).

28. <http://sdg.iisd.org/news/ocean-pathway-launched-at-cop-23/>.

29. E.g., *Maritime Boundary Dispute Between Norway and Sweden (Grisbadarna)*, Award of October 23, 1909, *American Journal of International Law* 4(1) (1910), p. 231; *Case Concerning the Continental Shelf (Libyan Arab Jamahiriya/Malta)*, Judgment, ICJ Rep. 1985, p. 41, para. 49; *Maritime Delimitation and Territorial Questions (Qatar V. Bahrain (Merits))*, Judgment, ICJ Rep. 2001, p. 97, para. 185; Bing Bing 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,” *German Yearbook of International Law* 57 (2014), p. 63.

30. Articles 4 (territorial sea), 33(2) (contiguous zone), 57 (exclusive economic zone), 76(5) (continental shelf), 48 (archipelagic baselines).

31. Article 5. The International Hydrographic Organization (IHO) resolved that the Lowest Astronomical Tide be normally adopted as chart datum: Resolution 3/1919, as amended. “Coast” is defined by the IHO as “the edge or margin of the land next to the sea.” “Land” is defined as “the solid portion of the Earth’s surface”: see *Hydrographic Dictionary*, Part I (5th ed., Monaco, 1994), p. 42, para. 850, and p. 122, para. 2635.

32. Article 60(8). An island is a naturally formed area of land, surrounded by water, above water at high tide: Article 121(1.)

33. Articles 9 and 10.

34. Article 7(1) and (2). Among the conditions that must be fulfilled, the drawing of straight baselines must not depart to any appreciable extent from the general direction of the coast: Article 7(3). On the appropriate points being located on the low-water line, see notably *Fisheries Case (United Kingdom V. Norway)*, Judgment, ICJ Rep. 1951, pp. 129–130.

35. Article 47(1). On these questions, see Vincent Cogliati-Bantz, “Archipelagic States and the New Law of the Sea” in Lilian del Castillo (ed.), *Law of the Sea, from Grotius to the International Tribunal for the Law of the Sea. Liber Amicorum Judge Hugo Caminos* (Leiden: Brill, 2015), pp. 299–317. An archipelagic State is defined in Article 46 as a State constituted wholly by one or more archipelagos.

36. Article 76(5). The 2,500 metre isobath is also measured from the baselines: see UN Doc. CLCS/11, *Scientific and Technical Guidelines of the Commission of the Limits of the Continental Shelf* (May 13, 1999), para. 4.4.2.

