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MARITIME ENTITLEMENTS AND THE CHANGING ATLAS

The Effect of Coastal Changes on Maritime Limits and Maritime Boundaries

Snjólaug Árnadóttir

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School of Law

The University of Edinburgh

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Declaration

I declare that I composed this thesis. It is my own work and it has not been submitted for any other degree or professional qualification.

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List of Abbreviations

ABLOS	Advisory Board on the Law of the Sea
DOALOS	Division for Ocean Affairs and the Law of the Sea
ICJ	International Court of Justice
ILA	International Law Association
ILC	International Law Commission
ILM	International Legal Materials
ILR	International Law Reports
IPCC	International Panel on Climate Change
ITLOS	International Tribunal for the Law of the Sea
PCA	Permanent Court of Arbitration
PCIJ	Permanent Court of International Justice
RIAA	Reports of International Arbitral Awards
UNCLOS	United Nations Convention for the Law of the Sea
UNTS	United Nations Treaty Series
WTO	World Trade Organisation

Abstract

The international law of the sea is based on the general principle that land dominates the sea; entitlement to maritime zones is generated by the coastal front and the seaward extent of those entitlements is measured from relevant coastal geography. This is rooted in the assumption that territory is permanent and, consequently, a stable basis for delineation and delimitation of maritime entitlements. However, climate-related changes and a new geological epoch, characterised by instability, are challenging these fundamental assumptions and international law must either change or allow for an interpretation that accommodates these changes.

Unilaterally declared maritime limits generally fluctuate to reflect changing coastal geography. However, States may permanently establish the outer limits of their continental shelf in certain circumstances. Maritime limits are opposable to other States, as long as they are consistent with international law, and other States can challenge outdated limits following a change to relevant coastal geography.

Overlapping maritime entitlements are delimited on the basis of relevant coastal geography and the resulting maritime boundaries generally remain stable, at fixed coordinates, notwithstanding subsequent changes to coastal geography. However, the juridical link between the coastal front and the rights to maritime zones can be strengthened by considering coastal instability and imminent changes to coastal geography in the delimitation process. Delimitation methods, base points and the adjustment of provisional boundaries can take account of changing coastal geography to produce boundaries that remain equitable in the foreseeable future.

Maritime boundaries can become radically inequitable when coastal geography changes and unforeseen changes may be invoked as grounds for terminating treaties establishing non-territorial maritime boundaries if they affect the essential basis of the treaty and radically affect ongoing obligations. This will only be possible in exceptional cases but the threat of termination may incite mutual revision of maritime boundaries.

Lay Summary

The international law of the sea affords coastal States an entitlement to certain maritime expanses surrounding their territory. Coastal States have different rights and obligations in clearly defined maritime zones and the extent of these zones is determined by reference to the coastline. Coastal geography is changing worldwide due to environmental changes, such as sea level rise and coastal erosion, and these changes affect the entitlement to maritime zones because the entitlements follow relevant coastlines.

Coastal States may unilaterally determine the inner and outer parameters of their own maritime zones and these limits generally fluctuate to reflect changing coastal geography. However, when neighbouring States make competing claims to the same maritime areas, bilateral boundaries must be established to mark the extent of each State's entitlements. While unilateral limits are only opposable insofar as they are consistent with international law, and can be easily adjusted by the coastal State, bilateral boundaries are generally not subject to change without mutual consent. Therefore, changing coastlines will have a significant impact on unilateral limits but bilateral boundaries will only be affected in exceptional cases.

This thesis examines the effects that changing coastal geography may have on the establishment, subsequent adjustment and possible termination of unilateral and bilateral limits to maritime zones, under existing rules. Furthermore, this thesis discusses the feasibility of changing or re-interpreting those rules to ensure stability and equitable division of oceanic resources in times of unprecedented change to coastal geography.

I. INTRODUCTION: THE LAW OF THE SEA AND CHANGING COASTAL GEOGRAPHY

1.1. International Law of the Sea: A Historical Overview

The international law of the sea is among the oldest branches of public international law.¹ It originally consisted of customary law, shaped by State practice, and governed mainly the rights of States in two distinct maritime zones: the territorial sea and the high seas.² Efforts to codify the law of the sea commenced in 1930 with the League of Nations Codification Conference in the Hague and these efforts went on for half a century.³ The 1930 Hague Conference did not result in the conclusion of a treaty, but the First United Nations Conference on the Law of the Sea, which was held in Geneva from 24 February to 27 April 1958, led to the adoption of four treaties and an optional protocol: the Convention on the Territorial Sea and the Contiguous Zone;⁴ the Convention on the High Seas;⁵ the Convention on Fishing and Conservation of the Living Resources of the High Seas;⁶ the Convention on the Continental Shelf (hereinafter 1958 Geneva Conventions;⁷) and the Optional Protocol of Signature concerning the Compulsory Settlement of Disputes.⁸

The First Geneva Conference did not result in a single instrument, it did not set a limit for fishing rights and it left unresolved an issue of great importance – the breadth of

¹ Tullio Treves, 'Historical Developments of the Law of the Sea' in Donald R Rothwell, Alex G Oude Elferink, Karen N Scott and Tim Stephens (eds) *The Oxford Handbook of the Law of the Sea* (Oxford University Press 2015) 1, 1.

² *Ibid* 7.

³ *Ibid* 2.

⁴ Convention on the Territorial Sea and the Contiguous Zone (adopted 29 April 1958, entered into force 10 September 1964) 516 UNTS 205.

⁵ Convention on the High Seas (adopted 29 April 1958, entered into force 30 September 1962) 450 UNTS 11.

⁶ Convention on Fishing and Conservation of the Living Resources of the High Seas (adopted 29 April 1958, entered into force 20 March 1966) 559 UNTS 285.

⁷ Convention on the Continental Shelf (adopted 29 April 1958, entered into force 10 June 1964) 499 UNTS 311.

⁸ Optional Protocol of Signature concerning the Compulsory Settlement of Disputes (adopted 29 April 1958, entered into force 30 September 1962) 450 UNTS 169.

the territorial sea.⁹ To address these shortcomings, a Second United Nations Conference on the Law of the Sea was convened in Geneva from 16 March to 26 April 1960, but no legal instruments were adopted.¹⁰ The Third United Nations Conference on the Law of the Sea convened in New York in 1973 and it lasted for nine years, culminating in the adoption, in 1982, of the United Nations Convention on the Law of the Sea (hereinafter UNCLOS or the Convention);¹¹ a single instrument that has been described as the ‘constitution for the oceans’.¹²

Churchill has explained that UNCLOS ‘is without doubt the most important source of the international law of the sea, although it is by no means the only source’.¹³ Its predecessors adopted in Geneva in 1958 all remain in force, although they have been superseded by UNCLOS for those States that have also ratified UNCLOS, in their relations with other Parties to UNCLOS.¹⁴ The 1958 Geneva Conventions reflected customary international law to a large extent, at the time of their adoption, and many provisions were transferred directly into UNCLOS.¹⁵ Yet, in addition to codifying well-established rules of customary international law, UNCLOS also signified progressive development of the law.¹⁶

At the time of writing, 168 States are Parties to UNCLOS.¹⁷ Non-Parties are bound by customary international law, which is largely compatible with UNCLOS,¹⁸ or the 1958 Conventions. UNCLOS is a very comprehensive instrument, governing most uses of

⁹ Tullio Treves (n 1) 13-14.

¹⁰ *Ibid* 14.

¹¹ United Nations Convention on the Law of the Sea (adopted 10 December 1982, entered into force 16 November 1994) 1833 UNTS 3.

¹² DOALOS, ‘The United Nations Convention on the Law of the Sea: A Historical Perspective’ (United Nations 1998) available at: http://www.un.org/depts/los/convention_agreements/convention_historical_perspective.htm accessed 19 August 2017.

¹³ Robin R Churchill ‘The 1982 United Nations Convention on the Law of the Sea’ in *The Oxford Handbook of the Law of the Sea* (n 1) 24, 24.

¹⁴ UNCLOS article 311(1).

¹⁵ Tullio Treves (n 1) 16; Robin R Churchill (n 13) 30.

¹⁶ Robin R Churchill (n 13) 30; James Harrison, *Making the Law of the Sea: A Study in the Development of International Law* (Cambridge University Press 2011) 53.

¹⁷ DOALOS ‘Chronological lists of ratifications of, accessions and successions to the Convention and the related Agreements’ (United Nations 2017) available at: http://www.un.org/depts/los/reference_files/chronological_lists_of_ratifications.htm accessed 13 September 2017.

¹⁸ Robin R Churchill (n 13) 37.

the world's oceans, but it may be amended if new challenges emerge, supplementary agreements can be adopted under the Convention and rules can be further developed through State practice and jurisprudence. Amendments to the Convention are possible under articles 312-316 but the acceptance of a large majority of States Parties is required before they can enter into force and to date no amendments have been made under this procedure.¹⁹ However, two implementing agreements have been concluded and both have entered into force: the 1994 Part XI Implementing Agreement²⁰ and the 1995 Fish Stocks Agreement.²¹ Another supplementary treaty may soon be concluded under UNCLOS, governing the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction. To this end, a Preparatory Committee held four meetings in 2016 and 2017 and the General Assembly of the United Nations is expected to convene an intergovernmental conference at its next session.²²

According to Tommy TB Koh, President of the Third United Nations Conference on the Law of the Sea, UNCLOS covers 'every aspect of the uses and resources of the sea'.²³ It does not contain detailed provisions on every aspect of ocean governance but it 'sets out the legal framework within which detailed norms to regulate the various uses of the sea may be developed and applied'.²⁴ The international law of the sea has further evolved through case law and customary international law since the entry into force of UNCLOS. This has been necessary to interpret ambiguous provisions, particularly those that refer to 'international law', i.e., provisions concerning maritime

¹⁹ *Ibid* 43.

²⁰ Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 (adopted 28 July 1994, entered into force 28 July 1996) 1836 UNTS 3.

²¹ Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (adopted 4 August 1995, entered into force 11 December 2001) 2167 UNTS 3.

²² Sustainable Development Goals 'Countries agree to recommend elements for new treaty on marine biodiversity of areas beyond national jurisdiction' (UN 2017) available at:

<http://www.un.org/sustainabledevelopment/blog/2017/07/countries-agree-to-recommend-elements-for-new-treaty-on-marine-biodiversity-of-areas-beyond-national-jurisdiction/> accessed 13 September 2017.

²³ Remarks by Tommy TB Koh, of Singapore, President of the Third United Nations Conference on the Law of the Sea 'A Constitution for the Oceans' (UN 1982) available at http://www.un.org/depts/los/convention_agreements/texts/koh_english.pdf accessed 13 September 2017.

²⁴ Robin R Churchill (n 13) 30.

boundary delimitation. The law governing maritime boundary delimitation has developed significantly through the years²⁵ and new challenges now call for further clarifications of the law of the sea.²⁶

UNCLOS has been described by a former UN Secretary-General as ‘possibly the most significant legal instrument in [the twentieth] century’.²⁷ Indeed, its importance cannot be overstated and, as thesis will demonstrate, it has the capacity to stand the test of time. ‘The law of the sea is very much alive’ and, consequently, capable of addressing new challenges, such as those arising from climate change.²⁸

1.2. Delineation and Delimitation of Maritime Entitlements

Maritime entitlements are the rights that coastal States possess in the water columns, seabed and subsoil extending from their land territory. Coastal States are entitled to different maritime zones under UNCLOS, namely: internal waters; archipelagic waters, territorial sea; contiguous zone; exclusive economic zone; and continental shelf. The nature of maritime entitlements differs between maritime zones and so does their seaward extension from coastlines.²⁹ Coastal features must satisfy certain conditions to generate, and continuously support, claims to maritime zones and maritime entitlements are only generated by naturally formed land.³⁰ The naturally formed land must be above water at high-tide and sustain human habitation or economic life to justify a claim to an exclusive economic zone and continental shelf,³¹

²⁵ See, e.g., *Bay of Bengal Maritime Boundary Arbitration (Bangladesh v India)* (2014) 167 ILR 1, para 339; *Delimitation of the Maritime Boundary between Bangladesh and Myanmar in the Bay of Bengal (Bangladesh/Myanmar)* (Judgment) [2012] ITLOS Rep 4, 55-56, paras 183 and 184; *Delimitation of the Exclusive Economic Zone and the Continental Shelf (Barbados v Trinidad and Tobago)* (2006) XXVII RIAA 147, 210-211, para 223.

²⁶ See, e.g., *South China Sea (Philippines v China)* (Merits) (2016) 170 ILR 1, paras 239 and 509, considering the legitimacy of an alleged regime of historic rights and the effects of land reclamation on maritime entitlements.

²⁷ DOALOS (n 12) referring to the Statement of Secretary-General Javier Perez de Cuellar upon signing UNCLOS in 1982.

²⁸ Yeosu World Expo ‘Statement by Ms Patricia O’Brien, Under-Secretary-General for Legal Affairs, The Legal Counsel’ (UN) available at:

http://legal.un.org/ola/media/info_from_lc/Statement%20POB%20YEOSU.pdf accessed 25 August 2017, 11.

²⁹ See further discussion in section 2.2.2.

³⁰ See UNCLOS articles 13(1), 60(80) and 121(1); *Philippines v China* (n 26) (Merits) para 508.

³¹ UNCLOS article 121.

and above water at low-tide and within range of an island or the mainland to justify a claim to a territorial sea.³²

Maritime entitlements are measured from each State's baselines and, unless otherwise specified, baselines follow the low-water line along relevant coastlines, as marked on large-scale charts officially recognized by coastal States.³³ States also have the option of drawing straight baselines 'where the coastline is deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity'.³⁴ They may also draw straight closing lines to close off bays and river mouths.³⁵ Furthermore, States can draw archipelagic baselines where the requirements of UNCLOS article 47 are satisfied.³⁶

The breadth of all maritime zones is measured from baselines.³⁷ Internal waters are any water between land and baselines,³⁸ the territorial sea may extend seawards up to 12 nautical miles (hereinafter nm) from baselines,³⁹ the contiguous zone up to 24 nm from baselines,⁴⁰ the outer limits of the exclusive economic zone up to 200 nm from baselines,⁴¹ and the continental shelf may extend up to 200 nm from baselines or further if the natural prolongation of the land territory justifies such a claim.⁴²

Coastal States clarify the extent of their maritime entitlements through a process known as maritime delineation whereby they unilaterally lay down inner maritime limits, i.e., baselines, and outer limits to each maritime zone. However, these limits are only opposable to other States insofar as they coincide with the governing international law.⁴³ Where neighbouring States have overlapping maritime entitlements, they must agree on bilateral boundaries delimiting their overlapping

³² UNCLOS article 13.

³³ UNCLOS article 5.

³⁴ UNCLOS article 7.

³⁵ See UNCLOS articles 9 and 10.

³⁶ UNCLOS article 47.

³⁷ UNCLOS articles 3, 8(1), 33(2), 48, 57 and 76(1).

³⁸ UNCLOS article 8(1).

³⁹ UNCLOS article 3.

⁴⁰ UNCLOS article 33(2).

⁴¹ UNCLOS article 57.

⁴² UNCLOS article 76.

⁴³ *Anglo-Norwegian Fisheries* (United Kingdom/Norway) (Judgment) [1951] ICJ Rep 116, 132.

entitlements⁴⁴ or settle their disputes by other peaceful means.⁴⁵ Thus, baselines and outer maritime limits are established through unilateral delineation and areas that are subject to overlapping claims are delimited by agreements or adjudication.

1.3. Changes to Coastal Geography

The coastline is constantly changing. The low-water line fluctuates on a daily basis and the difference between high and low tide can be as much as 35 feet.⁴⁶ Such fluctuations have long been understood and they were anticipated by the International Law Commission (hereinafter ILC or the Commission) when discussing what later became the 1958 Geneva Conventions.⁴⁷ However, natural elements also cause changes that are less foreseeable and more consequential, for example, volcanic eruptions, earthquakes, land rise and sedimentation. Furthermore, anthropogenic climate change is affecting coastal geography in new ways and the changes are occurring at an accelerated rate.⁴⁸

The Intergovernmental Panel on Climate Change (hereinafter IPCC) is the ‘primary international scientific body compiling policy-relevant research on climate change’⁴⁹ and it aims to ‘provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts’.⁵⁰ The IPCC published its First Assessment Report in 1990 and then addressed the potential effects of sea level rise.⁵¹ The same year, Caron and Soons both

⁴⁴ UNCLOS articles 15, 74(1), 83(1).

⁴⁵ See UNCLOS part XV.

⁴⁶ William Michael Reisman and Gayl S Westerman, *Straight Baselines in International Maritime Boundary Delimitation* (MacMillan Press 1992) 4.

⁴⁷ Extract from the Yearbook of the International Law Commission, 1956, vol II ‘Report of the International Law Commission on the Work of its Eighth Session 23 April to 4 July 1956, Official Records of the General Assembly, Eleventh Session, Supplement No. 9 (A/3159)’ (4 July 1956) UN Doc A/CN.4/104, 267.

⁴⁸ Rajendra K Pachauri Chairman and Leo Meyer (eds) *Climate Change 2014: Synthesis Report: Contribution of Working Groups I, II and III to the Fifth Assessment Report of the IPCC* (IPCC 2014), 4.

⁴⁹ Timothy Meyer, ‘Institutions and Expertise: The Role of Science in Climate Change Lawmaking’ in Cinnamon P Carlane, Kevin R Gray and Richard Tarasofsky (eds) *The Oxford Handbook of International Climate Change Law* (Oxford University Press 2016) 442, 442.

⁵⁰ IPCC ‘Organization’ available at: <https://www.ipcc.ch/organization/organization.shtml> accessed 13 September 2017. See further discussion about the IPCC in section 3.3.2.2.

⁵¹ IPCC, John T Houghton, G J Jenkins, J J Ephraums, World Meteorological Organization, United Nations Environment Programme, *Climate Change: The IPCC Scientific Assessment* (Cambridge University Press 1990) chapter 9.

explained that changes to the low-water line (an inevitable consequence of sea level rise) would have an effect on the enforceability of unilaterally declared baselines.⁵²

The IPCC has published numerous reports elaborating on the various effects of global warming. The most recent publication, the Fifth Assessment Report, which was finalised in November 2014, explains that sea levels have risen by 0.19 m between 1993 and 2010 because of decrease in glacier mass and thermal expansion of the world's oceans.⁵³ The rate of sea level rise is increasing and it has been greater in the past 70 years than ever in the preceding 2000 years.⁵⁴ Sea levels are expected to rise, on average, by 0.52-0.98 m by 2100 if the emission of greenhouse gasses is not significantly reduced⁵⁵ and it will continue for centuries to come, possibly amounting to 4 m by the year 2300.⁵⁶ Sea level rise will almost certainly affect more than 95% of the ocean area by the end of the 21st century and some areas will experience significant deviations from the average predictions, making sea level rise more severe in those parts of the world.⁵⁷ Sea level rise will have 'serious implications for coastal cities, deltas, and low-lying states' and exacerbate coastal erosion.⁵⁸ This will have an impact on islands, rocks, shoals and reefs and the maritime entitlements they generate.

⁵² See David D Caron, 'When Law Makes Climate Change Worse: Rethinking the Law of Baselines in Light of a Rising Sea Level' (1990) 17 (4) *Ecology Law Quarterly* 621; Alfred H A Soons, 'The Effects of a Rising Sea Level on Maritime Limits and Boundaries' (1990) 37 (2) *Netherlands International Law Review* 207, 216.

⁵³ John A Church, Peter U Clark, Anny Cazenave, Johnathan M Gregory, Svetlana Jevrejeva, Anders Levermann, Mark A Merrifield, Glenn A Milne, R Steven Nerem, Patrick D Nunn, Anthony J Payne, W Tad Pfeffer, Detlef Stammer and Allakat S Unnikrishnan '2013: Sea Level Change' in Thomas F Stocker, Qin Dahe, Gian-Kasper Plattner, Melinda Tignor, Simon K Allen, Judith Boschung, Alexander Nauels, Yu Xia, Vincent Bex and Pauline M Midgley (eds) *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2013), 1139.

⁵⁴ IPCC, '2013: Summary for Policymakers' in Thomas F Stocker, Qin Dahe, Gian-Kasper Plattner, Melinda Tignor, Simon K Allen, Judith Boschung, Alexander Nauels, Yu Xia, Vincent Bex and Pauline M Midgley (eds) *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2013) 3, 11.

⁵⁵ '2013: Sea Level Change' (n 53) 23.

⁵⁶ *Ibid* 24.

⁵⁷ *Ibid* 1140.

⁵⁸ Poh Poh Wong, Iñigo J Losada, Jean-Pierre Gattuso, Jochen Hinkel, Abdellatif Khattabi, Kathleen L McInnes, Yoshiki Saito, and Asbury Sallenger, 'Coastal systems and low-lying areas' in Christopher B Field, Vicente R Barros, David J Dokken, Katherine J Mach, Michael D Mastrandrea, T Eren Bilir, Monalisa Chatterjee, Kristie L Ebi, Yuka O Estrada, Robert C Genova, Betelhem Girma, Eric S Kissel, Andrew N Levy, Sandy MacCracken, Patricia R Mastrandrea and Leslie L White (eds) *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects Contribution of*

Storms can create dangerous waves and currents capable of moving large amounts of sand and destroying infrastructure, ultimately reshaping coastlines.⁵⁹ Hurricanes and other extreme storms can lead to storm-induced coastal change in the form of beach erosion, dune erosion, overwash, inundation, island breaching, marsh erosion and coastal cliff erosion.⁶⁰ Moreover, CO₂ in the atmosphere has increased over the last 800,000 years, mainly because of intensive fossil-fuel burning and deforestation, and this contributes to ocean acidification, which affects a wide range of marine organisms and the food webs that they depend on.⁶¹ ‘Warming and acidification will lead to coral bleaching, mortality, and decreased constructional ability [...] making coral reefs the most vulnerable marine ecosystem with little scope for adaptation.’⁶²

‘Climatic and non-climatic drivers affecting coral reefs will erode habitats, increase coastline exposure to waves and storms and degrade environmental features important to fisheries and tourism.’⁶³ In fact, low-lying coastal States ‘will increasingly experience submergence, flooding and erosion throughout the 21st century and beyond, due to sea level rise’.⁶⁴ These changes will have particularly severe consequences for low-lying island States, such as Tuvalu, Kiribati, Micronesia, the Marshall Islands and the Maldives, which may become uninhabitable in the foreseeable future. Uninhabitable States may not only lose the maritime entitlements generated by habitable islands but also their statehood⁶⁵ and, thereby, all maritime entitlements.⁶⁶ No island State has yet become completely uninhabitable but individual islands have. For example, the residents of the Indian island Loachara and Papua New

Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (Cambridge University Press 2014) 361, 366.

⁵⁹ St Petersburg Coastal and Marine Science Center ‘Coastal Change Hazards: Hurricanes and Extreme Storms’ (US Department of the Interior 2015) available at: <http://coastal.er.usgs.gov/hurricanes/> accessed 13 September 2017.

⁶⁰ *Ibid.*

⁶¹ Sarah R Cooley and Scott C Doney ‘Anticipating ocean acidification’s economic consequences for commercial fisheries’ (2009) 4 (2) *Environmental Research Letters* 1.

⁶² ‘Coastal systems and low-lying areas’ (n 58) 364.

⁶³ *Ibid.*

⁶⁴ Rajendra K Pachauri Chairman and Leo Meyer (n 48) 67.

⁶⁵ Rosemary Rayfuse, ‘Chapter 6: Climate Change and the Law of the Sea’ in Rosemary Rayfuse and Shirley V Scott (eds) *International Law in the Era of Climate Change*, 147, 152. See also Emily Crawford and Rosemary Rayfuse ‘Chapter 10: Climate Change and Statehood’ in Rosemary Rayfuse and Shirley V Scott (eds) *International Law in the Era of Climate Change*, 243, 249.

⁶⁶ Uninhabitable rocks, shoals and reefs can generate an entitlement to a territorial sea and contiguous zone but only a State can hold sovereignty over such features and the derived maritime entitlements.

Guinea's Cateret Island were evacuated in 2006 and 2007.⁶⁷ Furthermore, submerging island States seem to have begun exploring their options for evacuation, in preparation for further loss of territory. To this end, the Tuvalu government approached officials from Australia and New Zealand in 2001 in the hopes of relocating the entire population if and when the island State becomes uninhabitable.⁶⁸

These human induced changes are unprecedented in the planet's history and they are happening on a very large scale, possibly bringing about a new geological epoch.⁶⁹ The last (and formally still the current)⁷⁰ geological epoch is called the Holocene and it began approximately 11,700 years ago.⁷¹ However, scientific studies suggest that a new geological epoch might be emerging due to the fact that 'humans have replaced nature as the dominant environmental force on Earth'.⁷²

A working group was established in August 2016 at the 35th International Geological Congress with the mandate of delivering a ratified conclusion on whether and when this new geological epoch formally began.⁷³ The new epoch is called the Anthropocene and the name refers to the 'growing impacts of human activities on Earth and atmosphere'.⁷⁴ The Anthropocene is characterised by profound alterations of 'many geologically significant conditions and processes' affecting, e.g., coastal

⁶⁷ See Geoffrey Lean, 'Disappearing World: Global Warming Claims Tropical Island' (The Independent 2006) available at: <http://www.independent.co.uk/environment/climate-change/disappearing-world-global-warming-claims-tropical-island-5331748.html> accessed 26 August 2017; John Stewart, 'Rising seas force Cataret Islanders out of home' (ABC Television 2007) available at: <http://www.abc.net.au/lateline/content/2006/s1840956.htm> accessed 26 August 2017.

⁶⁸ Rosemary Rayfuse, 'International Law and Disappearing States: Maritime Zones and the Criteria for Statehood' (2011) 41 (6) Environmental Policy and Law, 281, 285, referring to 'New Immigration Category for Pacific Migrants' (Ministry of Pacific Islands Affairs 2002).

⁶⁹ See Jan Zalasiewicz, Mark Williams, Will Steffen and Paul J Crutzen, 'The new world of the Anthropocene' (2010) 44 (7) Environmental Science and Technology, 2228, 2228.

⁷⁰ Mike Walker, Sigfus Johnsen, Sune Olander Rasmussen, Trevor Popp, Jørgen-Peder Steffensen, Phil Gibbard, Wim Hoek, John Lowe, John Andrews, Svante Björck, Les C Cwynar, Konrad Hughen, Peter Kershaw, Bernd Kromer, Thomas Litt, David J. Lowe, Takeshi Nakagawa, Rewi Newnham, Jakob Schwander, 'Formal Definition and Dating of the gssp (Global Stratotype Section and Point) for the Base of the Holocene Using the Greenland NGRIP Ice Core, and Selected Auxiliary Records' (2009) 24 Journal of Quaternary Science 3, 3-4.

⁷¹ *Ibid* 12.

⁷² William F Ruddiman, Erle C Ellis, Jed O Kaplan, Dorian Q Fuller, 'Defining the Epoch We Live in' (2015) 348 (6230) Science 38, 38.

⁷³ Heidi Bostica and Meghan Howey, 'To address the Anthropocene, engage the liberal arts' (2017) 18 Anthropocene 105, 105.

⁷⁴ Anne China, Lindsey Gillsonb, Steven M. Quiringc, Donald R. Nelsond, Mark Patrick Taylore, Veerle Vanackerf and Daniel Lovegroveg 'An evolving Anthropocene for science and society' (2016) 3 Anthropocene 1, 1.

erosion, sediment and the chemical composition of the oceans and subsoil.⁷⁵ While the Holocene was ‘characterized by relative environmental stability [...] [t]he Anthropocene, on the contrary, is seen as characterized by uncertainty and, possibly, a considerable degree of instability’.⁷⁶

The changes discussed above and their physical impacts on coastal geography will have significant consequences: legal, economic and political, and it is of great importance that new challenges are addressed by the international community and governed by international law. This thesis will analyse how maritime limits and maritime boundaries may be affected under the applicable international law and it seeks to determine whether existing rules must be altered to address the obstacles ahead.

1.4. Relevance of Coastal Changes for Maritime Limits, Maritime Boundary Delimitation and Settled Maritime Boundaries

Changes to coastal geography are relevant for maritime limits, maritime boundary delimitation and settled maritime boundaries because maritime entitlements, upon which limits and maritime boundaries are based, are generated by the coastal front; Maritime entitlements are derived from land territory and they exist ‘solely by virtue of the coastal State’s sovereignty over the land’.⁷⁷

What distinguishes a coastal State with [maritime] rights from a landlocked State which has none, is certainly not the landmass, which both possess, but the existence of a maritime front in one State and its absence in the other. The juridical link between the State’s territorial sovereignty and its rights to certain adjacent maritime expanses is established by means of its coast.⁷⁸

Unilateral limits to maritime entitlements generally fluctuate with changing coastal geography because they follow the basis for title, i.e., the coastal front. Baselines are

⁷⁵ Working Group on the Anthropocene, ‘What is the “Anthropocene”? - current definition and status’ (2015) available at: <https://quaternary.stratigraphy.org/workinggroups/anthropocene/> accessed 26 August 2017.

⁷⁶ Davor Vidas, ‘Sea-Level Rise and International Law: At the Convergence of Two Epochs’ (2014) 4 *Climate Law* 70, 80 referring to Jan Zalasiewicz, Paul J Crutzen, and Will Steffen, ‘The Anthropocene’ in Felix M Gradstein et al (eds) *The Geologic Time Scale 2012 vol 2* (Elsevier 2012) 1033-1040.

⁷⁷ *Aegean Sea Continental Shelf (Greece v Turkey)* [1978] ICJ Rep 3, para 86.

⁷⁸ *Continental Shelf (Libyan Arab Jamahiriya/Malta)* (Judgment) [1985] ICJ Rep 13, 41.

ambulatory and the same holds true for unilateral maritime limits that are measured from ambulatory baselines⁷⁹ (with the exception of permanently described limits of the continental shelf⁸⁰). However, a clear distinction must be made between maritime limits and international boundaries between opposite or adjacent States. While maritime limits are subject to unilateral acts by relevant coastal States, boundaries are bilateral in nature and subject to agreements or binding dispute settlement.⁸¹ Maritime boundaries generally remain stable, at fixed coordinates, notwithstanding subsequent changes to the essential basis of those boundaries – the coastal front. Therefore, significant changes to coastal geography will break the juridical link between the coastal front and derived maritime entitlements in instances where States will exercise jurisdiction over maritime areas, to which they have no entitlement under the applicable law. Furthermore, this will create a discrepancy between the maritime limits and boundaries that are permanently fixed and those that continuously fluctuate with changing coastal geography.

The law of the sea is based on the fundamental assumption that ‘the oceans will continue to provide a predictable and benign environment which allows clear jurisdictional boundaries to be drawn from’.⁸² UNCLOS was concluded at a time when there was still limited understanding of the potential effects of anthropogenic global warming⁸³ and the Convention has no explicit rules relating to maritime entitlements in a changing environment.⁸⁴ However, the impact of coastal changes are now well understood and it has been widely acknowledged that changes to coastal geography have an effect on maritime limits that are based on the normal baseline.⁸⁵ Yet, several

⁷⁹ David D Caron, ‘Climate Change, Sea Level Rise and the Coming Uncertainty in Oceanic Boundaries: A Proposal to Avoid Conflict’ in Seoung-Yong Hong and Jon M Van Dyke (eds) *Maritime Boundary Disputes, Settlement Processes and the Law of the Sea* (Martinus Nijhoff 2008) 1, 2.

⁸⁰ See UNCLOS article 76(8) and further discussion in 2.3.4.

⁸¹ UNCLOS Part XV.

⁸² Tim Stephens, ‘Warming Waters and Souring Seas: Climate Change and Ocean Acidification’ in *The Oxford Handbook of the Law of the Sea* (n 1) 777, 778.

⁸³ Alan E Boyle, ‘Law of the Sea Perspectives on Climate Change’ in David Freestone (ed) *The 1982 Law of the Sea Convention At 30: Successes, Challenges and New Agendas* (Martinus Nijhoff 2013) 157, 157.

⁸⁴ With the exception of UNCLOS article 7(2).

⁸⁵ See, e.g., Alfred H A Soons (n 52) 216; David D Caron (n 52) 621; Lewis M Alexander, ‘Baseline Delimitations and Maritime Boundaries’ (1983) 23 *Virginia Journal of International Law* 503, 535; Victor Prescott and Eric Bird, ‘The Influence of Rising Sea Levels on Baselines from Which National Maritime Claims Are Measured and an Assessment of the Possibility of Applying Article 7(2) of the

questions remain unanswered. In particular, this thesis will address the practical aspects of the ambulatory baselines theory, implications for settled maritime boundaries and delimitation methods that strengthen the juridical link between the coastal front and the exercise of national jurisdiction.

Climate change has certainly brought on a surge of new challenges for ocean governance – a burgeoning need for conservation of biological diversity,⁸⁶ and, arguably, a need for clarification of the rules governing maritime entitlements extending from changing coastal geography. The International Law Association has formed two committees to address the legal uncertainty relating to maritime entitlements and changing coastlines: the Committee on Baselines under the International Law of the Sea (hereinafter ILA Baselines Committee) and the Committee on International Law and Sea Level Rise. Furthermore, experts in the law of the sea have proposed amendments to existing rules to mitigate the destabilising effects climate change is bound to have on baselines and maritime limits.⁸⁷ This thesis will examine the effects that changes to coastal geography may have on unilateral maritime limits and bilateral maritime boundaries under applicable international law. The aim is to determine the legal status of coastal States whose maritime entitlements are affected by natural and human-induced changes and the rights of third States which may be effected by the recession of limits of national jurisdiction.

1982 Convention on the Law of the Sea to Offset any Retreat of the Baseline’ in Carl Grundy-Warr (ed) *International Boundaries and Boundary Conflict resolution* (International Boundaries Research Unit 1990) 279; David Freestone and John Pethick, ‘Sea Level Rise and Maritime Boundaries: International Implications of Impacts and Responses’ in Gerald H Blake (ed) *Maritime boundaries: World Boundaries, vol 5* (Routledge 1994) 73, 76; Jenny Grote Stoutenburg, ‘Implementing a New Regime of Stable Maritime Zones to Ensure the (Economic) Survival of Small Island States Threatened by Sea-Level Rise’ (2016) 26 *The International Journal of Marine and Coastal Law* 263, 267; Alain Khadem, ‘Protecting Maritime Zones from the Effects of Sea Level Rise’ (1998) 5 (3) *IBRU Boundary and Security Bulletin* 76, 77-78; Clive Schofield, ‘Rising Waters, Shrinking States: The Potential Impacts of Sea Level Rise on Claims to Maritime Jurisdiction’ (2011) 53 *German Yearbook of International Law* 189, 190; Moritaka Hayashi ‘Sea Level Rise and the Law of the Sea: Legal and Policy Options’ in *Proceedings of International Symposium on Islands and Oceans* (Ocean Policy Research Foundation 2009) 78; Kate Purcell, ‘Maritime Jurisdiction in a Changing Climate’ in Michael B Gerrard and Katrina Fischer Kuh (eds) *The Law of Adaptation to Climate Change: U.S. and International Aspects* (The American Bar Association 2012) 729, 733.

⁸⁶ See discussion relating to a new treaty on biodiversity in section 1.1.

⁸⁷ See section 2.5.

1.5. Methodology

The research methodology employed in this doctoral thesis is rooted in legal positivism, as the aim is to clarify the law relating to maritime entitlements generated by changing coastlines. The methodology is primarily doctrinal; it involves an analysis of relevant treaties, international instruments, case law, legislative history and State practice, and this approach stems from the nature of the questions posed. The focus is on the *lex lata* and not the *lex ferenda*, but proposals to change existing rules are considered in section 2.5.

This thesis deals with unilateral maritime limits, bilateral maritime boundaries (including the delimitation of such boundaries) and the effects that changing circumstances may have on the stability of maritime limits and boundaries. The scope of changing circumstances extends to natural and man-made changes to coastal geography, i.e., any changes that affect the low-water mark along coastal features and the classification of coastal features. This includes an evaluation of whether coastal features are formed through natural or artificial processes and whether they meet the requirements to support base points and generate entitlement to different maritime zones.⁸⁸

This thesis is not limited to climate-induced changes, although the topic is made more pressing by the ongoing acceleration of environmental changes. The changes discussed in this thesis include, but are not limited to, climate-related changes, other environmental changes such as those resulting from seismic and volcanic activity, artificial changes made in response to environmental changes,⁸⁹ and other man-made changes such as the building of harbour works, land reclamation and other extensions of the coastline.

The core sources of law that are relevant for this thesis are codified in UNCLOS and the 1969 Vienna Convention on the Law of Treaties (hereinafter VCLT) but the scope of this thesis also extends to non-Parties. Therefore, the applicable customary law is analysed where appropriate, as well as the relevant case law, general principles of law,

⁸⁸ See UNCLOS articles 13, 60 and 121.

⁸⁹ I.e., artificial conservation of coastlines.

scholarly writings and preparatory works. The thesis examines, in the context of the geographical changes outlined above, the law relating to baselines and unilaterally declared maritime limits (Chapter II); the relevance of coastal instability for maritime boundary delimitation (Chapter III); and the effect of fundamental geographical changes on agreed maritime boundaries (Chapter IV).

II. BASELINES AND UNILATERALLY DECLARED MARITIME LIMITS

2.1. Introduction

Coastal States are entitled to a territorial sea, contiguous zone, exclusive economic zone, and continental shelf under UNCLOS and customary international law. States enjoy an array of rights within these maritime zones and, consequently, it serves their interests to extend their claims as far seawards as possible. Coastal States have, in their exclusive economic zone:

sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil, and with regard to other activities for the economic exploitation and exploration of the zone, such as the production of energy from the water, currents and winds.⁹⁰

A large portion of all the maritime resources that States can exploit economically falls within the exclusive economic zone⁹¹ and these are, for example, offshore hydrocarbons, minerals and living resources of the sea. Therefore, maritime entitlements are immensely important to coastal States and claims to maritime zones have come to encompass an area approximately the size of the world's land territory.⁹²

Maritime entitlements are derived from land territory⁹³ and maritime zones are delineated by reference to geographic features along relevant coasts;⁹⁴ inner limits, also known as baselines, and outer limits, which are measured from baselines. Coastal features are classified as either rocks, shoals, reefs, islands or low-tide elevations, and,

⁹⁰ UNCLOS article 56(1)(a). 'The rights set out in this article with respect to the seabed and subsoil shall be exercised in accordance with Part VI.' See UNCLOS article 56(3).

⁹¹ See Gemma Andreone 'The Exclusive Economic Zone' in *The Oxford Handbook of the Law of the Sea* (n 1) 159, 159.

⁹² Clive Schofield, 'Parting the Waves: Claims to Maritime Jurisdiction and the Division of Ocean Space' (2012) 1 Penn State Journal of Law and International Affairs 40, 57.

⁹³ See *Anglo-Norwegian Fisheries* (n 43) 133: 'It is the land which confers upon the coastal State a right to the waters off its coasts'.

⁹⁴ See ILA Baselines Committee 'Conference Report Sofia 2012' (ILA 2012) 3.

depending on their classification and distance from mainland, they can generate entitlements to a territorial sea, all maritime zones, or no entitlements at all. These features can generate maritime entitlements separate from the mainland or form part of the baselines along a coastal State's mainland,⁹⁵ effectively extending all maritime entitlements seawards. However, all baselines are based on proximity to land territory and they are subject to stringent requirements that must be satisfied on an ongoing basis.⁹⁶ Therefore, maritime limits are dependent upon the presence of, and proximity to, the coastal front; but coastal geography is prone to change, particularly now given the effects of climate change. The changes discussed in section 1.3. will have an impact on the coastal front and on derived maritime entitlements as coastlines are eroded and inundated.⁹⁷

The present chapter builds on the theory of ambulatory baselines and explains how changing circumstances affect the extent of maritime entitlements under UNCLOS; how normal, straight and archipelagic baselines are affected; how outer maritime limits fluctuate; and how States can acquire permanent continental shelf limits. Practical examples will be analysed to determine whether the charted or actual low-water line represents the legal baseline; whether States have an obligation to adjust maritime limits or whether this happens automatically; and to what extent States can rely on unlawful limits. After a thorough examination of the effects of natural changes to the coastal front, man-made changes will be discussed, including the limits between permissible artificial conservation, legitimate harbour works, and unlawful extension of the coastline. Finally, proposals to stabilize baselines will be examined, and the feasibility of changing existing rules and permanently fixing all maritime limits evaluated.

2.2. Maritime Delineation

All coastal States have baselines, which mark the inner limits of their maritime zones, and outer limits that are measured from baselines, to mark the seawards extent of maritime zones. All waters that fall on the landward side of baselines automatically

⁹⁵ See UNCLOS articles 7 and 47.

⁹⁶ Kate Purcell (n 85) 734.

⁹⁷ 'Coastal systems and low-lying areas' (n 58) 367.

become subject to territorial sovereignty of the coastal State under the regime of internal waters; moreover, '[t]he 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 belt of sea, described as the territorial sea.'⁹⁸ Coastal States inherently have a continental shelf, an entitlement that exists *ipso facto ab initio* as an extension of the land territory.⁹⁹ UNCLOS also indicates that coastal States have an entitlement to a territorial sea without any proclamation to that end,¹⁰⁰ the possession of a territorial sea may even be compulsory.¹⁰¹ However, States must make claims to other maritime zones to activate such entitlements under UNCLOS or customary international law.¹⁰²

Baselines normally follow the low-water line along relevant coastlines¹⁰³ and such baselines are applicable by default, unless otherwise specified.¹⁰⁴ Therefore, where no declarations have been made regarding the location of baselines States must rely on normal baselines. States may construct straight or archipelagic baselines and closing lines in certain localities¹⁰⁵ but they must take positive action to exercise that right. Straight and archipelagic baselines must be clearly defined by the coastal State; charts or lists of geographical coordinates must be given due publicity; and copies must be deposited with the Secretary-General of the United Nations in accordance with UNCLOS article 16. Outer maritime limits to claimed maritime zones are at a fixed distance from baselines, as determined by UNCLOS. Outer limits can, therefore, be identified by reference to baselines, but they can also be displayed separately on charts, on lists of coordinates and in national legislation, particularly the outer limits of the

⁹⁸ UNCLOS article 2(1).

⁹⁹ UNCLOS article 77 see also *North Sea Continental Shelf (Federal Republic of Germany/Netherlands) (Federal Republic of Germany/Denmark)* (Judgment) [1969] ICJ Rep 3, para 19; *Bangladesh/Myanmar* (n 25) para 409.

¹⁰⁰ John E Noyes, 'The Territorial Sea and Contiguous Zone' in in *The Oxford Handbook of the Law of the Sea* (n 1) 91, 94.

¹⁰¹ *Ibid*, referring to the dissenting opinion of Judge McNair in *Anglo-Norwegian Fisheries* (n 43) 160.

¹⁰² See John E Noyes (n 100) 109 and Gemma Andreone (n 91) 162-163.

¹⁰³ UNCLOS article 5.

¹⁰⁴ Robert Beckman and Clive Schofield, 'Moving Beyond Disputes Over Island Sovereignty: ICJ Decision Sets Stage for Maritime Boundary Delimitation in the Singapore Strait' (2009) 40 (10) *Ocean Development and International Law* 1, 5.

¹⁰⁵ See UNCLOS articles 7, 9, 10 and 47.

continental shelf, which may extend beyond the default 200 nm to reflect the natural prolongation of the continental margin.¹⁰⁶

Rules governing the delineation of baselines and outer maritime limits are detailed in the following sections.