37. Articles 16(1) and 47(8).
38. E.g., D. Kapoor and Adam Kerr, *A Guide to Maritime Boundary Delimitation* (Toronto: Carswell, 1986), p. 31.
39. Of themselves, maps cannot constitute a territorial title: see *Frontier Dispute (Burkina Faso/Mali)*, Judgment, ICJ Rep. 1986, p. 582, para. 54.
40. Article 3 of the 1958 Convention on the Territorial Sea and the Contiguous Zone.
41. See UN Doc. A/CN.4/61/Add.1/Corr.1, Second Report on the Régime of the Territorial Sea, by Mr. J.P.A. François, Special Rapporteur (May 18, 1953), *Yearbook of the ILC* 1953(II), p. 77.
42. International Law Association, Committee on baselines, *Report of the Seventy-fifth Conference (Sofia, 2012)*, pp. 405–408. In the case of Barbados's straight baselines, "certified charts shall be judicially noticed for all purposes of the law as indicating the baselines": *ibid.*, p. 408.
43. *Ibid.*, p. 413. Rule 27 of chapter 5 of the International Convention for the Safety of Life at Sea (SOLAS) indicates: "Nautical charts ... shall be adequate and up to date."
44. See *Award in the Arbitration Regarding the Delimitation of the Maritime Boundary Between Guyana and Suriname*, Award of September 16, 2007, *Reports of International Arbitral Awards*, vol. XXX, p. 110, para. 396; *Territorial and Maritime Dispute (Nicaragua V. Colombia)*, Judgment, ICJ Rep. 2012, p. 644, paras. 35–36.
45. ILA, 2012, p. 426. The low-water line may recede landward as a result of erosion or sea-level rise or expand seaward because of accretion.
46. *Ibid.*, p. 424.
47. *Ibid.*, pp. 416, 417. "As a matter of evidence for proving the location of the normal baseline the charted line appears to enjoy a strong presumption of accuracy. However, where significant physical changes have occurred so that the chart does not provide an accurate representation of the actual low-water line at the chosen vertical datum, extrinsic evidence has been considered": *ibid.*, p. 417. Thus Lathrop suggests that baselines may be fixed temporarily with an obligation of the coastal State to update in the event of significant geographic changes: Coalter G. Lathrop, "Baselines" in D. Rothwell et al., *The Law of the Sea* (Oxford: Oxford University Press, 2015), pp. 77–78, <https://doi.org/10.1093/law/9780198715481.003.0004>.
48. See, e.g., Kai Trümpler, "Article 5," in A. Proelss (ed.), *United Nations Convention on the Law of the Sea. a Commentary* (Munich: C.H. Beck, 2017), pp. 59–60; Yoshifumi Tanaka, *The International Law of the Sea*, 3rd ed. (Cambridge: Cambridge University Press, 2019), p. 55; Nilufer Oral, "International Law as an Adaptation Measure to Sea-Level Rise and Its Impacts on Islands and Offshore Features," *International Journal of Marine and Coastal Law* 34 (2019), pp. 426–428, <https://doi.org/10.1163/15718085-13431094>.
49. ILA, 2012, p. 426.
50. See *infra*, IV.
51. Thus, for a concrete case on straight baselines, see for instance *Territorial and Maritime Dispute Between Nicaragua and Honduras in the Caribbean Sea (Nicaragua V. Honduras)*, Judgment, ICJ Rep. 2007, p. 743, para. 278.
52. See *infra* IV.2 and IV.3.b.
53. Patrick Nunn et al. "Identifying and Assessing Evidence for Recent Shoreline Change Attributable to Uncommonly Rapid Sea-Level Rise in Pohnpei, Federated States of Micronesia, Northwest Pacific Ocean," *Journal of Coastal Conservation* 21(6) (2017), p. 721, <https://doi.org/10.1007/s11852-017-0531-7>. For similar results in the Solomon Islands, see Albert et al., 2016, p. 1.
54. Article 13(1) of the Convention. The same provision defines an LTE as a naturally formed area of land surrounded by and above water at low tide but submerged at high tide. That said, States are free to select any high-water datum that reasonably corresponds to the ordinary meaning of the term "high tide": *South China Sea Arbitration (Philippines/People's Republic of China)*, Award of July 12, 2016, para. 311. For an early view on the impact of sea-level rise on LTE, see Hugo Ignacio Llanos, "Low-Tide Elevations: Reassessing Their Impact on Maritime Delimitation," *Pace International Law Review* 14 (2002), p. 264.
55. See http://www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/table_summary_of_claims.pdf, accessed September 10, 2019.
56. Articles 47(1)-(3). On the Indonesian archipelagic baselines in a changing environment, see https://www.iho.int/mtg_docs/com_wg/ABLOS/ABLOS_Conf5/Presentations/Session6-Presentation2-Patmasari.pdf (October 17, 2008), accessed September 10, 2019.

57. The EEZ may not extend beyond 200 nautical miles from the baselines: Convention, Article 57.

58. An island is defined in the Convention as a naturally formed area of land, surrounded by water, above water at high tide: Article 121(1).

59. "In the case of islands situated on atolls or of islands having fringing reefs, the baselines ... is the seaward low-water line of the reef."

60. The drawing of straight archipelagic baselines is subject to a certain land/water ratio (Article 47[1]). Under Article 47(7), land areas may include waters lying within fringing reefs of islands and atolls.

61. See UN Office for Ocean Affairs and the Law of the Sea, *Baselines: An Examination of the Relevant Provisions of the United Nations Convention on the Law of the Sea* (New York: United Nations, 1989), p. 12, para. 27 and p. 37, para. 85; Robert Hodgson and Robert Smith, "The Informal Single Negotiating Text (Committee II). A Geographical Perspective," *Ocean Development and International Law* 3 (1976), p. 230, <https://doi.org/10.1080/00908327609545570>. While coral growth may be stimulated by moderate sea-level rise, it is also impaired by rising sea temperatures, ocean acidification and diseases; see, e.g., <http://www.reefresilience.org/coral-reefs/stressors/climate-and-ocean-change/sea-level-rise/> and, for recent analyses, Chris T. Perry et al., "Loss of Coral Reef Growth Capacity to Track Future Increases in Sea Level," *Nature* 558(No. 7710) (2018), p. 396, <https://doi.org/10.1038/s41586-018-0194-z>.

62. Article 121(3). See, e.g., Eric Bird and Victor Prescott, "Rising Global Sea Levels and Maritime Claims," *Marine Policy Reports* 1 (1989), p. 186.

63. *South China Sea Arbitration*, 2016, para. 549. The Tribunal made it clear though that a feature's status must be ascertained on the basis of natural conditions, "prior to the onset of significant human modification": *ibid.*, para 511.

64. A "rock" submerged at high tide will in any event become an LTE.

65. See <https://www.spc.int/our-members>, accessed September 10, 2019.

66. http://www.mfed.gov.ki/sites/default/files/Government%20of%20Kiribati%202018%20Budget%20-%20as%20presented%205%20Dec_0.pdf, p. 5. For Tuvalu's equivalent proportions in 2017, see http://www.tuvaluaudit.tv/wp-content/uploads/2014/05/FINAL_2017-National-Budget.pdf, p. 116.

67. http://www.un.org/depts/los/consultative_process/icp18_presentations/moses.pdf (Speech of the Ambassador of Nauru to the UN [May 16, 2017]).

68. For Kiribati, see http://www.un.org/depts/los/nippon/unnnff_programme_home/fellows_pages/fellows_papers/Tanielu_1314_Kir.pdf (December 2013).

69. UN Doc. S/PV.5663, Security Council, 5663rd meeting (April 17, 2007), p. 22.

70. Convention, Article 11.

71. UN Doc. A/3159, *Report of the ILC Covering the Work of Its Eighth Session, Yearbook of the ILC* 1956(II), p. 270.

72. ILA, 2012, p. 420.

73. https://sustainabledevelopment.un.org/content/documents/18577Review_of_Partnerships_for_SIDS.pdf (May 2018), accessed September 10, 2019.

74. E.g., seawalls, breakwaters and groynes may disrupt coastal processes such as fluxes of sediments, reef growth, contribute to beach erosion or impact on tourism.

75. For island erosion which may be balanced by progradation on other sectors of shorelines, see Arthur Webb and Paul Kench, "The Dynamic Response of Reef Islands to Sea-Level Rise: Evidence from Multi-Decadal Analysis of Island Change in the Central Pacific," *Global and Planetary Change*, 72(3) (2010), p. 234, <https://doi.org/10.1016/j.gloplacha.2010.05.003>. For coastal protection methods, costs and impacts, see <https://www.theprif.org/documents/regional/other/guidance-coastal-protection-works-pacific-island-countries> (November 2017), accessed September 10, 2019.

76. See Convention, Article 300 and, e.g., *South China Sea Arbitration*, 2016, paras. 305–306, 511; Clive Symmons, "Some Problems Relating to the Definition of 'Insular Formations' in International Law: Islands and Low-Tide Elevations," *IBRU Maritime Briefing* 1(5) (1995), p. 3. For Japan's reinforcement of the Okinotori islets, see Andrew Silverstein, "Okinotorishima: Artificial Preservation of a Speck of Sovereignty," *Brooklyn Journal of International Law* 16 (1990), p. 409. For the foreseen necessity to artificially protect some basepoints in the Indonesian system of

archipelagic baselines, see https://www.iho.int/mtg_docs/com_wg/ABLOS/ABLOS_Conf5/Papers/Session6-Paper2-Patmasari.pdf (October 17, 2008), pp. 7–8, accessed September 10, 2019.

77. The legal solutions proposed by the ILA in response to sea-level rise (see *infra* IV.3.b.) are in part justified by the high costs of artificially maintaining territorial extents: see International Law Association, Committee on international law and sea-level rise, *Report of the Seventy-Eighth Conference (Sydney, 2018)*, p. 919. Yet, costs are not an objective reason to reject a solution if effective distributive justice international mechanisms (e.g., aid and capacity-building) are designed. The Maldives is currently building a new city, “City of Hope,” on an artificial island: see <https://www.newscientist.com/article/2125198-on-front-line-of-climate-change-as-maldives-fights-rising-seas/>, accessed September 10, 2019.

78. *Supra* II.2.

79. Doc. A/72/70, para. 54. It is doubtful that customary law or the Convention is silent on the effects of loss of territory: see *infra*. Nevertheless, not a single reference to climate change or sea-level rise was made during the ten years of negotiation of the Convention.

80. UN Doc. A/72/95, *Report on the Work of the UN Open-ended Informal Consultative Process at Its Eighteenth Meeting* (June 16, 2017), para. 25.

81. *Ibid.*, para. 26. One delegation noted that the workload of the Sixth Committee was already heavy: *ibid.*, para. 111. The question was taken up again by some States at the Sixth Committee in November 2017: see UN Doc. A/C.6/72/SR.19–20, SR.22, SR.24.

82. <https://sustainabledevelopment.un.org/content/documents/24716tuvalu.pdf> (accessed September 10, 2019).

83. UN Doc. A/73/70, *Report of the ILC on the Work of Its Seventieth Session* (September 21, 2018), p. 299, para. 389.

84. *Ibid.*, p. 355, para. 14. The ILC intends to work on the law of the sea aspects of the topic over the next two years.

85. See, e.g., UN Doc A/C.6/73/SR.20, General Assembly, Sixth Committee, *Summary Record of the 20th Meeting* (October 20, 2018), para. 34 (CARICOM); para. 40 (Marshall Islands).