2.2.1. Baselines

The Council of the League of Nations established a Committee of Experts for the Progressive Codification of International Law in 1924, which was tasked with the preparation of an agenda for topics in international law that could, subsequently, be codified.¹⁰⁷ One of those topics was the regime of territorial waters and in 1926 a sub-committee published draft articles on the subject.¹⁰⁸ Among other things, the sub-committee found that ‘the general practice of states, all projects of codification, and the prevailing doctrine agree in considering that the baseline should be the low-water mark along the coast’.¹⁰⁹ This was agreed upon at the League of Nations Conference for the Codification of International Law, convened in Hague in 1930. No convention was adopted at that time but rules relating to the normal baseline were codified in the 1958 Convention on the Territorial Sea and the Contiguous Zone¹¹⁰ and in UNCLOS.¹¹¹

The ILC proposed in its 1956 report to the United Nations General Assembly that ‘the breadth of the territorial sea [should be] measured from the low-water line along the coast, as marked on large-scale charts officially recognized by the coastal State’, except where straight baselines or closing lines were justified.¹¹² Thus, baselines would normally follow the low-water mark but they could be substituted with straight baselines where all necessary requirements were satisfied. This was the Commission’s

¹⁰⁶ See UNCLOS article 76.

¹⁰⁷ Lewis M Alexander (n 85) 505.

¹⁰⁸ Committee of Experts for the Progressive Codification of International Law, ‘Report of the Subcommittee on Territorial Waters, League of Nations’ Legal Questions 10, reprinted in (1926) 20 *American Journal of International Law* 62.

¹⁰⁹ *Ibid* 79.

¹¹⁰ Convention on the Territorial Sea and the Contiguous Zone (n 4) article 3.

¹¹¹ UNCLOS article 5.

¹¹² ‘Report of the International Law Commission on the Work of its Eighth Session’ (n 47) 257.

interpretation of the *Anglo-Norwegian Fisheries* case from 1951,¹¹³ which reflected the applicable international law.¹¹⁴

UNCLOS article 5 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’.¹¹⁵ The low-water line fluctuates twice a day, depending on the relative position of the earth, sun and the moon and the location and extent of these tides can vary from one foot to over 35 feet in areas like the Bay of Fundy, on the East coast of Canada.¹¹⁶ The ILC acknowledged, in its 1956 commentary, that the reference to a low-water mark ‘may have different meanings’ and that ‘there is no uniform standard by which States in practice determine this line’.¹¹⁷ The Commission further noted that ‘the omission of detailed provisions’ governing the identification of the low-water mark was ‘hardly likely to induce Governments to shift the low-water lines on their charts unreasonably’.¹¹⁸ This suggests that the ILC considered the possibility that States might produce unreasonable charts but it seems to have overlooked the possibility that charts might later become incorrect due to changed circumstances. In fact, no reference is made to changing coastal geography in the 1958 Conventions or UNCLOS, with the exception of UNCLOS article 7(2) which relates to highly unstable coastlines.

States generally use ‘the mean low-water line along the coast’ to establish their normal baselines¹¹⁹ and general changes to that reference mark are insignificant when compared to the catastrophic changes that may result from sea level rise, coastal erosion, volcanic and seismic activity. However, commentators generally agree that climate-related changes to the coastal and marine environment were not anticipated when UNCLOS was negotiated and, consequently, not provided for in the text.¹²⁰

¹¹³ *Anglo-Norwegian Fisheries* (n 43).

¹¹⁴ ‘Report of the International Law Commission on the Work of its Eighth Session’ (n 47) 267.

¹¹⁵ UNCLOS article 5.

¹¹⁶ William Michael Reisman and Gayl S Westerman (n 46) 4.

¹¹⁷ ‘Report of the International Law Commission on the Work of its Eighth Session’ (n 47) 267.

¹¹⁸ *Ibid* 267.

¹¹⁹ Ashley Roach and Robert W Smith, ‘Straight Baselines: The Need for a Universally Applied Norm’ (2000) 31 *Ocean Development and International Law* 47, 50. See further discussion on the mean low-water mark in section 2.3.1.

¹²⁰ See, e.g., Kate Purcell (n 85) 736; David D Caron (n 79) 5; Rosemary Rayfuse ‘W(h)ither Tuvalu? International Law and Disappearing States’ (2009) 9 *University of New South Wales Faculty of Law Research Series* 1, 5; Moritaka Hayashi (n 85) 81; Clive Schofield (n 85) 222; Tim Stephens (n 82) 787.

Article 6(3) of the 1958 Geneva Convention on the Continental Shelf provides that continental shelf boundaries ‘should be defined with reference to charts and geographical features as they exist at a particular date’. In discussing this provision, the delegation of the United Kingdom noted that such boundaries ‘should remain constant regardless of any subsequent changes in the coastline’.¹²¹ This demonstrates an awareness that coastlines (and median lines) might fluctuate and an assumption that, once fixed through agreements, bilateral boundaries would be unaffected by such changes. However, the *travaux préparatoires* for the 1958 Geneva Conventions bear no indication that the ILC or State representatives considered the effect of changing coastal geography on unilateral maritime limits. Implications for unilateral limits were finally addressed at the Third Law of the Sea Conference, but only in the context of inherently unstable coastlines and, even then, ‘this was not a major concern’.¹²²

Normal baselines are the most common method for determining baselines in international practice.¹²³ However, States may draw closing lines along the mouths of rivers¹²⁴ and bays¹²⁵ and base points may be placed on ports¹²⁶ and low-tide elevations¹²⁷ to draw interconnected straight baselines. Straight baselines may be drawn along the general direction of the coast along coastlines that are very irregular, i.e., ‘deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity’.¹²⁸ ‘Where because of the presence of a delta and other natural conditions the coastline is highly unstable’, States may also draw straight baselines under UNCLOS article 7(2) and these remain stable ‘notwithstanding subsequent regression of the low-water line’.¹²⁹

¹²¹ Official Records of the United Nations Conference on the Law of the Sea, Volume VI ‘Fourth Committee (Continental Shelf)’ (24 February to 27 April 1958) UN Doc A/CONF.13/42, 93.

¹²² Jose Luiz Jesus, ‘Rocks, New-Born Islands, Sea Level Rise and Maritime Space’ in Jochen Abr Frowein, Klaus Scharioth, Ingo Winkelmann and Rüdiger Wolfrum (eds) *Verhandeln für den Frieden - Negotiating for Peace: Liber Amicorum Tono Eitel* (Springer 2003) 579, 601.

¹²³ Clive Schofield (n 92) 55.

¹²⁴ UNCLOS article 9.

¹²⁵ UNCLOS article 10.

¹²⁶ UNCLOS article 11.

¹²⁷ UNCLOS article 13.

¹²⁸ UNCLOS article 7(1).

¹²⁹ See UNCLOS article 7(2).

The method of drawing straight baselines was meant as an alternative to the system of normal baselines. According to the ICJ's decision in the *Anglo-Norwegian Fisheries* case, the low-water mark would not have to be followed as a rule where the coast was deeply indented or cut into or characterised by insular features, like those at the Norwegian Skjaergaard.¹³⁰ The Court explained that straight baselines should not be considered to be exceptions to normal baselines because such an approach would necessitate too many derogations from the general rule. Instead, the method of drawing straight baselines should be viewed as a rule in its own right. According to the ICJ, straight baselines could 'depart from the physical line of the coast' but only 'within reasonable limits'.¹³¹ Where the strict conditions of UNCLOS article 7 are not satisfied, States must rely on normal baselines – they are applicable unless and until a State establishes a system of straight baselines.¹³² According to the ICJ, straight baselines may only be drawn in exceptional cases and they should be applied restrictively.¹³³

UNCLOS article 7(2) was a subsequent addition to the original rule concerning straight baselines; the right to draw straight baselines on highly unstable coastlines was not addressed in the *Angle-Norwegian Fisheries Case* or codified in the 1958 Geneva Conventions. The rule enshrined in UNCLOS article 7(2) was first introduced in 1975, it was phrased in the same manner as the existing provision but instead of forming a separate paragraph, it was part of paragraph 1.¹³⁴ Bangladesh has maintained that UNCLOS article 7(2) was meant to deal specifically with the Bengal Delta.¹³⁵ Indeed, the provision was originally proposed by Bangladesh¹³⁶ but as highlighted by India, in

¹³⁰ *Anglo-Norwegian Fisheries* (n 43) 129.

¹³¹ *Ibid.*

¹³² Extract from the Yearbook of the ILC: 1956, vol I 'Summary Record of the 335th meeting' (27 April 1956) UN Doc A/CN.4/SR.335, 9.

¹³³ *Maritime Delimitation and Territorial Questions between Qatar and Bahrain (Qatar v Bahrain)* (Merits) [2001] ICJ Rep 40, 67, para 212.

¹³⁴ Revised Consolidated Text on Baselines 'C.2/Blue Paper No 4, 9 April 1975' UN Doc A/Conf.62/C.2/WP.1 in Renate Platzoder, *Third United Nations Conference on the Law of the Sea: Documents, Vol IV* (Oceana Publications 1983) 126.

¹³⁵ See *Bangladesh v India* (n 25) para 237 referring to hearing transcript, 117, para 1-118, para 16.

¹³⁶ Robin R Churchill and Alan V Lowe, *The Law of the Sea, 3rd edition* (Juris Publishing 1999) 37.

Bangladesh v India, ‘article 7(2) is phrased in general terms and it makes no reference to the Bengal Delta’.¹³⁷

As explained by Churchill and Lowe, UNCLOS article 7(2) is somewhat ambiguous as it does not clearly settle whether the use of straight baselines is permitted along highly unstable coastlines regardless of whether they are deeply indented and cut into.¹³⁸ Roach, Smith and Brown seem to assume that UNCLOS article 7(2) applies in tandem with paragraph 1,¹³⁹ meaning that an unstable coastline must also be highly indented and cut into or fringed with islands to justify the use of straight baselines. However, the ILA Baselines Committee has concluded that ‘[t]hese criteria are not cumulative and any one of these three geographic circumstances will be sufficient for the coastal State to become entitled to use the straight baseline method’.¹⁴⁰ According to the ILA Baselines Committee, UNCLOS article 7(2) was meant to be an addition, permitting the use of straight baselines in localities where they might not otherwise be justified.¹⁴¹

There is very limited jurisprudence on the use of straight baselines; the ICJ has only once confirmed the legitimacy of straight baselines, in the *Anglo-Norwegian Fisheries* case, which did not address the use of straight baselines along unstable coastlines.¹⁴² Examples from State practice also fail to give an unequivocal answer as to whether UNCLOS article 7(2) must be read in conjunction with paragraph 1 because the juridical basis for straight baseline segments is often left unstated. Yet, there is at least one example of a State establishing straight baselines along a river delta where the conditions of UNCLOS article 7(1) are not met: Egypt has drawn straight baselines along the Mediterranean coast and the river Nile, assumedly on the basis of UNCLOS

¹³⁷ *Bangladesh v India* (n 25) para 245.

¹³⁸ Robin R Churchill and Alan V Lowe (n 136) 37.

¹³⁹ See Edward Duncan Brown, *The International Law of the Sea*, vol I (Dartmouth 1994) 27; Ashley Roach and Robert W Smith, *Excessive Maritime Claims*, 3rd edition (Martinus Nijhoff 2012) 67.

¹⁴⁰ ILA Baselines Committee, ‘Conference Report Washington 2014’ (ILA 2014) para 25.

¹⁴¹ *Ibid.*

¹⁴² See Robin R Churchill and Alan V Lowe (n 136) 38.

article 7(2).¹⁴³ However, the United States has challenged those baselines on the grounds that they do not also satisfy the requirements of paragraph 1.¹⁴⁴

The ICJ explained in *Qatar v Bahrain* that the primary conditions for drawing straight baselines are ‘that either the coastline is deeply indented and cut into, or that there is a fringe of islands along the coast in the immediate vicinity’.¹⁴⁵ This suggests that coastal instability does not suffice to permit the use of straight baselines and, if that is the case, then UNCLOS article 7(2) simply provides stability for those instances where irregular coastlines are also highly unstable. At any rate, straight baselines may not depart to any appreciable extent from the general direction of the coast and sea areas within the baselines must be sufficiently linked to the land domain to be subject to the regime of internal waters.¹⁴⁶ This applies to all straight baselines, whether they are drawn along coastlines that are deeply indented and cut into, fringed with islands and/or highly unstable.

States that qualify as archipelagic States can 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 water to the area of the land, including atolls, is between 1 to 1 and 9 to 1.’¹⁴⁷ Straight and archipelagic baselines are constructed by reference to base points. Instead of following every indent of the low-water line, they approximately reflect relevant coastlines.

States are free to use a combination of methods when establishing their baselines, whichever method suits different conditions of their coastlines,¹⁴⁸ but the presence of certain geographical factors determines whether the use of a particular type of baseline is permitted.¹⁴⁹ Most States do take advantage of these rules and use straight baselines,

¹⁴³ *Ibid.*

¹⁴⁴ Ashley Roach and Robert W Smith (n 139) 85 and 89.

¹⁴⁵ *Qatar v Bahrain* (n 133) para 212.

¹⁴⁶ UNCLOS article 7(3).

¹⁴⁷ UNCLOS article 47(1).

¹⁴⁸ UNCLOS article 14.

¹⁴⁹ Kate Purcell (n 85) 744.

archipelagic baselines and closing lines wherever possible – sometimes even excessively, because they want their territory to extend as far seawards as possible.¹⁵⁰

2.2.2. Outer Maritime Limits

Each coastal State establishes baselines along its coastline, in accordance with articles 5-13 or 47 of UNCLOS, and the breadth of maritime zones is measured from those baselines.¹⁵¹ Internal waters are any water that falls between land and baselines;¹⁵² the territorial sea may extend seawards up to 12 nm from baselines;¹⁵³ the contiguous zone up to 24 nm from baselines;¹⁵⁴ the outer limits of the exclusive economic zone up to 200 nm from baselines;¹⁵⁵ and the continental shelf may extend up to 200 nm from baselines or further if the natural prolongation of the land territory justifies such a claim.¹⁵⁶

Outer maritime limits are generally determined by reference to distance from the coast, i.e. from baselines. However, the outer limits of the outer continental shelf are based on the natural prolongation of the continental margin where it extends beyond 200 nm from baselines.¹⁵⁷

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 where the outer edge of the continental margin does not extend up to that distance.¹⁵⁸

States will usually choose the method which results in a larger maritime zone, which means that outer continental shelf limits are established by reference to the continental margin wherever it extends beyond 200 nm. If the continental margin of a coastal State extends further from baselines than 200 nm then the State delineates its outer limits in

¹⁵⁰ Excessive maritime limits are discussed further in section 2.4.4.

¹⁵¹ UNCLOS articles 3, 8(1), 33(2), 48, 57 and 76(1).

¹⁵² UNCLOS article 8(1).

¹⁵³ UNCLOS article 3.

¹⁵⁴ UNCLOS article 33(2).

¹⁵⁵ UNCLOS article 57.

¹⁵⁶ UNCLOS article 76.

¹⁵⁷ *Libyan Arab Jamahiriya/Malta* (n 78) 33, para 34.

¹⁵⁸ UNCLOS article 76(1).

accordance with paragraphs 4 to 6 of UNCLOS article 76.¹⁵⁹ Thereafter, the coastal State submits information on the limits of its continental shelf beyond 200 nm from baselines to the Commission on the Limits of the Continental Shelf (hereinafter CLCS).¹⁶⁰ The CLCS then makes recommendations on matters related to the establishment of the outer limits of the continental shelf and limits of the shelf established by a coastal State on the basis of these recommendations are final and binding.¹⁶¹ Coastal States shall also deposit charts and relevant information, including geodetic data, to permanently describe the outer limits of their continental shelf with the Secretary-General of the United Nations, who gives due publicity to the new, stable limits.¹⁶²

‘The rights of the coastal State over the continental shelf do not depend on occupation, effective or notional, or on any express proclamation.’¹⁶³ This confirms that States have an entitlement to a continental shelf regardless of whether they have established outer limits delineating their entitlements.¹⁶⁴ Furthermore, the entitlement to a continental shelf differs from that of other maritime zones in that the outer limits of the continental shelf can be permanently described¹⁶⁵ and the outer limits beyond 200 nm become final and binding once established on the basis of recommendations of the CLCS.¹⁶⁶

2.3. Theory of Ambulatory Baselines

‘The maritime zones under coastal state jurisdiction have no legal existence in the absence of a coastal front, just as a shadow cannot exist independently of the object which creates it.’¹⁶⁷ Just like shadows, maritime limits follow fluctuating coastlines, and they cease to exist when the coastal features generating them disappear under the

¹⁵⁹ UNCLOS article 76(2).

¹⁶⁰ UNCLOS article 76(8).

¹⁶¹ UNCLOS article 76(8).

¹⁶² UNCLOS article 76(9).

¹⁶³ UNCLOS article 77(3), see also *North Sea Continental Shelf* (n 99) para 19; *Bangladesh/Myanmar* (n 25) para 409.

¹⁶⁴ *Bangladesh/Myanmar* (n 25) para 409.

¹⁶⁵ UNCLOS article 76(9).

¹⁶⁶ UNCLOS article 76(8). See further discussion in section 2.3.4.

¹⁶⁷ Geoffrey Marston, ‘The Stability of Land and Sea Boundary Delimitations’ in Gerald H Blake (n 85) 144, 154.

waves. Maritime entitlements cannot persist without land territory because ‘[t]he juridical link between the State’s territorial sovereignty and its rights to certain adjacent maritime expanses is established by means of its coast.’¹⁶⁸ States cannot claim sovereignty over low-tide elevations or submerged coastal features¹⁶⁹ and, consequently, such features cannot generate maritime entitlements.¹⁷⁰ Likewise, complete inundation of a rock, shoal, reef or an island, must result in loss of maritime entitlements.

UNCLOS is silent on the matter of fluctuation or stability of baselines and zonal limits, with the exception of UNCLOS articles 7(2), 76(8) and 76(9) and from those provisions a general rule has been derived. The theory of ambulatory baselines provides that ‘baselines and boundaries generated from them are “ambulatory” ... that is, the baselines – and therefore the boundaries – adjust themselves to a changing coastline’.¹⁷¹ UNCLOS article 7(2) provides that ‘[w]here 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.’ Similarly, States shall establish ‘final and binding’ outer limits to the continental shelf beyond 200 nm, as per UNCLOS article 76(8), and they are permanently described in accordance with UNCLOS article 76(9). This stability is subject to stringent requirements, which leaves non-conforming limits ambulatory.

The theory of ambulatory baselines is also rooted in the assumption that baselines must satisfy the conditions of UNCLOS provisions concerning the establishment of baselines on an ongoing basis since baselines that no longer meet the requirements of UNCLOS provisions become unlawful.¹⁷² Furthermore, the theory has been supported

¹⁶⁸ *Libyan Arab Jamahiriya/Malta* (n 78) 41.

¹⁶⁹ *Qatar v Bahrain* (n 133) paras 205-206; *Philippines v China* (n 26) (Merits) para 309.

¹⁷⁰ Low-tide elevations can only be used for the purpose of delineating the territorial sea if they are located within the territorial sea and for drawing straight baselines if lighthouses or similar installations which are permanently above sea level have been built on them. However, when outside the territorial sea, low-tide elevations generate no entitlements on their own. See UNCLOS articles 7(4) and 13; *Qatar v Bahrain* (n 133) paras 201, 207.

¹⁷¹ David D Caron (n 79) 2.

¹⁷² Kate Purcell (n 85) 734.

by the view that baselines should be ambulatory like the phenomenon they are based upon: the low-water line.¹⁷³ Most commentators today accept the ‘ambulatory baselines thesis’ and agree that changes to coastal geography have an impact on maritime entitlements and zonal limits.¹⁷⁴ However, State practice is not always true to theory and States are, understandably, reluctant to update their limits when it means adjusting to a receding coastline.¹⁷⁵

The normal baseline follows the low-water line, under the theory of ambulatory baselines. Furthermore, when base points are submerged, straight and archipelagic baselines drawn from those base points have to be recalibrated and new baselines established ‘on the basis of still valid exposed baselines points’.¹⁷⁶ The outer limits of maritime zones are also ambulatory as a consequence of the baselines being ambulatory because outer maritime limits are measured from baselines.¹⁷⁷ Maritime zones will not grow larger as baselines recede, their width will continuously have to meet relevant conditions of UNCLOS, but the inner and outer limits of maritime zones will shift in accordance with changes to coastal geography. Sea level rise and submergence of coastal features will cause a landward shift,¹⁷⁸ and maritime entitlements will expand further seawards with coastal accretion and the creation of new islands.¹⁷⁹

The theory of ambulatory baselines has various practical implications and these will be discussed in later sections, but first, some theoretical aspects will be analysed in more detail. In particular, it remains unclear how changes are to take place. UNCLOS article 7(2) grants a stabilizing effect to the baselines of deltaic or otherwise highly unstable coastlines but States may still have an obligation to adjust such baselines

¹⁷³ *Ibid* 738.

¹⁷⁴ See, e.g., David D Caron (n 52) 621; Lewis M Alexander (n 85) 535; Victor Prescott and Eric Bird (n 85) 279; David Freestone and John Pethick (n 85) 73; Alfred H A Soons (n 52) 216; Alain Khadem (n 85) 77-78; Moritaka Hayashi (n 85) 78; Katherine J Houghton, Athanasios T Vafeidis, Barbara Neumann and Alexander Proelß, ‘Maritime Boundaries in a Rising Sea’ (2010) 3 *Nature Geoscience*, 813, 813; Kate Purcell (n 85) 733.

¹⁷⁵ Whereas this section deals with theoretical aspects of ambulatory limits, section 2.4. addresses practical implementation of the ambulatory baselines thesis.

¹⁷⁶ David D Caron (n 79) 9.

¹⁷⁷ Continental shelf limits that are permanently described under UNCLOS articles 76(9) and 76(8) are an exception to this general rule. See section 2.2.2.

¹⁷⁸ See Rosemary Rayfuse (n 68) 282.

¹⁷⁹ See, e.g., William Hirst and D Robertson, ‘Geographic Information Systems, Charts and UNCLOS – Can They Live Together?’ (2004) 136 *Maritime Studies* 1.

when they become inconsistent with UNCLOS. Furthermore, there is no consensus on whether UNCLOS article 76(9) fixes all outer continental shelf limits or only those that are final and binding under article 76(8). These issues are explored in the following sections.

2.3.1. Fluctuations of Baselines

The ILA Baselines Committee 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 humanmade structures ... and also landward to reflect changes caused by erosion and sea level rise’.¹⁸⁰ This assumedly also applies to archipelagic baselines and straight baselines established under UNCLOS article 7(1) because such baselines are not afforded stability, temporal or permanent, in cases of coastal recession or other changes.¹⁸¹ Geographical changes to the coastline, such as coastal erosion, submergence of islands, rocks, shoals, reefs and low-tide elevations, coastal accretion, sedimentation and seismic activity, will affect the capacity to generate normal baselines, archipelagic baselines and straight baselines. Islands that were permanently above high tide when baselines were first established may become partially or completely submerged. This can lead to the reclassification from an island to a rock, a low-tide elevation (which instead of generating all maritime zones could only be used to delineate the territorial sea or for the construction of straight baselines in limited cases),¹⁸² or a fully submerged feature that no longer supports a claim to maritime entitlements.¹⁸³

The gradient of the coast is an important factor when predicting how much of an impact sea level rise will have on baselines.

¹⁸⁰ ‘Conference Report Sofia 2012’ (n 94) 31.

¹⁸¹ As is the case with baselines established under UNCLOS article 7(2).

¹⁸² UNCLOS article 13 provides that the territorial sea may be measured from baselines on low-tide elevations only if they are situated wholly or partly at a distance not exceeding the breadth of the territorial sea from the mainland or an island. Furthermore, UNCLOS article 7(4) provides that straight baselines may extend to low-tide elevations only if lighthouses or similar installations which are permanently above sea level have been built on them or where the drawing of baselines to and from such elevations has received general international recognition.

¹⁸³ Clive Schofield, ‘Shifting Limits?: Sea Level Rise and Options to Secure Maritime Jurisdictional Claims’ (2009) 4 Carbon and Climate Law Review 405, 409-410.

Where the coastline is relatively steep the impact of sea-level rise will be limited in terms of shifting the location of baselines (and thus the maritime jurisdictional limits derived from them) horizontally. Conversely, where the coastline is gently shelving, even relatively slight changes in sea level vertically can result in significant shifts in the location of the low-water line horizontally and this, in turn, can have significant impacts on the spatial extent of national maritime claims.¹⁸⁴

Consequently, States with large low-lying coasts are particularly vulnerable to baseline shifts. However, accretion and the formation of new islands through volcanic eruptions may also lead to expanding maritime claims and man-made changes may affect existing baselines, as described in section 2.4.5. below. Furthermore, States may lose their archipelagic status as sea levels rise because the ratio between land and water within legitimate baselines may cease to satisfy the requirements of UNCLOS article 47. This may also justify new claims to archipelagic status.

Caron has noted that baselines will shift, either automatically in accordance with physical changes to coastlines, or through mandatory adjustments enacted by coastal States. The outer limits of all maritime zones measured from baselines (with the exception of the outer limits of the continental shelf) will also shift either automatically or following adjustments enacted by coastal States.¹⁸⁵ There is an important difference between these two theories because one imposes an obligation on States to actively change their limits to allow for fluctuations and the other leaves no such discretionary power.

Coastal States have an obligation to display all maritime limits on charts or lists of coordinates¹⁸⁶ and even though there is no explicit obligation to submit such data, regarding the normal baseline, to the UN Secretary-General, UNCLOS article 5 clearly assumes that normal baselines are displayed on officially recognised charts. There must, therefore, exist an obligation to reflect changes to ambulatory limits on relevant charts, i.e., if the provisions apply on a continuing basis; coastal States have an obligation to display lawful maritime limits on charts or lists of coordinates at all times and fluctuations of maritime limits are reflected in such data. However, this does not

¹⁸⁴ Clive Schofield and Robin Warner, *Climate change and the oceans gauging the legal and policy currents in the Asia Pacific and beyond* (Edward Elgar Pub 2012) 136.

¹⁸⁵ David D Caron (n 79) 9.

¹⁸⁶ See section 2.4.2.1.

mean that inaction leads to stable limits because, as discussed in later sections, unlawful limits may be challenged¹⁸⁷ and courts may resort to the actual low-water line when the charted line proves inaccurate.¹⁸⁸ According to this, there is an obligation to adjust maritime limits *and* automatic adjustment if that obligation is not satisfied. State practice indicates that UNCLOS article 5 is generally understood as referring to ‘the mean low-water line along the coast’.¹⁸⁹ The mean low-water line may be established through different methods but States have long used the datum best suited to advance their maritime claims.¹⁹⁰ Today, many States rely on the lowest astronomical tide for this purpose and in such cases, the baseline reflects ‘a coastline that only rarely emerges from under the waves.’¹⁹¹ Therefore, the low-water line used for establishing normal baselines is not representative of some average position of the coastline, but, rather a low position of the coastal State’s choosing, e.g., the lowest astronomical tide.¹⁹² Any change in the low-water line along a State’s coastline can affect normal baselines. However, the mean low-water mark can change frequently without affecting a mean low-water line that has been established over a long period of time.¹⁹³ Therefore, the normal baseline may not change unless the mean low-water line is affected.

The location of baselines is determined by reference to the low-water datum but the high-water datum is crucial for the classification of coastal features. The arbitral tribunal in *Philippines v China* recently confirmed that, for the purposes of determining the status of coastal features, States could use any high-water datum ‘that reasonably corresponds to the ordinary meaning of the term “high tide” in Articles 13

¹⁸⁷ See section 2.4.1.

¹⁸⁸ See section 2.4.2.2.

¹⁸⁹ Ashley Roach and Robert W Smith (n 119) 50.

¹⁹⁰ William Michael Reisman and Gayl S Westerman (n 46) 10.

¹⁹¹ Clive Schofield and I Made Andi Arsana, ‘Imaginary islands?: options to preserve maritime jurisdictional entitlements and provide stable maritime limits in the face of coastal instability’ (2010) University of Wollongong Research Online, available at: <http://ro.uow.edu.au/cgi/viewcontent.cgi?article=2641&context=lhapapers> accessed 18 September 2017, section 1.

¹⁹² Clive Schofield, ‘Departures from the Coast: trends in the application of territorial sea baselines under the Law of the Sea Convention’ (2012) 27 (4) The International Journal of Marine and Coastal Law 723, 724.

¹⁹³ William Michael Reisman and Gayl S Westerman (n 46) 6.

and 121'.¹⁹⁴ The tribunal found 'nothing in the Convention, and no rule of customary international law, that would mandate that the status of low-tide elevations and high-tide features/islands be determined against any particular high-water datum'.¹⁹⁵ However, the ordinary meaning would commonly refer to 'the average height of all high waters at a place over a 19-year period', 'the average height of higher high water at a place over a 19-year period' or 'the average height of the high waters of spring tides'.¹⁹⁶ Furthermore, this would generally be the same datum as that used for nautical charts.¹⁹⁷

This indicates that coastal States are afforded significant discretion in choosing the datum most suitable to advance their maritime claims but the relevant timeframe for establishing the mean low-water line may be 19 years. Thus, States can have an impact on how much and how often maritime limits fluctuate. In addition to using the lowest possible low-water datum for their baselines, States can use the lowest possible high-water datum to categorise low-lying features as rocks or islands (rather than low-tide elevations) and the longest possible timespan to decelerate changes.

Straight baselines, archipelagic baselines and closing lines do not have the same direct correlation to the low-water line as normal baselines; the mean low-water line can undergo substantial changes without affecting the furthest seaward extensions, namely, the base points for closing lines, archipelagic and straight baselines. If base points are on elevated peaks they may withstand coastal erosion and sea level rise, effectively making coastlines more heavily indented but without shifting the location of straight baselines or closing lines. Yet, this only applies where the coastal features still meet the geographic requirements to be used for the purpose of drawing baselines. Base points can only be used for delineating maritime entitlements as long as they are valid, that is, located on coastal features that satisfy all relevant requirements of UNCLOS. Base points can never be based on submerged features or low-tide

¹⁹⁴ *Philippines v China* (n 26) (Merits) para 311.

¹⁹⁵ *Ibid.*

¹⁹⁶ *Ibid* para 310, referring to International Hydrographic Organization, *Hydrographic Dictionary* 5th edition (IHO 1994) 144.

¹⁹⁷ *Ibid* para 311.

elevations beyond territorial waters.¹⁹⁸ Therefore, unilateral limits, founded on invalid base points, will themselves become invalid unless they are justified on the basis of historic title; subsequent changes to coastlines will not affect the entitlement to draw closing lines at historic bays since such bays may be enclosed regardless of whether they meet the geographical requirements of UNCLOS article 10.¹⁹⁹

2.3.2. Straight Baselines on Highly Unstable Coastlines

UNCLOS article 7(2) forms an exception to the general rule that all baselines become invalid as soon as they cease to satisfy the requirements essential for their establishment because straight baselines on highly unstable coastlines can remain effective when coastlines recede, even though they no longer correlate to the low-water line.²⁰⁰ Yet, this stability may not be infinite.

UNCLOS article 7(2) provides that:

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.

The phrase ‘until changed by the coastal State in accordance with this Convention’ suggests that States, relying on straight baselines along highly unstable coastlines, may be under an obligation to adjust such baselines when coastlines change. As explained by Soons, ‘it was not the intention of this provision to grant the coastal State a discretionary power in this respect. If that were the case the reference in the provision to subsequent change by the coastal State would not have been necessary’.²⁰¹ Likewise, Churchill and Lowe have asserted that ‘article 7(2) does, of course, require a State eventually to change its baselines.’²⁰² Indeed, it seems unlikely that States would ever update straight baselines, following the regression of the low-water line, unless they were under an obligation to do so.

¹⁹⁸ See, e.g., *Aegean Sea Continental Shelf* (n 77) para 86; *Qatar v Bahrain* (n 133) para 209; *Philippines v China* (n 26) (Merits) para 309.

¹⁹⁹ See Coalter G Lathrop, ‘Baselines’ in *The Oxford Handbook of the Law of the Sea* (n 1) 69, 84.

²⁰⁰ ‘Conference Report Sofia 2012’ (n 94) 8.

²⁰¹ Soons (n 52) 220.

²⁰² Robin R Churchill and Alan V Lowe (n 136) 38.

UNCLOS article 7(3) provides that '[t]he 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.' The fact that, according to UNCLOS article 7(2), straight baselines may 'remain effective until changed by the coastal State' does not make them exempt from UNCLOS article 7(3), which applies to all straight baselines. Consequently, it must be assumed that the obligation to adjust straight baselines on highly unstable coastline arises when coastal geography undergoes significant changes and impacts the correlation between baselines and relevant coastal geography. This does not change the fact that straight baselines can remain effective, notwithstanding changes to the low-water line and submergence of base points, as long as the general direction of the coast remains unaltered and internal waters, on the landward side of the straight baselines, are sufficiently close to the land domain.

UNCLOS article 7(2) applies to coastlines that are unstable due to deltas or other natural conditions and the second half of that sentence might be interpreted so as to include instability resulting from sea level rise and other foreseeable changes. Such an approach has been promoted as a method for stabilizing otherwise ambulatory maritime limits.²⁰³ Brown has noted that the precise scope of UNCLOS article 7(2) is unclear because the provision does not settle '[w]hat degree of change over what period of time would be considered to constitute a high degree of instability'.²⁰⁴ Yet, the interpretation advanced by Brown is, arguably, too broad because UNCLOS article 7(2) was meant to be a narrow exception, designed to deal with the exceptional circumstances at the Bengal delta²⁰⁵ and not large-scale changes to coastal geography, such as the complete submergence of islands.

²⁰³ Moritaka Hayashi (n 85) 79.

²⁰⁴ 'Conference Report Washington 2014' (n 140) referring to Edward Duncan Brown (n 139) 27.

²⁰⁵ See earlier discussion in section 2.2.1. *Bangladesh v India* (n 25) para 237 referring to hearing transcript, 117, paras 1 and 16; Kate Purcell (n 85) 740.

2.3.3. Fluctuations of Outer Maritime Limits

UNCLOS does not specify whether the outer limits of maritime zones are ambulatory or stable but outer maritime limits are generally measured from baselines²⁰⁶ and if baselines are ambulatory, then the same must apply to zonal limits measured from baselines.²⁰⁷ Indeed, advocates for the theory of ambulatory baselines agree that outer limits of maritime zones, except for the permanently described limits of the continental shelf, will shift towards the mainland as baselines recede and move seawards when coastlines extend.²⁰⁸ However, outer limits of maritime zones can only fluctuate in accordance with the baselines from which they are measured. Therefore, stable baselines will produce stable outer limits; outer limits derived from highly unstable coastlines will not recede with subsequent regression of the low-water line if measured from straight baselines established under UNCLOS article 7(2) – not until such baselines are adjusted by the coastal State.

Islands and rocks are entitled to a territorial sea but if they completely disappear beneath the ocean's surface the entitlement is lost.²⁰⁹ A low-tide elevation may be used as the baseline for measuring the breadth of the territorial sea if it is situated wholly or partly at a distance not exceeding the breadth of the territorial sea from the mainland or an island.²¹⁰ However, a low-tide elevation cannot generate entitlement to a territorial sea if it is wholly situated at a distance exceeding the breadth of the territorial sea from the mainland or an island. Consequently, the territorial sea should not be measured from a low-tide elevation if the mainland or a neighbouring island has receded so that the distance between it and the low-tide elevation has increased to more than 12 nm or if the low-tide elevation has been completely inundated. This means that the territorial sea will have to be recalibrated under such circumstances in order to comply with UNCLOS.

²⁰⁶ UNCLOS articles 3, 33(2), 57 and 76(1).

²⁰⁷ See, e.g., Louis B Sohn and John E Noyes, *Cases and Materials on the Law of the Sea* (Transnational 2004) 235; Alfred H A Soons (n 52) 216-18.

²⁰⁸ See, e.g., David D Caron (n 79) 9; Alfred H A Soons (n 52) 216-218; Rosemary Rayfuse (n 120) 3.

²⁰⁹ Alfred H A Soons (n 52) 216-217.

²¹⁰ UNCLOS article 13.

Furthermore, islands that become uninhabitable or incapable of sustaining economic life because of inundation will no longer generate an exclusive economic zone or a continental shelf²¹¹ and if an island becomes completely submerged it also loses all entitlements to a territorial sea.²¹² States can also lose the capacity to qualify as archipelagic States and, consequently, the right to rely on straight archipelagic baselines. Finally, even where baselines and/or outer continental shelf limits remain stable, changes to coastal geography will influence either the width of internal waters or the continental shelf.

It should be noted that outer limits of maritime zones are often drawn by application of the ‘envelope of arcs’ method whereby only the outermost points of the baseline contribute to the construction of the outer limits.²¹³ Consequently, physical changes to the low-water line may affect baselines but not, or only partially, affect the outer limits measured from those baselines. For example, normal baselines will always change to reflect fluctuations in the low-water line, however, if the base points stretching furthest seawards remain above water they can still be relied upon to generate maritime zones and the outer limits will continually be measured from those base points.

2.3.4. Stability of the Outer Limits of the Continental Shelf

UNCLOS article 76(8) provides that ‘[i]nformation on the limits of the continental shelf beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured shall be submitted by the coastal State to the [CLCS]’. In turn, the Commission makes recommendations relating to the establishment of the outer continental shelf limits and ‘limits of the shelf established by a coastal State on the basis of these recommendations shall be final and binding.’²¹⁴ Furthermore, coastal States ‘shall’, according to UNCLOS article 76(9), ‘deposit with the Secretary-General of the United Nations charts and relevant information, including geodetic data,

²¹¹ UNCLOS article 121(3).

²¹² Alfred H A Soons (n 52) 216-217.

²¹³ Christopher Carleton and Clive Schofield, ‘Developments in the Technical Determination of Maritime Space: Charts, Datums, Baselines, Maritime Zones and Limits’ (2001) 3 (3) International Boundaries Research Unit Maritime Briefing 1, 62.

²¹⁴ UNCLOS article 76(8).

permanently describing the outer limits of its continental shelf’ and the Secretary-General gives ‘due publicity thereto’.

The outer limits of the continental shelf were not described as final and binding under the 1958 Convention on the Continental Shelf. On the contrary, article 1 provided that the outer limits of the continental shelf should extend seawards to a depth of 200 m or to greater depths, as far as exploitation of resources was possible. As noted by Schofield, this suggests that the outer limits of the continental shelf were ambulatory before the entry into force of UNCLOS, because advances in technology that allowed exploitation of resources at greater depths could justify moving the outer limits of the continental shelf further seawards.²¹⁵ Consequently, the final and binding nature of the outer limits of the continental shelf is a relatively new addition to the law of the sea.

In principle, the same rule applies to the continental shelf as other maritime zones. ‘A coastal State’s entitlement to the continental shelf exists by the sole fact that the basis of entitlement, namely, sovereignty over the land territory, is present.’²¹⁶ Therefore, changes to coastal geography have an impact on the entitlement to a continental shelf; inundated former islands cease to generate continental shelf entitlements once they become rocks that cannot sustain human habitation or economic life of their own,²¹⁷ low-tide elevations²¹⁸ or completely submerged features. Likewise, newly formed islands can generate entitlements to continental shelves like other land territory and, consequently, justify an extension of maritime limits. Nonetheless, despite changes in maritime entitlements, continental shelf limits remain final, binding and permanent once they have been established under UNCLOS articles 76(8) and 76(9).

The stability afforded to the outer limits of the continental shelf constitutes an exception to the general principle that outer limits of maritime zones fluctuate in accordance with baselines.²¹⁹ However, it should be highlighted that the stability of outer continental shelf limits has no impact on baselines; they remain ambulatory,

²¹⁵ Clive Schofield (n 92) 44.

²¹⁶ *Bangladesh/Myanmar* (n 25) para 409.

²¹⁷ UNCLOS article 121(3).

²¹⁸ UNCLOS article 13.

²¹⁹ David D Caron (n 79) 9.

which means that continental shelf zones grow larger as coastlines recede, potentially larger than permissible under UNCLOS article 76(5).²²⁰

The fact that the continental shelf is subject to a different regime from that of other maritime zones can be explained by reference to important differences between the rights in question and the manner in which they are determined. The continental shelf affords sovereign rights to explore and exploit the resources of the continental margin,²²¹ while other maritime zones afford entitlements to the water-column above the seabed. Furthermore, sovereign rights over the continental shelf are inherent, they do not depend on occupation, effective or notional, or on any express proclamation.²²² As explained by the ICJ in the *North Sea Continental Shelf* cases:

What confers the ipso jure title which international law attributes to the coastal State in respect of its Continental shelf is the fact, that submarine areas concerned may be deemed to be actually part of the territory over which the coastal State already has dominion, in the sense that, although covered with water, they are a prolongation or continuation of that territory, an extension of it under the sea.²²³

This continuation of land territory is much less susceptible to change than the low-water line, from which maritime limits are generally measured. Outer limits of the continental shelf beyond 200 nm are dependent upon the stable continental margin and they afford entitlement to immobile resources. On the contrary, living resources of the water column migrate and they can be heavily affected by changing environmental circumstances. It seems reasonable to have ambulatory limits demarcate the rights to ambulatory resources and fixed limits surrounding the more territorial, inherent rights to submarine areas. This may justify the discrepancy between the stable limits of the continental shelf and the fluctuating limits of other maritime zones. The argument is less persuasive when it comes to continental shelf limits that are measured from fluctuating baselines. However, such limits are ambulatory if UNCLOS article 76(9) is read in conjunction with article 76(8).

²²⁰ UNCLOS Article 76(5) provides that the outer continental shelf limits ‘either shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured or shall not exceed 100 nautical miles from the 2,500 metre isobath, which is a line connecting the depth of 2,500 metres’.

²²¹ UNCLOS article 77(4).

²²² UNCLOS article 77(3).

²²³ *North Sea Continental Shelf* (n 99) 31.

The procedure described in UNCLOS article 76(8), of submitting data to the CLCS and establishing final and binding continental shelf limits, is only available to States with a natural prolongation extending beyond 200 nm from baselines. However, UNCLOS article 76(9), allowing States to permanently describe their outer continental shelf limits, does not explicitly distinguish between States with a natural prolongation of more or less than 200 nm. If the two provisions are read together, they seem to indicate that continental shelf limits may only be permanently described, under UNCLOS article 76(9), once the limits have become final and binding on the basis of CLCS recommendations. If so, then the permanence is only available for continental shelf limits that extend beyond 200 nm from baselines and only after the CLCS has issued its recommendations. Yet, if UNCLOS article 76(9) is taken alone, it suggests that all outer limits of the continental shelf may be permanently described because, unlike article 76(8), it is not expressly limited to continental shelf limits extending beyond 200 nm from baselines.²²⁴

If UNCLOS article 76(9) applies to all outer continental shelf limits, States may be able to permanently describe their continental shelf limits at 200 nm from baselines, without any involvement of the CLCS, and such limits would not be affected by subsequent changes of the baseline. However, UNCLOS article 84 obligates States to deposit copies of charts, describing boundaries and limits to the continental shelf, with the UN Secretary-General and this provision makes no mention of permanently describing the limits. It may be argued that this obligation, which is synonymous with that concerning the exclusive economic zone,²²⁵ applies to continental shelf limits in general, while UNCLOS article 76(9) deals specifically with continental shelf limits beyond 200 nm. Otherwise, UNCLOS article 84 seems redundant. The ILA Baselines Committee has not reached a unanimous decision in this regard: while the majority has concluded that UNCLOS article 76(9) applies only to continental shelf limits beyond

²²⁴ See Alex G Oude Elferink, 'Article 76 of the LOSC on the Definition of the Continental Shelf: Questions concerning its Interpretation from a Legal Perspective' (2006) 21 (3) *The International Journal of Marine and Coastal Law* 269, 282.

²²⁵ See UNCLOS article 75.

200 nm, some members of the Committee have argued that all continental shelf limits can be permanently described.²²⁶

The stability afforded to the outer limits of the continental shelf is logical if it only applies to outer limits that are measured from the natural prolongation of the continental margin, instead of baselines, because the continental margin is much less susceptible to changes resulting from sea level rise, coastal erosion and extreme weather events. Yet, continental shelf limits beyond 200 nm may also be established on the basis of changing baselines if the outer limits reach the 350 nm limit²²⁷ and such limits are final and binding once established on the basis of recommendations from the CLCS.²²⁸ However, the main rationale behind the stability afforded to continental shelf limits applies equally to all continental shelf limits, at and beyond 200 nm from baselines: the regime of the continental shelf affords sovereign rights to explore and exploit the resources of the seabed and subsoil²²⁹ and the investments made in relation to these resources require permanence and stability.²³⁰ As noted by Soons, this supports the view that all continental shelf limits might be permanently described.²³¹

Continental shelf limits may fluctuate until they are permanently described²³² and States cannot establish final and binding continental shelf limits without the recommendations of the CLCS.²³³ Therefore, there is a matter of urgency in acquiring CLCS recommendations, particularly where coastlines are receding. Article 4 of UNCLOS Annex II provides that States that wish to establish their continental shelf limits on the basis of CLCS recommendations must submit relevant data to the

²²⁶ ILA Committee on the Outer Continental Shelf 'Conference Report Toronto 2006' (ILA 2006) 16. For arguments in favour of the broader interpretation of UNCLOS Article 76(9) see: Alfred H A Soons (n 52) 217 and Rainer Lagoni and Alexander Proelß, 'Festlandssockel und ausschließliche Wirtschaftszone' in Wolfgang Graf Vitzthum (ed) *Handbuch des Seerechts* (C H Beck 2006) 161, 195.

²²⁷ UNCLOS article 76(5).

²²⁸ UNCLOS article 76(8).

²²⁹ UNCLOS article 77(4).

²³⁰ See *Bangladesh v India* (n 25) para 218.

²³¹ See Soons (n 52) 217.

²³² This is unlikely in the case of continental shelf limits that are determined solely by reference to the continental margin but outer limits at 200 nm from baselines fluctuate like other limits that are linked to the ambulatory baseline.

²³³ UNCLOS article 76(8), see also *Maritime Delimitation in the Indian Ocean (Somalia v Kenya)* (Preliminary Objections) [2017] ICJ Rep 1, para 66 and *Questions of the Delimitation of the Continental Shelf Between Nicaragua and Colombia Beyond 200 Nautical Miles from the Nicaraguan Coast (Nicaragua v Colombia)* (Preliminary Objections) [2016] ICJ Rep 1, paras 107-108.

Commission ‘as soon as possible but in any case, within 10 years of the entry into force of this Convention for that State.’ The earliest deadline for submitting relevant data to the CLCS was, therefore, 16 November 2004, ten years after the entry into force of UNCLOS for the first member States. However, this process proved more arduous than originally expected (particularly difficult for some developing States)²³⁴ and the deadline was pushed back to 13 May 2009 – ten years after the adoption of the Scientific and Technical Guidelines of the CLCS.²³⁵ This meant that the earliest date would be 13 May 2009 and that for those States that became bound by UNCLOS after 13 May 1999, the deadline would still be ten years after the entry into force of the Convention for that State.²³⁶ Due to these complications, States Parties also concluded that preliminary submissions would suffice to halt the 10 year deadline for submissions.²³⁷

Article 4 of UNCLOS Annex II is not clear in regard to whether there are any consequences for non-compliance with the 10-year deadline. Oude Elferink has argued that States might either be barred from submitting their data to the CLCS after their deadline expires or that the CLCS would not be obligated to consider any submissions after that time.²³⁸ However, this view is not widely held and according to Judge Heiðar, ‘there is no sanction for failure to make a submission within [the 10-year] period’.²³⁹

At the time of writing, 69 States have submitted information regarding their continental shelves beyond 200 nm to the CLCS and the Commission has produced 29

²³⁴ See *Somalia v Kenya* (n 233) para 17.

²³⁵ Scientific and Technical Guidelines of the Commission on the Limits of the Continental Shelf, (adopted on 13 May 1999) UN Doc CLCS/11.

²³⁶ UNCLOS: Meeting of States Parties ‘Decision regarding the date of commencement of the ten-year period for making submissions to the Commission on the Limits of the Continental Shelf set out in article 4 of Annex II to the United Nations Convention on the Law of the Sea’ (29 May 2001) UN Doc SPLOS/72.

²³⁷ See UNCLOS: Meeting of States Parties ‘Decision regarding the workload of the Commission on the Limits of the Continental Shelf and the ability of States, particularly developing States, to fulfil the requirements of article 4 of Annex II to the Convention, as well as the decision contained in SPLOS/72, paragraph (a)’ (20 June 2008) UN Doc SPLOS/183.

²³⁸ Alex G Oude Elferink (n 224) 279.

²³⁹ Tómas H Heiðar, ‘Legal Aspects of Continental Shelf Limits’, in Myron H Nordquist, John Norton Moore and Tómas H Heiðar (eds) *Legal and Scientific Aspects of Continental Shelf Limits* (Martinus Nijhoff 2004) 19, 30.

recommendations.²⁴⁰ The CLCS's rate of considering submissions is around two years and it currently has 53 submissions pending.²⁴¹ The CLCS is expected to need a couple of decades to go through all the submissions lodged with it so far.²⁴² Thus, it remains to be seen whether all the States that have made submissions to the CLCS will ever acquire stable outer limits to continental shelves extending more than 200 nm from baselines. In the meantime, some islands that currently generate an entitlement to a continental shelf may be reduced to rocks, incapable of sustaining human habitation or economic life, low-tide elevations or even be completely submerged.

It should also be noted that some States do not have sufficient resources to collect the necessary data and make submissions to the CLCS in order to establish permanent continental shelf limits.²⁴³ Furthermore, it seems that non-Parties may be precluded from submitting their data to the CLCS and establishing final and binding limits on that basis. This is not explicitly dealt with in UNCLOS but in Judge Heiðar's opinion non-Parties have no such right under UNCLOS or customary international law.²⁴⁴ One of the arguments supporting this conclusion is that UNCLOS article 82, concerning revenue sharing and contributions to the Authority, only applies to member States. If these obligations, relating to the outer continental shelf beyond 200 nm, are only carried by member States then it makes sense that they are also the only ones that can acquire final and binding limits to their continental shelf beyond 200 nm.

The ICJ has explained that States party to UNCLOS are obligated to submit relevant data to the CLCS 'whereas the making of a recommendation, following examination of that information, is a prerogative of the CLCS'.²⁴⁵ Non-member States certainly have no obligation to make submissions to the CLCS but this does not preclude the possibility of them submitting their data to the CLCS. However, they would always be

²⁴⁰ DOALOS 'Submissions, through the Secretary-General of the United Nations, to the Commission on the Limits of the Continental Shelf, pursuant to article 76, paragraph 8, of the United Nations Convention on the Law of the Sea of 10 December 1982' (UN 2017) available at:

http://www.un.org/depts/los/clcs_new/commission_submissions.htm accessed 14 September 2017.

²⁴¹ *Ibid.*

²⁴² Alex G Oude Elferink, 'The Continental Shelf in the Polar Regions: Cold War or Black-Letter Law?' (2009) 40 *Netherlands Yearbook of International Law* 121, 133.

²⁴³ *Ibid* 139.

²⁴⁴ Tómas H Heiðar (n 239) 31.

²⁴⁵ *Questions of the Delimitation of the Continental Shelf Between Nicaragua and Colombia Beyond 200 Nautical Miles from the Nicaraguan Coast* (n 233) para 107.

at the Commission's mercy and probably be placed at the end of a long line. Consequently, not all States will be able to acquire final and binding outer continental shelf limits; the much-desired stability cannot be guaranteed, even for those States that have a continental margin extending beyond 200 nm from baselines.

2.4. Ambulatory Limits in Practice

Baselines and maritime limits (with the exception of straight baselines at unstable coastlines and permanently established continental shelf limits) are ambulatory and should, therefore, fluctuate with changing coastal geography. The foregoing section sets out the theoretical basis for this assertion and the following sections will show how theory is reflected in practice. States may sometimes be reluctant to update maritime limits if it means reducing the extent of their exclusive national jurisdiction. However, maritime limits may be unenforceable if inconsistent with UNCLOS and States seem to have an obligation to continuously bring their maritime limits into conformity with UNCLOS. As explained by the arbitral tribunal in *Philippines v China*, '[a]ccession to the Convention reflects a commitment to bring incompatible claims into alignment with its provisions, and its continued operation necessarily calls for compromise by those States with prior claims in excess of the Convention's limits.'²⁴⁶

The fluctuation of maritime limits has implications, not only for the coastal States whose maritime zones are directly affected but also for third States, even landlocked States, because fluctuations of outer maritime limits can affect the extent of the seabed and subsoil, which are subject to the regimes of the high seas and the international seabed area. Maritime limits can fluctuate within otherwise stable, bilateral boundaries and the regression of outer maritime limits can make maritime boundaries redundant. This may occur when maritime entitlements no longer extend as far seawards as the boundary and the strip of sea or seabed surrounding the boundary has turned into high seas or the international seabed area.²⁴⁷ Bilateral boundaries might also remain in

²⁴⁶ *Philippines v China* (n 26) (Merits) para 262.

²⁴⁷ See more about potential changes to maritime boundaries in Julia Lisztwan, 'Stability of maritime boundary agreements' (2012) 37 *Yale Journal of International Law* 153, 176-177.

force between relevant States without interfering with the rights of third States.²⁴⁸ If so, they would represent lines that neither State could extend its claim beyond - even if altered entitlements might otherwise justify such an extension. Furthermore, fundamental changes to maritime limits can justify termination or revision of maritime boundaries, as explained in Chapter IV.²⁴⁹

Ambulatory baselines will continuously alter the median and equidistance lines, which are equally distant from States with adjacent or opposite coastlines, because these are determined by reference to the baselines.²⁵⁰ UNCLOS article 15 provides that the territorial sea boundary between adjacent and opposite States follows a median line unless and until otherwise agreed or where 'it is necessary by reason of historic title or other special circumstances to delimit the territorial seas of the two States in a way which is at variance therewith'. Therefore, UNCLOS article 15 establishes a provisional boundary which fluctuates with changes to coastal geography, until agreed upon or justified by reference to special circumstances or historic title.

This was evidenced by the *Guyana v Suriname* arbitration in 2007 concerning delimitation of territorial sea entitlements extending from a highly unstable coastline. The tribunal found that the 3 nm territorial sea boundary had been established by reference to the N10°E line and this was based on the assumption that 'all of the Corentyne River was to be Suriname's territory and that the 10° line provided appropriate access through Suriname's territorial sea to the western channel of the Corentyne River'.²⁵¹ Both States extended their territorial sea limits from 3 to 12 nm in 1977 and 1978 but without explicitly settling whether the boundary would continue to follow the 10° line agreed upon for the 3 nm boundary.²⁵² No boundary agreement was ratified in relation to the 12 nm territorial sea boundary, but according to Guyana,

²⁴⁸ Maritime boundaries are only opposable to third States if compatible with relevant UNCLOS provisions or accepted through acquiescences. See *Philippines v China* (n 26) (Merits) para 261; *Chagos Marine Protected Area (Mauritius v United Kingdom)* (2015) XXXI RIAA 359, para 451. Bilateral boundaries cannot prevent third States from exercising their rights under UNCLOS to the high seas and the international seabed area.

²⁴⁹ See particularly section 4.4.

²⁵⁰ See detailed discussion about UNCLOS article 15 and median/equidistance lines in section 3.2.1.

²⁵¹ *Award in the arbitration regarding the delimitation of the maritime boundary between Guyana and Suriname (Guyana v Suriname)* (2007) XXX RIAA 1, para 306.

²⁵² *Ibid* para 310.

both States relied on the equidistance line along the N34°E azimuth, beyond the established 3 nm limit.²⁵³ Guyana took the position that the territorial sea boundary should be based on this ‘historical equidistance line’.²⁵⁴ However, the equidistance line had shifted because relevant coasts were made up of mud banks ‘constantly subjected to erosion and accretion’.²⁵⁵

Suriname sought to rely on the settled practice of the States in relation to the 10° line, allegedly amounting to a ‘perfected instrument’, but the tribunal held that no legal obligations had been created beyond the 3 nm limit.²⁵⁶ The tribunal concluded that the territorial sea boundary should follow the N10°E line from relevant coasts seawards to 3 nm and, thereafter, intersect the equidistance line as it was at the time of delimitation,²⁵⁷ and not the ‘historical equidistance line’. Therefore, the boundary line had shifted, even though the equidistance method was still being employed, because the relevant coastal geography had changed. This case demonstrates that the extent of maritime entitlements changes in accordance with changes to the coastline.

Although most commentators assume that baselines will fluctuate in accordance with geographical changes, they do not all agree on whether the theory of ambulatory baselines entails an obligation to adjust baselines to changed circumstances, so as to conform to UNCLOS provisions on a continuing basis, or an automatic shift, led by the fluctuating low-water line. Caron has suggested that baselines may automatically shift in accordance with changing coastlines; that they will adjust themselves.²⁵⁸ Hayashi assumes an obligation to adjust baselines and outer limits of maritime zones to geographic changes²⁵⁹ but Alexander refers to the possibility that affected States might challenge official baselines.²⁶⁰ These assertions may all be correct because, as mentioned in section 2.3.1., States have an obligation to adjust their limits but if they fail to do so, their limits may be otherwise adjusted, following a challenge by another State. As the following sections demonstrate, States can challenge excessive or

²⁵³ *Ibid* para 290.

²⁵⁴ *Ibid* para 288.

²⁵⁵ *Ibid* para 133.

²⁵⁶ *Ibid* para 312, referring to *Sovereignty over Certain Frontier Land (Belgium v Netherlands)* (Judgment) [1959] ICJ Rep 209, 229.

²⁵⁷ *Guyana v Suriname* (n 251) para 325.

²⁵⁸ David D Caron (n 79) 2.

²⁵⁹ Moritaka Hayashi (n 85) 78.

²⁶⁰ Lewis M Alexander (n 85) 535.

unlawful maritime limits and such challenges can affect their validity; baselines may shift in accordance with changing coastlines when courts and tribunals reject outdated charts and, instead, rely on the actual low-water line; and States have an obligation to portray certain maritime limits, thus, continued reliance upon such limits entails an obligation of adjustment.

The following sections will delve deeper into these issues, exploring in practical terms, first, the legal possibilities of challenging excessive or unlawful maritime limits; second, the identification of lawful baselines; third, the process of adjusting baselines and maritime limits; fourth, the opposability of permanent continental shelf limits; and, finally, the impact of man-made changes.

2.4.1. Challenges and Judicial Review of Maritime Limits

Maritime limits cannot be opposable to other States unless they are consistent with international law.²⁶¹ ‘Although it is true that the act of delimitation [of baselines and outer limits] is necessarily a unilateral act, because only the coastal State is competent to undertake it, the validity of the delimitation with regard to other States depends upon international law.’²⁶² Therefore, States can challenge baselines and maritime limits on the grounds that they are inconsistent with the applicable international law²⁶³ and UNCLOS States Parties are bound to ‘settle any dispute between them concerning the interpretation or application of [UNCLOS] by peaceful means’.²⁶⁴

Courts and tribunals can have jurisdiction over disputes concerning maritime limits on the basis of special agreements,²⁶⁵ an optional clause declaration regarding compulsory jurisdiction of the ICJ²⁶⁶ or compromissory clauses.²⁶⁷ Furthermore, when ratifying UNCLOS States accept the compulsory dispute settlement system embodied

²⁶¹ *Anglo-Norwegian Fisheries* (n 43) 132 (addressing the unilateral act of declaring straight baselines: the same issues apply with respect to normal baselines).

²⁶² *Ibid* 132.

²⁶³ See, e.g., *Fisheries Jurisdiction (Federal Republic of Germany v Iceland)* (Merits) [1974] ICJ Rep 175, para 59 and *Qatar v Bahrain* (n 133) para 212.

²⁶⁴ See UNCLOS articles 279 and 280.

²⁶⁵ Disputes can be submitted for arbitration on the basis of agreements and to the ICJ, as per article 36(1) of the ICJ Statute.

²⁶⁶ Article 36(2) of the ICJ Statute.

²⁶⁷ Article 36(1) of the ICJ Statute.

therein and if they fail to settle their disputes through peaceful means, the disputes may be submitted to courts or tribunals in accordance with UNCLOS article 287. The competent court or tribunal has ‘jurisdiction over any dispute concerning the interpretation or application’ of UNCLOS, as long as the dispute is submitted to it in accordance with relevant provisions of UNCLOS Part XV.²⁶⁸ ‘In the event of a dispute as to whether a court or tribunal has jurisdiction, the matter shall be settled by decision of that court or tribunal.’²⁶⁹ These are the general rules governing compulsory dispute settlement under UNCLOS but they do not apply without exceptions. UNCLOS article 297 limits the scope of these obligations and UNCLOS article 298 allows States the option to exclude certain disputes from compulsory dispute settlement, for example, disputes concerning maritime boundary delimitation.²⁷⁰ The validity of established maritime limits can be challenged and brought before courts or tribunals in accordance with UNCLOS article 287(1) as long as they are concerned with the interpretation or application of UNCLOS provisions.²⁷¹ This was confirmed in *Philippines v China* where the Philippines ‘challenged the existence and extent of the maritime entitlements claimed by China in the South China Sea’.²⁷² The tribunal found that it had jurisdiction to determine the lawfulness of China’s ‘nine dash line’ and the capacity of specific features to generate maritime entitlements.²⁷³ The tribunal’s decision in *Philippines v China* is particularly noteworthy in this context because China had activated all of the optional exceptions available under UNCLOS article 298, excluding maritime boundary delimitations (among other things) from compulsory settlement. Nonetheless, the tribunal held that ‘a dispute concerning the existence of an entitlement to maritime zones is distinct from a dispute concerning the delimitation of those zones in an area where the entitlements of parties overlap’.²⁷⁴ In support of its decision, the tribunal explained that the ‘premise of the Philippines’ Submission is not that the Tribunal will delimit any overlapping entitlements in order

²⁶⁸ UNCLOS article 288(1).

²⁶⁹ UNCLOS article 288(4).

²⁷⁰ UNCLOS article 298(1)(a)(i).

²⁷¹ See, e.g., *Qatar v Bahrain* (n 133) para 212.

²⁷² *Philippines v China* (n 26271) (Award on Jurisdiction and Admissibility) para 157.

²⁷³ *Philippines v China* (n 26) (Merits) paras 278 and 692.

²⁷⁴ *Philippines v China* (n 26) (Award on Jurisdiction and Admissibility) para 156.

to declare that these features form part of the exclusive economic zone and continental shelf of the Philippines, but rather that no overlapping entitlements can exist'.²⁷⁵

'While all sea boundary delimitations will concern entitlements, the converse is not the case: all disputes over entitlements do not concern delimitation.'²⁷⁶ The *Philippines v China* dispute was concerned with the existence of entitlement and there can be no boundary delimitation in the absence of overlapping entitlements. The tribunal concluded that UNCLOS article 298(1)(a)(i) would not prevent it from exercising jurisdiction because it could 'not reach so far as to capture a dispute over the existence of entitlements that may – or may not – ultimately require delimitation.'²⁷⁷ However, the tribunal also noted that it would not have jurisdiction to determine whether specific features fell within national jurisdiction of either State in areas where there were overlapping entitlements.²⁷⁸

The *Philippines v China* award confirms that courts and tribunals always have jurisdiction to determine the lawfulness of baselines and maritime limits and the existence of maritime entitlements for UNCLOS Parties, barring exceptions such as *res judicata*. This applies even when all the optional exceptions of UNCLOS article 298 have been invoked, as long as the relief sought is not, in effect, a delimitation of a maritime boundary.

However, baselines and maritime limits cannot be reviewed in judicial proceedings unless interested States challenge them and bring their disputes to courts and tribunals. Therefore, States' reactions to excessive or unlawful maritime limits are crucial.²⁷⁹ After all, there are no other mechanisms for surveillance or enforcement of UNCLOS provisions concerning baselines and maritime limits. States can continuously rely upon unchallenged limits, even if they are inconsistent with international law, and other States may be seen as acquiescing to maritime limits of questionable lawfulness if they raise no objections to their use.²⁸⁰ Consequently, they may be later estopped from

²⁷⁵ *Ibid* para 402.

²⁷⁶ *Philippines v China* (n 26) (Merits) para 204.

²⁷⁷ *Ibid*.

²⁷⁸ See *Ibid* para 393 and *Philippines v China* (n 26) (Award on Jurisdiction and Admissibility) para 402.

²⁷⁹ Ashley Roach and Robert W Smith (n 119) 65.

²⁸⁰ Julia Lisztwan (n 247) 165.

challenging such limits if all the requirements of estoppel are satisfied.²⁸¹ As explained by the ICJ in *Gulf of Maine*, ‘acquiescence is equivalent to tacit recognition manifested by unilateral conduct which the other party may interpret as consent’.²⁸²

Churchill and Lowe have clearly articulated the effect that acquiescence may have on maritime limits:

Where a baseline is clearly contrary to international law, it will not be valid, certainly in respect of States which have objected to it, though a State which has accepted the baseline (for example in a boundary treaty) might be stopped from later denying its validity. In border-line cases—for example, where there is doubt as to whether a State’s straight baseline system conforms to all the criteria laid down in customary and conventional law—the attitude of other States in acquiescing in or objecting to the baseline is likely to prove crucial in determining its validity.²⁸³

The ICJ’s decision in the *Black Sea* case suggests that challenges should generally be raised shortly after submission of data to the UN Secretary-General, or earlier, to avoid acquiescence. In this case the Court refused to accept a base point on the seaward end of Sulina dyke²⁸⁴ but the decision had no effect on the validity of Romania’s baselines, which gave that same base point full effect. This was partly due to the fact that Romania had submitted its data, designating a base point on Sulina dyke, to the UN Secretary-General, in accordance with UNCLOS article 16(2), and Ukraine had raised no objections.²⁸⁵ This suggests that acquiescence upon due publicity in accordance with UNCLOS article 16(2) can cement the lawfulness of maritime limits.

However, there is an important difference between excessive maritime limits that are never consistent with applicable law and maritime limits that are lawfully established but become unlawful due to subsequent environmental changes. States can acquiesce to excessive maritime limits and, thus, become estopped from later challenges. Yet, acquiescence to lawful maritime limits will be of much less significance for the simple

²⁸¹ For a general discussion on estoppel, see *Chagos Marine Protected Area* (n 248) paras 436–438.

²⁸² *Delimitation of the Maritime Boundary in the Gulf of Maine Area (Canada/United States of America)* (Judgment) [1984] ICJ Rep 246, para 130.

²⁸³ Robin R Churchill and Alan V Lowe, *The Law of the Sea*, 2nd revised edition (Manchester University Press 1988) 46–47.

²⁸⁴ *Maritime Delimitation in the Black Sea (Romania v Ukraine)* (Judgment) [2009] ICJ Rep 61, para 217.

²⁸⁵ *Ibid* 107.

reason that States have no reason to object to lawful maritime limits. Just as new facts of decisive nature can justify the revision of judicial decisions²⁸⁶ and a fundamental change of circumstances can justify termination of certain maritime boundaries,²⁸⁷ significant changes to coastal geography should justify new challenges, i.e., if the basis for acquiescence is affected. Therefore, States must have the opportunity to challenge maritime limits once they become inconsistent with the applicable law, even if they were tacitly accepted before the change of circumstance.

Courts and tribunals generally determine the lawfulness of maritime limits by reference to the law applicable and circumstances existing when the dispute is settled, i.e., at the critical date.²⁸⁸ In this context it matters not whether the limits were legitimate when first established if they have ceased to meet those requirements. The arbitral tribunal indicated this in *Philippines v China* when it explained that even if the disputed limits were ever lawful under an alleged regime of historic rights, those rights had been superseded by the accession to and entry into force of UNCLOS.²⁸⁹ This further supports the contention that maritime limits can become unenforceable when circumstances change, even if they were consistent with the applicable law when first established.

The environmental changes discussed in Chapter I will have an impact on coastlines worldwide as coastal configuration undergoes significant changes and sea levels rise. The low-water mark along coastlines will change and this will affect the lawfulness of established normal baselines. Moreover, coastal features will be eroded and submerged, which will have an impact on the base points used for straight and archipelagic baselines. Consequently, baselines and maritime limits that are established in good faith and in accordance with UNCLOS may become inconsistent with international law when circumstances change, and this may justify new challenges to existing baselines and base points.²⁹⁰

²⁸⁶ Article 61(1) of the ICJ Statute.

²⁸⁷ See section 4.4.

²⁸⁸ See *Bangladesh v India* (n 25) para 212.

²⁸⁹ *Philippines v China* (n 26) (Merits) para 262.

²⁹⁰ See, e.g., *Bangladesh v India* (n 25) para 224: The parties ‘presented opposing views on the accuracy of the maps and charts produced, due in particular to the rapid erosion of the coastline’.

States generally have a legal interest in making sure that maritime limits of other States satisfy the requirements of UNCLOS. Even if they have no overlapping claims to maritime zones, they may have legitimate interests relating to claims encroaching upon the high seas or the international seabed area as these detract from the common rights of the international community.²⁹¹ The ILA Baselines Committee recently identified ‘a total of 82 protests or other forms of objection’ to straight baselines. These challenges have been submitted by 21 States and the EU and lodged against 39 States, covering almost 50% of all straight baseline claims.²⁹² The United States has been very active in objecting to the unlawful use of baselines worldwide, not only in areas where it has overlapping entitlements. This has instigated discussions on the use of straight baselines, particularly in the Asia-Pacific region.²⁹³ The official views of the United States on the law of baselines have been published and similar efforts have been made to persuade other States to adjust their baselines to international law.²⁹⁴

When the ICJ first confirmed the legitimacy of the straight baselines system, in the *Anglo-Norwegian Fisheries* case in 1951, it clearly stipulated that this method was only permissible ‘where the coast of the mainland does not constitute, as it does in practically all other countries [apart from Norway], a clear dividing line between land and sea’.²⁹⁵ In more recent cases, the Court has confirmed that straight baselines should only be employed on the rare occasions where all necessary requirements are satisfied²⁹⁶ and that the method of drawing straight baselines ‘must be applied restrictively’.²⁹⁷ Straight baselines should not only ‘be used sparingly’ but also ‘drawn conservatively to reflect the one rationale for their use that is consistent with the Convention, namely, the simplification and rationalization of the measurement of the territorial sea and other maritime zones off highly irregular coasts.’²⁹⁸ In addition, UNCLOS article 7(6) provides that ‘[t]he system of straight baselines may not be

²⁹¹ See, e.g., *Chagos Marine Protected Area* (n 248) para 153; *Anglo-Norwegian Fisheries* (n 43) 125.

²⁹² ILA Baselines Committee, ‘Johannesburg Conference’ (ILA 2016) 17, para 65.

²⁹³ Ashley Roach and Robert W Smith (n 119) 48.

²⁹⁴ *Ibid.*

²⁹⁵ *Anglo-Norwegian Fisheries* (n 43) 127.

²⁹⁶ See e.g. *Qatar v Bahrain* (n 133) para 212.

²⁹⁷ *Ibid.*

²⁹⁸ Ashley Roach and Robert W Smith (n 119) 49; William Michael Reisman and Gayl S Westerman (n 46) xv.

applied by a State in such a manner as to cut off the territorial sea of another State from the high seas or an exclusive economic zone’.

Nonetheless, several States have made straight baselines claims that clearly contradict the stipulations of the Court and UNCLOS article 7. For example, ‘almost all of the states of the Asia-Pacific region have adopted straight baseline systems that are inconsistent with international law’, these have been contested vigorously and, ‘[y]et the trend continues’.²⁹⁹ However, if successfully challenged, such baselines are invalid vis-à-vis other States, as demonstrated by the *Philippines v China* case.³⁰⁰ Furthermore, when constructing maritime boundaries courts and tribunals can disregard baselines that do not meet relevant requirements of UNCLOS and select more appropriate base points in their stead.³⁰¹

The *Tunisia/Libya* case concerned the validity of straight baselines established by Tunisia.³⁰² The ICJ ruled on the method of delimitation but submitted that it was ‘not making any ruling as to the validity or opposability to Libya of the straight baselines.’³⁰³ In *Libya/Malta* the ICJ was faced with questions concerning the validity of base points along straight baselines as it had to delimit the continental shelf between the two States and Malta proposed a line measured from the low-water line of Libya but straight baselines along the Maltese coastline. The Court did not declare the straight baselines invalid as such but rejected the use of an uninhabited island off the coast of Malta as a base point for delimitation, even though this island had been used as a base point for the purpose of drawing Malta’s straight baselines.³⁰⁴ The Court explained that ‘the baselines, as determined by coastal States, are not per se identical with the points chosen on a coast to make it possible to calculate the area of continental shelf appertaining to that State.’³⁰⁵ Therefore, the rejection, by courts and tribunals, of base points for the purpose of boundary delimitation does not necessarily signify the

²⁹⁹ Ashley Roach and Robert W Smith (n 119) 66.

³⁰⁰ See, e.g., *Philippines v China* (n 26) (Merits) paras 278 and 1203 B.(2).

³⁰¹ See, e.g., *Bangladesh/Myanmar* (n 25) para 264; *Romania v Ukraine* (n 284) para 137; *Bangladesh v India* (n 25) para 264. Further discussion in section 3.4.1.

³⁰² *Continental Shelf (Tunisia/Libyan Arab Jamahiriya)* (Judgment) [1982] ICJ Rep 18.

³⁰³ *Ibid* para 104.

³⁰⁴ *Libyan Arab Jamahiriya/Malta* (n 78) 48, para 64.

³⁰⁵ *Ibid*.

invalidity of related baselines or derived maritime limits. Indeed, baselines may be lawful even if they are not an appropriate basis for boundary delimitation.

The Court elaborated on this in the *Black Sea* case, where it stated that the identification of base points for the purpose of drawing baselines, on the one hand, and for delimiting boundaries, on the other, were two different things.³⁰⁶ This difference lies, essentially, in that the drawing of baselines is a unilateral act (although it always has an international aspect)³⁰⁷ while the delimitation of boundaries involves two or more States and in such cases, ‘the Court should not base itself solely on the choice of base points made by one of those Parties’.³⁰⁸

The International Tribunal for the Law of the Sea (hereinafter ITLOS or the Tribunal) also explained, in the *Bangladesh/Myanmar* case, that maritime boundaries could be delimited in ‘the absence of established outer limits’ and despite a ‘[l]ack of agreement on baselines’.³⁰⁹ Furthermore, in *Bangladesh v India*, the parties separated the issues of baselines and delimitation as they agreed not to rely on the straight baselines used for their unilateral limits when proposing base points for the boundary delimitation.³¹⁰ The Tribunal condoned this decision as it noted that while reliance upon low-tide elevations might be feasible for the purpose of maritime delineation, it might not be appropriate to rely on the same base points when delimiting a maritime boundary.³¹¹

This arguably supports the assertion that the fixing of a bilateral boundary does not stabilize the maritime limits therein. Baselines and outer maritime limits continue to fluctuate even after a maritime boundary has been agreed upon because the legitimacy of those unilateral limits continues to be dependent upon the applicable international law.

The arbitral award in *Eritrea/Yemen* had an impact on the baselines as the tribunal asserted that a reef which is not above water at low-tide cannot be used as a base point

³⁰⁶ *Romania v Ukraine* (n 284) para 137.

³⁰⁷ See *Anglo-Norwegian Fisheries* (n 43) 132.

³⁰⁸ *Romania v Ukraine* (n 284) para 137.

³⁰⁹ *Bangladesh/Myanmar* (n 25) para 370.

³¹⁰ *Bangladesh v India* (n 25) para 250.

³¹¹ *Ibid* para 260.

for the purpose of UNCLOS article 6.³¹² The reef in question, Negileh Rock, failed to meet the requirements of UNCLOS article 7(4) and could, therefore, not be used to establish straight baselines.³¹³ This effectively meant that Eritrea's claim to straight baselines could no longer extend to Negileh Rock and, consequently, had to be adjusted to conform to relevant UNCLOS provisions. Finally, in *Qatar v Bahrain* the ICJ concluded that the straight baselines established by Qatar were not justified and that certain low-tide elevations should be disregarded when delimiting maritime zones between the two States.³¹⁴

These examples demonstrate that baselines are not necessarily unlawful if specific points on the baselines are inappropriate for the delimitation of bilateral boundaries. However, courts and tribunals can render existing limits unopposable by stating that coastal features are incapable of generating maritime entitlements or that officially recognised charts do not accurately reflect the low-water mark. Furthermore, States can acquiesce to maritime limits of questionable lawfulness; baselines may acquire validity once registered with the UN Secretary-General, as evidenced by the *Black Sea* case, particularly if no objections are raised. Yet, maritime limits may generally be challenged once circumstances arise that make them inconsistent with the applicable law.

2.4.2. Identifying the Legal Baseline and Derived Limits

States can certainly challenge baselines and derived limits of coastal States, as explained in the foregoing section. Courts and tribunals can confirm the invalidity of baselines in contentious cases and States can ignore unopposable limits.³¹⁵ But how do courts and tribunals determine the location of the legal baseline? States are obligated to display straight and archipelagic baselines and outer maritime limits on

³¹² *Second stage of the proceedings between Eritrea and Yemen (Maritime Delimitation) (Eritrea/Yemen)* (1999) XXII RIAA 335, para 143.

³¹³ *Ibid* para 146.

³¹⁴ *Qatar v Bahrain* (n 133) 103-4, para 215.

³¹⁵ This is supported by current practice of several States defying China's Nine-Dash Line in the South China Sea. See, e.g., Joe Cochrane 'Indonesia, Long on Sidelines, Starts to Confront China's Territorial Claims' (New York Times 2017) available at:

<https://www.nytimes.com/2017/09/10/world/asia/indonesia-south-china-sea-military-buildup.html>
accessed 24 September 2017.

charts and to give them due publicity, as explained in section 2.4.2.1. However, these charts are not always determinative for the legally valid baseline or derived maritime limits because charted limits may be ignored where they are inconsistent with actual circumstances.³¹⁶

As previously mentioned, States generally have an obligation to display maritime limits and they must update relevant charts or lists of coordinates to reflect coastline changes.³¹⁷ States, consequently, have some discretion as to how and when their maritime limits are updated. However, Courts and tribunals seem to revert to the actual low-water mark if charted lines are inconsistent with international law and in such cases, maritime limits fluctuate without adjustment by the coastal State. In other words, the charted line takes precedence, but the actual low-water line (which fluctuates automatically) can be decisive if maritime limits are not accurately displayed.

2.4.2.1. Obligation to Display Maritime Limits

Territorial sea boundaries, straight baselines, closing lines, lines around ports and roadsteads and limits derived therefrom ‘shall be shown on charts of a scale or scales adequate for ascertaining their position. Alternatively, a list of geographical coordinates of points, specifying the geodetic datum, may be substituted.’³¹⁸ Coastal States must ‘give due publicity to such charts or lists of geographical coordinates and shall deposit a copy of each chart or list with the Secretary-General of the United Nations’.³¹⁹ Synonymous provisions can be found in regard to the scale of charts and due publication of archipelagic baselines,³²⁰ and the boundaries and outer limits of the exclusive economic zone³²¹ and the continental shelf.³²² Finally, as explained in section 2.3.4., the outer limits of the continental shelf shall be permanently described by submission of relevant data to the UN Secretary-General³²³ and this permanence

³¹⁶ See section 2.4.2.2.

³¹⁷ See section 2.3.1.

³¹⁸ UNCLOS article 16(1).

³¹⁹ UNCLOS article 16(2).

³²⁰ UNCLOS articles 47(8) and 47(9).

³²¹ UNCLOS article 75.

³²² UNCLOS article 84.

³²³ UNCLOS article 76(9).

seems to be afforded only to outer limits beyond 200 nm. This conclusion is based on the assumption that UNCLOS article 76(9) is an exception from the general rule enshrined in UNCLOS article 84 and it reflects the majority view of the ILA Baselines Committee.³²⁴

UNCLOS article 16, concerning the publication of maritime limits, explicitly refers to UNCLOS articles 7, 9, 10, 12 and 15, dealing with straight baselines, roadsteads, closing lines of bays and rivers, and delimitation of the territorial sea, but not to normal baselines. Furthermore, no obligation exists to display the outer limits of the territorial sea on official charts. UNCLOS article 5, governing the delineation of normal baselines, assumes that such baselines are portrayed on ‘large-scale charts officially recognised by the coastal State’ and the reference to charts of a scale or scales adequate for ascertaining their position might be a more precise description of the same type of chart as referred to in UNCLOS article 5. If so, then the only difference between the charts needed for normal baselines and other limits is that UNCLOS article 16 obligates States to give due publicity to charts and submit a copy to the UN Secretary-General, while no such duty exists in relation to normal baselines.

UNCLOS article 5 states that ‘[e]xcept where otherwise provided in this Convention, the normal baseline for measuring the breadth of the territorial sea is the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State’. As noted by the ILA Baselines Committee, two readings of the provision seem to be available: ‘(1) the normal baseline is the low-water line depicted on the charts officially recognized by the coastal State; or (2) the normal baseline is the low-water line along the coast at the vertical, or tidal, datum indicated on the charts officially recognized by the coastal State.’³²⁵ Therefore, it is left unclear whether the charted low-water line is determinative or the actual low-water line, which should be indicated on officially recognised charts.³²⁶

UNCLOS article 5 clearly assumes that normal baselines are displayed on officially recognised charts, although there is no obligation to deposit such charts with the UN

³²⁴ ‘Conference Report Toronto 2006’ (n 226) 16.

³²⁵ ‘Conference Report Sofia 2012’ (n 94) 3.

³²⁶ This is discussed further in the following section.

Secretary-General. The large-scale charts that States rely on for determining their low-water line are not necessarily their own; they can officially recognise charts that are published by foreign hydrographic services, e.g., the UK Hydrographic Office Admiralty Charts or the US Defence Mapping Agency/National Geospatial-Intelligence Agency Digital Nautical Charts.

Many States fail to submit relevant data to the UN Secretary-General. Some States adopt legislation concerning their limits but according to the UN Division for Ocean Affairs and the Law of the Sea (hereinafter DOALOS), such acts do not suffice to satisfy obligations arising under UNCLOS articles 16(2), 47(9), 75(2), 76(9) and 84(2): ‘The mere existence or adoption of legislation or the conclusion of a maritime boundary delimitation treaty registered with the Secretariat, even if they contain charts or lists of coordinates, cannot be interpreted as an act of deposit with the Secretary-General under the Convention.’³²⁷

The following States have yet to submit the necessary data to the UN Secretary-General regarding their straight baselines: Albania, Algeria, Angola, Barbados, Bulgaria, Cameroon, Canada, Dem. Rep. Congo, Denmark, Djibouti, Dominica, Egypt, Estonia, Guinea, Guinea-Bissau, Haiti, Iceland, Republic of Korea, Malaysia, Malta, Mauritania, Morocco, Mozambique, Oman, Portugal, Senegal, South Africa, Sudan, Sweden, Thailand, Ukraine. Furthermore, the Maldives, Marshall Islands, Solomon Islands, Cape Verde, Mauritius, Antigua and Barbuda, Grenada and the Dominican Republic have not deposited charts or lists of geographic data regarding their archipelagic baselines.³²⁸ In *Nicaragua v Colombia*, the ICJ referred to Nicaragua’s failure to notify the Secretary-General of the location of base points, in accordance with UNCLOS article 16(2) and found that, for that reason, the relevant area would have to be ‘determined only on an approximate basis’.³²⁹ Therefore, it may

³²⁷ DOALOS ‘Deposit of charts and/or lists of geographical coordinates and DOALOS Geographic Information System (GIS)’ (United Nations 2013) available at: http://www.un.org/depts/los/doalos_activities/about_doalos.htm#GIS accessed 20 September 2017.

³²⁸ *Ibid.*

³²⁹ *Territorial and Maritime Dispute (Nicaragua v Colombia)* (Judgment) [2012] ICJ Rep 624, para 159.

be concluded that failure to deposit charts and coordinates with the Secretary-General affects the right to rely upon certain maritime limits.

DOALOS notifies all States of the location of maritime limits, in accordance with the charts and geographical coordinates deposited with the UN Secretary-General,³³⁰ and this publicity is important for opposability of the limits because it enables seafarers and other interested parties ‘to ascertain the position of the artificial baseline.’³³¹ More importantly, as discussed in the following section, charted lines may actually be constitutive of the legal limits and, therefore, uncharted limits may simply be invalid. However, failure to properly display maritime limits on charts does not necessarily mean that States have no opposable limits. States are not required to actively claim normal baselines or publicise them in any way; they exist by default.³³² Failure to deposit required data with the UN Secretary-General thus calls for reliance upon the normal baseline, as established by reference to the actual low-water line displayed on officially recognised charts.

The following section examines how the legal baseline is determined, i.e., whether the charted or actual low-water line takes precedence and how the relevant line has been identified in contentious cases.

2.4.2.2. Charted vs Actual Low-Water Line

UNCLOS article 5 can be read in two distinct ways; it provides that the normal baseline is either the low-water line as displayed on officially recognised charts (making charts the legal documents that determine the position of the legal baseline) or the actual low-water line along relevant coasts, which should be displayed on officially recognised charts.³³³ In *Eritrea/Yemen*, the arbitral tribunal used the low-water line depicted on officially recognised charts to identify the median line boundary.³³⁴ Similarly, the ILC seemed to assume, in its 1956 commentary on the draft article on normal baselines, that the low-water mark, as displayed on large-scale charts, would be determinative

³³⁰ DOALOS (n 327).

³³¹ ‘Conference Report Sofia 2012’ (n 94) 8-9.

³³² Robert Beckman and Clive Schofield (n 104) 5.

³³³ ‘Conference Report Sofia 2012’ (n 94) 3.

³³⁴ *Eritrea/Yemen* (n 312) para 40.

for the legal normal baseline – not the actual low-water line. This is deduced from the fact that, while acknowledging the autonomy States have in determining the low-water mark for normal baselines, the Commission indicated that charted lines should be reasonably representative of actual low-water lines.³³⁵ An unreasonable shift of a charted line would carry no weight unless the chart constituted the legal baseline and, therefore, the ILC's remarks suggest that the charted line is determinative. However, the ILC seems to have assumed that States would not abuse the discretion given to them in charting their own baselines and that, arguably, supports the conclusion that unlawful or outdated limits should be adjusted.

Kapoor and Kerr are of the view that 'once the normal baseline has been established and cartographically depicted on large scale charts, it remains in place until such time as it is redrafted, irrespective of whether or not the actual low-water line has physically moved'.³³⁶ '[N]ormal baselines change every time a new edition of a large scale nautical chart is published', according to Elema and Dorst from the Hydrographic Service of the Royal Netherlands Navy.³³⁷ Similarly, Carleton and Schofield assert that:

if the coastline has altered, but it has not been published, the legal baseline is that on the published chart. Where this is the case, the normal baseline will only come to reflect the physical change in the coastline if a fresh survey is undertaken and the chart correspondingly updated.³³⁸

This appears to be a minority view in scholarly writing.³³⁹ However, it is the conclusion of this thesis that the charted line is the first point of reference for determining the legally valid baseline. Chartist lines can become inconsistent with international law and if coastal States neglect their obligation to adjust maritime limits, official charts may be abandoned, which involves resort to the actual low-water line.

³³⁵ 'Report of the International Law Commission on the Work of its Eighth Session' (n 47) 267.

³³⁶ 'Conference Report Sofia 2012' (n 94) 23 referring to D C Kapoor and Adam J Kerr, *A Guide to Maritime Boundary Delimitation* (Carswell 1986) 31.

³³⁷ Leendert Dorst and Ina Elema, 'The Effects of Changing Baselines on the Limits of the Netherlands in the North Sea' Conference Paper for ABLOS, 2008. Available at: <https://www.researchgate.net/publication/265167053> accessed 20 April 2018.