86. *Ibid.*, para. 68 (China).

87. *Ibid.*, SR.21, 21st meeting (October 23, 2018), para. 15 (Czechia).

88. *Ibid.*, para. 28; see also para. 68 (Greece, emphasizing the need to preserve the integrity of the Convention). Slovakia’s doubts were shared by the U.S.: *ibid.*, SR.29, 29th meeting (October 31, 2018), para. 27.

89. E.g. Rosemary Rayfuse, “Sea Level Rise and Maritime Zones,” in Michael Gerrard and Gregory Wannier, *Threatened Island Nations. Legal Implications of Rising Seas and a Changing Climate* (Cambridge: Cambridge University Press, 2013), pp. 181–182.

90. On Article 7(1), see *supra* II.1. Cumulative reading is suggested by the UN Secretariat: see *Baselines*, 1989, p. 24, para. 48. Independent reading is supported by the ILA: see International Law Association, Committee on baselines, *Report of the Seventy-Sixth Conference (Washington, 2014)*, pp. 225–226, para. 62. The second interpretation finds support in Bangladeshi practice in relation to the Ganges delta: see notably Muhammad 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* (New York: United Nations, 2006), <https://doi.org/10.18356/91394ea0-en>.

91. Only the Russian language version of the Convention says “or” and not “and.”

92. Robin Churchill and Alan Lowe, *The Law of the Sea*, 3rd ed. (Manchester: Manchester University Press, 1999), p. 38.

93. See, e.g., the legislation of Samoa (2017); the Marshall Islands (2016); Kiribati (2014); Niue (2013); Cook Islands (2012); Tuvalu (2012); Palau (2008).

94. David Freestone and Clive Schofield, “Current Legal Developments. Republic of the Marshall Islands,” *International Journal of Marine and Coastal Law* 31(4) (2016), p. 740, <https://doi.org/10.1163/15718085-12341413>. They repeated their view in “Islands Awash Amidst Rising Seas: Sea Level Rise and Insular Status Under the Law of the Sea,” *International Journal of Marine and Coastal Law* 34(3) (2019), pp. 406–408, <https://doi.org/10.1163/15718085-13431098>.

95. See also on this point Stuart Kaye, “The Law of the Sea Convention and Sea Level Rise After the South China Sea Arbitration,” *International Law Studies* 93 (2017), p. 445.

96. See Fiji’s Marine Spaces (Archipelagic Baselines and Exclusive Economic Zone) Order 1981 and Nauru’s 1997 Proclamation Providing the Geographical Coordinates of Points for the

Drawing of the Straight Baselines and Outer Limits of the Territorial sea, Contiguous Zone and Exclusive Economic Zone.

97. Articles 16 et 75. Eighty States have fulfilled this obligation: see <http://www.un.org/Depts/los/LEGISLATIONANDTREATIES/depositpublicity.htm>, accessed September 10, 2019.

98. Articles 75 and 83. In the South Pacific, baselines and maritime delimitation agreements are developed with the support of “Pacific Maritime Boundaries,” an international partnership: see Robyn Frost et al., “Redrawing the Map of the Pacific,” *Marine Policy* 95 (2018), p. 302, <https://doi.org/10.1016/j.marpol.2016.06.003>. Initially, the purpose was to clarify the extent of EEZ for the purpose of sharing income from fishing license fees under the 1987 Treaty on Fisheries between certain Pacific Island States and the U.S.: *ibid.*

99. <http://www.forumsec.org/wp-content/uploads/2017/11/2014-Palau-Declaration-on-%E2%80%98The-Ocean-Life-and-Future%E2%80%99.pdf>, para. 10, accessed September 10, 2019.

100. <http://www.samoagovt.ws/wp-content/uploads/2015/07/The-Polynesian-P.A.C.T.pdf>, accessed September 10, 2019.

101. Commonwealth Secretariat, *Ocean Governance: Our Sea of Islands* (London, 2017), p. 19.

102. Quoted in ILA, 2018, p. 885.

103. *Ibid.*, p. 888. The language of the committee fluctuated throughout the report, referring also to “*prima facie* evidence of the development of a regional State practice in the Pacific islands” and to practice that “appears to be a deliberate attempt to pre-empt arguments” that physical changes to coastlines have resulting impacts on baselines and the outer limits of maritime zones. *Ibid.*, pp. 886, 887.

104. See *infra*, IV.3.b.

105. *Infra* IV.1.

106. The ILA committee cautiously added that the “emergence of a new customary rule will require a pattern of State practice, as well as *opinio juris*” (ILA, 2018, p. 887), making it seemingly clear that it was unable to identify a rule yet. The committee was also conscious of the fact that the rule at stake, if any, should be global, not regional: *ibid.*

107. *Ibid.*, p. 888.

108. Article 31(3)(b) of the Vienna Convention on the Law of Treaties. Such practice must establish “the agreement of *all* the parties”: UN Doc. A/73/10, Report of the ILC on the work of its seventieth session (April 30–June 1, July 2 and August 10, 2018), p. 31, para. 16 (emphasis added).

109. *Ibid.*, p. 63, para. 38.

110. Bernard H. Oxman, “The Third United Nations Conference on the Law of the Sea: The Ninth Session,” *American Journal of International Law* 75 (1981), p. 230, <https://doi.org/10.2307/2201252>.

111. See Commission on Marine Science, Engineering and Resources, *Our Nation and the Sea: A Plan for National Action* (Washington, D.C.: U.S. Government Printing Office, 1969), p. 145. The foot of the slope plays a fundamental role in the definition of the outer edge of the margin beyond 200 n.miles: Article 76(4). Distance from the baselines and depth play a role for the constraint lines: Article 76(5).

112. Note that outer limits are different from lines of delimitation: see *infra* IV.3.c.

113. Solution notably advocated by Moritaka Hayashi, “Sea Level Rise and the Law of the Sea: How Can the Affected States Be Better Protected?,” in Moon-Sang Kwon et al. (eds.), *Limits of Maritime Jurisdiction* (Leiden: Brill, 2013), pp. 613–614.

114. *Territorial and Maritime Dispute*, 2012, p. 641, para. 26.

115. David Caron, “When Law Makes Climate Change Worse: Rethinking the Law of Baselines in Light of Rising Sea Level,” *Ecology Law Quarterly* 17 (1990), p. 647; Alfred Soons, “The Effects of a Rising Sea Level on Maritime Limits and Boundaries,” *Netherlands International Law Review* 37 (1990), p. 225, <https://doi.org/10.1017/S0165070X00006513>. Caron also envisages a liberal interpretation of Article 7 or a historic title, but clearly saw difficulties there: *ibid.*, pp. 650–651.

116. See, e.g., Bird and Prescott, 1989, p. 177; David Freestone and John Pethick, “Sea Level Rise and Maritime Boundaries,” in Gerald Blake (ed.), *Maritime Boundaries* (London: Routledge, 1994), p. 73; David Caron, “Climate Change, Sea Level Rise and the Coming Uncertainty in Oceanic Boundaries: A Proposal to Avoid Conflict,” in Seoung-Yong Hong and Jon Van Dyke (eds.), *Maritime Boundary Disputes, Settlement Processes, and the Law of the Sea* (Leiden: Nijhoff, 2009),

p. 1, <https://doi.org/10.1163/ej.9789004173439.i-308.7>; Moritaka Hayashi, "Sea-Level Rise and the Law of the Sea: Future Options," in Davor Vidas and Peter Johan Schei (eds.), *The World Ocean in Globalisation* (Leiden: Nijhoff, 2011), p. 187; Hayashi, 2013, p. 609; José Luis Jesus, "International Tribunal for the Law of the Sea," in Jon van Dyke et al. (eds.), *Governing Ocean Resources* (Leiden: Nijhoff, 2013), p. 25; Rayfuse, 2013, p. 167; Jenny Stoutenburg, *Disappearing Island States in International Law* (Leiden: Nijhoff/Brill, 2015), <https://doi.org/10.1163/9789004303010>; Julia Xue, "Climate Change and the Law of the Sea," in Keyuan Zou (ed.), *Sustainable Development and the Law of the Sea* (Leiden: Brill/Nijhoff, 2016), p. 243; Sarra Sefrioui, "Adapting to Sea Level Rise: A Law of the Sea Perspective," in Gemma Andreone (ed.), *The Future of the Law of the Sea* (Cham: Springer, 2017), p. 3, https://doi.org/10.1007/978-3-319-51274-7_1; Oral, 2019, p. 415.

117. International Law Association, Committee on sea-level rise, *Report of the Seventy-seventh Conference (Johannesburg, 2016)*, p. 852; ILA, 2018, p. 879 (referring to "the finding *de lege lata* that the Baselines Committee passed on to this Committee for further study and for the formulation of proposals *de lege ferenda*").

118. ILA, 2018, pp. 881–883. Thus, in the case of maintaining baselines, the breadth of the maritime zones would remain compliant with the Convention and the incentive to artificially preserve baselines would be removed, but the chart showing the baselines would be a legal fiction which might also pose risks to navigational safety. In addition, the coastal State may find itself with offshore maritime areas where the physical features have ceased to retain the characteristics required by the Convention and, by maintaining existing baselines, coastal States would prevent high seas areas from expanding and prevent territorial sea areas from becoming EEZ, contrary to a global public interest. In the case of maintaining outer limits, the baseline would move to reflect physical reality and the charts would reflect the actual coastline, but the breadth of the maritime zones might exceed the limit in the Convention, and high seas would be prevented from expanding, which might be seen as contrary to a global public interest.