³³⁸ Christopher Carleton and Clive Schofield (n 213) 24-25.

³³⁹ 'Conference Report Sofia 2012' (n 94) 24.

A majority of the scholarship in this area maintains that charts are not constitutive for the location of the normal baseline.³⁴⁰ According to O’Connell, ‘[t]here is no doubt that changes in the shoreline, however and how quickly effected, result in changes in the baseline from which the territorial sea is measured’.³⁴¹ Similarly, Reed asserts that ‘[i]t is the actual low-water line and not the charted line that is to be used as the baseline under the Convention’.³⁴² According to these authors, all changes to the low-water line affect the legal normal baseline regardless of whether ‘large-scale charts officially recognised by the coastal State’ have been updated, as per UNCLOS article 5.

The actual low-water line can differ quite significantly from a charted line and, according to technical experts assembled by the UN, ‘[t]he low-water line along the coast is a fact irrespective of its representation on charts. The territorial sea exists even if no particular low-water line has been selected or if no charts have been officially recognized.’³⁴³ Therefore, it seems that maritime entitlements do not depend on the publication of charted lines, in the absence of valid charts, they can be determined by reference to the default baseline: the actual low-water line.

UNCLOS article 7(2) ‘distinguishes between the actual low-water line and the representational version of that low-water line’³⁴⁴ and it provides that the ‘representational version’ remains effective until changed by the coastal State. This is of course an exception from the general rule, as explained in section 2.3.2., which indicates that, in general, the ‘representational version’ should correspond to the actual low-water line.³⁴⁵ Therefore, the representational charted line must be determinative for straight baselines on highly unstable coastlines even when there is a discrepancy between actual circumstances and the line depicted on charts or lists in accordance with UNCLOS article 16. Yet, charted baselines should always reflect legitimate baselines and be drawn in a reasonable manner. States may be obligated to adjust

³⁴⁰ *Ibid* 22.

³⁴¹ Daniel P O’Connell, *The International Law of the Sea*, vol II (Clarendon Press 1984) 682.

³⁴² ‘Conference Report Sofia 2012’ (n 94) 23 referring to Michael W Reed, *Shore and Sea Boundaries*, volume 3 (United States Government Printing Office 2000) 182-185.

³⁴³ ‘Conference Report Sofia 2012’ (n 94) 23 referring to UN Office of Ocean Affairs and Law of the Sea, *Baselines: An Examination of Relevant Provisions of the United Nations Convention on the Law of the Sea* (UN 1989).

³⁴⁴ ‘Conference Report Sofia 2012’ (n 94) 8.

³⁴⁵ *Ibid*.

outdated baselines when circumstances have changed – this is discussed in the following section – but before going any further, the hierarchy between representational lines and actual circumstances will be considered because this can be paramount for determining legal baselines in the absence of updated data.

The ILC assumed that the low-water line would be depicted on large-scale officially recognised charts in a reasonable manner,³⁴⁶ i.e., that the charts would not depart from the actual low-water line to an appreciable extent. However, changing coastlines may result in significant discrepancies between the actual and charted low-water line, discrepancies that were not envisioned by the ILC in 1956. Therefore, it seems logical to look at officially recognised charts as a first point of reference.³⁴⁷ However, when published charts do not provide a reasonable representation of the actual low-water line, maritime limits drawn from such baselines may be challenged before international courts or tribunals; even minor deviations from the actual low-water line have been considered in domestic courts.³⁴⁸ In such cases, the actual low-water line must be used to identify the legal normal baseline. Consequently, the second point of reference has to be the actual low-water line, which becomes determinative of the legal normal baseline if the charted line departs from the low-water mark to an appreciable extent. Indeed, as noted by Oude Elferink, a coastal State may in principle be ‘entitled to rely on the low-water line as depicted on its nautical charts but this may not be the case if an area is not regularly surveyed and the relevant nautical chart is outdated’.³⁴⁹

Fitzmaurice explained in 1956 that ‘[a] straight baseline system had to be specially established, and unless and until that had been done, a country was deemed to operate the low-water-mark system’.³⁵⁰ The same logic arguably applies to all baselines and derived limits – unless legitimately established and continuously reasonable, States may be ‘deemed to operate the low-water mark system’. Therefore, if normal, straight or archipelagic baselines are challenged and officially recognised charts have become inconsistent with reality, reliance upon the actual low-water line will be justified. Yet,

³⁴⁶ ‘Report of the International Law Commission on the Work of its Eighth Session’ (n 47) 267.

³⁴⁷ See ‘Conference Report Sofia 2012’ (n 94) 3.

³⁴⁸ Victor Prescott and Clive Schofield, *The Maritime Political Boundaries of the World*, 2nd edition (Martinus Nijhoff 2005) 101 referring to Michael W Reed (n 342) 180-182.

³⁴⁹ ‘Conference Report Sofia 2012’ (n 94) 22, footnote 145.

³⁵⁰ ‘Summary Record of the 335th meeting’ (n 132), 9.

it may prove difficult to ascertain the location of the actual low-water line if it is not accurately displayed on officially recognised charts. National legislation relating to baselines and maritime limits sometimes refers to the use of particular charts as evidence for ascertaining the location of baselines and other maritime limits.³⁵¹ However, courts and tribunals generally have the authority to seek further evidence to establish the facts of a case³⁵² and States have had to produce further evidence, relating to their baselines, in several contentious cases.³⁵³

In *Bangladesh v India*, the parties ‘presented opposing views on the accuracy of the maps and charts produced, due in particular to the rapid erosion of the coastline’.³⁵⁴ The tribunal used the most recent large-scale charts to take changing circumstances into account³⁵⁵ and various materials were used for determining the relevant coastal geography. ‘Published territorial sea baselines were not considered’ but, instead, resort was had to ‘official nautical charts provided by the Parties’.³⁵⁶ The tribunal made use of a particular software to determine the actual low-water line ‘[w]here charts were not available’³⁵⁷ and computation of the relevant area also relied upon information and data that was ‘abstracted from the Executive Summaries deposited with the CLCS’.³⁵⁸

The accuracy of official charts was also disputed in *Guyana v Suriname*. The coastlines between Guyana and Suriname are largely made up of unstable mud banks, causing fluctuations of the relevant coastline.³⁵⁹ The boundary proposed by Suriname relied on a base point located on Vissers Bank, according to the officially recognised Netherlands Hydrographic Office Chart 2218 (2005 ed). However, Guyana based its claims on several different charts³⁶⁰ and challenged base point S14 on the basis that it

³⁵¹ ‘Conference Report Sofia 2012’ (n 94) 17: ‘These provisions appear in the legislation of the following states: Barbados, Brunei, Grenada, Namibia, New Zealand, Saint Kitts and Nevis, Saint Lucia, Samoa, Seychelles, Solomon Islands, Sri Lanka, Tuvalu, and United Kingdom.’

³⁵² See PCA Arbitration Rules 2012, article 27(3); Rules of the ICJ, article 62; Rules of ITLOS, article 77.

³⁵³ See, e.g., *Guyana v Suriname* (n 251) para. 396; *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) para 38.

³⁵⁴ *Bangladesh v India* (n 25) para 224.

³⁵⁵ *Ibid* para 224.

³⁵⁶ *Ibid* Appendix, para 30.

³⁵⁷ *Ibid*.

³⁵⁸ *Ibid* Appendix, para 31.

³⁵⁹ *Guyana v Suriname* (n 251) para 133.

³⁶⁰ *Ibid* para 240.

did not reflect the actual low-water line.³⁶¹ Guyana argued that '[t]he chart in question, NL 2218, was produced by the Netherlands Hydrographic Office (with the assistance of the Maritime Authority Suriname) in June 2005 after the proceedings in this arbitration had commenced'.³⁶² Furthermore, it asserted that another chart prepared by Dutch authorities 'disprov[ed] the existence of a low-tide coast at Vissers Bank where Suriname placed its purported basepoint S14'.³⁶³

The tribunal admitted further evidence from both States to help it determine whether base point S14 reflected the actual low-water line but ultimately accepted the base point, noting that it was 'not convinced that the depiction of the low-water line on chart NL 2218, a chart recognised as official by Suriname, is inaccurate'.³⁶⁴ The tribunal did not discuss its evaluation of the charts presented to it in any detail and seemed to reject Guyana's challenge simply because it was 'not convinced' that the disputed chart was 'inaccurate'. This may suggest a presumption in favour of officially recognised charts or a high standard of proof.

The ICJ did not rely on officially recognised charts in *Nicaragua v Colombia* but instead it asked both States to produce new data to help the Court identify the actual location of the low-water line, particularly to determine 'whether or not there exist at Quitasueño any naturally formed areas of land which are above water at high tide'.³⁶⁵ Colombia presented two reports that were published in 2008 by the Colombian Navy³⁶⁶ but Nicaragua opposed their use, partly because they 'were prepared specially for the purposes of the present proceedings'.³⁶⁷ Nicaragua relied on various charts, surveys and other material spanning decades, e.g., 'a survey prepared in 1937 by an official of the Colombian Foreign Ministry'³⁶⁸ and a recent chart prepared by the UK Hydrographic Office.³⁶⁹ The Court explained that:

³⁶¹ *Ibid* para 242; Reply of Guyana, vol I, 1 April 2006, para 3.19.

³⁶² *Guyana v Suriname* (n 251) para 395 referring to Reply of Guyana, vol I, 1 April 2006, paras 1.10, 3.19; Transcript, 170-172; Suriname Rejoinder, Annex SR43.

³⁶³ *Guyana v Suriname* (n 251) para 395 referring to Reply of Guyana, vol I, 1 April 2006, para. 3.19.

³⁶⁴ *Ibid* para. 396.

³⁶⁵ *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) para 35.

³⁶⁶ *Ibid* para 29.

³⁶⁷ *Ibid* para 30.

³⁶⁸ *Ibid* para 28.

³⁶⁹ *Ibid* para 31.

It does not consider that surveys conducted many years (in some cases many decades) before the present proceedings are relevant in resolving that issue. Nor does the Court consider that the charts on which Nicaragua relies have much probative value with regard to that issue. Those charts were prepared in order to show dangers to shipping at Quitasueño, not to distinguish between those features which were just above, and those which were just below, water at high tide.³⁷⁰

The Court went on to confirm that the relevant evidence would have to be ‘the contemporary evidence’ and that the most important contemporary evidence was the report ‘based upon actual observations of conditions at Quitasueño and scientific evaluation of those conditions’.³⁷¹ The Court emphasised the importance of having sufficient evidence to determine the status of coastal features³⁷² and before making its final decision, it reviewed charts, reports, tidal models, photographic evidence, ‘information and analysis submitted by both Parties regarding tidal variation’³⁷³ – clearly going beyond officially recognised charts and data submitted to the Secretary-General.

It may be concluded that even though the charted line is a starting point for determining the location of the normal baseline and derived maritime entitlements, courts and tribunals can seek further clarifications to accurately determine the location of the actual low-water line, particularly if any doubt is cast on the accuracy of charted lines. Furthermore, if straight and archipelagic baselines are not duly publicised as required by UNCLOS, courts and tribunals may, instead, rely on the low-water line. Therefore, the primacy afforded to the charted line depends on its consistency with the applicable law.

2.4.3. Adjustment of Maritime Limits

The previous section concludes that the charted line takes precedence over the actual low-water line unless it departs, to an appreciable extent, from the reality of relevant coastal geography, in which case courts and tribunals may go beyond official charts to identify the actual low-water line and determine legal entitlements on that basis.

³⁷⁰ *Ibid* para 35.

³⁷¹ *Ibid* para 36.

³⁷² *Ibid*.

³⁷³ *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) para 38.

Furthermore, failure to submit necessary data to the UN Secretary-General in accordance with UNCLOS may affect the validity of maritime limits.³⁷⁴ Therefore, even if States would be entitled to straight or archipelagic baselines, failure to claim such baselines in accordance with procedural and substantive requirements of UNCLOS may justify challenges from other States and render them unopposable. When challenged, courts and tribunals may determine maritime entitlements by reference to the default normal baseline. Consequently, States should be careful to ensure that their baselines comply with UNCLOS. This applies not only when first establishing baselines but also in monitoring for any change in circumstances, which might invalidate existing baselines. In such cases, States must submit new data to the UN Secretary-General to maintain the legitimacy of straight and archipelagic baselines and derived outer limits.

UNCLOS obligations relating to the construction and publication of maritime limits assumedly apply on an ongoing basis, as those relating to baselines in general.³⁷⁵ Therefore, States must have an obligation to update their baselines and derived maritime limits and they have a clear incentive to adjust relevant charts since that may ensure opposable rights. Baselines and maritime limits should be updated as soon as baselines cease to meet the requirements of relevant UNCLOS provisions, i.e., when the low-water line has shifted³⁷⁶ or base points are submerged.³⁷⁷ This can ensure opposability of the limits.

Schofield suggests that the establishment of normal baselines could take effect by the recognition of a chart displaying baselines.³⁷⁸ The ‘Admiralty Notices to Mariners’ are large-scale charts published and updated by the UK Hydrographic Office every week and they are officially recognised by many States. These charts and accompanying publications contain corrections, alterations and amendments for the coastal geography of the whole world. They are updated on a weekly basis and they reflect

³⁷⁴ *Ibid* para 159.

³⁷⁵ See Kate Purcell (n 85) 734.

³⁷⁶ Where normal baselines are concerned.

³⁷⁷ In the case of straight baselines that do not follow the low-water line.

³⁷⁸ Clive Schofield, ‘Holding back the waves? sea level rise and maritime claims’ in Oliver C Ruppel, Christian Roschmann and Katharina Ruppel Schlichting (eds) *Climate Change: International Law and Global Governance: Legal Responses and Global Responsibility*, vol I (Nomos 2013) 593, 605.

changes to baselines and outer limits of maritime zones.³⁷⁹ They could effectively update the normal baseline and derived limits for all States that officially recognise them because their scope extends far beyond the UK and British maritime limits.

States often rely on national legislation and related charts to prove the location of their baselines³⁸⁰ and such legislation may be adjusted to changed circumstances. Charts attached to domestic legislation can qualify as ‘large-scale charts officially recognised by the coastal State’, and, consequently, be relevant for identifying and adjusting the legal baseline. However, domestic legislation does not satisfy the requirement of submitting data to the UN Secretary-General.³⁸¹ Therefore, even if potentially useful for ascertaining the location of the normal baseline, domestic legislation does not suffice to make maritime limits opposable to other States and is, consequently, not proper adjustment of the legal baseline or derived maritime limits.

There are recorded examples of States updating their maritime limits to more accurately reflect geographic circumstances. For example, Australia has updated its charts and coordinates at least five times³⁸² and Indonesia has updated its archipelagic baselines.³⁸³ One of the changes made to the Indonesian baselines was a division of one long baseline into three segments to satisfy requirements of UNCLOS article 47(2). This caused a minimal landward shift of the baseline, reducing the extent of archipelagic waters.³⁸⁴ However, it is clearly better for any State to suffer a slight landward shift than to lose archipelagic baselines altogether, which might happen if outdated baselines were challenged and a court or tribunal reverted back to the actual low-water line. Therefore, adjustments, such as those implemented by Indonesia, are

³⁷⁹ The weekly updates are available here: ‘Admiralty Notices to Mariners’ (UK Hydrographic Office 2017) available at: <http://www.ukho.gov.uk/ProductsandServices/MaritimeSafety/Pages/NMPublic.aspx> accessed 24 September 2017.

³⁸⁰ ‘Conference Report Sofia 2012’ (n 94) 17.

³⁸¹ DOALOS (n 327).

³⁸² Commonwealth of Australia (Geoscience Australia), ‘Australia’s Maritime Zones Edition 5’ (Australian Government 2015) available at: <http://www.ga.gov.au/metadatagateway/metadata/record/81859/> accessed 16 September 2017.

³⁸³ See Act no 6/1996 on Indonesian Waters; Ashley Roach, ‘Archipelagic States Practice: Update on Article 47 in Committee’s final first report Archipelagic States Practice’ (ILA Baselines Committee Draft, 2017) para 78.

³⁸⁴ Ashley Roach (n 383) para 78, referring to Clive Schofield and I Made Andi Arsana ‘Closing the loop: Indonesia’s revised archipelagic baselines system’ (2009) 1 (2) Australian Journal of Maritime and Ocean Affairs 57, 61-62.

advisable, and to ensure that they are opposable to other States, updated charts and lists of coordinates should always be deposited with the Secretary-General in accordance with UNCLOS articles 16, 47, 75 and 84.

2.4.4. Opposability of Permanent Continental Shelf Limits

Continental shelf limits beyond 200 nm are final and binding if established on the basis of CLCS recommendations, as per UNCLOS article 76(8), and continental shelf limits are permanently fixed when relevant data is submitted to the UN Secretary-General in accordance with UNCLOS article 76(9). On one reading these two paragraphs suggest the same thing: that subject to the requirements of each paragraph, continental shelf limits become opposable to other States notwithstanding subsequent changes to the underlying maritime entitlements. However, there is an arguable case that the two references to finality and permanence have different legal implications. As explained in section 2.3.4., it seems that UNCLOS articles 76(8) and 76(9) must be read together, i.e., that continental shelf limits cannot be permanently fixed unless they first become final and binding. This begs the question whether States can acquire final and binding continental shelf limits without submitting the relevant data to the UN Secretary-General.

Oude Elferink maintains that the outer limits of the continental shelf become final and binding at the time when a coastal State deposits relevant data with the UN Secretary-General permanently describing the outer limits of its continental shelf.³⁸⁵ According to Oude Elferink, '[t]his deposit signifies the completion of the process of establishment of the outer limits of the outer continental shelf by the coastal state under article 76'.³⁸⁶ If so, then the phrase 'final and binding', in UNCLOS article 76(8), has limited independent significance as no finality is achieved until the limits are permanently described, as per UNCLOS article 76(9). This, arguably, supports the view that paragraphs 8 and 9 must be read together: the outer continental shelf limits do become final and binding but only when the procedural requirements of paragraph 9 are satisfied.

³⁸⁵ Alex G Oude Elferink (n 224) 282.

³⁸⁶ *Ibid.*

As an objective technical body, the CLCS serves an important role in confirming the location of the outer limits beyond 200 nm and, thereby, confirming the opposability of the outer continental shelf limits. ITLOS has confirmed that the significance of the outer continental shelf limits being final and binding is that it enhances ‘opposability with regard to other States’.³⁸⁷ ITLOS also noted, in *Bangladesh/Myanmar*, that the continental shelf limits beyond 200 nm are opposable to third States, despite being based on unilateral acts, as long as they are compliant with UNCLOS article 76 and the recommendations of the CLCS.³⁸⁸ This confirms the importance of satisfying all requirements of UNCLOS article 76 when establishing permanent and opposable continental shelf limits.

Permanent outer continental shelf limits are not only opposable to other States but, arguably, also binding upon the coastal State. In *Questions of the Delimitation of the Continental Shelf Between Nicaragua and Colombia Beyond 200 Nautical Miles from the Nicaraguan Coast*, Nicaragua argued that CLCS recommendations were ‘not binding on the submitting State’.³⁸⁹ Furthermore, Nicaragua asserted that States could make new or revised submissions if they disagreed with the recommendations of the CLCS.³⁹⁰ The ICJ did not confirm this but, instead, explained that ‘[w]hen the CLCS addresses its recommendations on questions concerning the outer limits of its continental shelf to coastal States, those States establish, on that basis, limits which, pursuant to paragraph 8 of Article 76 of UNCLOS, are “final and binding” upon the States parties to that instrument’.³⁹¹ This suggests that outer continental shelf limits are, indeed, final and binding on the coastal State, once established on the basis of recommendations of the CLCS.

The ILA Baselines Committee has echoed this interpretation, stating that coastal States cannot change final and binding continental shelf limits until they are successfully challenged by other States.³⁹² Consequently, coastal States may not have the option to make revisions to their continental shelf limits, once they have been established on the

³⁸⁷ *Bangladesh/Myanmar* (n 25) para 407.

³⁸⁸ *Ibid.*

³⁸⁹ *Questions of the Delimitation of the Continental Shelf Between Nicaragua and Colombia Beyond 200 Nautical Miles from the Nicaraguan Coast* (n 233) para 102.

³⁹⁰ *Ibid.*

³⁹¹ *Ibid* para 108.

³⁹² ‘Conference Report Toronto 2006’ (n 226) 18.

basis of CLCS recommendations in accordance with UNCLOS articles 76(8) and 76(9).

2.4.4.1. Challenges to Unlawful Continental Shelf Limits

Judicial review of outer continental shelf limits has a somewhat elaborate relationship with the CLCS and, therefore, this section begins with an analysis of the fine line between delineation and delimitation of outer continental shelf limits beyond 200 nm from baselines. Article 9 of UNCLOS Annex II provides that '[t]he actions of the Commission shall not prejudice matters relating to delimitation of boundaries between States with opposite or adjacent coasts'. Indeed, ITLOS confirmed, in *Bangladesh/Myanmar*, that it has the competence to delimit overlapping continental shelf entitlements in the absence of recommendations of the CLCS and that this does not constitute 'an encroachment on the functions of the Commission'.³⁹³ Yet, in a subsequent case, *Nicaragua v Colombia*, the ICJ found that it could not delimit a boundary concerning the outer continental shelf beyond 200 nm because it had not been sufficiently established that Nicaragua's continental margin extended far enough beyond the 200 nm limit to overlap with Colombia's continental shelf.³⁹⁴

However, in 2017, *Questions of the Delimitation of the Continental Shelf Between Nicaragua and Colombia Beyond 200 Nautical Miles from the Nicaraguan Coast* were again put before the ICJ. This time, the Court explained that it had refused to delimit the continental shelf beyond 200 nm (in its earlier decision of 2012) because at that time, Nicaragua had not yet submitted the necessary information to the CLCS.³⁹⁵ This shortcoming had been remedied at the time of the second proceedings and, consequently, Nicaragua's request for delimitation was admissible.³⁹⁶

In this recent decision, the ICJ confirmed that 'since the delimitation of the continental shelf beyond 200 nautical miles can be undertaken independently of a recommendation from the CLCS, the latter is not a prerequisite that needs to be satisfied by a State party

³⁹³ *Bangladesh/Myanmar* (n 25) para 393. See also *Somalia v Kenya* (n 233) para 67.

³⁹⁴ *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) para 129.

³⁹⁵ *Questions of the Delimitation of the Continental Shelf Between Nicaragua and Colombia Beyond 200 Nautical Miles from the Nicaraguan Coast* (n 233) paras 82 and 84.

³⁹⁶ *Ibid* para 115.

to UNCLOS before it can ask the Court to settle a dispute with another State over such a delimitation.’³⁹⁷ Therefore, courts and tribunals have the competence to delimit overlapping entitlements to continental shelves beyond 200 nm and they can exercise such jurisdiction before the CLCS issues its recommendations. However, it is not the role of courts and tribunals to delineate outer continental shelf limits – the procedures for delimitation and delineation are distinct and the latter is the prerogative of the CLCS.³⁹⁸ Nonetheless, continental shelf limits may be challenged before courts and tribunals, after they are established on the basis of CLCS recommendations.

One might assume that outer continental shelf limits were inviolable once they become final and binding, as per UNCLOS article 76(8), or once permanently described, in accordance with UNCLOS article 76(9). However, this does not seem to be the case. The ILA Baselines Committee has submitted that outer continental shelf limits are not permanently fixed and opposable to other States immediately after the relevant data is deposited with the Secretary-General – this is to give States the time to challenge the limits. Only if no protests are raised will they ‘eventually become permanently fixed’.³⁹⁹

As explained in section 2.4.1., failure to object to maritime limits may translate into acquiescence and this applies equally to continental shelf limits at and beyond 200 nm from baselines. Consequently, continental shelf limits beyond 200 nm can become opposable to other States, even if they do not conform to the recommendations of the CLCS, but only if other States with legitimate interests have failed to object to such limits. All States have an interest in the size of the international seabed area as it is the common heritage of mankind. Therefore, continental shelf limits that are inconsistent with UNCLOS or customary international law can be challenged by any other State, as long as it has not acquiesced to the limits. As with other maritime limits, their

³⁹⁷ *Ibid* para 114.

³⁹⁸ *Ibid* para 112.

³⁹⁹ ‘Conference Report Toronto 2006’ (n 226) 18 referring to Ted L McDorman ‘The Role of the Commission on the Limits of the Continental Shelf: A Technical Body in a Political World’ (2002) 17 *International Journal of Marine and Coastal Law* 301, 317.

opposability to other States depends on whether they conform to international law and also on the reactions of other States.⁴⁰⁰

States can challenge outer continental shelf limits after they have been permanently described if the limits are not in conformity with the recommendations of the CLCS or if the CLCS has gone beyond its competence in issuing recommendations.⁴⁰¹ This means that outer limits of the continental shelf, which are not based on CLCS's recommendations, may always be challenged by other States.⁴⁰² Furthermore, since the CLCS does not have authority to decide whether established limits conform to its recommendations, other States can challenge limits on those grounds:⁴⁰³ 'If the outer limits of the continental shelf have not been established in accordance with the substantive and procedural requirements of article 76 this issue may be raised by other States Parties under Part XV of the Convention.'⁴⁰⁴

States can undoubtedly challenge continental shelf limits before courts and tribunals and States seem to be able to influence the CLCS recommendation process. Article 5(a) of the Rules of Procedure of the Commission on the Limits of the Continental Shelf, Annex I, provides that:

where a land or maritime dispute exists, the Commission shall not consider and qualify a submission made by any of the States concerned in the dispute. However, the Commission may consider one or more submissions in the areas under dispute with prior consent given by all States that are parties to such a dispute.

Consequently, the CLCS does not consider a submission or issue recommendations when there is an ongoing boundary dispute and one or more relevant States withholds its consent. 'A State will thus be unable to establish the outer limits of its continental shelf if it has a dispute with one or more other States and they have not consented to the consideration of its submission by the CLCS.'⁴⁰⁵ Yet, as explained by Oude

⁴⁰⁰ See Ashley Roach and Robert W Smith (n 119) 65.

⁴⁰¹ ILA Committee on the Outer Continental Shelf 'Berlin Conference (2004)' (ILA 2004) 24, see particularly footnote 116.

⁴⁰² Suzette V Suarez, 'The Outer Limits of the Continental Shelf: Legal Aspects of their Establishment' (2009) 199 *Beiträge zum ausländischen öffentlichen Recht und Völkerrecht* 239, 243.

⁴⁰³ Alex G Oude Elferink (n 224) 281.

⁴⁰⁴ 'Conference Report Toronto 2006' (n 226) 16.

⁴⁰⁵ *Somalia v Kenya* (n 233) para 69.

Elferink, ‘the procedure for establishing the outer limits of the continental shelf under [UNCLOS] does not envisage a role for third states in the consideration of the submission of the coastal state by the Commission’.⁴⁰⁶ Even so, the CLCS has refrained from considering submissions when there is a potential for dispute and the necessary consent has not been given.⁴⁰⁷ Moreover, it seems to have considered note verbales from China and the Republic of Korea when determining the procedure concerning Japan’s submission to the CLCS relating to a contentious area surrounding Okinotorishima.⁴⁰⁸ On the other hand, the Commission has also taken a narrow approach, for example, refusing to take into account a letter from the US relating to the Brazilian submission, on the grounds that there was no dispute between the two States.⁴⁰⁹

States that are not Parties to UNCLOS do not seem to be barred from submitting their objections to the CLCS and they can challenge continental shelf limits on the same grounds as Parties to UNCLOS. However, they may not have the same incentive to do so because permanently fixed outer continental shelf limits may not be opposable to non-Parties to UNCLOS who have not accepted the authority of the CLCS or the procedures embedded in UNCLOS articles 76(8) and 76(9). The status of customary law, relating to UNCLOS article 76, is not completely clear:⁴¹⁰ the ICJ confirmed, in *Nicaragua v Colombia*, that paragraph 1 reflects customary international law but in that case, it did not find it necessary to determine whether the same applies to other provisions of UNCLOS article 76.⁴¹¹ Both States agreed that the definition of the continental shelf and rules governing delimitation of the continental shelf reflect

⁴⁰⁶ Alex G Oude Elferink (n 242) 149.

⁴⁰⁷ See, e.g., Twenty-sixth session of the CLCS ‘Statement by the Chairperson of the Commission on the Limits of the Continental Shelf on the progress of work in the Commission’ (27 September 2010) UN Doc CLCS/68, para 30-31; Forty-first session of the CLCS ‘Progress of work in the Commission on the Limits of the Continental Shelf’ (21 September 2016) UN Doc CLCS/96 para 105 and (*Somalia v Kenya*) (n 233) paras 20 and 69.

⁴⁰⁸ See Twenty-fourth session of the CLCS, ‘Statement by the Chairman of the Commission on the Limits of the Continental Shelf on the progress of work in the Commission’ (1 October 2009) UN Doc CLCS/64, para 26.

⁴⁰⁹ Fourteenth session of the CLCS ‘Statement by the Chairman of the CLCS on the progress of the work in the Commission’ (14 September 2004) UN Doc CLCS/42, para 17.

⁴¹⁰ Alex G Oude Elferink (n 242) 132. See also Robin R Churchill ‘The 1982 United Nations Convention on the Law of the Sea’ (n 13) 37-38: Although many UNCLOS provisions are reflective of custom, the rules relating to the CLCS may not be.

⁴¹¹ *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) para 118.

customary international law and that the entitlement to a continental shelf exists *ipso facto ab initio*. However, they disagreed on which rules govern entitlements to a continental shelf beyond 200 nm from baselines.⁴¹² Nicaragua maintained that paragraphs 1 to 7 of UNCLOS article 76 reflect customary international law⁴¹³ while Colombia accepted only the customary status of paragraph 1 and raised doubts concerning such status of paragraphs 4 to 9.⁴¹⁴

The United States, which is not party to UNCLOS, submits that paragraphs 1-7 of UNCLOS article 76 reflect customary international law.⁴¹⁵ Yet, the procedural requirements of paragraphs 8, 9 and 10 do probably not possess the status of customary international law since they are not of a ‘fundamentally norm-creating character’ as is necessary for a rule of customary international law.⁴¹⁶ Treaty obligations do not create obligations for third States without their express consent.⁴¹⁷ Therefore, limits established on the basis of CLCS recommendations may only be opposable to States that have ratified UNCLOS as they have accepted the CLCS’s authority to determine where the outer limits of the continental shelf beyond 200 nm lie. This suggests that even when permanently fixed continental shelf limits have become opposable to States Parties to UNCLOS, they may not be opposable to non-Parties unless and until they are opposable on the basis of acquiescence. However, when it comes to exploitation of the international seabed area, the international community is represented by the International Seabed Authority, which does not have competence to determine the extent of the international seabed beyond national jurisdiction, i.e., the outer limits of the continental shelf.⁴¹⁸ The International Seabed Authority relies on limits that are

⁴¹² *Ibid* paras 114-115.

⁴¹³ *Ibid* para 116.

⁴¹⁴ *Ibid* para 117.

⁴¹⁵ See US Interagency Group on the Law of the Sea and Ocean Policy ‘Policy Governing the Continental Shelf of the United States of America’ (17 November 1987) reproduced in Ashley Roach and Robert W Smith (n 139) 188.

⁴¹⁶ See *North Sea Continental Shelf* (n 99) para 72.

⁴¹⁷ See VCLT articles 35 and 36.

⁴¹⁸ Alex G Oude Elferink, ‘The Continental Shelf beyond 200 Nautical Miles: The Relationship between the CLCS and Third Party Dispute Settlement’, in Alex G Oude Elferink and Donald Rothwell (eds) *Oceans Management in the 21st Century: Institutional Frameworks and Responses* (Martinus Nijhoff 2004) 107, 118 referring to L Dolliver M Nelson, ‘Claims to the Continental Shelf beyond the 200-Mile Limit’ in Volkmar Götze, Peter Selmer and Rudiger Wolfrum (eds) *Liber Amicorum Günther Janicke – Zum 85 Geburtstag* (1998) 573, 575.

established in accordance with UNCLOS and through association, the international community may as well.

2.4.4.2. Revision of Continental Shelf Limits

UNCLOS articles 76(8) and 76(9) make no references to subsequent adjustments of the stable continental shelf limits and as explained in section 2.3.4. above, established continental shelf limits seem to be binding on the coastal State, once established on the basis of recommendations of the CLCS. Thus, coastal States are barred from making any revisions on their own initiative. However, the CLCS can request a re-submission where it disagrees with the submissions brought before it⁴¹⁹ and States will have to make revised submissions and establish new continental shelf limits when their limits are successfully challenged by other States.

The CLCS has accepted new data relating to areas it already issued recommendations on but only after advising the submitting States to provide further data and before the limits were permanently described. The Russian Federation submitted a ‘partial revised submission’ regarding the Sea of Okhotsk, on 28 February 2013, after having made a partial submission in respect of the Sea of Okhotsk and other areas on 20 December 2001. All neighbouring States in the Arctic Ocean reacted to the first submission⁴²⁰ and the CLCS advised the Russian Federation to make another submission and base it on the recommendations from 2002.⁴²¹ The CLCS, thus, issued two recommendations, first on 27 June 2002 and again on 11 March 2014.⁴²² This allowed Russia to revise its submission to the CLCS, but the revision occurred before the limits were permanently described, as per UNCLOS article 76(9), and before they became opposable as described in section 2.4.4. Therefore, this does not seem to

⁴¹⁹ Alex G Oude Elferink (n 242) 130; UNCLOS Annex II, article 8.

⁴²⁰ *Ibid* 146.

⁴²¹ *Ibid* 151, referring to Report of the Secretary-General ‘Oceans and Law of the Sea’ UN Doc A/57/57/Add.1 (8 October 2002), para. 41.

⁴²² CLCS ‘Summary of the Recommendations of the Commission on the Limits of the Continental Shelf in Regard to the Partial Revised Submission made by the Russian Federation in Respect of the Sea of Okhotsk on 28 February 2013: Recommendations prepared by the Subcommission established for the consideration of the Submission made by the Russian Federation’ (Adopted by the CLCS, with amendments, on 11 March 2014).

indicate that the CLCS would accept new submissions relating to permanently fixed outer continental shelf limits.

States may wish to revise permanently described continental shelf limits due to new data relating to the continental margin or changes in coastal geography, geology or geomorphology, for example if a new volcanic island appears. However, this may not be possible once the limits have become permanently stable, that is, if the limits are not only binding upon other States but also on the coastal State that establishes them.⁴²³ Unilateral declarations create obligations for the declaring State and their binding nature is rooted in the principle of good faith, i.e., other States' reliance upon the unilateral act.⁴²⁴ The extent to which a unilateral act creates legal obligations also depends on the intention of the declaring State⁴²⁵ and when the scope of an obligation is unclear, unilateral acts are interpreted restrictively.⁴²⁶ Coastal States surely intend to accept lasting legal obligations when establishing final and binding outer continental shelf limits and other States may rely on the permanence of such an undertaking. However, unilateral declarations may be revoked when there has been a fundamental change of circumstances, satisfying the conditions of VCLT article 62.⁴²⁷ Permanently described continental shelf limits may, consequently, be subject to revocation when the essential basis for delineation is affected by a fundamental change of circumstances.⁴²⁸

'No obligation may result for other States from the unilateral declaration of a State. However, the other State or States concerned may incur obligations in relation to such a unilateral declaration to the extent that they clearly accepted such a declaration.'⁴²⁹

⁴²³ See 'Conference Report Toronto 2006' (n 226) 18.

⁴²⁴ ILC 'Guiding Principles applicable to unilateral declarations of States capable of creating legal obligations, with commentaries thereto 2006', Report of the International Law Commission Fifty-eighth session (1 May-9 June and 3 July-11 August 2006) UN Doc A/61/10, 370.

⁴²⁵ See *Frontier Dispute (Burkina Faso/Republic of Mali)* (Judgment) [1986] ICJ Rep 554, 573, para 39; *Case concerning Military and Paramilitary Activities in and against Nicaragua (Nicaragua v United States of America)* (Judgment) [1986] ICJ Rep 132, para 261.

⁴²⁶ 'Guiding Principles applicable to unilateral declarations of States capable of creating legal obligations, with commentaries thereto 2006' (n 424) 377.

⁴²⁷ *Ibid* 381, referring to *Fisheries Jurisdiction (Federal Republic of Germany v Iceland)* (Jurisdiction) [1973] ICJ Rep 4, 63, para 36, and *Case Concerning the Gabčíkovo-Nagymaros Project (Hungary/Slovakia)* (Judgment) [1997] ICJ Rep 7, 64, para 104.

⁴²⁸ See chapter IV for a detailed discussion on this principle.

⁴²⁹ 'Guiding Principles applicable to unilateral declarations of States capable of creating legal obligations, with commentaries thereto 2006' (n 424) 379.

UNCLOS member States may be said to accept the binding nature of continental shelf limits established in accordance with UNCLOS article 76(9), by virtue of their accession to UNCLOS. They may, therefore, be bound by such unilateral acts. Nonetheless, as explained in section 4.4., a fundamental change of circumstance may justify termination or revision of agreements relating to maritime limits and maritime boundaries under *rebus sic stantibus* or VCLT article 62. Whether qualified as unilateral acts or agreed limits, outer continental shelf limits might be challenged on the basis of fundamental changes because VCLT article 62 can apply *mutatis mutandis* to unilateral declarations establishing final and binding continental shelf limits.⁴³⁰ According to this, revision of permanently described continental shelf limits might be initiated by the coastal State or other interested States, by reference to a fundamental change of circumstances.

2.4.5. Man-Made Changes to Coastal Geography

The prospect of sea level rise and coastal erosion has led many States to artificially conserve their coastlines and reinforce vulnerable coastal features such as rocks, shoals and low-tide elevations. The purpose may be to prevent submergence of land territory, fluctuations of maritime limits and even the extension of maritime entitlements further out to sea. UNCLOS has several provisions relating to the capacity of man-made structures to generate maritime entitlements and these are discussed below to determine whether and to what extent human efforts can generate and maintain maritime entitlements.

2.4.5.1. Permanent Harbour Works

Baselines are only established on or along the coastline and not on artificial islands, installations or structures such as oil drilling rigs, navigational towers, and off-shore docking and oil pumping facilities. Man-made structures do not generate maritime entitlements and, therefore, they are generally not used to establish baselines.⁴³¹ However, ‘the outermost permanent harbour works which form an integral part of the

⁴³⁰ ILC ‘Unilateral Acts of States’ Ninth report on unilateral acts of States, by Mr. Víctor Rodríguez Cedeño, Special Rapporteur, (6 April 2006) UN Doc A/CN.4/569 and Add.1, 170.

⁴³¹ UNCLOS articles 11, 60(8), 147(2) and 259.

harbour system are regarded as forming part of the coast' and, consequently, baselines can be drawn to and from permanent harbour works.⁴³²

Jetties, moles, quays, coastal terminals, wharves, breakwaters and sea walls may be considered as permanent harbour works⁴³³ but '[o]ff-shore installations and artificial islands shall not'.⁴³⁴ Roadsteads normally used for the loading, unloading, and anchoring of ships, and which would otherwise be situated wholly or partly beyond the outer limits of the territorial sea, are included within the territorial sea⁴³⁵ but baselines are not drawn from roadsteads because these structures do not generate maritime zones in the sea around them.⁴³⁶

Ports form part of the coast⁴³⁷ and, therefore, baselines are drawn to and from ports when delimiting the territorial sea and other maritime boundaries.⁴³⁸ New harbour works affect the location of normal baselines, as they can move 'seaward to reflect changes to the coast caused by... human-made structures associated with harbour systems, coastal protection and land reclamation projects'.⁴³⁹ Similarly, States can update straight or archipelagic baselines to reflect such changes. However, it remains unclear whether States can choose to disregard harbour works for the purpose of drawing their baselines or establishing bilateral boundaries. Article 8 of the Geneva Convention states that harbour works 'shall be regarded as forming part of the coast' and Norway proposed to change the wording to 'may be regarded' because 'shall' seemed to obligate States to adjust their maritime limits to account for ports, whereas 'may' would indicate that it was a choice.⁴⁴⁰ Members of the ILC were of the view that

⁴³² UNCLOS article 11.

⁴³³ *Baselines: An Examination of Relevant Provisions of the United Nations Convention on the Law of the Sea* (n 343) 56.

⁴³⁴ UNCLOS article 11.

⁴³⁵ UNCLOS article 12.

⁴³⁶ Ashley Roach and Robert W Smith (n 119) 53.

⁴³⁷ UNCLOS article 11.

⁴³⁸ International Hydrographic Organization, International Oceanographic Commission, International Association of Geodesy and Advisory Board on the Law of the Sea, *A Manual on Technical Aspects of the United Nations Convention on the Law of the Sea – 1982: Special Publication No 51, 4th Edition* (International Hydrographic Bureau 2006) Appendix 1-6.

⁴³⁹ 'Conference Report Sofia 2012' (n 94) 31. See also Lewis M Alexander (n 85) 535, referring to human-made structures.

⁴⁴⁰ UNCLOS, Official Records, Volume III: First Committee (Territorial Sea and Contiguous Zone) 'Summary records of meetings and Annexes' (24 February-27 April 1958) UN Doc: A/CONF. 13/39, 141.

‘may’ and ‘shall’ meant the same thing⁴⁴¹ and that the Norwegian proposal would detract from the clarity of the provision.⁴⁴² ‘States had long regarded harbour works such as jetties as part of their land territory and that practice should be universally recognized as unchallengeable.’⁴⁴³

The Norwegian proposal was rejected by 54 votes to 6, with 10 abstentions and article 8 (with the term ‘shall’) was eventually adopted by 70 votes to none, with 1 abstention.⁴⁴⁴ A compromise seems to have been reached at the Third Law of the Sea Conference because UNCLOS article 11 provides that permanent harbour works ‘are’ to be regarded as part of the territory. Consequently, no choice is explicitly indicated but the Advisory Board on the Law of the Sea (hereinafter ABLOS) Manual on Technical Aspects of UNCLOS employs the term ‘may’, stating that harbour works ‘may be used as part of the baseline for the purpose of delimiting the territorial sea and other maritime zones’.⁴⁴⁵ This interpretation suggests that the impact of harbour works is in fact discretionary.

2.4.5.2. Artificial Conservation of the Coastline

Many coastal States have responded to coastal erosion and sea level rise with ‘the construction or reinforcement of sea defences (shoreline protection)’,⁴⁴⁶ which may serve to protect the low-water line and important base points. According to Soons ‘[a]rtificial conservation of the coastline, including that of islands, is fully permitted under public international law: this is proved by abundant State practice.’⁴⁴⁷ However, artificial conservation of naturally formed land must not be confused with artificial structures that extend beyond naturally formed land because artificial structures do not generate maritime entitlements in their own right,⁴⁴⁸ except in the case of permanent harbour works. The Palm Islands on the coast of Dubai are an example of such artificial

⁴⁴¹ *Ibid* 142.

⁴⁴² *Ibid* 141.

⁴⁴³ ‘Summary records of meetings and Annexes’ (n 440) 142.

⁴⁴⁴ *Ibid* 142.

⁴⁴⁵ *A Manual on Technical Aspects of the United Nations Convention on the Law of the Sea – 1982: Special Publication No 51, 4th Edition* (n 438).

⁴⁴⁶ See Alfred H A Soons (n 52) 222.

⁴⁴⁷ *Ibid* 216-18, 222.