119. *Ibid.*, p. 881.

120. *Ibid.*, p. 888.

121. *Ibid.*, p. 896.

122. Resolution 5/2018, *ibid.*, p. 30 (emphasis added).

123. *Ibid.*, p. 883.

124. See *Arbitration Regarding the Chagos Marine Protected Area Between Mauritius and the United Kingdom*, Award of March 18, 2015, *Reports of International Arbitral Awards*, vol. XXXI, p. 460, paras. 220–221.

125. Committee on Sea-level Rise, Inter-sessional Meeting (Lopud, September 15–16, 2017), <https://ila.vettoreweb.com/Storage/Download.aspx?DbStorageId=5536&StorageFileGuid=2ea2e2e2-3406-4a46-a302-709fe3879fe5>, p. 5 (accessed September 10, 2019).

126. ILA, 2018, pp. 868–874.

127. In its draft Principles on the Protection of Persons Displaced in the Context of Sea Level Rise, the committee defined sea-level rise as "the sole or combined and cumulative impacts of the effects of climate change and subsidence or land uplift on the change of the sea level in a given location": *ibid.*, p. 899 (subsidence or land uplift may or may not be due to climate change: *ibid.*, p. 900).

128. An interesting analogy is the Franco-Mexican dispute over Clipperton Island: by decree of 1978, France declared an EEZ around the island, with a map indicating the outer limit. On November 30, 2010, co-ordinates were communicated to the UN under Article 75(2) of the Convention: Doc. M.Z.N. 80.2010.LOS. Mexico, considering that the island is a "rock" under Article 121(3) and has no EEZ, protested by note verbale of May 14, 2012: *Law of the Sea Bulletin*, 79 (2013), p. 64. Yet, by agreement of March 29, 2007, France granted to Mexican vessels registered with the Inter-American Tropical Tuna Commission, free of charge, unlimited yearly fishing licenses 200 nautical miles around Clipperton. A new agreement was concluded on January 17, 2017, which now prohibits fishing in the Clipperton territorial sea (a newly-designated marine protected area by France).

129. E.g., Alejandra Torres Camprubi, *Statehood Under Water* (Leiden: Brill, 2016), p. 97, <https://doi.org/10.1163/9789004321618>.

130. E.g., Agreement between France and Tonga of January 11, 1980, on the delimitation of the EEZ (Articles 1 and 2).

131. Such as forests, swamps, mountain crests or seabed: see Daniel Bardonnnet, "Les fron-

tières terrestres et la relativité de leur tracé,” *Recueil des cours de l’academie de droit international* 153 (1976), p. 83.

132. Thus, the Treaty of April 7, 1961 between Argentina and Uruguay, specifying that the boundary on the Uruguay River “shall be permanent and unalterable and shall not, except as provided for in..., be affected by any natural or artificial changes” (Article 3[2]).

133. *Land and Maritime Boundary Between Cameroon and Nigeria (Cameroon V. Nigeria: Equatorial Guinea Intervening)*, Judgment, ICJ Rep. 2002, p. 336, para. 43 (argument of Cameroon).

134. Marshall Islands/Micronesia agreement of 2006, Article 2(5).

135. Agreement of 2016 between Vanuatu and the Salomon Islands, Article 5.

136. The Tuvalu/Kiribati agreement of 2012 specifies that the line lies seaward of Nanumea and Nuitao islands (Tuvalu), and Tabiteuea, Tamana and Arorae islands (Kiribati). The method used may be identified in the bilateral negotiations: for the U.S./Cook Islands agreement of 1980, see <https://www.state.gov/documents/organization/58566.pdf>, p. 10, accessed September 10, 2019 (equidistance).

137. E.g., Sefrioui, 2017, p. 19; Soons, 1990, p. 228. Article 62 says in part: “A fundamental change of circumstances ... 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 ... and (b) the effect of the change is radically to transform the extent of obligations still to be performed. ... 2. A fundamental change of circumstances may not be invoked...: (a) if the treaty establishes a boundary.”

138. See *Bay of Bengal Maritime Boundary Arbitration (Bangladesh/India)*, Award of July 7, 2014, p. 63, para. 216.

139. Kaiyan Homi Kaikobad, “Some Observations on the Doctrine of Continuity and Finality of Boundaries,” *British Year Book of International Law* 54 (1984), p. 126, <https://doi.org/10.1093/bybil/54.1.119>.