⁴⁴⁸ See UNCLOS article 60(8).

features, which explains why they cannot contribute to the maritime entitlements of the United Arab Emirates.⁴⁴⁹

The ILC asserted, in 1956, that '[p]ermanent structures erected on the coast and jutting out to sea (such as jetties and coast protective works) are assimilated to harbour works'.⁴⁵⁰ Similarly, the ILC Baselines Committee has concluded that structures for protecting the coast can contribute to the drawing of the baseline whether they lie along the coastline or abut out to sea.⁴⁵¹ There is no requirement that the coast protective works form, in any way, part of the permanent harbour works.⁴⁵² McDougal and Burke have noted that '[t]here would seem to be no substantial objection to assimilating 'coast protective works' to harbor installations even when they are isolated structures if, as is usually the case, they are not extensive'.⁴⁵³ Carleton has referred to coast protective works of the Netherlands as 'part of the normal baseline' even though they cover approximately 17% of the coastline.⁴⁵⁴ However, those coast protective works fall behind the normal baseline and do not extend the maritime entitlements of the Netherlands further seawards. Therefore, the Dutch protective works might be 'assimilated to harbour works' and regarded as being 'not extensive'.⁴⁵⁵

Hard engineering structures which are commonly used are sea walls, groynes (structures that aim to minimize the effects of coastal erosion), wave reduction structures like revetments (to absorb the energy of incoming water), offshore breakwaters (intercepting incoming waves and creating stable pocket beaches between

⁴⁴⁹ See Decision no 5/2009 in LOS Bulletin no 69, 'Deposit by the United Arab Emirates of a list of geographical coordinates of points, pursuant to article 16, paragraph 2, of the Convention' (10 March 2009).

⁴⁵⁰ 'Conference Report Sofia 2012' (n 94) 27 referring to Yearbook of the ILC 1956, vol II: Report of the International Law Commission to the General Assembly 'Report of the International Law Commission covering the work of its eight session' (23 April-4 July) UN Doc A/3159, 253, 266 and 270.

⁴⁵¹ 'Conference Report Sofia 2012' (n 94) 27 referring to Victor Prescott and Clive Schofield (n 348) 101, 135 and Christopher Carleton, 'Problems Relating to Man-made Basepoints under UNCLOS' presented at *Current Problematic Issues in the Law of the Sea* (Dublin, 3-4 June 2010) 13.

⁴⁵² 'Conference Report Sofia 2012' (n 94) 27-28.

⁴⁵³ *Ibid* 27 referring to Myres McDougal and William Burke, *The Public Order of the Oceans* (Yale University Press 1962) 422-423.

⁴⁵⁴ 'Conference Report Sofia 2012' (n 94) 27, footnote 185, referring to Christopher Carleton (n 451) 13.

⁴⁵⁵ See 'Conference Report Sofia 2012' (n 94) 27 referring to Myres McDougal and William Burke (n 453) 422-423.

fixed stone structures), rock armour at the sea front and gabions (cages filled with rocks or concrete).⁴⁵⁶ States have also used reclamation works or landfill to build up their coastlines. Furthermore, soft engineering mechanisms have been utilized to stabilize the coast, for example, the creation of artificial wetlands, dune stabilisation measures and efforts to increase coastal vegetation.⁴⁵⁷ These measures have been employed worldwide. For example, the Icelandic Government attempted to reinforce the islet Kolbeinsey, approximately 60 nm north of the mainland, in order to secure extensive maritime entitlements that would be lost with the islet if it was submerged. Iceland measured its exclusive economic zone from the islet, but in the maritime delimitation agreement between Iceland and Denmark (Greenland) in 1997 Kolbeinsey was given 30% effect.⁴⁵⁸

The Japanese Government has gone to great lengths to preserve Japan's maritime entitlements extending from Okinotorishima, an uninhabited atoll, which, according to China and South Korea, cannot generate entitlements to an exclusive economic zone or a continental shelf. Japan has built walls of cement, steel blocks and titanium mesh around the coral reefs and in 1988 a platform was constructed housing researchers for a weather monitoring station,⁴⁵⁹ presumably to meet the requirement of sustaining economic life. However, UNCLOS article 60(8) clearly states that artificial islands, installations and structures do not possess the status of islands and that their presence does not affect the delimitation of the territorial sea, the exclusive economic zone or the continental shelf. Furthermore, according to UNCLOS article 121(1) the definition of an island is 'a naturally formed area of land, surrounded by water, which is above water at high tide'.

In response to China's persistent objections to the classification of Okinotorishima as islands under UNCLOS article 121 and to deal with the continuing erosion, the

⁴⁵⁶ Clive Schofield and I Made Andi Arsana (n 191) section 7.1.

⁴⁵⁷ *Ibid.*

⁴⁵⁸ Agreement between the Government of the Kingdom of Denmark along with the Local Government of Greenland on the one hand, and the Government of the Republic of Iceland on the other hand on the Delimitation of the Continental Shelf and the Fishery Zone in the Area between Greenland and Iceland (adopted 11 November 1997, entered into force 27 May 1998) 2074 UNTS 58.

⁴⁵⁹ Yuriko Nagano, 'Growing Coral to Keep a Sea Claim Above Water' (The New York Times, 2014) available at: http://www.nytimes.com/2014/11/19/business/energy-environment/growing-coral-to-keep-a-sea-claim-above-water.html?_r=0 accessed 17 September 2017.

Japanese Government has begun growing corals to add to the reef.⁴⁶⁰ The method used entails the transportation of adult corals from Okinotorishima to a laboratory, 680 miles away, where coral eggs are fertilized and the resulting larvae and juvenile corals are returned to repopulate the Okinotori reef.⁴⁶¹ The capacity of the coral reefs to turn Okinotorishima into islands, within the meaning of UNCLOS article 121, will depend on whether they are considered to be naturally formed land rather than artificial islands or coast protective works. The human intervention in growing the coral reefs will inevitably affect that assessment because it does not suffice that islands are made up of natural elements, they must also be formed through natural processes.⁴⁶² Furthermore, as explained by the tribunal in *Philippines v China*, ‘the inclusion of the term “naturally formed” in the definition of both a low-tide elevation and an island indicates that the status of a feature is to be evaluated on the basis of its natural condition’.⁴⁶³ The addition inserted through human intervention, i.e., the man-made coral reefs, is not part of Okinotorishima in its ‘natural condition’. The corals are created through artificial processes and as artificial structures they cannot ‘possess the status of islands’.⁴⁶⁴

The growing of coral reefs on or around Okinotorishima might be regarded as artificial conservation of the naturally formed land that was already there, i.e., coast protective works around the disputed features. Soons maintains that such measures are permitted under international law and that natural features preserved through artificial means can be valid base points. He explains that an island which would have been submerged without artificial reinforcement might be considered to be artificial in some sense but that UNCLOS article 60(8) only applies to ‘newly constructed artificial islands’.⁴⁶⁵ Thus, according to Soons, submerging islands may retain the entitlement to all maritime zones as long as they are artificially kept above water.

However, artificial conservation of the coastline differs from the construction of new islands insofar as it conserves naturally formed land, whereas efforts to grow new

⁴⁶⁰ *Ibid.*

⁴⁶¹ *Ibid.*

⁴⁶² UNCLOS article 121(1).

⁴⁶³ *Philippines v China* (n 26) (Merits) para 305.

⁴⁶⁴ UNCLOS article 60(8).

⁴⁶⁵ Alfred H A Soons (n 52) 222.

corals seek to create new land through artificial processes. Coast protective works may preserve naturally formed land but they cannot create new islands. Therefore, the coral reefs at the Okinotorishima can serve to protect the maritime entitlements generated by the features when the artificial conservation commenced but they cannot justify a reclassification of coastal features. In other words, rocks cannot be turned into islands, within the meaning of UNCLOS article 121, through artificial conservation.

2.4.5.3. Artificial Extension of the Coastline

A clear distinction should be drawn between artificial conservation of natural coastal features and artificial extension of the coastline. Furthermore, a distinction should be drawn between the artificial extension of baselines through land reclamation and the re-categorisation of a coastal feature as a rock or an island. Whereas the artificial conservation of natural features is fully permissible, the seaward extension of baselines is only possible through the construction of permanent harbour works and artificial extension of the coastline cannot change the status of a coastal feature.

The arbitral tribunal in the *Philippines v China* arbitration explicitly addressed the possibility of man-made changes extending a State's maritime entitlements, and found that, 'as a matter of law, human modification cannot change the seabed into a low-tide elevation or a low-tide elevation into an island'.⁴⁶⁶ The tribunal confirmed that 'low-tide elevations do not form part of the land territory of a State in the legal sense'⁴⁶⁷ and that a 'low-tide elevation will remain a low-tide elevation under the Convention, regardless of the scale of the island or installation built atop it'.⁴⁶⁸ This seems conclusive as far as the re-categorisation of coastal features is concerned. Yet, it does not settle the question whether baselines can be drawn along artificial coastlines that have been extended seawards through land reclamation.

UNCLOS Articles 13(1) and 121(1) make clear that low-tide elevations and islands are composed of naturally formed land. The Convention holds no definition of what constitutes a coast, in the context of UNCLOS Articles 5, 7 and 47, but Article 60(8) makes clear that artificial islands, installations and structures generate no maritime

⁴⁶⁶ *Philippines v China* (n 26) (Merits) para 305.

⁴⁶⁷ *Ibid* para 309.

⁴⁶⁸ *Ibid* para 305.

entitlements. The only exception from this general rule can be found in UNCLOS Article 11, which provides that ‘the outermost permanent harbour works which form an integral part of the harbour system are regarded as forming part of the coast’. Therefore, ‘human-made structures associated with harbour systems’ affect the drawing of baselines.⁴⁶⁹ It can be deduced, from this exception, that the coast is otherwise made up of naturally formed land – the same as other features that generate maritime entitlements. Indeed, the same argument applies to mainland coastlines and individual coastal features: States should not be allowed to unilaterally and arbitrarily increase their entitlements. Otherwise, as noted by the Danish representative to the General-Assembly in 1982, insignificant coastal features, ‘looked upon in the past as mere obstacles to navigation, would miraculously become the golden keys to vast maritime zones. That would indeed be an unwarranted and unacceptable consequence of the new law of the sea.’⁴⁷⁰ Therefore, artificial extension of baselines (and thereby maritime entitlements) should only be lawful in the case of permanent harbour works.

The ILA Baselines Committee has concluded ‘that existing international law recognizes [...] any coast protective work which extends above the chart datum, and any human-induced extension of the natural coast, as part of the coast for the purposes of article 5. As such, the normal baseline moves, sometimes seaward, with the resulting changes in coastal configuration.’⁴⁷¹ This is not explicitly permitted under international law but the Committee maintains that ‘what little state practice there is indicates that artificial extensions of the coast serve to extend the normal baseline’.⁴⁷² The applicable law can be clarified or amended through subsequent State practice (as thoroughly explained in section 2.5.2.).⁴⁷³ However, State practice would have to be consistent and uniform and either establish an agreement between UNCLOS member States or be supported by *opinio juris* to change the interpretation of UNCLOS or

⁴⁶⁹ ‘Conference Report Sofia 2012’ (n 94) 31. See also Lewis M Alexander (n 85) 535 referring to human-made structures.

⁴⁷⁰ Extract from the Official Records of the Third United Nations Conference on the Law of the Sea, Volume XVI ‘171st Plenary Meeting’ (16 April 1982) UN Doc A/CONF.62/SR.171, 106, para 8.

⁴⁷¹ ‘Conference Report Sofia 2012’ (n 94) 28.

⁴⁷² *Ibid.*

⁴⁷³ See, e.g., Robin R Churchill, ‘The Impact of State Practice on the Jurisdictional Framework Contained in the LOS Convention’ in Alex G Oude Elferink (ed) *Stability and Change in the Law of the Sea: The Role of the Los Convention* (Martinus Nijhoff 2005) 91, 93.

create a new rule of customary international law.⁴⁷⁴ These requirements do not seem to be satisfied in the case of artificial extension of baselines.

The Baselines Committee refers to examples from the Netherlands, the United Arab Emirates, Singapore and Japan to support the conclusion that baselines can be extended through artificial means.⁴⁷⁵ Indeed, the Netherlands and Singapore have drawn baselines around reclaimed land;⁴⁷⁶ this has been the consistent practice of the Dutch authorities and Malaysia seems to accept that Singapore's baselines could be affected by land reclamation.⁴⁷⁷ However, the world and palm islands in Dubai do not affect the legal baseline of the United Arab Emirates.⁴⁷⁸ Furthermore, Japanese efforts to extend maritime entitlements through artificial extension of the coastline have been criticised.⁴⁷⁹

The examples that the ILA Committee relies upon do not give an unequivocal answer as to the general use of baselines around reclaimed land and the examples may also be justified on the basis of UNCLOS Article 11. That article gives no clear definition of 'permanent harbour works' and land reclamation projects can always extend the baseline if they qualify as such. This is why, for example, Rotterdam harbour justifies an extension of the Dutch baselines.⁴⁸⁰ A proposal has recently been put forth to extend Schiphol airport out to sea⁴⁸¹ and it remains to be seen whether such a construction would be assimilated to permanent harbour works or an artificial island. The former might certainly be justified if, indeed, coast protective works fall into that category.⁴⁸² Airports and other extensions of the coastline may, therefore, extend the baseline

⁴⁷⁴ See VCLT article 31(3)(b) and *Asylum (Colombia/Peru)* (Judgment) [1950] ICJ Rep 266, 277; *Right of Passage over Indian Territory (Portugal v India)* (Merits) [1960] ICJ Rep 6, 40.

⁴⁷⁵ *Ibid* referring to Christopher Carleton (n 451) 19-22.

⁴⁷⁶ Christopher Carleton (n 451) 21-22.

⁴⁷⁷ 'Conference Report Sofia 2012' (n 94) 28.

⁴⁷⁸ Christopher Carleton (n 451) 23-26.

⁴⁷⁹ 'Growing Coral to Keep a Sea Claim Above Water' (n 459).

⁴⁸⁰ See 'Conference Report Sofia 2012' (n 94) 28 referring to Maritieme zones gewijzigd door aanleg Maasvlakte 2 (Dutch Ministry of Defence, press release of 22 December 2009).

⁴⁸¹ Janene Pieters, 'Schiphol Expansion Would Move Miles Into North Sea in New Proposal' (NL Times, 12 March 2018) Available at: <https://nltimes.nl/2018/03/12/schiphol-expansion-move-miles-north-sea-new-proposal> accessed 20 April 2018.

⁴⁸² See 'Conference Report Sofia 2012' (n 94) 27 referring to Myres McDougal and William Burke (n 453) 422-423.

seawards but only if the construction in question qualifies as permanent harbour works as per UNCLOS article 11.

For the above reasons it is concluded that the status of coastal features cannot be re-categorised through artificial means and that artificial extension of baselines, from naturally formed land, may only be justified by reference to UNCLOS Article 11. The coast, for the purposes of UNCLOS Articles 5, 7 and 47, must consist of naturally formed land and any State practice that suggests otherwise is not yet sufficiently widespread or uniform to support a different conclusion.

2.5. Proposals to Stabilize Maritime Limits

Recession of maritime limits can have adverse effects for coastal States as they lose control over resources previously under their jurisdiction. This can affect low-lying coastal States and their inhabitants and in extreme cases may lead to loss of statehood.⁴⁸³ To address these problems, leading academics have put forth proposals to stabilize baselines and/or outer maritime limits for the purpose of promoting stability in the distribution of maritime entitlements and reducing the risk of international conflicts and wasted resources.⁴⁸⁴ Furthermore, the ILA Committee on International Law and Sea Level Rise is currently considering whether international law can be changed to incorporate such proposals.⁴⁸⁵

These proposals would make it possible for States to fix the location of baselines and/or all outer limits of maritime zones, notwithstanding subsequent changes to relevant coastlines.⁴⁸⁶

⁴⁸³ Rosemary Rayfuse (n 65) 152. See also Emily Crawford and Rosemary Rayfuse (n 65) 249.

⁴⁸⁴ See, e.g., David D Caron (n 79) 12, 14; Jonathan Lusthaus, 'Shifting Sands: Sea Level Rise, Maritime Boundaries and Inter-state Conflict' (2010) 30 (2) *Politics* 113, 117; Alfred H A Soons (n 52) 225; Rosemary Rayfuse, 'International Law and Disappearing States: Utilising Maritime Entitlements to Overcome the Statehood Dilemma' (2010) 52 *University of New South Wales Faculty of Law, Research Paper Series*, 1, 5-7.

⁴⁸⁵ ILA Committee on International Law and Sea Level Rise 'Johannesburg Conference' (ILA 2016) 14.

⁴⁸⁶ ILA Committee on International Law and Sea Level Rise 'Minutes of the Lopud Intersessional Meeting' (ILA 2017) 14.

2.5.1. Arguments For Freezing Maritime Limits

In 1990, Soons advised that coastal States should be entitled to rely on the outer limits of their maritime zones as they had been established before the occurrence of a landward shift of baselines.⁴⁸⁷ According to him, this rule could develop into customary international law and it might also be codified in a treaty or an implementation agreement within the framework of UNCLOS. The purpose would be to mitigate losses resulting from imminent sea level rise and to provide stability in the regime of maritime entitlements.⁴⁸⁸ Soons envisioned the rule quickly becoming customary international law through widespread and publicized application and limited protests.⁴⁸⁹ However, the new rule would infringe upon the rights of other States on the high seas and in the international seabed area. These States might impede the development of a new customary rule by preventing the development of uniform State practice and the necessary *opinio juris*. For the same reason, these States might prevent an amendment to UNCLOS or the conclusion of a supplementary instrument implementing such a rule.

Artificial conservation of the coastline is permissible under existing international law, as explained in section 2.4.5.2. All maritime entitlements can be preserved through artificial conservation and such measures seem to be the only method available, under existing international law, for stabilizing otherwise fluctuating unilateral maritime limits.⁴⁹⁰ Artificial conservation of the coastline has the benefit of being consistent with international law but the disadvantage of being very expensive.⁴⁹¹ As noted by Caron, artificial conservation may lead to economic inefficiency and waste and it may be of greater benefit for the global community if resources are invested in climate change mitigation and adaptation activities rather than the preservation of maritime limits.⁴⁹²

Artificial conservation also creates a disparity between States that do have the economic capacity to defend their limits and those that do not. This affords an

⁴⁸⁷ Alfred H A Soons (n 52) 224.

⁴⁸⁸ *Ibid.*

⁴⁸⁹ *Ibid* 225.

⁴⁹⁰ ‘Conference Report Sofia 2012’ (n 94) 422.

⁴⁹¹ Alfred H A Soons (n 52) 222.

⁴⁹² See David D Caron (n 52) 639-640.

inequitable advantage to richer States as they will be able to reinforce their maritime limits while developing States may not have the means to do the same. Consequently, the negative impacts of baseline recession will, in all likelihood, be heaviest for States that bear little responsibility for climate-related coastline changes. This is an unfortunate result of the existing law and, surely, the strongest argument in favour of a new rule stabilising zonal limits.

Inequitable consequences of a similar nature were discussed at the third United Nations Conference on the Law of the Sea, in relation to UNCLOS article 7(4), which permits the drawing of straight baselines to and from low-tide elevations if lighthouses or similar installations are built on them. A number of States argued that this might discriminate against those with insufficient means to build such structures and, consequently, the second half of the provision (referring to instances of general recognition) was adopted.⁴⁹³ This shows a willingness to minimize any discrepancy between States that have the financial capacity to further their maritime claims and those that do not.

Nonetheless, recourse to artificial conservation of the coastline will surely increase in the coming years and decades because it may prove necessary not only to retain maritime entitlements but also to protect coastal habitations from inundation. Sea defences and shoreline protection are important tools to prevent or delay displacement of the large portion of the world's population that lives on territory that is currently at risk of inundation.⁴⁹⁴ Consequently, a rule stabilizing maritime limits would only to a limited extent reduce the need for costly sea defences.

Climate-related changes are threatening the existence of small island States and other low-lying States and the freezing of maritime limits is no solution to problems such as seawater intrusion into fresh water supplies, storms and hurricanes, deterioration of fish stocks and loss of habitable territory. It may seem inequitable that States that are heavily dependent on oceanic resources must lose maritime entitlements while faced with other catastrophic consequences of climate change. However, the freezing of

⁴⁹³ Myron H Nordquist, Satya N Nandan og Shabtai Rosenne, *United Nations Convention on the Law of the Sea 1982, Volume II, A Commentary* (Brill Nijhoff 1982) 102.

⁴⁹⁴ Anil Ananthaswamy, 'Going, going...' (2009) 202 (2715) *New Scientist* 26, 30-31.

maritime limits would only address a small portion of the problems associated with sea level rise and coastal erosion and it would only be a temporary solution. Vulnerable States are in need of a holistic approach which may entail, for example, coastline defences, development assistance from the World Bank and humanitarian aid. The prospect of fluctuating maritime limits is not the biggest threat to low-lying coastal States or the only inequity resulting from climate change. This issue extends far beyond the scope of the law of the sea and revision of UNCLOS is not the most obvious or useful remedy.

2.5.3. Arguments Against the Freezing of Maritime Limits

Coastline retreat increases the size of the high seas, under the theory of ambulatory baselines.⁴⁹⁵ A new rule of stable limits would prevent other States from enjoying their rights in these areas. Lisztwan notes that '[i]f coastal States were to claim the increased ocean area, they would be further advantaged in comparison to land-locked and geographically disadvantaged States'.⁴⁹⁶ Coastal States would be entitled to all new ocean area and the international community, which has shared interests in areas beyond national jurisdiction, would gain nothing. Furthermore, the proposed changes would create a form of historic waters where States would have historic rights based on 'sovereignty over maritime areas derived from historical circumstances'.⁴⁹⁷ However, historic title is only relevant for the delimitation of territorial waters and demarcation of historic bays;⁴⁹⁸ no other form of historic rights is recognised under UNCLOS and they can never extend beyond territorial waters, as recently confirmed in the *Philippines v China* arbitration.⁴⁹⁹

The freezing of maritime limits might be an equitable solution, in Caron's view, because no State would gain a larger area of the earth's surface than agreed upon when UNCLOS was adopted in 1982.⁵⁰⁰ Yet, the ratio between land and water would clearly be affected and coastal States would gain larger maritime expanses than permissible

⁴⁹⁵ Julia Lisztwan (n 247) 170.

⁴⁹⁶ *Ibid* 170.

⁴⁹⁷ See *Philippines v China* (n 26) (Merits) para 225.

⁴⁹⁸ *Ibid* paras 225-226.

⁴⁹⁹ *Ibid* para 266.

⁵⁰⁰ David D Caron (n 52) 640-41. See also David D Caron (n 79) 16.

under existing rules. Caron has also argued that ambulatory limits threaten international peace and stability because States may frequently challenge each other's maritime claims.⁵⁰¹ However, a new rule of stable maritime limits might also be highly contentious as opposing States might continue to rely on contrary rules concerning the breadth of maritime zones and firmly established principles of the law of the sea.⁵⁰² States might object to the exercise of coastal State jurisdiction where no land supports such claims and they might wish to exercise their own rights in new strips of high seas and the international seabed area.

A new rule of customary international law would have to take precedence over currently applicable UNCLOS provisions, customary law, general principles and judicial precedents. Furthermore, it might take a long time to reach consensus on the exact content of the rule, i.e., whether baselines or outer limits should be frozen, which procedure to follow to freeze the limits, what time frame should be relevant etc. A lengthy process of changing existing rules might cause uncertainty (similar to that which may result from the fluctuation of maritime limits) and since the stakes would be higher than ever, there might be a surge of new challenges to excessive or outdated maritime limits. This might cause a similar disruption to international peace and stability as the gradual increase of challenges to ambulatory maritime limits. In other words, the freezing of maritime limits would not eliminate the risk of international disputes; in fact, such changes to the law of the sea might induce new conflicts.

An amendment to UNCLOS or a new international treaty fixing maritime limits might reduce the risk of legal uncertainty inevitable with the development of new customary law. However, that option seems even more far-fetched than the eventuality of a customary rule superseding fundamental principles of the law of the sea, considering how time consuming that might be and the fact that implementing agreements are not meant to change the content of UNCLOS. The 1994 Part XI Implementing Agreement and the 1995 Fish Stocks Agreement were adopted relatively quickly and successfully but the codification of UNCLOS took a very long time, and so has the move towards

⁵⁰¹ David D Caron Caron (n 79) 13.

⁵⁰² I.e., 'land dominates the sea', 'freedom of the high seas' and 'common heritage of mankind'.

a new treaty concerning conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.⁵⁰³

The methods for freezing maritime limits would involve either giving the charted line priority over the actual low-water line (regardless of any inconsistency) or permanently fixing declared maritime limits. The first option would go against the developing jurisprudence as explained in section 2.4.2.2. Furthermore, it might cause uncertainty to have different charts and coordinates in circulation, showing both the actual low-water line, for navigational safety, and the legal baseline. The incentive to fix previously uncharted maritime limits might also generate new disputes.

The second option would essentially freeze all unilaterally declared limits, ideally by reference to data submitted to the UN Secretary-General. However, this might permanently establish excessive limits, as there is no surveillance of the legitimacy of such limits, and it might also have the effect of making all registered limits permanent, depriving States of the option to adjust their limits if the coastline extends seawards.

Rayfuse has argued that zonal limits should be stabilized. She maintains that the ‘freezing of baselines and the associated outer limits of all maritime zones accepted at the relevant moment [...] would be consistent with, and would significantly assist in, the promotion and achievement of the LOSC objectives of peace, stability, certainty, fairness and efficiency in ocean governance’.⁵⁰⁴ However, she has also brought attention to the fact that a general rule of permanently fixed baselines and/or zonal limits would not lead to an automatic acceptance of all maritime claims. Disputed areas would not acquire this permanent stability,⁵⁰⁵ which would result in a discrepancy between different States, with only some establishing stable limits. The new rule might serve as an incentive for States to settle their disputes so there might be several new challenges but, thereafter, fewer disputed areas.

The idea of stabilizing baselines and zonal limits is ill suited to deal with the eventuality of complete inundation or uninhabitability of island States. Rayfuse has

⁵⁰³ Sustainable Development Goals (n 22).

⁵⁰⁴ Rosemary Rayfuse (n 68) 283.

⁵⁰⁵ *Ibid.*

noted that only States are entitled to maritime zones⁵⁰⁶ and to qualify as a State there is a prerequisite of land territory and a permanent population inhabiting that territory.⁵⁰⁷ Submerging island States may become uninhabitable and eventually completely submerged, which may lead to them losing their statehood and, consequently, all entitlements to maritime zones.⁵⁰⁸ Submerging States might merge with other States and thereby retain maritime entitlements despite the loss of habitable territory. Frozen limits would enable such States to keep all original entitlements. However, the loss of statehood will inevitably affect maritime limits and maritime boundaries because only States can have maritime entitlements.⁵⁰⁹ Consequently, the freezing of maritime limits would create a discrepancy between States that can maintain all their maritime entitlements despite severe inundation and States that will cease to exist and, consequently, lose all entitlements.

2.5.2. Freezing of Baselines Versus Outer Maritime Limits

Proposals to stabilise maritime limits relate to baselines on the one hand and outer limits on the other. The options under consideration involve either the freezing of existing baselines or the freezing of established outer limits of maritime zones.⁵¹⁰ The freezing of baselines would essentially stabilise all maritime limits because the outer limits would be measured from frozen baselines. However, baselines would remain ambulatory if only the outer limits were frozen. The ILA Committee on International Law and Sea Level Rise has expressed a preference for freezing the outer limits of maritime zones instead of baselines,⁵¹¹ although possibly not by consensus.

Both options have some merit but neither is without fault. UNCLOS provisions concerning the breadth of different maritime zones would have to be changed if only the outer limits of maritime zones were permanently fixed; otherwise coastal regression and sea level rise would result in larger zones than permitted under UNCLOS.⁵¹² However, if baselines were fixed then internal waters would grow larger

⁵⁰⁶ *Ibid* 284.

⁵⁰⁷ Montevideo Convention on the Rights and Duties of States (adopted 26 December 1933, entered into force 26 December 1934) 165 League of Nations Treaty Series 19, article 1.

⁵⁰⁸ Rosemary Rayfuse (n 68) 284.

⁵⁰⁹ *Ibid*.

⁵¹⁰ ILA Committee on International Law and Sea Level Rise 'Johannesburg Conference' (n 477) 14.

⁵¹¹ *Ibid* 15.

⁵¹² Moritaka Hayashi (n 85) 79.

than ever intended and internal waters would not always be closely linked to the land domain as required under UNCLOS Article 7(3). The freezing of baselines would also limit the rights of other States more than the other option and more than necessary if the primary goal is to stabilise external limits.

The freezing of baselines might be a more feasible option when considering the available methods for changing the applicable law, namely because this would affect fewer and more ambiguous UNCLOS provisions. The interpretation of UNCLOS would have to be changed in such a way as not to impose an obligation on States to update their maritime limits once they become inconsistent with the requirements for baselines or outer limits. The freezing of baselines would call for a denunciation of the theory of ambulatory baselines and the threshold for internal waters being ‘sufficiently closely linked to the land domain’ would have to be raised.⁵¹³ UNCLOS articles 7(2) and 76(9) would have no effect on the interpretation of UNCLOS articles 5, 47 or other provisions of article 7; the assumption of ongoing adherence to these provisions would have to be rejected and so too would the assumption that charts and lists of coordinates have to be updated when coastlines change. This option might be achieved through subsequent State practice and revised interpretation of several UNCLOS provisions because it mostly relates to implied, as opposed to express, obligations.

On the other hand, the freezing of outer maritime limits would have an impact on explicit requirements, such as those concerning the maximum breadth of maritime zones. Baselines would continuously meet the conditions of UNCLOS, internal waters would be closely linked to land, as per UNCLOS article 7(3), and the normal baseline could be identified by reference to officially recognised charts. However, the correlation between baselines and outer limits would be broken and there would be a clear violation of UNCLOS articles 3, 33(2), 57 and 76(1) when maritime zones grew larger than expressly permitted. This would call for more extensive changes to the applicable law; an arduous process as further explained in the following sections.

⁵¹³ UNCLOS article 7(3).

2.5.2. Changing the Applicable Law to Stabilize Maritime Limits

Proposals to freeze baselines and/or maritime limits cannot be reconciled with existing international law, and UNCLOS is not easily changed or superseded. The ILA Committee on International Law and Sea Level Rise has been considering ‘appropriate mechanisms’ to address the challenges of sea level rise⁵¹⁴ and it is currently in the process of formulating its proposals for the freezing of baselines or outer maritime limits.⁵¹⁵

UNCLOS could be amended either directly or through an implementing agreement. However, changes to UNCLOS are subject to stringent requirements, as explained in section 2.5.2.1. Subsequent State practice can also have an impact on UNCLOS. As explained by Churchill, it ‘could give rise to a new rule of customary international law modifying or supplementing the Convention’ and it could also ‘be used as an element in interpreting the Convention’.⁵¹⁶ The first possibility will be discussed in section 2.5.2.2. and the latter in section 2.5.2.3.

2.5.2.1. Amending UNCLOS

The constitution of the oceans carries great weight; it is ‘a package comprising certain elements that constitute a single and indivisible entity’⁵¹⁷ and no reservations or exceptions are allowed unless expressly permitted under the Convention.⁵¹⁸ The primary purpose of UNCLOS was ‘the establishment of a completely integrated legal order for the use of the oceans and its resources and potential’.⁵¹⁹ According to the president of the third conference, everything else should ‘be subordinated to and subserve this purpose.’⁵²⁰

⁵¹⁴ ILA Committee on International Law and Sea Level Rise ‘Johannesburg Conference’ (n 477) 11.

⁵¹⁵ ‘Minutes of the Lopud Intersessional Meeting 15-16 Sept 2017’ (n 486) 3.

⁵¹⁶ Robin R Churchill (n 473) 91, 93.

⁵¹⁷ UNCLOS III ‘Note by the President on the Final Clauses’ UN Doc FC/1 (23 July 1979) reproduced in Renate Platzöder (ed) *Third United Nations Conference on the Law of the Sea: Documents, Vol XII*, 349 (Oceana Publications 1987).

⁵¹⁸ UNCLOS article 309.

⁵¹⁹ ‘Note by the President on the Final Clauses’ (n 517) 349.

⁵²⁰ *Ibid.*

If a State party wishes to alter this integrated legal order, it must propose specific amendments to the Secretary-General of the UN. If at least half of the States Parties to UNCLOS reply favourably to a request for an amendment conference, such a conference is convened to address the proposed amendments.⁵²¹ States Parties must make every effort to reach a consensus relating to these potential alterations to UNCLOS.⁵²² A simplified amendment procedure is also available when no State Party objects to the amendment or the simplified procedure twelve months after it is communicated to them by the Secretary-General.⁵²³ Amendments to the Convention are subject to UNCLOS articles 312-316 and amendments to the provisions relating exclusively to activities in the Area must meet the special requirements of UNCLOS article 314. A large majority is required before an amendment can enter into force and, to this day, no amendments have been ratified under this procedure.⁵²⁴

If a proposal to stabilize all baselines and/or maritime limits and change UNCLOS to that effect is put forward and at least one State party objects to the use of the simplified procedure, then an amendment conference has to be convened and that would require the support of 84 States parties.⁵²⁵ Even if a majority of States parties agree that maritime limits should be frozen, they might be reluctant to reopen a convention that took nine years to negotiate and another twelve to enter into force.

Two implementing agreements have been concluded to supplement, and in some ways amend, UNCLOS⁵²⁶ and this might also be a possibility for stabilising maritime limits. However, the negotiation of another implementing agreement might be a prolonged and arduous process. Indeed, the ongoing discussions concerning a new implementing agreement on marine biodiversity of areas beyond national jurisdiction clearly

⁵²¹ UNCLOS article 312(1).

⁵²² UNCLOS article 312(2).

⁵²³ UNCLOS article 313.

⁵²⁴ Robin R Churchill (n 13) 24, 43.

⁵²⁵ I.e. half the States party to UNCLOS, as per UNCLOS article 312(1).

⁵²⁶ See Agreement relating to the implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 (n 20); Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (n 21).

demonstrate how time-consuming this option can be where there is no consensus on what the agreement should say.

2.5.2.2. Subsequent Practice as Evidence for a New Rule of Customary International Law

State practice can be indicative of an emerging rule of customary international law, and such rules have the potential of superseding treaty obligations. However, State practice must be accompanied by the necessary *opinio juris* to become customary international law.⁵²⁷ State practice that has, thus far, contradicted UNCLOS provisions concerning baselines and other maritime limits, has not formed a basis for a general rule of customary international law because it has not been sufficiently widespread or uniform⁵²⁸ and because it has been challenged by several States. In fact, the ILA Baselines Committee has listed ‘85 protests or other forms of objection’ to straight baseline claims of 39 States. This covers almost 50 per cent of all claims to straight baselines.⁵²⁹

Judicial decisions and writings of the most highly qualified publicists have generally concluded that maritime limits fluctuate under UNCLOS⁵³⁰ and UNCLOS takes precedence over rules that may have been applicable before accession to the Convention.⁵³¹ This, however, does not settle the hierarchy between treaty obligations and rules of inconsistent, subsequent customary law. Customary international law is never written in stone; it changes through the progressive development of international law and customary international law might still develop in such a way as to incorporate the proposals discussed above. In fact, an UNGA resolution might serve to synchronise State practice and demonstrate *opinio juris* in support of an emerging rule, enabling States to freeze their baselines and/or outer maritime limits.⁵³²

⁵²⁷ *Ibid* 95.

⁵²⁸ State practice must be uniform, see, e.g., *Colombia/Peru* (n 474) 277; *Portugal v India* (n 474) 40.

⁵²⁹ ILA Baselines Committee, ‘ILA Straight Baselines Study—Protests’ (ILA 2016) 1.

⁵³⁰ See sections 2.3. and 2.4.1.

⁵³¹ *Philippines v China* (n 26) (Merits) para 262.

⁵³² UNGA resolutions have been relied on to identify *opinio juris*, see, e.g., *Nicaragua v United States of America* (n 425) para 188.

When two sources of law are in conflict the more recent rule often takes precedence (*lex posterior derogat legi priori*) and on those grounds, custom can modify a treaty. However, while this is true in a general sense, UNCLOS seems to enjoy a distinct level of primacy over inconsistent sources of law and Churchill has expressed doubts as to whether UNCLOS can be modified by subsequent custom, given the ‘special amendment procedures set out in articles 312-314 and 316’.⁵³³

Developing customary international law affected the ICJ’s decision in the *Libya/Malta* continental shelf case, which has subsequently been cited as an example of subsequent practice modifying treaty obligations.⁵³⁴ Here the Court confirmed that the entitlement to an exclusive economic zone had become part of customary international law,⁵³⁵ even though this was contrary to the existing rules codified in the 1958 Geneva Convention on the High Seas. Furthermore, the Court relied on UNCLOS, instead of the 1958 Geneva Convention on the Continental Shelf, to identify the ‘modern law’ concerning delimitation of the continental shelf, although UNCLOS had not yet entered into force.⁵³⁶

This was a landmark decision and it clearly demonstrates how State practice and the conclusion of treaties can progress the development of customary international law. However, it is not a definitive precedence of subsequent practice overriding treaty obligations because neither the 1958 Geneva Convention on the High Seas nor the 1958 Geneva Convention on the Continental Shelf were applicable in this case.⁵³⁷ Moreover, UNCLOS had been codified and agreed upon and, consequently, provided a clear basis for identifying the developing customary international law, which, in the view of both parties, governed the dispute.⁵³⁸ Furthermore, the 1958 Conventions had no provisions comparable to articles 309-311 of UNCLOS so there was no explicit obligation to afford priority to them. At any rate, the Court did not have to decide on the hierarchy between customary law and inconsistent treaty obligations. It had simply

⁵³³ Robin R Churchill (n 473) 97.

⁵³⁴ See, e.g., *ibid* 96, referring to the development of the exclusive economic zone.

⁵³⁵ *Libyan Arab Jamahiriya/Malta* (n 78) para 34.

⁵³⁶ *Ibid* para 33.

⁵³⁷ Malta was party to the 1958 Geneva Convention on the Continental Shelf, but Libya was not, see *ibid* para 26.

⁵³⁸ *Ibid*.

to identify the applicable customary law, and in doing so, it looked to the more recent (albeit not directly applicable) international treaty.

Even if subsequent custom can take precedence over treaty obligations in some instances, it is unlikely in the case of UNCLOS because of its primacy. UNCLOS article 311(2) provides that it does ‘not alter the rights and obligations of States Parties which arise from other agreements compatible with [UNCLOS] and which do not affect the enjoyment by other States Parties of their rights or the performance of their obligations under this Convention’. This indicates that the rules contained in UNCLOS can be supplemented by other sources of law but only if they are compatible with UNCLOS and if they do not restrict the rights other States may have under the Convention. The freezing of maritime limits would contradict the general consensus that UNCLOS establishes ambulatory limits. Furthermore, such an agreement would impact the entitlement of other States to areas that would, in the absence of frozen limits, become high seas and/or the international seabed area. This primacy given to UNCLOS over incompatible agreements would surely apply also to a developing rule of customary international law.⁵³⁹

UNCLOS article 311(3) further provides that:

Two or more States Parties may conclude agreements modifying or suspending the operation of provisions of [UNCLOS], applicable solely to the relations between them, provided that [...] such agreements shall not affect the application of the basic principles embodied [t]herein, and that the provisions of such agreements do not affect the enjoyment by other States Parties of their rights or the performance of their obligations under this Convention.

Moreover, ‘States Parties agree that there shall be no amendments to the basic principle relating to the common heritage of mankind set forth in article 136 and that they shall not be party to any agreement in derogation thereof.’⁵⁴⁰ According to this, an agreement (or a rule of customary international law) that would stabilize all maritime limits, would be in violation of UNCLOS because it would infringe upon the rights of third States to areas that should, under existing UNCLOS provisions, fall beyond national jurisdiction. Moreover, such a rule could be contrary to basic principles of

⁵³⁹ See Robin R Churchill (n 473) 99.

⁵⁴⁰ UNCLOS article 311(6).

UNCLOS; namely, the freedom of the high seas, land dominates the sea and common heritage of mankind.⁵⁴¹

It should be noted, however, that the 1994 Part XI Implementing Agreement modifies UNCLOS Part XI as it ties several procedural requirements to the exercise of rights to the common heritage of mankind. Nonetheless, no State has alleged a violation of UNCLOS article 136. Furthermore, the 1995 Fish Stocks Agreement departs from UNCLOS rules relating to freedom of the high seas and no objections have been raised on those grounds. The success of these implementing agreements may be accredited to the lack of challenges, which indicates that applicable rules may be amended or superseded (even if contrary to UNCLOS) if done by consensus or without any opposition.

There is certainly evidence of State practice contradicting the theory of ambulatory baselines⁵⁴² but this practice is not uniform, widespread or without challenges and even if it possessed the necessary elements for a rule of customary international law, such a rule should not take precedence over what has been described as ‘possibly the most significant legal instrument of [the twentieth] century’.⁵⁴³ Proposals to coordinate such practice (without first changing UNCLOS) do, in effect, encourage States to violate the Convention and non-compliance of a significant number of UNCLOS member States ‘undermines the integrity and legitimacy of [UNCLOS]’.⁵⁴⁴ A new customary rule freezing maritime limits would be incompatible with UNCLOS, which only leaves two eventualities: an inconsistent rule would either be subordinate to the Convention, and consequently inapplicable in cases of conflict, or, it would seriously undermine the integrity and legitimacy of UNCLOS.⁵⁴⁵

2.5.2.3. Subsequent Practice Affecting the Interpretation of UNCLOS

Even if widespread practice of UNCLOS member States will not create a customary rule superseding UNCLOS, it has the potential to modify the general interpretation

⁵⁴¹ See further discussion below in section 2.6.

⁵⁴² Robin R Churchill (n 473) 108.

⁵⁴³ The United Nations Convention on the Law of the Sea: A Historical Perspective’ (n 12).

⁵⁴⁴ Robin R Churchill, ‘The Persisting Problem of Non-compliance with the Law of the Sea Convention: Disorder in the Oceans’ (2012) 27 (4) The International Journal of Marine and Coastal Law 813, 815.

⁵⁴⁵ See *Philippines v China* (n 26) (Merits) para 262.

that renders maritime limits ambulatory. VCLT article 31(3) provides that when interpreting a treaty, '[a]ny subsequent agreement between the parties regarding the interpretation of the treaty or the application of its provisions' and '[a]ny subsequent practice in the application of the treaty which establishes the agreement of the parties regarding its interpretation' 'shall be taken into account, together with the context'.⁵⁴⁶ Furthermore, recourse may be had to subsequent practice of member States as supplementary means of interpretation under VCLT article 32.⁵⁴⁷

The ILC has classified subsequent agreements and subsequent practice under VCLT article 31(3) as 'authentic means of interpretation'. A subsequent agreement then represents 'an authentic interpretation by the parties which must be read into the treaty for purposes of its interpretation',⁵⁴⁸ and subsequent practice 'constitutes objective evidence of the understanding of the parties as to the meaning of the treaty'.⁵⁴⁹

What is the difference between subsequent agreements, subsequent practice (VCLT article 31(3)(b)) and other subsequent practice (VCLT article 32)? A 'subsequent agreement' is 'an agreement between the parties, reached after the conclusion of a treaty, regarding the interpretation of the treaty or the application of its provisions'. Subsequent practice under VCLT article 31(3)(b) 'consists of conduct in the application of a treaty, after its conclusion, which establishes the agreement of the parties regarding the interpretation of the treaty' and subsequent practice under VCLT article 32 'consists of conduct by one or more parties in the application of the treaty, after its conclusion'.⁵⁵⁰ The rules embodied in VCLT articles 31(3) and 32 reflect customary international law⁵⁵¹ and are, therefore, relevant for the interpretation of UNCLOS, regardless of the direct applicability of the VCLT.

⁵⁴⁶ VCLT Article 31(3)(a) and (b).

⁵⁴⁷ ILC 'Chapter VI: Subsequent agreements and subsequent practice in relation to the interpretation of treaties' Report of the International Law Commission Sixty-eighth session (2 May-10 June and 4 July-12 August 2016) UN Doc A/71/10, 118, 121.

⁵⁴⁸ Yearbook of the ILC, 1966, vol II, 'Report of the International Law Commission on the work of the second part of its seventeenth session' (3-28 January 1966) UN Doc A/6309/Rev.1., 221, para 14.

⁵⁴⁹ *Ibid* para 15.

⁵⁵⁰ 'Chapter VI: Subsequent agreements and subsequent practice in relation to the interpretation of treaties' (n 547) 121.

⁵⁵¹ *Ibid* 124.

The ILC recently adopted ‘draft conclusions on subsequent agreements and subsequent practice in relation to the interpretation of treaties’⁵⁵² and concluded that such measures can contribute to the clarification of a treaty. ‘This may result in narrowing, widening, or otherwise determining the range of possible interpretations, including any scope for the exercise of discretion which the treaty accords to the parties.’⁵⁵³ However, the ILC explained that it was to be ‘presumed that the parties to a treaty, by an agreement subsequently arrived at or a practice in the application of the treaty, intend to interpret the treaty, not to amend or to modify it. The possibility of amending or modifying a treaty by subsequent practice of the parties has not been generally recognized.’⁵⁵⁴

The ICJ has endorsed this view, finding that VCLT article 31(3)(b) cannot be used to give priority to State practice over treaty provisions or the absence of specific provisions.⁵⁵⁵ After all, treaty interpretation is primarily based on the text of the treaty.⁵⁵⁶ However, according to Dörr, subsequent practice establishing an agreement on the interpretation of a treaty may ‘override the original understanding of the text of the treaty, which prior to the subsequent developments may have appeared perfectly clear’, but only if arrived at by consensus.⁵⁵⁷

Subsequent practice under VCLT article 31(3)(b) can take a variety of forms. It relates to the conduct of State Parties in applying the treaty and includes, for example, official acts, statements and voting at the international level, national legislation, and even inaction.⁵⁵⁸ Subsequent agreements and subsequent practice under VCLT article 31(3)

⁵⁵² *Ibid* 119.

⁵⁵³ *Ibid* 121.

⁵⁵⁴ *Ibid* 122.

⁵⁵⁵ *Land, Island and Maritime Frontier Dispute (El Salvador/Honduras: Nicaragua intervening)* (Judgment) [1992] ICJ Rep 351, 586.

⁵⁵⁶ See, e.g., *Territorial Dispute (Libya v Chad)* (Judgment) [1994] ICJ Rep 6, para 41; *Legality of the Use of Force (Serbia and Montenegro v Belgium)* (Preliminary Objections) [2004] ICJ Rep 279, para 100.

⁵⁵⁷ Oliver Dörr ‘Article 31. General rule of interpretation’ in Oliver Dörr and Kirsten Schmalenbach (eds) *Vienna Convention on the Law of Treaties: A Commentary* (Springer 2012) 521, 523.

⁵⁵⁸ ‘Chapter VI: Subsequent agreements and subsequent practice in relation to the interpretation of treaties’ (n 547) 163-164.

can take the form of binding treaties and soft law instruments, such as memorandums of understandings.⁵⁵⁹

An UNGA resolution, stating that baselines and/or outer maritime limits should be stable, notwithstanding subsequent changes to relevant coastlines, could constitute ‘subsequent practice in the application of the treaty which establishes the agreement of the parties regarding its interpretation’ and, consequently, be relevant for interpreting UNCLOS, as per VCLT article 31(3)(b). However, it is important to emphasise that this method could only be used to interpret UNCLOS, not to change it.⁵⁶⁰ The fact that the ILC has categorised subsequent agreements and subsequent practice as ‘authentic means of interpretation’ does not ‘imply that these means necessarily possess a conclusive, or legally binding, effect’.⁵⁶¹ They should only be ‘taken into account’ in the ‘single combined operation’ that is treaty interpretation.⁵⁶² This is why the ILC would not say that interpretation in accordance with a subsequent agreement ‘is necessarily conclusive in the sense that it overrides all other means of interpretation’.⁵⁶³

Therefore, an UNGA resolution and the following coordinated practice could ‘contribute to a clarification of the meaning of a treaty’⁵⁶⁴ and direct the parties to ‘possible meanings of a particular term or provision, or of the scope of the treaty as a whole’.⁵⁶⁵ Nonetheless, a resolution would not be conclusive on its own; other means of interpreting UNCLOS would remain equally relevant.

‘The weight of a subsequent agreement or subsequent practice as a means of interpretation under article 31, paragraph 3, depends, *inter alia*, on its clarity and specificity.’⁵⁶⁶ VCLT article 31(3) does not provide an exhaustive list and among other relevant aspects is the timing of a subsequent agreement or practice establishing an

⁵⁵⁹ *Ibid* 164.

⁵⁶⁰ See *ibid* 165.

⁵⁶¹ *Ibid* 133.

⁵⁶² *Ibid*.

⁵⁶³ *Ibid* 134.

⁵⁶⁴ *Ibid* 166.

⁵⁶⁵ *Ibid* 166.

⁵⁶⁶ *Ibid* 122.

agreement.⁵⁶⁷ The ICJ and arbitral tribunals have afforded more weight to subsequent practice that relates specifically to the interpretation of a treaty⁵⁶⁸ and an UNGA resolution, clearly aimed at coordinating subsequent practice of UNCLOS member States, might well meet such requirements.

The ICJ recently considered the effect of subsequent practice on treaty interpretation in the *Whaling in the Antarctic* case. Australia argued that resolutions of the International Whaling Commission should affect the interpretation of Article VIII of the International Convention for the Regulation of Whaling under paragraphs (a) and (b) of VCLT article 31(3).⁵⁶⁹ The article in question provides that lethal methods may be permissible in the conduct of scientific research but Australia and New Zealand maintained that aforementioned resolutions had limited its scope to instances where non-lethal methods were available.⁵⁷⁰ The Court rejected this contention and found that resolutions of the International Whaling Commission could not be afforded such legal significance for two reasons. First, because they had been ‘adopted without the support of all States parties to the Convention and, in particular, without the concurrence of Japan’.⁵⁷¹ Second, because the resolutions and guidelines that had been adopted by consensus did not prohibit the use of lethal methods when other options were available. They merely urged States to consider whether research objectives could be met with the use of non-lethal methods.⁵⁷² This decision indicates that soft-law instruments can shape treaty obligations but it also highlights the importance of unanimity in subsequent practice.

The ILC has also confirmed the significance of the number of States involved in subsequent practice under VCLT article 31(3)(b). This may differ from one instance to another and ‘[s]ilence on the part of one or more parties can constitute acceptance of the subsequent practice when the circumstances call for some reaction’.⁵⁷³

⁵⁶⁷ *Ibid* 188.

⁵⁶⁸ *Ibid* 189.

⁵⁶⁹ *Whaling in the Antarctic (Australia v Japan: New Zealand intervening)* (Merits) [2014] ICJ Rep 226, para 79.

⁵⁷⁰ *Ibid* paras 80-81.

⁵⁷¹ *Ibid* para 83.

⁵⁷² *Ibid*.

⁵⁷³ *Ibid* 122.

According to Sinclair, the weight given to subsequent practice ‘depends on the extent to which it is concordant, common and consistent’.⁵⁷⁴ Aust goes even further, explaining that the practice in question must be expressly or tacitly accepted by all State parties to be relevant under VCLT article 31(3)(b).⁵⁷⁵ Indeed, the decision of the ICJ in the *Whaling in the Antarctic* case suggests that an UNGA resolution might have to be approved by consensus in order to alter UNCLOS provisions.

The World Trade Organisation (hereinafter WTO) Appellate Body has elaborated further on the number of States necessarily involved in subsequent practice and the evidence required for such practice. The Appellate Body has confirmed that ‘(i) there must be a common, consistent, discernible pattern of acts or pronouncements; and (ii) those acts or pronouncements must imply agreement on the interpretation of the relevant provision’.⁵⁷⁶ Furthermore,

in international law, the essence of subsequent practice in interpreting a treaty has been recognized as a ‘concordant, common and consistent’ sequence of acts or pronouncements which is sufficient to establish a discernable pattern implying the agreement of the parties regarding its interpretation. An isolated act is generally not sufficient to establish subsequent practice; it is a sequence of acts establishing the agreement of the parties that is relevant.⁵⁷⁷

The WTO Appellate Body has asserted that a ‘common’ and ‘concordant’ practice ‘clearly is something beyond a handful of classification exercises in one Member’.⁵⁷⁸ For example, in *China – Measures Affecting the Protection and Enforcement of Intellectual Property Rights*, the Appellate Body concluded that ‘the enforcement policies of two authorities of two Members, a draft Directive of another Member and various free trade agreements entered into by the United States’ were insufficient.⁵⁷⁹

⁵⁷⁴ Ian Sinclair, *The Vienna Convention on the Law of Treaties 2nd edition* (Manchester University Press 1984) 137.

⁵⁷⁵ Anthony Aust, *Modern Treaty Law and Practice, Second edition* (Cambridge University Press 2000) 194.

⁵⁷⁶ WTO, *Appellate Body Report, US – Measures Affecting the Cross-border Supply of Gambling and Betting Services* (20 April 2005) WT/DS285/AB/R, para 192.

⁵⁷⁷ WTO, *Appellate Body Report, Japan – Taxes on Alcoholic Beverages* (1 November 1996) WT/DS8/AB/R, WT/DS10/AB/R, WT/DS11/AB/R, 97.

⁵⁷⁸ WTO, *Panel Report, EC – Tariff Classification of Certain Information Technology Products* (21 September 2010) WT/DS375/R, WT/DS376/R, WT/DS377/R, para 7.565.

⁵⁷⁹ WTO, *Panel Report, China – Measures Affecting the Protection and Enforcement of Intellectual Property Rights* (20 March 2009) WT/DS362/R, paras 7.580 and 7.581.

Furthermore, in *EC – Chicken Cuts*, the WTO Appellate Body noted that although it was not necessary that ‘each and every party must have engaged in a particular practice for it to qualify as a “common” and “concordant” practice’ it would be difficult to establish such a pattern ‘on the basis of acts or pronouncements of one, or very few parties to a multilateral treaty’.⁵⁸⁰ The Appellate Body also concluded that a ‘lack of protest’ should not be regarded, on its own, as support of State practice.⁵⁸¹ In view of the above, it may be asserted that subsequent practice concerning maritime limits would have to be very compelling to affect the interpretation of UNCLOS and sufficient evidence would have to be provided by the party invoking VCLT article 31(3).⁵⁸² Furthermore, negative votes would surely reduce the interpretative weight given to an UNGA resolution as establishing an agreement between the parties concerning the interpretation of UNCLOS. However, even without a large majority, an UNGA resolution might be relevant under VCLT article 32⁵⁸³ and, consequently, qualify as supplementary means of interpretation.

2.5.3. Extent to Which Existing Rules Can be Altered Through Subsequent Practice

UNCLOS can be altered through articles 312-314 and 316 or an implementing agreement and there are no limits to the extent of such changes, except for those contained in UNCLOS article 311(2), (3) and (6). Likewise, there are no restrictions on the extent to which a subsequent rule of customary international law may modify a treaty, although, as previously explained, such rules may not be able to override the constitution of the oceans. However, there are limits on the extent to which treaties can be altered by subsequent practice because such practice can only affect the interpretation of existing provisions, not rewrite them.

The draft convention on the Law of Treaties originally contained an article that would have expressly permitted the modification of a treaty through subsequent practice, but

⁵⁸⁰ WTO, *Appellate Body Report, EC – Customs Classification of Frozen Boneless Chicken Cuts* (27 September 2005) WT/DS269/AB/R, WT/DS286/AB/R, para 259.

⁵⁸¹ *Ibid* para 272.

⁵⁸² See *Panel Report, China – Measures Affecting the Protection and Enforcement of Intellectual Property Rights* (n 579) paras 7.580 and 7.581.

⁵⁸³ ‘Chapter VI: Subsequent agreements and subsequent practice in relation to the interpretation of treaties’ (n 547) 164.

this was highly contentious⁵⁸⁴ and ultimately rejected with 53 votes to 15 and 26 abstentions.⁵⁸⁵ Commentators have argued that the decision not to explicitly recognise modification through subsequent practice does not exclude the possibility.⁵⁸⁶ However, this finds limited support in international jurisprudence, according to the ILC.⁵⁸⁷ As previously mentioned: ‘The possibility of amending or modifying a treaty by subsequent practice of the parties has not been generally recognized.’⁵⁸⁸

The ICJ has never concluded that subsequent practice modified a treaty but it has gone beyond the ordinary meaning of treaty provisions, opted for broad interpretations and done so by reference to subsequent practice of the parties.⁵⁸⁹ Indeed, ‘the dividing line between the interpretation and the amendment or modification of a treaty is in practice sometimes “difficult, if not impossible, to fix”’.⁵⁹⁰ Nonetheless, it might jeopardise the stability of treaty relations if subsequent practice could modify treaties.⁵⁹¹ Therefore, this possibility must not be presumed.

⁵⁸⁴ See Summary records of the plenary meetings and of the meetings of the Committee of the Whole, 37th meeting, ‘Official Records of the United Nations Conference on the Law of Treaties, First and Second Sessions, Vienna 26 March-24 May 1968 and 9 April-22 May’ (24 April 1968) UN Doc A/CONF.39/11, 207-215.

⁵⁸⁵ ‘Chapter VI: Subsequent agreements and subsequent practice in relation to the interpretation of treaties’ (n 547) 175.

⁵⁸⁶ *Ibid* 175, referring to, e.g., Ian Sinclair (n 574) 138; Richard K Gardiner, *Treaty Interpretation*, 2nd edition (Oxford University Press 2015) 275-280; Anthony Aust (n 575) 213; Mark E Villiger, Commentary on the 1969 Vienna Convention on the Law of Treaties (Martinus Nijhoff, 2009) 432, para 23; Oliver Dörr (n 557) 555, para 76; Malcolm N Shaw, *International Law*, 6th edition (Cambridge University Press 2008), 934.

⁵⁸⁷ See ‘Chapter VI: Subsequent agreements and subsequent practice in relation to the interpretation of treaties’ (n 547) 175.

⁵⁸⁸ *Ibid* 122.

⁵⁸⁹ See in particular *Legal Consequences for States of the Continued Presence of South Africa in Namibia (South West Africa) notwithstanding Security Council Resolution 276 (1970)* (Advisory Opinion) [1971] ICJ Rep 16, para 53.

⁵⁹⁰ ‘Chapter VI: Subsequent agreements and subsequent practice in relation to the interpretation of treaties’ (n 547) 176, referring to Ian Sinclair (n 574) 138; Richard K Gardiner (n 586) 275; Sean D Murphy, ‘The relevance of subsequent agreement and subsequent practice for the interpretation of treaties’ in Georg Nolte (ed) *Treaties and Subsequent Practice* (Oxford University Press 2013) 82, 90; Bruno Simma, ‘Miscellaneous thoughts on subsequent agreements and practice’ in Georg Nolte (*op cit*) 46; Wolfram Karl, *Vertrag und spätere Praxis im Völkerrecht* (Springer 1983) 42-43; Jean-Marc Sorel and Valérie Boré Eveno, ‘1969 Vienna Convention, Article 31: General rule of interpretation’ in Olivier Corten and Pierre Klein (eds) *The Vienna Conventions on the Law of Treaties: A Commentary* (Oxford University Press 2011) 804, 825, para 42; Oliver Dörr (n 557) 555, para 76.

⁵⁹¹ *Ibid* 180.

According to the ILC, VCLT article 31(3) is to be used for ‘narrowing or widening or otherwise determining the range of possible interpretation’.⁵⁹² This range of possibilities then marks the extent to which a treaty can be modified by reference to subsequent agreements or subsequent practice. Vague or ambiguous treaty provisions often leave more room for interpretation and the same is true of provisions that afford discretion to the member States. The range of possible interpretations can be quite broad and, therefore, subsequent practice can lead to significant revisions. For example, the 1944 Convention on International Civil Aviation was, with reference to subsequent practice, interpreted so as to require prior permission for landing, although no such requirement is stipulated in the treaty.⁵⁹³

The UNCLOS provisions that would be affected by the proposed changes are in some cases vague or unclear. For example, UNCLOS article 76(9) might apply to all outer continental shelf limits, including those at 200 nm from baselines, and UNCLOS article 7(2) might not entail an obligation but an option to adjust straight baselines on highly unstable coastlines, at the discretion of each coastal State. Likewise, it is open to interpretation whether UNCLOS article 47, 75 and 84 entail an obligation to update charts or lists of coordinates when circumstances change. These provisions can certainly be clarified through subsequent practice of UNCLOS member States. However, the provisions concerning maximum breadth of maritime zones and requirements for baselines are crystal clear and so are the provisions guaranteeing other States rights to areas beyond those limits.

As previously explained, States can divert from UNCLOS on the basis of bilateral or multilateral agreements but these must be compatible with UNCLOS and they cannot affect the rights and obligations that other States enjoy under the Convention.⁵⁹⁴ Moreover, States can agree to modify or suspend the operation of certain provisions, but such agreements cannot affect non-contracting States; they cannot ‘relate to a provision derogation from which is incompatible with the effective execution of the object and purpose of’ UNCLOS; and they ‘shall not affect the application of the basic

⁵⁹² *Ibid* 168.

⁵⁹³ Sean D Murphy (n 590) 85; Anthony Aust (n 575) 215.

⁵⁹⁴ See UNCLOS article 311(2).

principles embodied' in UNCLOS.⁵⁹⁵ Finally, 'there shall be no amendments to the basic principle relating to the common heritage of mankind'.⁵⁹⁶

The freezing of maritime limits may well be compatible with the object and purpose of establishing a legal order for the peaceful, equitable and efficient exploration and exploitation of the seas and oceans.⁵⁹⁷ However, this does affect access to areas that would become available to all States, as coastlines recede, and sea levels rise, if provisions concerning baselines and the maximum breadth of maritime zones were upheld. Therefore, the proposed rules afford larger maritime expanses to certain States and limit the rights of others, which, according to UNCLOS articles 311(2) and (3), is prohibited without the approval of all who are impacted.

UNCLOS article 311(3) suggests that the basic principles of UNCLOS cannot be derogated from, even if based on an agreement. The proposed derogation from the theory of ambulatory baselines would violate three basic principles of UNCLOS. Namely, the principles of the common heritage of mankind, freedom of the high seas and land dominates the sea. The first two principles are codified in UNCLOS⁵⁹⁸ and the prohibition on any derogation from the common heritage of mankind principle is made explicit under UNCLOS article 311(6). The freezing of maritime limits would not affect the nature of these principles but their sphere of application. The freedom of the high seas is meant to apply in the water column beyond 200 nm of baselines (as determined in accordance with UNCLOS articles 5, 7 and 47)⁵⁹⁹ and the common heritage of mankind principle shall govern the use of resources in the seabed and subsoil beyond national jurisdiction, as determined by UNCLOS article 76 (and relevant baseline provisions).⁶⁰⁰ However, if baselines or outer limits were frozen, these principles would govern a smaller portion of the world's oceans, seabed and subsoil, than currently prescribed by UNCLOS. This would not necessarily be a

⁵⁹⁵ UNCLOS article 311(3).

⁵⁹⁶ UNCLOS article 311(6).

⁵⁹⁷ UNCLOS preamble.

⁵⁹⁸ See, e.g., UNCLOS articles 87 and 136.

⁵⁹⁹ UNCLOS articles 86 and 87.

⁶⁰⁰ UNCLOS articles 1(1) and 136.

fundamental deviation from the principles and might be assimilated to the deviations of the existing implementing agreements.

The land dominates the sea principle is reflected in several UNCLOS provisions, although never explicitly mentioned. ‘The juridical link between the State’s territorial sovereignty and its rights to certain adjacent maritime expanses is established by means of its coast.’⁶⁰¹ Maritime entitlements are generated by the coastal front⁶⁰² and coastal features that satisfy the requirements of UNCLOS articles 7(4), 13 and 121. Inner limits of these entitlements are dependent upon coastal geography⁶⁰³ and so are the outer limits.⁶⁰⁴ Maritime boundaries are also constructed by reference to coastal geography⁶⁰⁵ and the ICJ has relied on this general principle of the law of the sea in numerous decisions.⁶⁰⁶ UNCLOS article 311(3) indicates that this principle cannot be violated even through a subsequent agreement. Therefore, it seems unlikely that subsequent practice or a developing rule of customary international law could justify such derogation from UNCLOS, as the freezing of limits would entail. In these circumstances only an amendment of UNCLOS or an implementing agreement would suffice.

2.6. Conclusion

This chapter has explained how baselines, and the outer maritime limits derived from them, fluctuate in accordance with changes to coastal geography to continuously meet the requirements of UNCLOS. In theory, all maritime limits (with the exception of straight baselines on highly unstable coastlines and permanently stable continental shelf limits) fluctuate as a direct consequence of changes to the low-water mark surrounding relevant coastal features. However, maritime limits are generally identified by reference to officially recognised large-scale charts or information submitted to the UN Secretary-General, which assumes positive action by coastal

⁶⁰¹ *Libyan Arab Jamahiriya/Malta* (n 78) 41.

⁶⁰² See, e.g., *Tunisia/Libyan Arab Jamahiriya* (n 302) para 73.

⁶⁰³ See UNCLOS article 5, 7 and 47.

⁶⁰⁴ See UNCLOS articles 3, 33, 48, 57 and 76.

⁶⁰⁵ See chapter 3.3.

⁶⁰⁶ See, e.g., *North Sea Continental Shelf* (n 99) para 96; *Romania v Ukraine* (n 284) para 77; *Tunisia/Libyan Arab Jamahiriya* (n 302) para 73.

States in updating maritime limits. States may in some instances delay the fluctuation of their maritime limits by relying on outdated charts or lists of coordinates and enforcing their rights accordingly. There is no automatic surveillance that ensures that maritime limits are immediately updated when coastal geography changes. Yet, unilaterally declared maritime limits cannot be opposable to other States unless they are consistent with international law.⁶⁰⁷ In other words, maritime limits are only binding on other States insofar as they mark the extension of lawful maritime entitlements. Consequently, States can ignore maritime limits that have become inconsistent with the applicable international law or challenge them before courts and tribunals. Officially recognised charts or submissions to the UN Secretary-General are usually the first point of reference for identifying the location of maritime limits but where these sources no longer reflect the low-water mark or still valid base points, courts and tribunals may instead refer to the actual low-water mark. Therefore, the charted line is constitutive of the legally valid baseline, but it is abandoned and substituted with the actual low-water line if it is inconsistent with international law.

Commentators have noted that ambulatory maritime limits may cause friction in international relations as increased changes to coastal geography will incite more challenges and disputes concerning maritime limits.⁶⁰⁸ Indeed, the threat of climate change and accelerated changes to the marine environment have sparked several disputes in recent years.⁶⁰⁹ Nonetheless, the stability, or rather instability, of maritime limits is a logical consequence of the basis for title over maritime areas.⁶¹⁰ The number of disputes may go up in the coming era of instability but new rules changing the existing legal framework to the detriment of States interested in the expansion of the high seas and international seabed area will not solve that problem. Entitlements can be preserved with coast protective works; this admittedly comes at a cost but has the benefit of conforming to the applicable international law.

Existing rules could be altered to stabilise baselines and/or outer maritime limits. The freezing of baselines could possibly be achieved through revised interpretation of

⁶⁰⁷ *Anglo-Norwegian Fisheries* (n 43) 132.

⁶⁰⁸ David D Caron Caron (n 79) 12, 14.

⁶⁰⁹ See, e.g., *Bangladesh v India* (n 25) para 217; *Chagos Marine Protected Area* (n 248) para 288.

⁶¹⁰ See *Anglo-Norwegian Fisheries* (n 43) 133: 'It is the land which confers upon the coastal State a right to the waters off its coasts'.

UNCLOS, by reference to subsequent practice. However, the better option may be to uphold the integrity of UNCLOS and adjust maritime limits in accordance with the Convention. The desired stability could be achieved through a more conservative approach; with increased use of straight baselines (and subsequent stability of all dependent outer limits); the fixing of all continental shelf limits (leaving other limits ambulatory); and the fixing of permanent maritime boundaries, with due consideration for changing circumstances.

Vidas explains that the new geographical order is one of instability and that laws regulating maritime claims should adapt to the instability of nature.⁶¹¹ Existing international law can accommodate impending changes by obligating States to gradually change their maritime limits (with the exception of outer continental shelf limits beyond 200 nm) and the option to freeze certain limits with artificial constructions. This is disadvantageous for poorer States that are unable to protect their coastlines, but it strikes a balance between the desired stability for maritime limits and the increasing instability of nature. The alternative is to change or reinterpret existing rules through complicated processes to create stability around fluctuating coastlines. Such measures would not be a final solution, at least when it comes to submerging island States because loss of statehood will inevitably affect maritime entitlements.

While changing coastal geography leads to challenges and makes previously acceptable baselines and base points unopposable⁶¹² maritime boundaries that are constructed on the basis of the same baselines or base points remain stable and enforceable from the moment when they are agreed upon or established through judicial means. Subsequent changes may alter the extent of maritime entitlements of the parties to a maritime boundary and yet, boundaries will be fixed in place. The baselines and outer maritime limits of relevant States may even fluctuate within the confines of a stable maritime boundary without having any effect on the location of the boundary. This means that changing coastlines bring about a discrepancy between maritime limits and maritime boundaries – while unilateral limits continue to reflect relevant coastal geography, the correlation between relevant coastlines and bilateral

⁶¹¹ Davor Vidas (n 76) 83.

⁶¹² See, e.g., *Bangladesh v India* (n 25) para 264.

boundaries is lost when the boundaries take effect. Maritime boundaries may become redundant when maritime limits recede so far back that the boundaries no longer delimit overlapping entitlements⁶¹³ and they may potentially be terminated when fundamental changes affect the essential basis of the underlying agreements.⁶¹⁴ However, such eventualities may be averted if coastal instability and coastal changes are considered when boundaries are delimited, i.e., if foreseeable fluctuations of maritime entitlements have an effect on maritime boundary delimitation.

⁶¹³ See section 2.4.

⁶¹⁴ See section 4.4.

III. THE RELEVANCE OF COASTAL INSTABILITY FOR MARITIME BOUNDARY DELIMITATION

3.1. Introduction

States with overlapping maritime entitlements are obligated to establish maritime boundaries to delimit the territorial sea, exclusive economic zone and continental shelf.⁶¹⁵ Maritime boundaries must be effected by agreements, and, if States fail to agree, their maritime boundaries are settled through compulsory dispute settlement: arbitration, adjudication or conciliation.⁶¹⁶ Maritime delimitation differs from maritime delineation insofar as it produces permanent bilateral boundaries, as opposed to ambulatory unilateral limits. Agreed or adjudicated boundaries are of a permanent nature because they are safeguarded by the principles of *pacta sunt servanda* (protecting the sanctity of treaty obligations) and *res judicata* (preventing the revision of adjudicated boundaries). Furthermore, UNCLOS article 296(1) provides that any decision rendered by a court or tribunal with jurisdiction under the compulsory dispute settlement regime of UNCLOS shall be final and complied with by all the parties to the dispute. Minor changes to the geographical landscape of a coastal State can affect the validity of maritime limits but similar changes do not affect permanent bilateral maritime boundaries, unless otherwise agreed. A fundamental change of circumstances can be invoked to justify termination of agreed maritime boundaries in rare and exceptional cases, as discussed in Chapter IV. However, maritime boundaries generally remain opposable when circumstances change, even if such changes sever the boundaries from underlying maritime limits and entitlements under UNCLOS.

⁶¹⁵ See UNCLOS articles 15, 74 and 83.

⁶¹⁶ See UNCLOS articles 15, 74, 83, 286 and 287(1). Note, however, that maritime boundary delimitation may be excluded from mandatory dispute settlement under UNCLOS article 298(1)(a)(i).

No method of maritime delimitation is obligatory in all circumstances. UNCLOS article 15, which deals with delimitation of the territorial sea, refers to a method of delimitation commonly known as the equidistance/special circumstances method. Failing an agreement to the contrary, the territorial sea is delimited on the basis of the equidistance method. However, an equidistance line may be abandoned or adjusted, by reference to special circumstances or historic title, to ensure an equitable solution.⁶¹⁷ UNCLOS articles 74 and 83, which govern the delimitation of the exclusive economic zone and the continental shelf, obligate States to achieve an equitable solution on the basis of international law but make no explicit reference to a delimitation method. The applicable international law requires consideration of all relevant circumstances and it is on the basis of those circumstances that a delimitation method is selected.⁶¹⁸ Courts and tribunals have shown a preference for the equidistance/relevant circumstances method of delimitation as they generally start with a provisional equidistance line and subsequently adjust it by reference to relevant circumstances.⁶¹⁹ However, this method can lead to inequitable results, therefore, different methods may be justified.⁶²⁰ The equidistance method does not have automatic priority over other methods of delimitation⁶²¹ and it should never be applied mechanically⁶²² to the detriment of a proper consideration of all relevant circumstances.

Maritime entitlements are generated by the coastal front;⁶²³ therefore, coastal geography is fundamental to maritime boundary delimitation.⁶²⁴ Maritime boundaries

⁶¹⁷ *Bangladesh/Myanmar* (n 25) para 151; *Bangladesh v India* (n 25) para 272.

⁶¹⁸ *Tunisia/Libyan Arab Jamahiriya* (n 302) para 110.

⁶¹⁹ See, e.g., *Bangladesh/Myanmar* (n 25) para 238.

⁶²⁰ See, e.g., *Tunisia/Libyan Arab Jamahiriya* (n 302) paras 109, 110; *North Sea Continental Shelf* (n 99) 47; *Libyan Arab Jamahiriya/Malta* (n 78) paras 60-64; *Territorial and Maritime Dispute between Nicaragua and Honduras in the Caribbean Sea (Nicaragua v Honduras)* (Judgment) [2007] ICJ Rep 659, para 287.

⁶²¹ *Nicaragua v Honduras* (n 620) para 272.

⁶²² *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) para 194.

⁶²³ See *Libyan Arab Jamahiriya/Malta* (n 78) 30, paras 27 and 61; *North Sea Continental Shelf* (n 99) para 96; *Tunisia/Libyan Arab Jamahiriya* (n 302) para. 74; *Delimitation of the Maritime Boundary in the Gulf of Maine Area* (n 282) para 205.

⁶²⁴ See, e.g., *Davor Vidas* (n 76) 76; *Land and Maritime Boundary between Cameroon and Nigeria (Cameroon v Nigeria: Equatorial Guinea intervening)* (Judgment) [2002] ICJ Rep 303, 443-445, para 295.

have been delimited by reference to changing coastlines.⁶²⁵ However, courts and tribunals have also rejected the relevance of foreseeable changes to coastal geography,⁶²⁶ partly to defuse potential threats to the stability of previously settled boundaries.⁶²⁷ Such efforts are understandable but they do not justify derogation from existing rules governing maritime boundary delimitation and the delimitation of unsettled boundaries has no direct effect on previously settled boundaries. Moreover, the quest for peace and stability may be better served by constructing boundaries with due regard for imminent changes so that the boundaries can remain equitable and unchallenged as circumstances change. This would extend the correlation between maritime boundaries and lawful entitlements, and, thus, promote peaceful relations. After all, ‘good fences make good neighbours’.⁶²⁸

This chapter will explore the relevance of changing coastal geography for maritime boundary delimitation and consider, in practical terms, how future changes to coastal geography can affect the delimitation process.

3.2. Maritime Boundary Delimitation

States must cooperate in delimiting overlapping maritime entitlements. They must negotiate in good faith ‘with the genuine intention of achieving a positive result’⁶²⁹ and whenever an agreement cannot be reached recourse is had to the dispute settlement mechanisms provided for in UNCLOS Part XV,⁶³⁰ which can entail binding settlement by a court or tribunal.⁶³¹ States may exclude maritime boundary delimitation from compulsory dispute settlement. However, they are still obligated to subject any dispute that arises after the entry into force of the Convention to conciliation under Annex V, section 2, at the request of either party, if they fail to agree otherwise within a

⁶²⁵ See, e.g., *Nicaragua v Honduras* (n 620) para 277; Agreement between the Government of the French Republic and the Government of the Kingdom of Belgium on the delimitation of the continental shelf (adopted 8 October 1990, entered into force 7 April 1993) 32 ILM 1068, article 2.

⁶²⁶ See *Delimitation of the Continental Shelf between the United Kingdom of Great Britain and Northern Ireland, and the French Republic (United Kingdom/France)* (1977) XVIII RIAA 3; *Bangladesh v India* (n 25) para 217.

⁶²⁷ *Ibid* para 217.

⁶²⁸ Robert Frost, *The Mending Wall* (David Nutt 1914).

⁶²⁹ *Delimitation of the Maritime Boundary in the Gulf of Maine Area* (n 282) para 112(1).

⁶³⁰ DOALOS (n 616) 1.

⁶³¹ Whatever forum is applicable under UNCLOS article 287(1).

reasonable period of time.⁶³² The obligation to agree on a boundary is merely a preliminary obligation and if agreement cannot be reached an equitable boundary must still be delimited on the basis of international law, through judicial means.⁶³³ After all, judicial settlement of international disputes ‘is simply an alternative to the direct and friendly settlement of such disputes between the parties’.⁶³⁴

Different rules apply when delimiting maritime boundaries, depending on the maritime zone in question. UNCLOS article 15 provides that the boundary delimiting the territorial sea of States with opposite or adjacent coasts is ‘the median line every point of which is equidistant from the nearest points on the baselines from which the breadth of the territorial seas of each of the two States is measured’ unless otherwise agreed or justified by reasons of special circumstances or historic title. This refers to the equidistance method, which is further discussed in section 3.2.1. Delimitation of the exclusive economic zone and the continental shelf is governed by UNCLOS articles 74 and 83, which are identical except that article 74 refers to the exclusive economic zone, whereas article 83 refers to the continental shelf. These provisions differ from UNCLOS article 15 insofar as they only require that the delimitation is effected by an agreement, in accordance with international law, and that an equitable solution is achieved; they make no reference to the equidistance method. Consequently, the equidistance method is the default method for delimiting the territorial sea,⁶³⁵ while delimitation of the exclusive economic zone and the continental shelf need not necessarily be effected by the equidistance method.⁶³⁶

Courts and tribunals often establish single purpose maritime boundaries delimiting all relevant maritime zones, insofar as they are coincident.⁶³⁷ Thus, overlapping claims to maritime zones can be delimited with one line, which then marks the seaward extent

⁶³² See UNCLOS article 298(1)(a)(i). The provision further provides ‘that any dispute that necessarily involves the concurrent consideration of any unsettled dispute concerning sovereignty or other rights over continental or insular land territory shall be excluded from such submission’.

⁶³³ Jonathan I Charney, ‘Progress in International Maritime Boundary Delimitation Law’ (1994) 88 (2) *American Journal of International Law* 227, 254.

⁶³⁴ *Case of the Free Zones of Upper Savoy and the District of Gex (Switzerland v France)* PCIJ Rep Series A/B No 46, app 1, 13.

⁶³⁵ Failing agreement to the contrary, special circumstances or historic title justifying derogation from equidistance.

⁶³⁶ *Bangladesh v India* (n 25) 104.

⁶³⁷ See e.g. *Qatar v Bahrain* (n 133) paras 173-174; *Nicaragua v Honduras* (n 620) 739-740.

of all maritime zones that reach as far as the boundary. The entitlement to a continental shelf is inherent to all coastal States, and, consequently, States always have to delimit overlapping entitlements to continental shelves. It is up to the discretion of each coastal State whether it claims an exclusive economic zone, but most States do claim either an exclusive economic zone or an exclusive fisheries zone, and most maritime boundaries lie beyond the limits of the territorial sea. Single purpose maritime boundaries can be established to delimit all relevant maritime zones, as far as they are coincident.⁶³⁸ Furthermore, the ICJ has confirmed that where it is tasked with the delimitation of a single maritime boundary, ‘the so-called equitable principles/relevant circumstances method may usefully be applied, as in these maritime zones this method is also suited to achieving an equitable result’.⁶³⁹

‘[T]he concept of a single maritime boundary does not stem from multilateral treaty law but from State practice, and [...] it finds its explanation in the wish of States to establish one uninterrupted boundary line delimiting the various — partially coincident — zones of maritime jurisdiction appertaining to them’.⁶⁴⁰ The construction of single purpose boundaries has been generally accepted and widely practiced since first employed in the *Gulf of Maine* case in 1984.⁶⁴¹ However, it should be noted that the application of international law can have different results for different maritime zones, resulting in different boundaries.⁶⁴² For example, certain circumstances that are relevant for exclusive economic zone delimitation may be irrelevant for delimitation of the continental shelf, and vice versa. Therefore, maritime boundaries of different maritime zones can be conceptually different, even where the location of the boundaries coincides.⁶⁴³ Moreover, the equidistance method may be applicable for delimitation of the territorial sea while another method is required for delimitation of the exclusive economic zone and the continental shelf. Consequently, certain

⁶³⁸ *Ibid.*

⁶³⁹ Extract from the Yearbook of the International Law Commission: 2009, vol I ‘Summary record of the 3016th meeting’ (7 July 2009) UN Doc A/CN.4/3016, 122, para 24-25, referring to *Nicaragua v Honduras* (n 620) para 271.

⁶⁴⁰ *Qatar v Bahrain* (n 133) para 173.

⁶⁴¹ See *Delimitation of the Maritime Boundary in the Gulf of Maine Area* (n 282) 252.

⁶⁴² Thomas Cottier, *Equitable Principles of Maritime Boundary Delimitation: The Quest for Distributive Justice in International Law* (Cambridge University Press 2015) 218.

⁶⁴³ *Maritime Delimitation in the Area between Greenland and Jan Mayen (Denmark v Norway)* (Judgment) [1993] ICJ Rep 38, 56-57.

circumstances may call for different boundaries delimiting the territorial sea, the exclusive economic zone and the continental shelf, which means that single purpose boundaries are not suitable in all cases.

The following sections will explore the different rules governing delimitation of maritime boundaries under UNCLOS.

3.2.1. Delimitation of the Territorial Sea: The Equidistance Method

Delimitation of the territorial sea is governed by UNCLOS article 15, which provides the following:

Where the coasts of two States are opposite or adjacent to each other, neither of the two States is entitled, failing agreement between them to the contrary, to extend its territorial sea beyond the median line every point of which is equidistant from the nearest points on the baselines from which the breadth of the territorial seas of each of the two States is measured. The above provision does not apply, however, where it is necessary by reason of historic title or other special circumstances to delimit the territorial seas of the two States in a way which is at variance therewith.

UNCLOS article 15 codifies the customary ‘equidistance/special circumstances’ rule,⁶⁴⁴ and the reference to a ‘median line’ also refers to an ‘equidistance line’. The equidistance method is the only method explicitly referred to in UNCLOS, and the 1958 Conventions, and, in general, ‘most agreed maritime boundaries are based on some form of equidistance’.⁶⁴⁵

The equidistance/special circumstances method involves drawing a boundary midway between the baselines of two opposite or adjacent States; base points are identified on each State’s coastline and a boundary line constructed at an equal distance from the nearest points on each State’s baselines.⁶⁴⁶ After a provisional boundary line is

⁶⁴⁴ *Qatar v Bahrain* (n 133) para. 176.

⁶⁴⁵ Approximately 89% of maritime boundary agreements concluded between opposite coastal states are based on some form of equidistance and around 38% of agreements between adjacent states. See Clive Schofield (n 92) 54, referencing Leonard Legault and Blair Hankey, ‘Method, Oppositeness and Adjacency, and Proportionality in Maritime Boundary Delimitation’ in Jonathan I Charney and Lewis M Alexander (eds) *International Maritime Boundaries, volume 1* (Martinus Nijhoff 1993) 203.

⁶⁴⁶ *Qatar v Bahrain* (n 133) para 177.

constructed, on the basis of valid base points, special circumstances are examined to determine whether the equidistance line must be adjusted.⁶⁴⁷ An equidistance line can be modified by reference to special circumstances or historic title, but these factors can also justify derogation from the equidistance method altogether when delimiting the territorial sea. For example, the ICJ decided not to apply the equidistance method when delimiting the territorial sea in *Nicaragua v Honduras* because of special circumstances.⁶⁴⁸ The Court found that ‘[n]othing in the wording of article 15 suggests that [...] “special circumstances” may only be used as a corrective element to a line already drawn’ and that jurisprudence did not contradict this interpretation.⁶⁴⁹

UNCLOS article 15 is identical to article 12(1) of the 1958 Convention on the Territorial Sea and the Contiguous Zone, and article 6 of the Convention on the Continental Shelf, except for minor editorial changes, and the drafters of those provisions ‘envisaged that a special configuration of the coast might require a different method of delimitation’.⁶⁵⁰ Furthermore, the arbitral tribunal in the *Anglo/French Continental Shelf* case asserted that the travaux préparatoires of article 6 of the Convention on the Continental Shelf showed that the condition relating to special circumstances was added because ‘owing to particular geographical features or configurations, application of the equidistance principle might not infrequently result in an unreasonable or inequitable delimitation of the continental shelf’.⁶⁵¹ The tribunal went on to say that ‘the role of the “special circumstances” condition in Article 6 is to ensure an equitable delimitation’.⁶⁵² This clearly confirms that special circumstances can justify derogation from the equidistance method for delimitation of the territorial sea.

Where no territorial sea boundary has been delimited, neither State may extend its territorial sea beyond the median line. Thus, the median line represents a default

⁶⁴⁷ *Ibid* para 176.

⁶⁴⁸ *Nicaragua v Honduras* (n 620) para 281.

⁶⁴⁹ *Ibid* para 280.

⁶⁵⁰ *Ibid* para 280, referring to Yearbook of the International Law Commission, 1952, vol II, ‘Documents of the fourth session including the report of the Commission to the General Assembly’ (6 June 1952) UN Doc A/CN.4/SER.A/1952/Add.I., 38, para. 4

⁶⁵¹ *United Kingdom/France* (n 626) para 70.

⁶⁵² *Ibid*.

boundary for the territorial sea, one which cannot be crossed by either party, unless, and until, so agreed. States may agree to divert from applicable law when delimiting their maritime boundaries,⁶⁵³ and in so doing they may abandon the equidistance line. However, when delimited by courts and tribunals on the basis of UNCLOS article 15 or customary international law, the applicable method is always the equidistance method, and any variance from a strict equidistance line must be justified by reference to special circumstances or historic title.⁶⁵⁴

The equidistance method was deemed to be a suitable method for delimitation of the territorial sea in ordinary circumstances, but other methods may be more suitable when delimiting larger maritime zones. According to the ICJ in the *Gulf of Maine* case, ‘the preference given to a particular method for drawing a boundary over a very short distance from the coasts may no longer be justifiable where the delimitation has to extend a great distance from its starting-point and where different factors have to be taken into account’.⁶⁵⁵ As this demonstrates, different rules apply for delimitation of the exclusive economic zone and the continental shelf.

3.2.2. Delimitation of the Exclusive Economic Zone and the Continental Shelf

UNCLOS article 74(1) governs the delimitation of exclusive economic zone boundaries and UNCLOS article 83(1) is applicable for the delimitation of continental shelf boundaries. Both provisions are identical, except that where the former refers to the exclusive economic zone, the latter refers to the continental shelf. Delimitation of the exclusive fisheries zone is not explicitly governed by UNCLOS but the ICJ has held that the customary law enshrined in article 74 UNCLOS also applies to delimitation of an exclusive fisheries zone.⁶⁵⁶ The provisions provide the following:

The delimitation of the [exclusive economic zone/continental shelf] between States with opposite or adjacent coasts shall be effected by agreement on the basis of international law, as referred to in Article 38 of the Statute of the International Court of Justice, in order to achieve an equitable solution.

⁶⁵³ Bjarni Már Magnússon, ‘Outer Continental Shelf Boundary Agreements’, (2013) 62 (02) International and Comparative Law Quarterly 345, 350.