140. Notably, *Aegean Sea Continental Shelf (Greece V. Turkey)*, Judgment, ICJ Rep. 1978, p. 36, para. 85; *Case Concerning the Delimitation of Maritime Boundary Between Guinea-Bissau and Senegal*, Decision of July 31, 1989, *Reports of International Arbitral Awards*, vol. XX, p. 144, para. 63.

141. *Yearbook of the ILC II* (2)(1982), p. 61, para. 6.

142. ILA, 2018, p. 891.

143. *Ibid.*, pp. 890–891.

144. *Ibid.*, p. 895. Such proposal is arguably also made *de lege ferenda*: although the committee “was acutely conscious of the potential for major physical impacts on coastal geography that sea-level rise could have in a relatively longer-term perspective, [it] noted that if its recommendations regarding the maintenance of existing entitlements to maritime zones were accepted, then the same principle should apply to maritime areas delimited by international agreements.” *Ibid.*

145. See for instance Julia Lisztwan, “Stability of Maritime Boundary Agreements,” *Yale Journal of International Law*, 37 (2012), p. 189 (maritime delimitation fall under Article 62[2]); Snjolaug Arnadóttir, “Termination of Maritime Boundaries Due to a Fundamental Change of Circumstances,” *Utrecht Journal of International and European Law* 32 (2016), p. 108 (maritime delimitation does not fall under Article 62[2]), <https://doi.org/10.5334/ujiel.335>; Thomas Giegerich, “Article 62. Fundamental Change of Circumstances,” in Oliver Dörr and Kirsten Schmalenbach (eds.), *Vienna Convention on the Law of Treaties: A Commentary*, 2d ed. (Berlin: Springer, 2018), p. 1169, para. 77 (expressing doubts).

146. In that sense, Torres Camprubi, 2016, p. 96.

147. Giegerich, 2018, p. 1163, para 58. Of importance is whether the change is expressly, or by necessary implication, provided for in the treaty or in any other relevant agreement between the parties: *Yearbook of the ILC II* (1957), p. 33.

148. E.g., Article 61 (supervening impossibility of performance).

149. Statute, Articles 59–60.

150. Statute, Article 61.

151. Lucius Caflisch, “Cent ans de règlement pacifique des différends interétatiques,” *Recueil des cours de l’academie de droit international* 288 (2001), p. 431.