⁶⁵⁴ *Qatar v Bahrain* (n 133) para 176.

⁶⁵⁵ *Delimitation of the Maritime Boundary in the Gulf of Maine Area* (n 282) para 160.

⁶⁵⁶ *Denmark v Norway* (n 643) para 47.

These provisions are far less explicit than UNCLOS article 15, which refers to the equidistance method. The reason for this is that State representatives were unable to agree on one applicable method of delimitation for the exclusive economic zone and the continental shelf; one group of States wished to base the delimitation on equidistance while the other group advocated for an obligation to apply equitable principles.⁶⁵⁷ Therefore, instead of making one method obligatory for all instances of exclusive economic zone and continental shelf boundary delimitation, UNCLOS articles 74(1) and 83(1) refer to the applicable law as it may evolve through State practice and judicial settlement. In light of this, it must be concluded that the interpretation of UNCLOS articles 74(1) and 83(1) may change over time.

Despite a degree of uncertainty and a margin for interpretation, these provisions carry three clear obligations. First, maritime boundaries delimiting exclusive economic zone and continental shelf boundaries must be effected by agreements between coastal States with overlapping maritime entitlements. Second, these agreements must be established on the basis of international law, as referred to in article 38 of the ICJ Statute. Third, this process must always result in an equitable solution. The first requirement is fairly straightforward: States must agree on a boundary to delimit any overlapping entitlements. However, ‘in providing that delimitation shall be effected by way of agreement’ these provisions require ‘that there be negotiations conducted in good faith, but not that they should be successful’.⁶⁵⁸ Consequently, if States cannot reach an agreement, their maritime boundaries must be delimited through arbitration or adjudication⁶⁵⁹ and that, arguably, satisfies the requirement of effecting the delimitation by agreement.

The second requirement calls for an analysis of the applicable international law, and the third requirement can only be explained by first examining the term ‘equitable solution’ and possible methods for achieving such solutions under the applicable international law. The following sections seek to address these issues by providing an overview of, first, the applicable international law, second, equitable solutions in the

⁶⁵⁷ Myron H Nordquist (ed) *United Nations Convention on the Law of the Sea 1982 – A Commentary*, vol II (Martinus Nijhoff 1993) 801 and 954.

⁶⁵⁸ *Somalia v Kenya* (n 233) para 90 referring to *Cameroon v Nigeria: Equatorial Guinea intervening* (n 624) para 244.

⁶⁵⁹ *Bangladesh/Myanmar* (n 25) para 183.

context of maritime boundary delimitation, and, third, the application of these rules through different methods of delimitation.

3.2.2.1. Applicable International Law

International law, as referred to in article 38 of the ICJ Statute, includes (a) treaty obligations, (b) customary law, (c) general principles of law and, (d) as subsidiary means for determination of the rules of law, judicial decisions and teachings of the most highly qualified publicists. These are the legal sources that agreed maritime boundaries are based upon, which means that the equitable solution achieved must be in conformity with the relevant sources of law, i.e., UNCLOS and other applicable treaties, rights of third States, customary law, general principles, and judicial decisions and scholarly works.⁶⁶⁰

Equitable maritime boundaries are based on the rights of States Parties under UNCLOS and delimited with full consideration for the rights of third States. They must also conform to applicable general principles, such as ‘land dominates the sea’,⁶⁶¹ but these are also reflected in UNCLOS provisions, e.g., those concerning capacity to generate maritime entitlements. These sources of law do not conclusively settle how an equitable solution is achieved when delimiting maritime boundaries. However, such rules have emerged through customary international law and judicial decisions. In fact, the reference to applicable law has been understood as referring, first and foremost, to those two sources of law: custom and jurisprudence.⁶⁶²

UNCLOS articles 74 and 83 refer to applicable international law because State representatives at the Third Conference were unable to agree on a single method that would be mandatory in all cases.⁶⁶³ Thus, instead of making one method mandatory in all cases, the provisions incorporate those methods that may be applicable under international law under the developing jurisprudence and customary law. Maritime boundary agreements are not the best source to identify the applicable customary law

⁶⁶⁰ See Thomas Cottier (n 642) 223.

⁶⁶¹ See, e.g., *Romania v Ukraine* (n 284) para. 77.

⁶⁶² See, e.g., *Bangladesh v India* (n 25) para 339; *Bangladesh/Myanmar* (n 25) paras 183 and 184; *Barbados v Trinidad and Tobago* (n 25) para 223.

⁶⁶³ Statement by the Chairman, NG7/26 (March 26, 1979), see Thomas Cottier (n 642) 216.

because State practice often contradicts relevant jurisprudence.⁶⁶⁴ After all, States may agree to divert from customary law when negotiating maritime boundaries⁶⁶⁵ and State practice cannot make customary law without the necessary *opinio juris*.⁶⁶⁶ Instead, the applicable customary international law is reflected in the decisions of courts and tribunals.⁶⁶⁷ As confirmed by the ICJ in *Nicaragua v Colombia*, the customary international law relevant for delimitation of the continental shelf is ‘reflected in the case law of this Court, the International Tribunal for the Law of the Sea (ITLOS) and international arbitral courts and tribunals’.⁶⁶⁸ Indeed, the case law constitutes ‘an *acquis judicare* ... and should be read into articles 74 and 83 of the Convention.’⁶⁶⁹

International law governing equitable maritime boundary delimitation is largely judge made and the ICJ’s decision in the *North Sea Continental Shelf* cases was long considered to be the ‘greatest contribution to the formation of customary law in this field’.⁶⁷⁰ It certainly had an impact on the development of the law applicable to maritime boundary delimitation and remains an important precedent. However, relevant jurisprudence has continued to evolve, and the methods used to delimit boundaries on the basis of international law have crystallised in recent decisions, most notably the *Black Sea* case in 2009.⁶⁷¹ (Methods for achieving equitable solutions are discussed in section 3.2.2.3.)

In the *North Sea Continental Shelf* cases, the ICJ declared that boundaries to overlapping entitlements should be effected by agreements on the basis of equitable

⁶⁶⁴ Maritime boundaries negotiated by States often refer to economic or environmental considerations and exploitation of fish stocks or minerals but courts and tribunals have not considered such circumstances to be relevant for maritime boundary delimitation. See Barbara Kwiatkowska, ‘Economic and Environmental Considerations in Maritime Boundary Delimitations’ in Jonathan I Charney and Lewis M Alexander (n 645) 75, 75-76.

⁶⁶⁵ See, e.g., Bjarni Már Magnússon (n 653) 350; Jonathan I Charney and Lewis M Alexander (n 645) 11.

⁶⁶⁶ Thomas Cottier (n 642) 377.

⁶⁶⁷ The ICJ explained how extensive evidence of state practice could not suffice to support the emergence of customary law in *Libyan Arab Jamahiriya/Malta* (n 78) 38, para 44.

⁶⁶⁸ *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) para 114.

⁶⁶⁹ *Bangladesh v India* (n 25) para 339.

⁶⁷⁰ *Delimitation of the Maritime Boundary in the Gulf of Maine Area* (n 282) 293.

⁶⁷¹ ‘Summary record of the 3016th meeting’ (n 639) para 24-25.

principles.⁶⁷² This obligation was rooted in the 1945 Truman proclamation,⁶⁷³ and the Court went on to say that the *opinio juris* in the field of maritime delimitation (as evidenced by the *travaux préparatoires* of the 1958 conventions) was from beginning to end dominated by these two notions:

namely, first, that no one single method of delimitation was likely to prove satisfactory in all circumstances, and that delimitation should, therefore, be carried out by agreement (or by reference to arbitration); and secondly, that it should be effected on equitable principles.⁶⁷⁴

An arbitral tribunal endorsed this view in 1977 when it referred to a general norm of international law, providing that equitable principles must be applied when delimiting continental shelves between neighbouring States (failing agreement).⁶⁷⁵ In 1982, the ICJ stated that although the explicit reference to equitable principles was omitted from the UNCLOS provisions, such an obligation existed under customary international law.⁶⁷⁶ This was reaffirmed by a chamber of the ICJ in the *Gulf of Maine* case in 1984, which found that the customary law in the field of maritime boundary delimitation required application of ‘equitable principles, or rather equitable criteria, without any indication as to the choice to be made among [them] or between the practical methods to implement them’.⁶⁷⁷ Similarly, in 1993, the Court declared that the customary rule of boundary delimitation between opposite coastal States was bilateral delimitation based upon equitable principles.⁶⁷⁸ States have endorsed this view by arguing that the customary law governing maritime boundary delimitation requires the application of equitable principles,⁶⁷⁹ taking account of all relevant circumstances.⁶⁸⁰

‘There has been no systematic definition of the equitable criteria that may be taken into consideration for an international maritime delimitation, and this would in any event be difficult *a priori*, because of their highly variable adaptability to different

⁶⁷² *North Sea Continental Shelf* (n 99) para. 47.

⁶⁷³ See Harry S Truman, ‘150 - Proclamation 2667 - Policy of the United States with Respect to the Natural Resources of the Subsoil and Sea Bed of the Continental Shelf’ September 28, 1945.

⁶⁷⁴ *North Sea Continental Shelf* (n 99) para. 55.

⁶⁷⁵ *United Kingdom/France* (n 626) para 70.

⁶⁷⁶ See *Tunisia/Libyan Arab Jamahiriya* (n 302) para 70.

⁶⁷⁷ *Delimitation of the Maritime Boundary in the Gulf of Maine Area* (n 282) para 123.

⁶⁷⁸ *Denmark v Norway* (n 643) para 46.

⁶⁷⁹ See, e.g., *Libyan Arab Jamahiriya/Malta* (n 78) 31, para 29; *Bangladesh/Myanmar* (n 25) para 6.

⁶⁸⁰ *Nicaragua v Honduras* (n 620) para 104; *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) para. 15.

concrete situations.’⁶⁸¹ According to the ICJ’s decision in the *Tunisia/Libya* case, ‘[t]he equitableness of a principle must be assessed in the light of its usefulness for the purpose of arriving at an equitable result’.⁶⁸² Therefore, application of equitable principles necessarily implies consideration of the circumstances that are relevant for reaching an equitable solution, namely, the relevant circumstances.

It should be noted that although several boundaries have been delimited by reference to equitable principles in the past decades and States still refer to them in their arguments, the significance of equitable principles, as a basis for boundary delimitation, has diminished. Courts and tribunals have largely ignored references to equitable principles in recent years⁶⁸³ and the last instance of a court or tribunal referring to equitable principles as part of the customary law applicable for maritime boundary delimitation was the *Eritrea/Yemen* arbitration.⁶⁸⁴ However, it remains well established that boundaries must always be delimited with due regard for the relevant circumstances of each particular case.⁶⁸⁵ Relevant circumstances can be assimilated to the special circumstances referred to in UNCLOS article 15 and they ‘are those circumstances which might modify the result produced by an unqualified application of the equidistance principle.’⁶⁸⁶ The concept of relevant (or special) circumstances ‘can be described as a fact necessary to be taken into account in the delimitation process’.⁶⁸⁷ As confirmed in the *Black Sea* case, they are the factors that require adjustment of provisional equidistance lines in order to ensure an equitable outcome.⁶⁸⁸

The importance of transparency and predictability in maritime boundary delimitation has increased in recent years,⁶⁸⁹ and this has caused a shift from the abstract notion of equitable principles to a clearly defined method of delimitation, often referred to as the equidistance/relevant circumstances method. However, applicable international law

⁶⁸¹ *Delimitation of the Maritime Boundary in the Gulf of Maine Area* (n 282) para 157.

⁶⁸² *Tunisia/Libyan Arab Jamahiriya* (n 302) 59.

⁶⁸³ See, e.g., *Bangladesh/Myanmar* (n 25) para 58; *Romania v Ukraine* (n 284) para 125.

⁶⁸⁴ *Eritrea/Yemen* (n 312) para 130.

⁶⁸⁵ See, e.g., *North Sea Continental Shelf* (n 99) para 85; *Delimitation of the Maritime Boundary in the Gulf of Maine Area* (n 282) 77.

⁶⁸⁶ *Denmark v Norway* (n 643) para 55. See also *Cameroon v Nigeria: Equatorial Guinea intervening* (n 624) para 288

⁶⁸⁷ *Ibid.*

⁶⁸⁸ *Romania v Ukraine* (n 284) para 155.

⁶⁸⁹ See, e.g., *Bangladesh v India* (n 25) para. 339.

has not evolved in such a way as to make the equidistance/relevant circumstances method obligatory in all cases.⁶⁹⁰ It certainly has become the preferred method for achieving an equitable solution on the basis of international law,⁶⁹¹ but the applicable international law still entails an obligation to ensure an equitable solution with due regard for all relevant circumstances.

3.2.2.2. An Equitable Solution

An equitable solution is a solution based on equity. Equity is a legal concept, tracing back to early rule-based legal systems from all over the world, and it serves to provide justice where codified rules cannot.⁶⁹² Moreover, arguments raised under equity have developed into self-standing legal concepts and principles through the passing of time; for example, the principles of proportionality, good faith, *pacta sunt servanda*, *estoppel*, acquiescence and the doctrine of abuse of rights.⁶⁹³ ‘For centuries, equity has served the purpose of facilitating legal adjustment and bringing laws in line with contemporary perceptions of justice and regulatory needs.’⁶⁹⁴ Thus, it enables law to adapt to changed circumstances and respond to new challenges,⁶⁹⁵ for example, the challenges of climate change. Cottier explains that equity co-exists with law, it supplements and develops static and rigid concepts of law and, thus, differs from *ex aequo et bono* decisions, based on exceptional powers.⁶⁹⁶ Equity demands that a rule of law is applied to reach a just decision and it is, consequently, distinct from a decision *ex aequo et bono*.⁶⁹⁷

The ICJ explained in the *Fisheries Jurisdiction* case that the concept of an ‘equitable solution’ had to be understood not in a vacuum but in relation to the applicable law.⁶⁹⁸ Thus, an equitable solution is a solution that is arrived at by application of relevant sources of law, and the law must be applied in such a way as to ensure an equitable

⁶⁹⁰ *Bangladesh/Myanmar* (n 25) para 225; *Bangladesh v India* (n 25) paras 338–9.

⁶⁹¹ As further explained in section 3.2.2.3.

⁶⁹² Thomas Cottier (n 642) 8–9.

⁶⁹³ *Ibid* 13–14, 20.

⁶⁹⁴ *Ibid* 9.

⁶⁹⁵ *Ibid*.

⁶⁹⁶ See *Libyan Arab Jamahiriya/Malta* (n 78) 60, para 71.

⁶⁹⁷ *North Sea Continental Shelf* (n 99) para. 88.

⁶⁹⁸ *Fisheries Jurisdiction (United Kingdom of Great Britain and Northern Ireland v Iceland)* (Merits) [1974] ICJ Rep 3, para 78.

solution in each case, as this is the ‘overarching objective of the delimitation process’.⁶⁹⁹ Equity is not applied as a matter of abstract justice but it demands due regard for all relevant circumstances for the achievement of an equitable solution. Equity should provide consistency and some degree of predictability, but the particular circumstances of each case always shape the results.⁷⁰⁰ The reference to equity in UNCLOS articles 74 and 83 does not refer to a specific method of delimitation but, rather, ‘an aim that should be borne in mind in effecting the delimitation’.⁷⁰¹ However, the law governing maritime boundary delimitation has evolved into a relatively clear process, as explained in section 3.2.2.3.

An equitable solution is not the same as an equal solution. ‘The object of delimitation is to achieve a delimitation that is equitable, not an equal apportionment of maritime areas’;⁷⁰² ‘equity does not necessarily imply equality’⁷⁰³ and maritime delimitation does not ‘seek to make equal what nature has made unequal’.⁷⁰⁴ The ICJ has also confirmed that, when delimiting a maritime boundary in an equitable manner ‘there can never be any question of completely refashioning nature’⁷⁰⁵ or ‘distributive justice’.⁷⁰⁶ Where there exists ‘a geographical situation of quasi-equality as between a number of States’, equity demands that ‘the effects of an incidental special feature from which an unjustifiable difference of treatment could result’ are abated.⁷⁰⁷ Therefore, equity should not remedy natural inequalities but an ‘unjustifiable difference of treatment’ should be avoided and the effects of such circumstances minimized.

Equity is often used to adjust provisional boundaries and reduce inequitable results; as such it seems to be used as a corrective element.⁷⁰⁸ However, the obligation to achieve an equitable solution must be seen as a primary obligation of UNCLOS articles 74 and

⁶⁹⁹ *Bangladesh v India* (n 25) para 397.

⁷⁰⁰ *Libyan Arab Jamahiriya/Malta* (n 78) 39, para 45.

⁷⁰¹ *Cameroon v Nigeria: Equatorial Guinea intervening* (n 624) para 294.

⁷⁰² *Romania v Ukraine* (n 284) para 111.

⁷⁰³ *North Sea Continental Shelf* (n 99) para 9.

⁷⁰⁴ *Libyan Arab Jamahiriya/Malta* (n 78) 40, para 46.

⁷⁰⁵ *North Sea Continental Shelf* (n 99) 49-50, para 91.

⁷⁰⁶ *Bangladesh v India* (n 25) para 397; *Libyan Arab Jamahiriya/Malta* (n 78) 40, para 46.

⁷⁰⁷ *North Sea Continental Shelf* (n 99) para. 91.

⁷⁰⁸ See Thomas Cottier (n 642) 378.

83 and, therefore, equity should guide the entire delimitation process, from start to finish. This proposition finds some support in the jurisprudence. For example, in *Denmark v Norway*, the ICJ used ‘equity *a priori* to work towards a result, and *a posteriori* to check a result thus reached’.⁷⁰⁹ Furthermore, in the *Tunisia/Libya* case, the Court explained that the equidistance method should not be applied automatically before considering all relevant circumstances.⁷¹⁰ In *Nicaragua v Honduras*, the ICJ chose a delimitation method specifically to avoid an inequitable solution.⁷¹¹ Similarly, the Court considered, in *Nicaragua v Colombia*, whether the construction of a provisional equidistance line was ‘appropriate as a starting-point for the delimitation’⁷¹² because the location of the San Andrés Archipelago had the effect of pushing the equidistance line quite close to the Nicaraguan mainland.⁷¹³

Courts and tribunals often start with strict equidistance lines and adjust those provisional lines, to achieve equitable solutions, only at later stages of the delimitation process. However, they can work towards equitable solutions from the beginning of the delimitation process by choosing base points by reference to relevant circumstances.⁷¹⁴ Courts and tribunals have declared that relevant circumstances are only considered at later stages of the delimitation process, i.e., when provisional boundaries are adjusted.⁷¹⁵ Yet, they generally choose their own base points instead of relying on baselines unilaterally constructed by the coastal States and in choosing such base points, courts and tribunals must give some consideration to the feasibility of individual base points. For example, in *Bangladesh v India*, the existence of some low-tide elevations was disputed⁷¹⁶ and the arbitral tribunal had to determine which base points to use for the provisional boundary line, before considering subsequent adjustments. The tribunal did not articulate a clear rule regarding the use of low-tide elevations as base points⁷¹⁷ but went on a site visit to evaluate the disputed features,

⁷⁰⁹ *Denmark v Norway* (n 643) Separate Opinion of Judge Weeramantry, para 20.

⁷¹⁰ *Tunisia/Libyan Arab Jamahiriya* (n 302) para 110.

⁷¹¹ *Nicaragua v Honduras* (n 620) para 277.

⁷¹² *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) para 195.

⁷¹³ *Ibid* paras 21 and 201.

⁷¹⁴ See detailed discussion in section 3.4.1.

⁷¹⁵ See, e.g., *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) para 195.

⁷¹⁶ *Bangladesh v India* (n 25) para 196.

⁷¹⁷ See *ibid* paras 196 and 260-262.

⁷¹⁸ which demonstrates how important the unique circumstances of each case are for the selection of base points, i.e. not just as a corrective element but for the entire delimitation process.

3.2.2.3. Achieving an Equitable Solution on the Basis of International Law

The ILC considered the matter of maritime boundary delimitation, as between adjacent States, from 1950 to 1956, and in doing so it did not find that any method of delimitation had priority over others or the status of customary international law.⁷¹⁹ The ILC considered several different methods of delimitation: for example, ‘delimitation by agreement, by reference to arbitration, by drawing lines perpendicular to the coast, by prolonging the dividing line of adjacent territorial waters’. The Commission referred the issue to the Committee of hydrographic Experts before drafting the 1958 Conventions on the Territorial Sea and the Contiguous Zone and on the Continental Shelf. The Committee of Experts promoted the method of equidistance in a report from 1953 and that was when equidistance first began taking precedence over other methods of delimitation.⁷²⁰ The Committee of Experts concluded that territorial sea boundaries should be drawn in accordance with an established formula and that such a formula could be used also to delimit continental shelf boundaries. The most suitable formula was, in the Committee’s view, the equidistance method, although it would not always lead to an equitable solution; in such cases a different method should be agreed upon.⁷²¹ Thus, equidistance was expected to produce an equitable solution in some but not all cases, and it was adopted on the basis of practical considerations rather than legal theory.⁷²²

The ICJ confirmed, in the 1969 *North Sea Continental Shelf* cases, that no customary rule required the application of equidistance or other particular method of delimitation,⁷²³ and that different methods could be employed, either in combination

⁷¹⁸ Bangladesh v India (n 25) para 22.

⁷¹⁹ *North Sea Continental Shelf* (n 99) para 50.

⁷²⁰ *Ibid* para 50.

⁷²¹ There are no official records of this Discussion, see *North Sea Continental Shelf* (n 99) paras 51-52.

⁷²² *North Sea Continental Shelf* (n 99) para 53.

⁷²³ *Ibid* para 81.

with the equidistance method or alone.⁷²⁴ The Court found that the States involved were under an obligation to achieve an equitable solution, which in the specific case involved taking all circumstances into account and applying equitable principles. The equidistance method was said to be suitable in the case at hand although other methods could also be employed.⁷²⁵ Furthermore, the Court declared that ‘in certain geographical configurations, which are quite frequently met with,⁷²⁶ the equidistance method, despite its known advantages, leads unquestionably to inequity’.⁷²⁷ This landmark decision resulted in a ‘shift away from equidistance as a preferred method of delimitation’.⁷²⁸ Thirteen years later, in the *Tunisia/Libya* case, the ICJ placed unprecedented emphasis on the equitable nature of the resulting boundary⁷²⁹ and held that equidistance was not ‘a mandatory legal principle, or a method having some privileged status in relation to other methods’.⁷³⁰ The Court noted that it was not obliged to apply equidistance, not even as a preliminary step: ‘[a] finding by the Court in favour of a delimitation by an equidistance line could only be based on considerations derived from an evaluation and balancing up of all relevant circumstances.’⁷³¹ The methods or principles used to delimit a maritime boundary were seen as subordinate to the predominant goal of achieving an equitable solution.⁷³² Similarly, in the 1985 *Libya/Malta* case, the ICJ asserted that the equidistance method did not ‘have the benefit of a presumption in its favour’ and that it should not be applied unless it could be demonstrated that it would lead to an equitable result.⁷³³ However, courts and tribunals have diverted from this extremely results-oriented approach in subsequent decisions as the pre-eminence of equidistance has grown.

In the *Jan Mayen* case in 1993, the ICJ drew a provisional equidistance line, before adjusting it by reference to special circumstances.⁷³⁴ Similarly, the Court applied this

⁷²⁴ *Ibid* para 85.

⁷²⁵ *Ibid* 47.

⁷²⁶ The Court was specifically referring to concave and convex coastlines.

⁷²⁷ *Ibid* para 89.

⁷²⁸ Clive Schofield (n 92) 49.

⁷²⁹ *Tunisia/Libyan Arab Jamahiriya* (n 302) para 70.

⁷³⁰ *Ibid* para 110.

⁷³¹ *Ibid* para 110.

⁷³² *Ibid* para 70.

⁷³³ *Libyan Arab Jamahiriya/Malta* (n 78) 47, para 63.

⁷³⁴ *Denmark v Norway* (n 643) para 51.

two-step equidistance method in *Qatar v Bahrain*, in 2001,⁷³⁵ and in *Cameroon v Nigeria: Equatorial Guinea intervening*, in 2002.⁷³⁶ Furthermore, in *Barbados v Trinidad and Tobago* in 2006, an arbitral tribunal held that it would normally be appropriate to start with the two-step equidistance approach and that the certainty it provided was highly desirable, even though no method could be considered to be compulsory.⁷³⁷ A year later, the arbitral tribunal in the *Guyana v Suriname* arbitration declared that international courts and tribunals had ‘come to embrace a clear role for equidistance’.⁷³⁸ In 2009, the ICJ developed the equidistance/relevant circumstances approach even further when it first applied and clearly broke down the three-stage method in the *Black Sea* case.⁷³⁹ First a provisional boundary line was drawn using geometrically objective standards,⁷⁴⁰ then the Court assessed whether there were any ‘factors calling for the adjustment or shifting of the provisional equidistance line in order to achieve an equitable result.’⁷⁴¹ Finally, the third stage entailed what the ICJ referred to as a ‘disproportionality test’, which involved evaluating whether the boundary line ‘lead to an inequitable result by reason of any marked disproportion between the ratio of the respective coastal lengths and the ratio between the relevant maritime area of each State by reference to the delimitation line.’⁷⁴² Soon the ICJ followed this precedent in the *Nicaragua v Columbia* case, in 2012,⁷⁴³ as did ITLOS in the *Bangladesh/Myanmar* case, the same year,⁷⁴⁴ and an arbitral tribunal constituted under UNCLOS Annex VII in the *Bangladesh/India* case, in 2014.⁷⁴⁵

While consistently applying some form of equidistance in recent decades, courts and tribunals have not held that an equitable solution under UNCLOS articles 74 and 83 can only be achieved on the basis of equidistance. In *Cameroon v Nigeria: Equatorial Guinea intervening*, in 2002, the ICJ held that there was no presumption in favour of

⁷³⁵ *Qatar v Bahrain* (n 133) para 230.

⁷³⁶ *Cameroon v Nigeria: Equatorial Guinea intervening* (n 624) paras 288-290.

⁷³⁷ *Barbados v Trinidad and Tobago* (n 25) paras 242 and 306.

⁷³⁸ *Guyana v Suriname* (n 251) para 335.

⁷³⁹ *Romania v Ukraine* (n 284).

⁷⁴⁰ *Ibid* para 116.

⁷⁴¹ *Ibid* para 120 referring to *Cameroon v Nigeria: Equatorial Guinea intervening* (n 624) para 288.

⁷⁴² *Romania v Ukraine* (n 284) paras 122, 214-215.

⁷⁴³ *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) paras. 190-194

⁷⁴⁴ *Bangladesh/Myanmar* (n 25) para 240.

⁷⁴⁵ *Bangladesh v India* (n 25).

equidistance;⁷⁴⁶ rather, it should be demonstrated that the equidistance method would lead to an equitable result in the case at hand.⁷⁴⁷ Similarly, the Court confirmed, in *Nicaragua v Honduras*, in 2007, that ‘the equidistance method does not automatically have priority over other methods of delimitation and, in particular circumstances, there may be factors which make the application of the equidistance method inappropriate’.⁷⁴⁸ Even in the *Black Sea* case, the Court held that the equidistance/relevant circumstances method could be substituted by a different method where ‘compelling reasons’ made it ‘unfeasible’.⁷⁴⁹

The search for consistency and predictability has definitely led to the advancement of the equidistance/relevant circumstances method. Indeed, it fits well with the obligation to ensure an equitable solution on the basis of all relevant circumstances, as it can generally ensure an equitable result.⁷⁵⁰ However, the equidistance/relevant circumstances method must not be conflated with the applicable law under UNCLOS articles 74 and 83.⁷⁵¹

[T]he equidistance method is not to be regarded as a rule of law [because] if it were to be compulsorily applied in all situations, this would not be consonant with certain basic legal notions [...] delimitation must be the object of agreement between the States concerned, and that such agreement must be arrived at in accordance with equitable principles.⁷⁵²

Therefore, while equidistance should generally be preferred, certain circumstances can justify resort to different methods of delimitation.⁷⁵³ The following sections explore the prospects for achieving equitable solutions in reliance upon the only delimitation methods ever employed by courts and tribunals: the equidistance/relevant circumstances method and the angle-bisector method.

⁷⁴⁶ *Cameroon v Nigeria: Equatorial Guinea intervening* (n 624) para 293 referring to *Libyan Arab Jamahiriya/Malta* (n 78) 47, para 63.

⁷⁴⁷ *Cameroon v Nigeria: Equatorial Guinea intervening* (n 624) para 294.

⁷⁴⁸ *Nicaragua v Honduras* (n 620) para 272.

⁷⁴⁹ *Romania v Ukraine* (n 284) para 116.

⁷⁵⁰ *Cameroon v Nigeria: Equatorial Guinea intervening* (n 624) para 288.

⁷⁵¹ UNCLOS articles 74 and 83 do not demand the use of equidistance, see, e.g., *Bangladesh/Myanmar* (n 25) para 225; *Bangladesh v India* (n 25) paras 338–9.

⁷⁵² *North Sea Continental Shelf* (n 99) para 85.

⁷⁵³ *Barbados v Trinidad and Tobago* (n 25) para 306.

3.2.2.3.1. The Equidistance/Relevant Circumstances Method

The equidistance/relevant circumstances method is quite similar to the equidistance/special circumstances method codified in UNCLOS article 15. Both methods entail ‘very similar processes, in view of the common need to ensure an equitable result’.⁷⁵⁴ Furthermore, they both require consideration of special or relevant circumstances and subsequent adjustment to the equidistance line where required for an equitable result.⁷⁵⁵ Yet, the three-stage equidistance/relevant circumstances method is, arguably, more elaborate than the traditional equidistance method, as described in section 3.2.1.⁷⁵⁶ The equidistance method, applicable to territorial sea delimitation, entails the construction of a strict equidistance line, which is abandoned or derogated from upon agreement or if special circumstances or historic title so require.⁷⁵⁷ ‘The most logical and widely practised approach is first to draw provisionally an equidistance line and then to consider whether that line must be adjusted in the light of the existence of special circumstances.’⁷⁵⁸ However, the strict equidistance line constructed under the equidistance/relevant circumstances method is ‘nothing more than a first step and in no way prejudices the ultimate solution’.⁷⁵⁹ This provisional equidistance line is always subject to adjustments, as required by reference to relevant circumstances, and, finally, a disproportionality test.⁷⁶⁰ Thus, both methods require consideration for special or relevant circumstances and adjustments to the provisional equidistance lines to ensure equitable solutions but the disproportionality test is only an integral part of the three-step equidistance/relevant circumstances method.

The ICJ has held that, when applying the equidistance/relevant circumstances method, relevant circumstances are not considered until the second stage of delimitation because the provisional equidistance line is ‘plotted on strictly geometrical criteria on

⁷⁵⁴ *Ibid* para 305. See also *Cameroon v Nigeria: Equatorial Guinea intervening* (n 624) para 288.

⁷⁵⁵ See e.g. *Bangladesh v India* (n 25) para 272.

⁷⁵⁶ This distinction is reflected in, e.g., *Nicaragua v Honduras* (n 620) para 271. See also Robin R Churchill ‘The Greenland-Jan Mayen Case and its Significance for the International Law of Maritime Boundary Delimitation’ (1994) 9 *The International Journal of Marine and Coastal Law* 1, 18. Note, however, that this distinction is not always reflected in the jurisprudence, see, e.g., *Bangladesh v India* (n 25).

⁷⁵⁷ See, e.g., *Nicaragua v Honduras* (n 620) para 280.

⁷⁵⁸ *Qatar v Bahrain* (n 133) para 167. See also *Bangladesh v India* (n 25) para 246.

⁷⁵⁹ *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) para 196.

⁷⁶⁰ See *Romania v Ukraine* (n 284) paras 115-116 and 120-122.

the basis of objective data'.⁷⁶¹ However, the provisional equidistance line is constructed by reference to relevant coastal geography, which calls for a decision on whether features are relevant or significant enough to be used as base points, and the second stage involves an assessment of factors that qualify as relevant circumstances requiring an adjustment of the provisional boundary.⁷⁶² At the third stage, the ratio between maritime areas and coastal length is measured.⁷⁶³

Relevant circumstances can justify such a significant shift in a provisional boundary line so as to make it almost unrecognisable, more resembling an angle-bisector boundary than an equidistance or median line.⁷⁶⁴ The equitable nature of the end result cannot be dependent on a provisional equidistance line if the equitable solution is actually closer to an angle-bisector boundary line. Yet, the applicable international law may require that the delimitation process begin with a provisional equidistance line that is later abandoned if circumstances of the case make it unfeasible. However, a presumption in favour of the equidistance/relevant circumstances method may well influence the end result, even if the equidistance line is shifted or abandoned due to relevant circumstances, because decisions are often shaped by their starting points.⁷⁶⁵ Therefore, the decision to start with a provisional equidistance line can affect how far courts and tribunals are willing to go in adjusting the line for an equitable result.

When negotiating UNCLOS, State representatives aired opposing views on whether to emphasise equidistance in maritime delimitation provisions or relevant circumstances in the area concerned.⁷⁶⁶ The equidistance/relevant circumstances method has the potential to reconcile both approaches, but only if relevant circumstances are given sufficient weight. Significant adjustments to the provisional equidistance line can result in a boundary that is quite remote from the original equidistance line and the anchoring to equidistance can come at the expense of

⁷⁶¹ *Ibid* para 118.

⁷⁶² *Romania v Ukraine* (n 284) para 120.

⁷⁶³ *Ibid* para 122.

⁷⁶⁴ The final boundary established by the tribunal in *Bangladesh v India* was closer to the angle-bisector line proposed by Bangladesh than a strict equidistance line. See *Bangladesh v India* (n 25), Appendix, A3-A5.

⁷⁶⁵ Gretchen B Chapman and Eric J Johnson, 'The Limits of Anchoring' (1994) 7 *Journal of Behavioural Decision Making* 223, 223.

⁷⁶⁶ Bernard H Oxman 'The Third United Nations Conference on the Law of the Sea: The Ninth Session' (1980) 75 (2) *American Journal of International Law* 211, 237.

adequate consideration for relevant circumstances. Relevant circumstances should be considered throughout the delimitation process, as explained in section 3.2.2.3., and, therefore, they should lead to the use of a different method when equidistance is inappropriate.

3.2.2.3.2. The Angle-Bisector Method

The equidistance/relevant circumstances method has been described as the preferred method of delimitation in ordinary circumstances,⁷⁶⁷ and it is generally applied by courts and tribunals unless relevant circumstances make it unfeasible.⁷⁶⁸ Approximately 60% of all maritime boundaries have relied on equidistance as a starting point⁷⁶⁹ but the angle-bisector method has also been employed in a number of cases and boundary agreements,⁷⁷⁰ as it ‘has proved to be a viable substitute method in certain circumstances where equidistance is not possible or appropriate’.⁷⁷¹ In theory, this is not the only alternative to the equidistance method, but it is the only one that has been applied by courts and tribunals, and, consequently, the only method that could be said to form part of the applicable law under article 38(1)(d).

The angle-bisector method was one of the methods seriously considered by the ILC when drafting the 1958 Conventions on the Territorial Sea and the Contiguous Zone and on the Continental Shelf.⁷⁷² It involves a linear approximation of both States’ coastlines; straight lines are drawn along both coastlines to create an angle and this angle is bisected to create the boundary.⁷⁷³

The angle-bisector method traces back to, at least, 1909, as it was applied in the first maritime boundary dispute settled before an international court or tribunal, the

⁷⁶⁷ *Bangladesh/Myanmar* (n 25) para 238.

⁷⁶⁸ *Nicaragua v Honduras* (n 620) para. 272

⁷⁶⁹ Thomas Cottier (n 642) 375.

⁷⁷⁰ See, e.g., *Tunisia/Libyan Arab Jamahiriya* (n 302); *Delimitation of the Maritime Boundary in the Gulf of Maine Area* (n 282); *Delimitation of the maritime boundary between Guinea and Guinea-Bissau (Guinea/Guinea-Bissau)* (1985) XIX RIAA 149; *Nicaragua v Honduras* (n 620).

⁷⁷¹ *Nicaragua v Honduras* (n 620) para 286.

⁷⁷² *North Sea Continental Shelf* (n 99) para 51.

⁷⁷³ *Delimitation of the Maritime Boundary in the Gulf of Maine Area* (n 282) para 195.

Grisbådarna case.⁷⁷⁴ In delimiting the territorial sea between Norway and Sweden, the tribunal was asked to take ‘into account the circumstances of fact and the principles of international law’.⁷⁷⁵ The tribunal applied equitable principles with due consideration for relevant circumstances to reach an equitable solution and this led to the drawing of a line ‘perpendicular to the general direction of the coast’. The line was adjusted to go around the *Grisbådarna* bank, so the tribunal constructed an angle-bisector boundary except in a particular area between *Grisbådarna* and *Skjöttegrunde* where the circumstances called for a median line.⁷⁷⁶

In the *Nicaragua v Honduras* case, the ICJ described this method ‘as an approximation of the equidistance method’ and a geometrical approach which can result in a simple and equitable solution by having due regard to special circumstances while aiming for an equal division of overlapping maritime entitlements.⁷⁷⁷ The angle-bisector method uses an approximation based on ‘macro-geography of a coastline as represented by a line drawn between two points on the coast’ as opposed to specific base points relied upon when an equidistance line is drawn.⁷⁷⁸ The angle-bisector does not correlate to coastal geography as closely as the equidistance method does, and, therefore, the ICJ has explained that when applying the angle-bisector method ‘care must be taken to avoid “completely refashioning nature”’.⁷⁷⁹ Therefore, this method can undoubtedly lead to an equitable solution, as long as it produces a true representation of the general direction of relevant coasts.

3.3. Relevant Circumstances: Coastal Geography

Maritime entitlements are generated by the coastal front,⁷⁸⁰ and maritime limits are generally measured from baselines along the coastline,⁷⁸¹ as explained in Chapter II.

⁷⁷⁴ Sang-Myon Rhee, ‘Sea Boundary Delimitation between States Before World War II’ (1982) 76 *American Journal of International Law* 555, 566; *Grisbådarna Arbitration (Norway v Sweden)* (1909) Scott Hague Court Rep 487, translated into English in (1910) Scott Hague Court Rep 121.

⁷⁷⁵ Sang-Myon Rhee (n 774) 571.

⁷⁷⁶ *Ibid* 570-571.

⁷⁷⁷ *Nicaragua v Honduras* (n 620) para 287.

⁷⁷⁸ *Ibid* 674.

⁷⁷⁹ *Ibid* 674, referring to *North Sea Continental Shelf* (n 99) para 91.

⁷⁸⁰ See, e.g., *Tunisia/Libyan Arab Jamahiriya* (n 302) para 73.

⁷⁸¹ UNCLOS articles 3, 33, 48, 57 and 76.

Maritime boundaries are constructed by reference to maritime entitlements and maritime limits (or base points); therefore, coastal geography is essential to the process of boundary delimitation. A strict equidistance line relies purely on coastal geography, and the relevant circumstances used to adjust provisional boundaries generally relate to coastal geography. There are some examples of adjustments based on non-geographic factors, e.g., access to fisheries,⁷⁸² but such considerations are negligible in comparison to coastal geography. Indeed, the *travaux préparatoires* of UNCLOS, jurisprudence in the field and prominent scholars unanimously hold that coastal geography is of paramount concern in maritime boundary delimitation and crucial to an equitable outcome.⁷⁸³ For example, the ICJ referenced the ‘land dominates the sea’ principle in the *North Sea Continental Shelf* cases and based the boundary on the geographical configuration of relevant coastlines.⁷⁸⁴ In the case of the land and maritime boundary between Cameroon and Nigeria from 2002, the ICJ stated that ‘the geographical configuration of the maritime areas that the Court is called upon to delimit is a given. It is not an element open to modification by the Court but a fact on the basis of which the Court must effect the delimitation.’⁷⁸⁵ Also, in 2006, in the *Barbados v Trinidad and Tobago* award, the arbitral tribunal found that, for the purposes of equity, certain criteria should be identified⁷⁸⁶ and that, with very few exceptions, ‘the quest for neutral criteria of a geographical character prevailed in the end over area-specific criteria such as geomorphological aspects or resource specific criteria such as the distribution of fish stocks’.⁷⁸⁷

The ICJ has referred to relevant circumstances as the factors that call for an adjustment of provisional boundary lines,⁷⁸⁸ and their purpose is to verify that a provisional boundary line ‘is not, in light of the particular circumstances of the case, perceived as

⁷⁸² *Denmark v Norway* (n 643) para 78, *Delimitation of the Maritime Boundary in the Gulf of Maine Area* (n 282) para 237. See also Victor Prescott and Clive Schofield (n 348) 239-241.

⁷⁸³ See, e.g., Davor Vidas (n 76) 76; Richard T S Hsu ‘A rational approach to maritime boundary delimitation’, (1983) 13 *Ocean Development and International Law* 103, 108; Prosper Weil, *The Law of Maritime Delimitation – Reflections* (Cambridge University Press 1989) 217-218; *Cameroon v Nigeria: Equatorial Guinea intervening* (n 624) para 295; *United Kingdom/France* (n 626) para 84; *North Sea Continental Shelf* (n 99) para 96.

⁷⁸⁴ *North Sea Continental Shelf* (n 99) para 96.

⁷⁸⁵ *Cameroon v Nigeria: Equatorial Guinea intervening* (n 624) para 295.

⁷⁸⁶ *Barbados v Trinidad and Tobago* (n 25) para 232.

⁷⁸⁷ *Ibid* para 228.

⁷⁸⁸ *Romania v Ukraine* (n 284) para 155.

inequitable'.⁷⁸⁹ In the *Black Sea* case, the Court held that relevant circumstances should not be considered until the second stage of delimitation.⁷⁹⁰ Yet, geographical features are relevant at all stages of maritime delimitation, from the drawing of a provisional equidistance line to subsequent adjustments and disproportionality tests; in that sense, geographical circumstances dominate the delimitation process.⁷⁹¹ A distinction may be drawn between 'relevant coasts' (the areas that generate maritime entitlements and are, consequently, relevant for delimitation)⁷⁹² and 'relevant circumstances' (the factors calling for adjustments of provisional boundary lines). However, this difference is not materially relevant for this thesis. Therefore, the following discussion will not reflect this distinction; the reference to relevant coastal geography may be understood as referring to geographical circumstances relevant for all stages of delimitation: the selection of delimitation methods, the plotting of provisional boundaries and their subsequent adjustments.

3.3.1. Relevance of Coastal Instability

The category of coastal geography can be disseminated into several sub-categories, all of which are relevant circumstances if this fundamental category is viewed broadly. The configuration of relevant coastlines is paramount because provisional equidistance and angle-bisector boundaries are constructed by reference to base points or general directions of relevant coasts. Coastal concavity and potential cut-off effects can constitute relevant circumstances;⁷⁹³ so can relative coastal lengths,⁷⁹⁴ the configuration of coastlines (adjacency or oppositeness),⁷⁹⁵ the size of coastal features⁷⁹⁶ and their distance from mainland.⁷⁹⁷ Nonetheless, courts and tribunals have

⁷⁸⁹ *Ibid* para 155.

⁷⁹⁰ *Ibid* para 118.

⁷⁹¹ Ki Beom Lee, *The Demise of Equitable Principles and the Rise of Relevant Circumstances in Maritime Boundary Delimitation*, submitted for the Degree of PhD School of Law (The University of Edinburgh 2012) 14.

⁷⁹² See *Romania v Ukraine* (n 284) para 77.

⁷⁹³ See, e.g., *Bangladesh/Myanmar* (n 25) and *Bangladesh v India* (n 25).

⁷⁹⁴ See, e.g., *Barbados v Trinidad and Tobago* (n 25) para 239; *Romania v Ukraine* (n 284) para 164; *Cameroon v Nigeria: Equatorial Guinea intervening* (n 624) para 301; *Denmark v Norway* (n 643) para 69; *Libyan Arab Jamahiriya/Malta* (n 78) para 50.