152. *Maritime Delimitation in the Black Sea (Romania V. Ukraine)*, Judgment, ICJ Rep. 2009, pp. 102–103, <https://doi.org/10.1017/S0002930000019989>.
153. E.g., *Nicaragua V. Honduras*, pp. 742–745 (lack of reliable basepoints rendering equidistance impossible to apply). As a general rule, the judicial body is only preoccupied with the physical reality at the time of the delimitation: *Bay of Bengal Arbitration*, para. 215.
154. In that sense, Stoutenburg, 2015, p. 140.
155. See Paul Reuter, *Introduction au droit des traités*, 3d ed. (Philippe Cahier ed.) (Paris: PUF, 1995), pp. 112–113. See also *Yearbook of the ILC* II (1964), p. 26 (Third report on the law of treaties by Sir Humphrey Waldock, limiting the effect of such treaties to third States which either consented to them or did not oppose them within a certain timeframe). See also the doubts expressed by Geoffrey Marston, “The Stability of Land and Sea Boundary Delimitations in International Law,” in Gerald Blake (ed.), *Maritime Boundaries* (London: Routledge, 1994), pp. 150–151, 159.
156. The vessel of a third State arrested in one party’s EEZ could hardly claim that it was arrested in the other party’s EEZ: see Maurice Mendelson, “On the Quasi-Normative Effect of Maritime Boundary Agreement,” in Nisuke Ando et al. (eds.), *Liber Amicorum Judge Shigeru Oda*, vol. 2 (The Hague: Kluwer, 2002), p. 1070.
157. For the ILA committee recommendation that coastal States should be allowed to maintain their maritime entitlements when the areas concerned are delimited by international agreement or international court decisions, see ILA, 2018, p. 895.
158. *Ibid.*, p. 887.
159. E.g., Alan Boyle, “Further Development of the Law of the Sea Convention: Mechanisms for Change,” *International and Comparative Law Quarterly* 54(3) (2005), pp. 563–565, <https://doi.org/10.1093/iclq/lei018>.
160. UN Doc. A/RES/73/127 (December 11, 2018).
161. UN Doc. A/69/780, para. 12 (February 13, 2015).
162. E.g., UN Doc. A/RES/72/73 (December 5, 2017), p. 2.
163. See David Anderson, “Efforts to Ensure Universal Participation in the UN Convention on the Law of the Sea,” *International and Comparative Law Quarterly* 43 (1994), p. 886, <https://doi.org/10.1093/iclqj/43.4.886>.
164. E.g., UN Doc. A/CONF.164/37 (September 8, 1995) (UN Fish Stocks Agreement), Article 4. See Article 311(3) on the extensive restrictions to agreements modifying the Convention among some parties.
165. UN Doc. A/CONF.232/2019/10 (September 13, 2019).
166. See, e.g., *Earth Negotiations Bulletin* 25(218) (September 2, 2019), p. 4.
167. Convention, Article 319(2); Annex II, Article 2(3); Annex VI, Articles 4(4), 18(5)–(7) and 19(1); Final Act, Resolution I, para. 10.
168. E.g., UN Doc. SPLOS/73 (June 14, 2001), paras. 78–84. See Tullio Treves, “The General Assembly and the Meeting of States Parties in the Implementation of the LOS Convention,” in Alex Oude Elferink (ed.), *Stability and Change in the Law of the Sea: The Role of the LOS Convention* (Leiden: Brill, 2005), p. 55. On the Meeting of States Parties tackling substantive issues of general interest, see the warning in UN Doc. SPLOS/324 (July 9, 2018), para. 98.
169. On this aspect, see also Hayashi, 2011, p. 199. In 1990, the Coastal Zone Management Subgroup of the IPCC recommended the adoption of a protocol to provide a framework for cooperation in dealing with the impacts of sea-level rise on the coastal zone but the recommended measures are material and practical: Dronkers, 1990, p. ix.
170. Caron, 1990, p. 647.
171. The selection of acts and statements to analyze will need to be carefully identified. Freestone and Schofield, 2019, p. 406, mention the Pacific Islands Forum Secretariat, “Boe Declaration on Regional Security” (September 5, 2018) and the Pacific Islands Forum Secretariat, “Communiqué of the Forty-Ninth Pacific Islands Forum, Yaren, Nauru” (September 3–6, 2018) but these documents are bereft of any reference to maintaining limits of maritime zones despite coastal change. The latter declaration acknowledges the importance of securing the region’s maritime boundaries and resolving outstanding maritime boundary claims. The former declaration reaffirms that climate change remains the single greatest threat to the peoples of the Pacific.
172. See, e.g., Kerstin von der Decken, “Article 39. General Rule Regarding the Amendment of Treaties,” in Oliver Dörr and Kirsten Schmalenbach (eds.), *Vienna Convention on the Law of*

Treaties: A Commentary, 2nd ed. (Berlin: Springer, 2018), p. 762; Philippe Sands, “Article 39,” in Olivier Corten and Pierre Klein (eds.), *Vienna Conventions on the Law of Treaties* (Oxford: Oxford University Press, 2011), p. 973; Reuter, 1995, p. 125.

173. Bernard H. Oxman, “Law of the Sea,” in Oscar Schachter and Christopher Joyner (eds.), *United Nations Legal Order*, vol. 2 (Cambridge: Cambridge University Press, 1995), p. 704.

174. UN Doc. A/64/350, *Climate Change and Its Possible Security Implications. Report of the Secretary-General* (September 11, 2009), para. 17. And for disputes over the sudden expansion of shared or undemarcated resources, see *ibid.*, para 18. On Tuvalu’s concerns about the securitization of climate change, fearing that it will lead to greater militarization, see UN Doc. S/PV.8144 (December 20, 2017), p. 65.

175. E.g., Jesus, 2013, p. 36.

176. ILA, 2018, p. 885.

177. Caron, 2009, p. 17.

178. Davor Vidas, “Sea-Level Rise and International Law: At the Convergence of Two Epochs,” *Climate Law* 4 (2014), p. 75, <https://doi.org/10.1163/18786561-00402006>.

179. Lucius Caflisch, “A Typology of Borders,” in B. Vukas and T. Susic (eds.), *International Law: New Actors, New Concepts—Continuing Dilemmas* (Leiden: Nijhoff, 2010), p. 212, <https://doi.org/10.1163/ej.9789004181823.i-614.53>.

180. See, e.g., Note Verbale No.000228 from the Philippines to the UN Secretary-General (April 5, 2011): https://www.un.org/Depts/los/clcs_new/submissions_files/mysvnm33_09/phl_re_chn_2011.pdf, accessed October 28, 2019.

181. See, e.g., Boyle, 2005, pp. 567–574; Catherine Redgwell, “Treaty Evolution, Adaptation and Change: Is the LOSC ‘Enough’ to Address Climate Change Impacts on the Marine Environment,?” *International Journal of Marine and Coastal Law* 34 (2019), pp. 446–452, <https://doi.org/10.1163/15718085-13431096>.

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