⁷⁹⁵ *Barbados v Trinidad and Tobago* (n 25) para 233.

⁷⁹⁶ *Nicaragua v Honduras* (n 620) para 202.

⁷⁹⁷ *Romania v Ukraine* (n 284) para 149.

rejected the relevance of future changes to coastal geography, most recently, and most explicitly, in the *Bangladesh v India* arbitration of 2014.⁷⁹⁸ The award sits in stark contrast to the ICJ's 2007 decision in *Nicaragua v Honduras* where the Court assessed the viability of base points and chose a delimitation method by reference to foreseeable changes to coastal geography.⁷⁹⁹ Furthermore, the tribunal in the *Philippines v China* arbitration recently indicated that coastal features could be evaluated by resort to historical evidence, particularly where the features are likely to remain unchanged,⁸⁰⁰ and it assessed islands on the basis of whether requirements of UNCLOS article 121 could, objectively, be satisfied on an ongoing basis.⁸⁰¹

Continuously equitable division of maritime entitlements has been ensured in boundary agreements. An example of such an agreement is the 1973 maritime boundary agreement between Canada and Denmark where a provisional equidistance line for the continental shelf boundary was adjusted due to foreseeable recession of the Greenland glacier.⁸⁰² Moreover, in a delimitation agreement between the Federated States of Micronesia and the Republic of the Marshall Islands, the States seem to anticipate revision of their boundary in case of 'significant shifts in the geographic location of islands'.⁸⁰³ The agreement provides the following: 'Should future surveys indicate significant shifts in the geographic location of islands used as base points in determining the line of delimitation, technical experts nominated by both parties shall collaborate in recommending revised coordinates of the agreed line.'⁸⁰⁴ Similarly, Belgium and the United Kingdom decided not to use a base point on Shipwash Sands in an agreement delimiting their continental shelves, although it had previously been relied upon by the United Kingdom, because a survey conducted during negotiations

⁷⁹⁸ *Bangladesh v India* (n 25) para 217.

⁷⁹⁹ *Nicaragua v Honduras* (n 620) para 277.

⁸⁰⁰ *Philippines v China* (n 26) (Merits) para 327.

⁸⁰¹ *Ibid* para 487.

⁸⁰² Barbara Kwiatkowska (n 664) 102.

⁸⁰³ Treaty between the Federated States of Micronesia and the Republic of the Marshall Islands Concerning Maritime Boundaries and Cooperation on Related Matters (adopted 12 July 2006), article 2(5); David A Colson and Robert W Smith (eds) *International Maritime Boundaries VI* (American Society of International Law, Martinus Nijhoff 2011) 4325, 4327.

⁸⁰⁴ Treaty between the Federated States of Micronesia and the Republic of the Marshall Islands Concerning Maritime Boundaries and Cooperation on Related Matters, July 5, 2006, Art 2(5); David A Colson and Robert W Smith (n 803) 4327.

showed that it had been eroded.⁸⁰⁵ It is clear, therefore, that foreseeable changes to coastal geography can affect the terms of a boundary agreement and lead to subsequent adjustments. This chapter, however, is more concerned with the international law governing boundary delimitation, as evidenced by the jurisprudence. The following sections explore case law in more detail in order to determine whether changing coastal geography has any bearing on the delimitation of equitable maritime boundaries under UNCLOS articles 74 and 83.

3.3.1.1. Case Law Affirming the Relevance of Changing Coastal Geography

There is no rule of law prohibiting consideration of future developments or changing circumstances. Indeed, judges and arbitrators must often look to potential developments when assessing the facts of a case before them, particularly when relying on risk assessments and environmental impact assessments. Changing coastal geography has also been considered in several disputes relating to the division of maritime entitlements.

In 2007, the ICJ took foreseeable geographical changes into account when constructing a maritime boundary between Nicaragua and Honduras, as it considered whether the solution would be equitable in the near future. The area to be delimited was undergoing rapid changes at the time of delimitation, as the mouth of the River Coco was constantly changing; Cape Gracias a Dios (a protrusion into the Atlantic) was being projected towards the sea, along with huge amounts of alluvium and sediment, forming unstable islands and, as a result, shoals and delta sediments were being redeposited along the coastlines of Nicaragua and Honduras. This was all due to the river delta and ‘a very active morpho-dynamism’, which led to continuous changes in both relevant coastlines.⁸⁰⁶

⁸⁰⁵ David Anderson, ‘Recent Boundary Agreements in the Southern North Sea’ in (1992) 41 (2) *International and Comparative Law Quarterly*, 414, 418, referring to the Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Kingdom of Belgium relating to the Delimitation of the Continental Shelf between the two Countries (adopted 29 May 1991, entered into force 14 May 1993) UK Treaty Series No 20 (1994).

⁸⁰⁶ *Nicaragua v Honduras* (n 620) para 32.

Both Nicaragua and Honduras argued that coastal instability, or ongoing changes of the coastline, should affect the delimitation process, but they did not agree on what the effect should be. Nicaragua argued that geographical changes and instability of the coastline should lead to application of the angle-bisector method, while Honduras wished to apply the equidistance principle and take the gradual movement of the mouth of the Coco into account. The Court ultimately concluded that the instability of the delta of the River Coco ‘might render any equidistance line so constructed today arbitrary and unreasonable in the near future’.⁸⁰⁷ Moreover, the Court asserted that ‘[a]ll deltas are by definition geographical accidents of an unstable nature and suffer changes in size and form in relatively short periods of time.’⁸⁰⁸ This suggests that deltas could be seen as relevant circumstances in all maritime boundary cases.

The changing conditions also had an impact on the ICJ’s decision relating to sovereignty over islands and cays in *Nicaragua v Honduras*. The Court held that it was ‘not in a position to make a determinative finding on the maritime features in the area in dispute’, particularly as regards Media Luna Cay, which was submerged at the time of delimitation, and Logwood Cay, which was above sea level according to Honduras but submerged in Nicaragua’s view.⁸⁰⁹ The instability of the river delta meant that large islands could join the riverbank on either side and smaller islands could disappear. These changing circumstances were the reason why the Court decided to make ‘no finding as to sovereign title over islands in the mouth of the River Coco’.⁸¹⁰ If a court or tribunal cannot confirm sovereignty over a feature because of its unstable nature, it should also refrain from permanently ascribing sovereignty and sovereign rights in surrounding maritime areas on the basis of that unstable feature. Therefore, an inability to confirm sovereignty over coastal features should also affect the capacity to generate maritime entitlements and, consequently, the delimitation process.

The arbitral tribunal in the *Philippines v China* case evaluated the capacity of coastal features to qualify as islands under UNCLOS article 121(3), taking into account not only circumstances existing at the time of the award, but also those occurring over an

⁸⁰⁷ *Ibid* para 277.

⁸⁰⁸ *Ibid* para 32.

⁸⁰⁹ *Ibid* paras 143-144.

⁸¹⁰ *Ibid* para 145.

extended period of time. UNCLOS article 121(3) 'is concerned with whether, objectively, the feature is apt, able to, or lends itself to human habitation or economic life'.⁸¹¹ According to the tribunal, this calls for an evaluation as to whether a feature can sustain human habitation 'over a continuous period of time' or commence and continue economic 'activity over a period of time in a way that remains viable on an ongoing basis'.⁸¹² When assessing this capacity of coastal features, courts and tribunals are bound to consider imminent changes to relevant coastal geography, e.g., whether the features will remain above water. Furthermore, the capacity to sustain human habitation or economic activity may also be affected by extreme weather events, ocean acidification, and other changes that affect pivotal ecosystems or natural resources. Therefore, non-geographic changes may be of relevance when adjusting maritime boundaries by reference to the status of coastal features and their capacity to generate maritime entitlements.

In the *Jan Mayen* case, the ICJ viewed foreseeable seasonal changes to coastlines and natural resources as potentially relevant circumstances. The Court decided to shift the provisional median line eastwards to take account of the seasonal migration of capelin,⁸¹³ and the presence of ice was also relevant, as 'a considerable seasonal restriction of access to the waters'.⁸¹⁴ However, the ice did not prevent the exploitation of capelin, the only commercially exploitable fish resource in the area, because the capelin was expected to appear at times and in areas where there was no ice. The presence of ice did 'not materially affect access to migratory fishery resources' and, therefore, it did not lead to an adjustment of the provisional boundary line.⁸¹⁵ This thesis is not concerned with non-geographic circumstances, such as the conditions of ecosystems, but the presence of ice in the *Jan Mayen* case can, arguably, be viewed as an aspect of coastal geography. Moreover, leaving aside the question of whether the changes dealt with are categorised as changes affecting coastal geography or exploitation of resources, this decision clearly indicates that predictable changes can

⁸¹¹ *Philippines v China* (n 26) (Merits) para 483.

⁸¹² *Ibid* para 487.

⁸¹³ *Denmark v Norway* (n 643) para 76.

⁸¹⁴ *Ibid* para 78.

⁸¹⁵ *Ibid*.

affect the delimitation process and that courts and tribunals must sometimes look beyond a snapshot of the circumstances existing at the time of delimitation.

3.3.1.2. Case Law Renouncing the Relevance of Changing Coastal Geography

In 1977, the tribunal in the *Anglo-French Continental Shelf* arbitration concluded that when looking at geographical circumstances it should only consider the physical circumstances as they were at that time of delimitation; only the ‘present-day coasts’ and ‘present-day seabed’ were relevant for boundary delimitation.⁸¹⁶ Moreover, the ICJ declared in the *Black Sea* case in 2009 that it would ‘use as base points those which the geography of the coast identifies as a physical reality at the time of the delimitation’.⁸¹⁷ Similarly, the tribunal constituted under UNCLOS Annex VII, in *Bangladesh v India*, delimited the boundary on the basis of base points that were ‘appropriate in reference to the time of the delimitation, i.e. the date of its Award’.⁸¹⁸ Indeed, courts and tribunals should not delimit a maritime boundary relying on previously used base points that have become inappropriate at the time of delimitation; the physical reality at the time of delimitation is the obvious starting point.⁸¹⁹ However, it may be appropriate, considering the circumstances existing at the date of the award, to choose base points or delimitation methods that produce a solution that remains equitable in the foreseeable future.

The tribunal specifically addressed the issue of foreseeable changes to coastal geography in *Bangladesh v India*, as Bangladesh argued that the instability of the coastline, and the potential effect of climate change and sea level rise should be taken into account as constituting special or relevant circumstances.⁸²⁰ Bangladesh argued that there was ‘scientific evidence of extreme coastal instability in the Bengal Delta’⁸²¹ and that within a few years several low-tide elevations proposed as base points

⁸¹⁶ *United Kingdom/France* (n 626) para 84.

⁸¹⁷ *Romania v Ukraine* (n 284) para 131.

⁸¹⁸ *Bangladesh v India* (n 25) para 212.

⁸¹⁹ See *Philippines v China* (n 26) (Merits) 117.

⁸²⁰ *Bangladesh v India* (n 25) 74.

⁸²¹ *Ibid* para 237.

probably would be submerged.⁸²² The Bengal Delta had been eroding for two centuries at the time of delimitation,⁸²³ this erosion was accelerating due to sea-level rise and major changes to the coastline were anticipated by 2100.⁸²⁴ Bangladesh presented convincing arguments in relation to the foreseeable changes affecting relevant coastal features. It highlighted the unstable nature of the coastline of the Bengal Delta and argued that this instability should lead to the application of the angle-bisector method or an adjustment of a provisional equidistance line.⁸²⁵ Yet the tribunal rejected Bangladesh's arguments, concluded that 'future instability of the coastline' was irrelevant for the delimitation,⁸²⁶ and adjusted its provisional equidistance line only by reference to the concavity in the area and the cut-off effect it would produce.⁸²⁷

The tribunal in *Bangladesh v India* was not concerned with 'whether the coastlines of the Parties will be affected by climate change in the years or centuries to come' but 'rather whether the choice of base points located on the coastline and reflecting the general direction of the coast is feasible in the present case and at the present time'.⁸²⁸ An evaluation of what is feasible at the time of delimitation can surely take account of ongoing instability of the coastline, even if potential changes in coming centuries are irrelevant. The tribunal further stated that 'only the present geophysical conditions' were relevant for boundary delimitation,⁸²⁹ i.e., the 'physical reality at the time of delimitation'.⁸³⁰ The tribunal quoted the following sentence from the *Black Sea* case when explaining what it meant by the 'physical reality at the time of the delimitation': 'geographical reality covers not only the physical elements produced by geodynamics and the movements of the sea, but also any other material factors that are present'.⁸³¹ Contrary to the position of the tribunal, however, the term 'material factors' can be interpreted broadly enough to encompass those relating to the nature of the physical reality, e.g., the presence of a delta or ongoing coastal instability. Similarly, coastal

⁸²² *Ibid* para 213.

⁸²³ *Ibid* para 373. See also Bangladesh's Reply, paragraph 3.59.

⁸²⁴ *Bangladesh v India* (n 25) para 376. See Bangladesh's Reply, paragraphs 4.116-4.117.

⁸²⁵ *Ibid* 111.

⁸²⁶ *Ibid* para 215.

⁸²⁷ *Ibid* para 421.

⁸²⁸ *Ibid* para 214.

⁸²⁹ *Ibid* para 399.

⁸³⁰ *Ibid* para 215.

⁸³¹ *Romania v Ukraine* (n 284) para 131.

instability can be an inseparable part of the ‘present-day coast’ and ‘present geophysical conditions’ and, therefore, highly relevant for selecting appropriate base points. Moreover, coastal instability that exists at the time of delimitation can well be relevant, even if courts and tribunals ‘need not address the issue of the future instability of the coastline’.⁸³²

Some changes to coastal geography are unpredictable and inherently speculative in nature: for example, those resulting from seismic or volcanic activity, or extreme weather events. However, there is an important difference between facts that are readily available and relate to existing coastal geography, and speculations regarding potential future developments. One of the reasons why the tribunal would not take coastal instability into account in *Bangladesh v India* was that it considered the impacts of climate-related changes to be uncertain and unpredictable.⁸³³ However, the IPCC publishes reliable predictions concerning future changes to coastal geography, which can be evidenced in judicial proceedings,⁸³⁴ but even if the effects of climate change are too speculative to foresee, certain geophysical conditions can be clearly established. The presence of a delta is a good example of circumstances that can be taken into account in maritime delimitation, as forming part of the geographical conditions existing at the time of delimitation. The instability of a delta is a given; future changes are not only possible but quite certain and they can be evidenced, not only by predicting future events, but by reference to past and ongoing changes. For example, in *Nicaragua v Honduras*, the area to be delimited was clearly undergoing rapid changes⁸³⁵ and the Court looked to past changes spanning the last century to determine the unstable nature of coastal features in the mouth of the river.⁸³⁶ It noted that cays were ‘extremely vulnerable to tropical storms and hurricanes which occur frequently in the Caribbean’⁸³⁷ and that this instability was sufficiently evident to affect the delimitation. Likewise, past and current instability at the Bengal delta should

⁸³² *Bangladesh v India* (n 25) para 215.

⁸³³ *Ibid* para 399.

⁸³⁴ This is discussed further in section 3.3.2.

⁸³⁵ *Nicaragua v Honduras* (n 620) para 32.

⁸³⁶ *Ibid* para 144-5.

⁸³⁷ *Ibid* para 28.

have been sufficiently evident to be considered relevant circumstances in the delimitation process.

The tribunal's decision to reject the relevance of coastal instability in *Bangladesh v India* seems to have been rooted in a policy argument rather than a rule of law, namely that 'neither the prospect of climate change nor its possible effects can jeopardize the large number of settled maritime boundaries throughout the world'.⁸³⁸ This reasoning is unconvincing for two reasons. First, previous failures to consider relevant foreseeable changes in maritime boundary delimitation do not justify the continued disregard for such changes. Predictions relating to climate-related changes are becoming increasingly detailed and reliable and if foreseeable changes are relevant under the applicable law, they should be taken into account, regardless of whether this was done in earlier cases. Second, the relevance of coastal instability for boundary delimitation could not, in itself, jeopardize existing maritime boundaries because they remain final and binding once agreed upon or settled through judicial means.⁸³⁹ The delimitation of previously unsettled boundaries has no effect on the validity of permanent international boundaries that are safeguarded by *pacta sunt servanda* and *res judicata*. Therefore, the main argument for rejecting the relevance of coastal instability should be dismissed and difficulties in determining coastal instability can be overcome, as explained below, in section 3.3.2.

3.3.1.3. Continuously Equitable Maritime Boundaries at Unstable Coastlines

According to the ICJ, 'there is no legal limit to the considerations which States may take account of for the purpose of making sure that they apply equitable procedures, and more often than not it is the balancing-up of all such considerations that will produce this result rather than one to the exclusion of all others'.⁸⁴⁰ The application of equitable principles and relevant rules 'may lead to widely differing results according to the way in which those principles and rules are interpreted and applied, and the

⁸³⁸ *Bangladesh v India* (n 25) para 217.

⁸³⁹ See Chapter IV.

⁸⁴⁰ *North Sea Continental Shelf* (n 99) 50. The ICJ later confirmed that all relevant circumstances must be balanced up in *Tunisia/Libyan Arab Jamahiriya* (n 302) para 110.

relative weight given to each of those factors in determining the method of delimitation'.⁸⁴¹ Courts and tribunals are bound to apply equity in order to reach just decisions, and when applying the law they can 'choose among several possible interpretations of the law the one which appears, in the light of the circumstances of the case, to be closest to the requirements of justice'.⁸⁴² After all, there are no clear rules on how to assess different considerations or to determine the exact weight given to each element of a particular case.⁸⁴³

The jurisprudence is somewhat contradictory as regards the relevance of coastal instability for maritime boundary delimitation, but, if policy arguments of doubtful relevance are set aside, the gist of the conclusions drawn from case law can be summarised as follows: relevant coastal geography is determined on the basis of circumstances existing at the time of delimitation; the delimitation process must result in stable boundaries; and these boundaries should not become 'arbitrary and unreasonable in the near future'.⁸⁴⁴ Coastal instability can be taken into account as part of the existing relevant circumstances, and a boundary, established by reference to such circumstances, can remain stable and equitable for the foreseeable future. If two interpretations of the applicable law lead to differing results, the interpretation that better ensures an equitable solution must surely be preferred, and, given the discretion that courts and tribunals have, they should always opt for the method most likely to result in a permanently equitable solution.⁸⁴⁵ This would prevent maritime boundaries from becoming arbitrary and unreasonable in the foreseeable future due to incompatibility with continuously applicable UNCLOS provisions.⁸⁴⁶

3.3.2. Evidence of Foreseeable Changes to Coastal Geography

Having determined that coastal instability can be an inseparable part of the relevant coast and qualify as a relevant circumstance in maritime boundary delimitation, this section explains how coastal instability can be proven and relied upon by courts and

⁸⁴¹ *Tunisia/Libyan Arab Jamahiriya* (n 302) 44.

⁸⁴² *Ibid* para 71.

⁸⁴³ *Ibid*.

⁸⁴⁴ *Ibid* para 277.

⁸⁴⁵ See *Ibid* para 277.

⁸⁴⁶ Kate Purcell (n 85) 734.

tribunals in contentious cases. The tribunal held, in *Bangladesh v India*, that, '[n]atural evolution, uncertainty and lack of predictability as to the impact of climate change on the marine environment, particularly the coastal front of States, make all predictions concerning the amount of coastal erosion or accretion unpredictable.'⁸⁴⁷ Courts and tribunals often have to deal with scientific evidence in environmental disputes⁸⁴⁸ and in disputes concerning maritime boundaries⁸⁴⁹ and this challenge has been met, quite successfully, in a number of cases. For example, in the *Kishenganga* arbitration, the tribunal relied on estimations concerning the 'potential changes' in the ecosystem of the Kishenganga river⁸⁵⁰ and explicitly referred to the 'evolving science of predicting the environmental changes that would result from altered flow conditions'.⁸⁵¹

However, courts and tribunals have also shown some reluctance to engage with complex scientific evidence, which might explain why the relevance of future changes has been curtailed. In the *Gabčíkovo-Nagymaros* case, in 1997, both Hungary and Slovakia provided an abundance of scientific evidence demonstrating the environmental/ecological and seismic impacts stemming from the Nagymaros Project.⁸⁵² Yet, the ICJ did not engage with it as much as could have been expected.⁸⁵³ Similarly, in *Bangladesh v India*, the tribunal showed little regard for evidence demonstrating 'extreme coastal instability in the Bengal Delta'⁸⁵⁴ and outright denied the relevance of foreseeable changes.⁸⁵⁵ The tribunal also noted that these changes were too unpredictable to shape the outcome of the case,⁸⁵⁶ and such an assertion should not be made without a previous consideration of the scientific evidence; the

⁸⁴⁷ *Bangladesh v India* (n 25) para 399.

⁸⁴⁸ See e.g. *Pulp Mills on the River Uruguay (Argentina/Uruguay)* (Judgment) [2010] ICJ Rep 14, para 165; Alan E Boyle and James Harrison, 'Judicial Settlement of International Environmental Disputes: Current Problems' (2013) 4 (2) *Journal of International Dispute Settlement* 245, 266.

⁸⁴⁹ See e.g. *Bangladesh/Myanmar* (n 25) para 446: 'In view of uncontested scientific evidence regarding the unique nature of the Bay of Bengal and information submitted during the proceedings, the Tribunal is satisfied that there is a continuous and substantial layer of sedimentary rocks extending from Myanmar's coast to the area beyond 200 nm.'

⁸⁵⁰ *The Indus Waters Kishenganga Arbitration (India/Pakistan)* (2013) 150 ILR 311 para 100.

⁸⁵¹ *Ibid* para 98.

⁸⁵² *Case Concerning the Gabčíkovo-Nagymaros Project* (n 427) para 140.

⁸⁵³ See Alan E Boyle and James Harrison (n 848) 268.

⁸⁵⁴ *Bangladesh v India* (n 25) para 237.

⁸⁵⁵ *Ibid* para 421.

⁸⁵⁶ *Ibid* para 399.

relevance of particular circumstances should not be denied on the grounds that the scientific evidence is unreliable if it has not been examined properly.

Courts and tribunals have successfully engaged with scientific evidence in several cases decided after the *Gabčíkovo-Nagymaros* case, e.g. in *Whaling in the Antarctic*,⁸⁵⁷ *Pulp Mills*⁸⁵⁸ and *Nicaragua v Colombia*.⁸⁵⁹ Difficulties relating to the use of scientific evidence can clearly be overcome and relevant facts should not be disregarded by reference to lack of such evidence because courts and tribunals can gather further evidence on their own accord. Disputing parties may not have submitted sufficient evidence in *Bangladesh v India* to convince the tribunal that the ‘extreme coastal instability in the Bengal Delta’ should affect its decision. However, coastal instability should not have been disregarded on those grounds and it should not have the effect of rendering coastal instability irrelevant for subsequent cases.

States often disagree on which evidence is most reliable,⁸⁶⁰ on how to interpret available evidence, such as maps and treaties,⁸⁶¹ and they often present evidence showing conflicting results.⁸⁶² Nonetheless, the judicial bodies settling their disputes must decide the facts of each case before applying the relevant law. For example, the ICJ did engage with scientific evidence in the *Pulp Mills* case where both Argentina and Uruguay presented ‘a vast amount of factual and scientific material in support of their respective claims’.⁸⁶³ In this case, the Court confirmed that ‘despite the volume and complexity of the factual information submitted to it, it is the responsibility of the Court, after having given careful consideration to all the evidence placed before it by the Parties, to determine which facts must be considered relevant, to assess their probative value, and to draw conclusions from them as appropriate.’⁸⁶⁴

⁸⁵⁷ *Whaling in the Antarctic* (n 569) paras 134-136.

⁸⁵⁸ *Pulp Mills on the River Uruguay* (n 848) 72.

⁸⁵⁹ *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) para 35.

⁸⁶⁰ See, e.g., *Pulp Mills on the River Uruguay* (n 848) 72.

⁸⁶¹ See for example *The Texas-New Mexico Boundary Dispute along the Rio Grande*: J J Bowden, ‘The Texas-New Mexico Boundary Dispute along the Rio Grande’ (1959) 63 *The Southwestern Historical Quarterly* 225; *Burkina Faso/Republic of Mali* (n 425); *Romania v Ukraine* (n 284) para 72.

⁸⁶² See, e.g., *Whaling in the Antarctic* (n 569) para 134; *Case Concerning the Gabčíkovo-Nagymaros Project* (n 427) para 140.

⁸⁶³ *Pulp Mills on the River Uruguay* (n 848) 71.

⁸⁶⁴ *Ibid* 72-73.

Courts and tribunals are not always limited to the evidence provided by disputing parties since it is generally within their power, depending on the procedure of each case, to request further evidence⁸⁶⁵ or to appoint their own independent experts.⁸⁶⁶ They can even go on site visits *proprio motu*.⁸⁶⁷ They can look at various evidence relating to the location of the low-water line, as discussed in section 2.4.2.2. However, it seems more reasonable to expect judicial bodies to consider scientific evidence in their decisions if parties to a dispute have relied heavily on such material in their submissions.⁸⁶⁸ Therefore, courts and tribunals can request further evidence if they wish to construct equitable boundaries by reference to changing circumstances and States can encourage such an outcome by emphasising the relevance of future changes in judicial proceedings and/or maritime boundary negotiations and by presenting relevant scientific evidence.

Several methods are available when presenting scientific evidence concerning future changes to coastal geography before courts and tribunals and there is no shortage of reliable scientific reports analysing the foreseeable impacts of climate-related changes on the coastal environment. The arbitral tribunal took foreseeable changes into account in the *Kishenganga* arbitration and noted that the suitability of an approach would depend on, among other things, ‘the magnitude of anticipated changes’ and in some cases, a simple assessment would suffice.⁸⁶⁹

The following sections provide an overview of the standard of proof, available scientific data and the most appropriate methods of presenting scientific evidence.

3.3.2.1. Standard of Proof

A State, arguing that foreseeable changes to coastal geography should affect maritime boundary delimitation, will have to give evidence supporting its claim, since it is

⁸⁶⁵ See PCA Arbitration Rules 2012 article 27(3); Article 62 of the Rules of the ICJ; Article 77 of the Rules of ITLOS.

⁸⁶⁶ See *Philippines v China* (n 26) (Merits) para 15.

⁸⁶⁷ See article 66 of the Rules of the ICJ.

⁸⁶⁸ Alan E Boyle and James Harrison (n 848) 268.

⁸⁶⁹ *The Indus Waters Kishenganga Arbitration* (n 850) para 99.

generally the party invoking a claim that bears the burden of proof.⁸⁷⁰ '[I]t is the duty of the party which asserts certain facts to establish the existence of such facts.'⁸⁷¹ States have to provide 'clear', 'convincing', 'conclusive' or 'sufficient' evidence to courts and tribunals⁸⁷² and there are several methods available for doing so. The scientific evidence presented in maritime boundary cases can be clear and incontrovertible.⁸⁷³ However, this will rarely be the case when potential geographical changes are concerned. It is in the nature of such evidence that it is dependent upon many variables and, thus, some leeway is required when setting the standard of proof.

Judge Greenwood advocated for a standard of proof known as the balance of probabilities, in his Separate Opinion in the *Pulp Mills* case, because 'the nature of environmental disputes is such that the application of the higher standard of proof would have the effect of making it all but impossible for a State to discharge the burden of proof.'⁸⁷⁴ The classification of maritime boundary disputes as environmental disputes might be subject to criticism but even if cases concerning the delimitation of boundaries at unstable or changing coastlines do not fall within that category, the same rationale applies. States will never be able to prove future geographical changes with absolute certainty. Nonetheless, such changes can be paramount for the determination of maritime entitlements and the equitable nature of maritime boundaries and, thereby, for the outcome of a maritime boundary dispute. Both the ICJ and ITLOS seem to have used this standard of proof in contentious cases,⁸⁷⁵ accepting claims without being able to 'conclusively assess the scientific evidence presented by the parties.'⁸⁷⁶

3.3.2.2. Reliable Scientific Evidence: The IPCC Reports

Independent scientific data is preferential to evidence produced by disputing parties. It is often the States, party to judicial proceedings, or their representatives, who

⁸⁷⁰ See, e.g., *Romania v Ukraine* (n 284) para. 68; *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina v Serbia and Montenegro)* (Judgment) [2007] ICJ Rep 75, para 204. See also article 27(1) of the PCA Arbitration Rules 2012.

⁸⁷¹ *Pulp Mills on the River Uruguay* (n 848) para 162.

⁸⁷² *Ibid* paras 225, 228, 254, 259, 262, 264, 265.

⁸⁷³ Alan E Boyle and James Harrison (n 848) 268.

⁸⁷⁴ *Pulp Mills on the River Uruguay* (n 848) Separate Opinion of Judge Greenwood, paras 25-26.

⁸⁷⁵ Alan E Boyle and James Harrison (n 848) 267-8.

⁸⁷⁶ *Southern Bluefin Tuna Cases (New Zealand v Japan; Australia v Japan)* (Provisional Measures) [1999] ITLOS Nos 3 and 4, para. 80.

produce factual evidence presented to courts and tribunals⁸⁷⁷ and the evidence can be unreliable or biased for that reason. Indeed, there seems to be consensus that reports produced by independent experts or agencies should carry more weight than those produced by disputing parties. This question was addressed to Argentina and Uruguay in the *Pulp Mills* case and according to the Argentinians, the weight given to scientific evidence should depend, among other things, on the ‘independence’ of the authors who should ‘have no personal interest in the outcome of the dispute and must not be an employee of the government’.⁸⁷⁸ Similarly, the Uruguayan representatives stated that ‘reports prepared by retained experts for the purposes of the proceedings and submitted as part of the record should not be regarded as independent and should be treated with caution; while expert statements and evaluations issued by a competent international organization [...] should be regarded as independent and given ‘special weight’.’⁸⁷⁹ The ICJ did not comment on this issue in particular and it did consider all the evidence presented to it (including reports prepared by experts and consultants of either party) before making its decision.⁸⁸⁰ However, the ICJ asserted, in the *Case Concerning Armed Activities on the Territory of the Congo* that ‘evidence obtained [by independent persons] experienced in assessing large amounts of factual information [...] merits special attention.’⁸⁸¹ Thus, scientific evidence presented in judicial proceedings should preferably originate from an independent source. In addition to meriting special attention, it can escape much of the criticism that one-sided evidence faces. For example, evidence produced by either party can favour that party’s arguments in a biased manner and there can be an asymmetry between the parties in terms of their ability to produce such evidence due to lack of financial resources, access to expertise knowledge or access to relevant data.

The IPCC provides information on the potential impacts of climate-related changes on coastal geography. The IPCC was created by two Agencies: the United Nations

⁸⁷⁷ See for example *The Indus Waters Kishenganga Arbitration* (n 850) para 14; *Pulp Mills on the River Uruguay* (n 848) para 165.

⁸⁷⁸ *Pulp Mills on the River Uruguay* (n 848) para 166.

⁸⁷⁹ *Ibid.*

⁸⁸⁰ *Ibid* para 168.

⁸⁸¹ *Case Concerning Armed Activities on the Territory of the Congo (Democratic republic of Congo v Uganda)* (Judgment) [2005] ICJ Rep 168, para 61.

Environment Programme and the World Meteorological Organization⁸⁸² and its role is to ‘assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change.’⁸⁸³ It compiles information relating to climate change and aims to convey it to policy makers and the general public.⁸⁸⁴ The IPCC has 195 member States and it draws on expertise from all over the world when examining the most recent scientific data available for understanding the effects of climate change.⁸⁸⁵ All member States have the opportunity to nominate authors and the authors must all sign a statement affirming that they have no conflict of interest, the point of which is to minimize the risk of bias.⁸⁸⁶

The IPCC is an epistemic institution, which means that it combines research from a network of leading experts and, consequently, minimizes ‘the adverse effects of scientific uncertainty’.⁸⁸⁷ The IPCC is the ‘*primus inter pares*’ in predicting the effects of climate change,⁸⁸⁸ ‘singular in its expertise, independence, and legitimacy.’⁸⁸⁹ Among the publications of the IPCC are the Assessment Reports, produced with regular intervals detailing the potential impacts of climate change, and the so-called Special Reports, assessing specific issues.⁸⁹⁰ Courts and tribunals can rely upon these reports because they contain ‘usable scientific data’, i.e. scientific data that has been made ‘relevant and accessible to decision-makers’.⁸⁹¹

Not all future changes to coastal geography fall within the category of climate-related changes. Thus, the IPCC reports will not provide information relevant for all potential changes that might have an impact on maritime boundary delimitation. However,

⁸⁸² Navraj Singh Ghaleigh, ‘Science and Climate Change Law – the Role of the IPCC in International Decision-making’ in *The Oxford Handbook of International Climate Change Law* (n 49) 56, 59 referring to Philippe Sands and Jacqueline Peel, *Principles of International Environmental Law*, 3rd edition (Cambridge University Press 2012) 70, 76.

⁸⁸³ IPCC ‘Principles Governing IPCC Work’ (Approved at the Fourteenth Session, 1-3 October 1998) available at: <https://www.ipcc.ch/pdf/ipcc-principles/ipcc-principles.pdf> accessed 20 September 2017.

⁸⁸⁴ IPCC ‘Organization’ (n 50); Timothy Meyer (n 49) 442.

⁸⁸⁵ IPCC ‘Organization’ (n 50); Navraj Singh Ghaleigh (n 882) 62.

⁸⁸⁶ Navraj Singh Ghaleigh (n 882) 62.

⁸⁸⁷ Timothy Meyer (n 49) 443.

⁸⁸⁸ Navraj Singh Ghaleigh (n 882) 61.

⁸⁸⁹ *Ibid* 61 referring to Lee A Kimball, ‘Treaty Implementation: Scientific and Technical Advice Enters a New Stage’ (1996) 28 *Studies in Transnational Legal Policy* 177, 196-197.

⁸⁹⁰ IPCC, ‘Activities’ available at: <https://www.ipcc.ch/activities/activities.shtml> accessed on 6 August 2017.

⁸⁹¹ Timothy Meyer (n 49) 447.

IPCC reports are by no means the only scientific data relevant for proving future changes to coastal geography. They can be supplemented or replaced by other reliable evidence such as detailed reports stemming from other international institutions or independent experts. Nonetheless, climate change is the root cause of many of the greatest threats to coastal stability and, therefore, IPCC reports will often be very useful. It might also be noted that changes falling outside the scope of the IPCC, such as seismic and volcanic changes, can be unforeseeable and impossible to prove in judicial proceedings.

3.3.2.3. Methods of Conveying Expert Evidence

Evidence of coastal instability can be presented and interpreted in a number of ways. ‘Scientific facts are rooted in methods of science [...] and not in methods of law’.⁸⁹² This makes the evaluation of scientific evidence particularly difficult for judges and arbitrators because even ‘usable scientific knowledge’ such as the IPCC reports can seem cryptic to an untrained eye. However, experts can help decipher complex scientific data and apply it to the facts of a judicial dispute, enabling judges and arbitrators to use it accurately. To this end, courts and tribunals can appoint experts or assessors to give evidence, experts can sit on tribunals and States can call expert witnesses or even have experts acting as counsel.⁸⁹³ In particular, the Rules of Procedure of ITLOS provide that the Tribunal shall ‘take all appropriate measures in order to establish the facts’⁸⁹⁴, it may ‘at any time during the arbitral proceedings, require the Parties to produce documents, exhibits or other evidence’⁸⁹⁵ and it can appoint independent experts to report on specific issues.⁸⁹⁶

Experts may sit with courts and tribunals when they settle disputes that involve scientific or technical matters under the auspices of UNCLOS. This may be requested

⁸⁹² Jean D’Aspremont and, Makane Moïse Mbengue, ‘Strategies of Engagement with Scientific, Fact-Finding in International Adjudication (2014) 5 Journal of International Dispute Settlement 240, 246.

⁸⁹³ See articles 30(2) and 50 of the Statute of the ICJ; Articles 9, 21(2), 62(2) and 67(1) of the Rules of the ICJ; Article 15 of the Rules of ITLOS; UNCLOS article 289; Article 27 of the PCA Optional Rules for Arbitrating Disputes between Two States from 1992.

⁸⁹⁴ ITLOS Rules of Procedure article 22(2).

⁸⁹⁵ *Ibid* article 22(4).

⁸⁹⁶ *Ibid* article 24.

by either party or decided *proprio motu* by the court or tribunal and the experts do not have the right to vote.⁸⁹⁷

Experts have assisted courts and tribunals in numerous cases: often in environmental disputes⁸⁹⁸ but also in disputes concerning maritime limits and boundaries, for example the *Bangladesh/Myanmar* case,⁸⁹⁹ *Philippines v China*⁹⁰⁰ and the *Barbados v Trinidad and Tobago Boundary Delimitation*.⁹⁰¹ An expert sat with the tribunal in *Philippines v China*⁹⁰² and the Philippines presented its own expert as a witness.⁹⁰³

According to Judges Al-Khasawneh and Simma of the ICJ:

The adjudication of disputes in which the assessment of scientific questions by experts is indispensable [...] requires an interweaving of legal process with knowledge and expertise that can only be drawn from experts properly trained to evaluate the increasingly complex nature of the facts put before the Court.⁹⁰⁴

The judges went on to say that, the ICJ was ‘not in a position adequately to assess and weigh complex scientific evidence of the type presented by the Parties’ and that it could not do so ‘without the assistance of experts’.⁹⁰⁵ In the words of the ICJ, ‘the purpose of the expert opinion must be to assist the Court in giving judgment upon the issues submitted to it for decision’⁹⁰⁶ and, thus, a request for an expert opinion should only be awarded where it can help the Court reach a decision.

Expert scientists have appeared as agents, counsel or representatives in a number of cases, for example the *Gabčíkovo-Nagymaros* case,⁹⁰⁷ the *Barbados v Trinidad and*

⁸⁹⁷ UNCLOS article 289.

⁸⁹⁸ See, e.g., *Trail Smelter Arbitration (United States/Canada)* (1941) III RIAA 1905 and *Award in the Arbitration regarding the Iron Rhine (“Ijzeren Rijn”) Railway (Kingdom of Belgium/Kingdom of the Netherlands)* (2005) XXVII RIAA 35.

⁸⁹⁹ *Bangladesh/Myanmar* (n 25) para 446.

⁹⁰⁰ *Philippines v China* (n 26) (Merits) paras 58 and 64-65.

⁹⁰¹ *Barbados v Trinidad and Tobago* (n 25) 153.

⁹⁰² See, e.g., *Philippines v China* (n 26) (Merits) para 58.

⁹⁰³ *Ibid* paras 64-65.

⁹⁰⁴ Joint Dissenting Opinion of Judges Al-Khasawneh and Simma in *Pulp Mills on the River Uruguay* (n 848) para 3 referring to Caroline E Foster, *Science and the Precautionary Principle in International Courts: Expert Evidence, Burden of Proof and Finality* (Cambridge University Press 2011) Chapter 2.

⁹⁰⁵ Joint Dissenting Opinion of Judges Al-Khasawneh and Simma in *Pulp Mills on the River Uruguay* (n 848) para 3.

⁹⁰⁶ *Ibid* para 5.

⁹⁰⁷ See *Case Concerning the Gabčíkovo-Nagymaros Project* (n 427) 9-10.

*Tobago Boundary Delimitation*⁹⁰⁸ and the *Pulp Mills* case.⁹⁰⁹ Both Argentina and Uruguay used experts as counsel in the *Pulp Mills* case but the ICJ declared that it ‘would have found it more useful had they been presented by the Parties as expert witnesses under Articles 57 and 64 of the Rules of Court, instead of being included as counsel in their respective delegations.’⁹¹⁰ The ICJ went on to say that, experts providing evidence in judicial proceedings should appear as experts or witnesses, rather than as counsel, so that the opposing party and the Court could question them.⁹¹¹

The ICJ can, in addition to admitting experts as witnesses, agents, counsel, representatives or judges, appoint assessors who differ from experts insofar as they can sit with the Court during judicial deliberations, albeit without a vote.⁹¹² Furthermore, the Court can arrange for enquiries to be carried out⁹¹³ by, for example, having a specialist committee gathering scientific data on a particular question and reporting back to the arbitral tribunal as was done in the *Trail Smelter* case where two technical consultants were given specific tasks.⁹¹⁴ The rules governing ITLOS and the PCA ‘Optional Rules for Arbitrating Disputes between Two States’ make no mention of assessors or enquiries but States can allow for the use of assessors in arbitral proceedings where procedure is optional. However, States have the right to request that at least two experts sit with any court or tribunal having jurisdiction over a dispute under UNCLOS section 2 (if it involves scientific or technical matters) and the relevant court or tribunal may decide this *proprio motu*.⁹¹⁵ Furthermore, experts can sit as arbitrators in arbitral proceedings and, thereby, take part in deliberations with other arbitrators and have a vote in judicial decisions, unlike assessors.⁹¹⁶ This method was used, for example, in the *Kishenganga* arbitration where a specialist in hydrology, Professor Howard Weather, acted as an arbitrator.⁹¹⁷

⁹⁰⁸ *Barbados v Trinidad and Tobago* (n 25) 153.

⁹⁰⁹ *Pulp Mills on the River Uruguay* (n 848) 22-24.

⁹¹⁰ *Ibid* para 167.

⁹¹¹ *Ibid*.

⁹¹² Article 30(2) of the Statute of the ICJ and articles 9 and 21(2) of the Rules of the ICJ.

⁹¹³ Article 67(1) of the Rules of the ICJ. This was done, for example, in *Corfu Channel (United Kingdom of Great Britain and Northern Ireland v Albania)* (Merits) [1949] ICJ Rep 4, 151.

⁹¹⁴ *Trail Smelter Arbitration* (n 898) 1934.

⁹¹⁵ UNCLOS article 289.

⁹¹⁶ Article 9(1) of the Rules of the ICJ.

⁹¹⁷ *The Indus Waters Kishenganga Arbitration* (n 850).

One or more of these methods should be used in maritime boundary delimitation proceedings when courts and tribunals have to consider complex scientific data concerning future changes to coastal geography.

3.4. Achieving an Equitable Solution with Due Regard for Coastal Instability

Equity cannot remedy natural inequalities,⁹¹⁸ but a delimitation approach should not result in inequality between States that are ‘given broadly equal treatment by nature’.⁹¹⁹ Such a solution would be inequitable, as established in the ICJ’s decision in the *North Sea Continental Shelf* cases.⁹²⁰ In that particular case, the three States involved (Germany, Denmark and the Netherlands) had coastlines that were relatively equal in length. However, application of the equidistance method led to a cut-off effect for Germany, limiting its access to a continental shelf because of the configuration of the relevant coastlines. The configuration of the coastlines constituted an irregularity, and according to the ICJ an irregularity that is greatly exaggerated in the resulting boundary should be remedied as far as possible whenever it creates inequity.⁹²¹ Equal treatment of the parties to this particular dispute (by application of the equidistance method) would have resulted in inequity;⁹²² therefore, the boundary had to be delimited in such a way as to minimize the aforementioned irregularity.

Changing circumstances may have the effect of creating inequalities in the near future, just as the configuration of the coastlines in the *North Sea Continental Shelf* cases had the potential of creating a cut-off effect for Germany. However, these effects should not lead to unequal distribution of maritime entitlements unless natural circumstances justify such a result. The boundary should be in line with the natural circumstances, not the effect certain circumstances produce. Therefore, the method of delimitation applied in each case must be one that reflects the effect of circumstances causing inequalities, without exaggerating or diminishing them.

⁹¹⁸ *North Sea Continental Shelf* (n 99) para. 91.

⁹¹⁹ *Ibid.*

⁹²⁰ *Ibid.*

⁹²¹ *Ibid* para 89.

⁹²² *Ibid* para 91.

The fact that the timing of a maritime boundary delimitation holds unusual significance (because maritime entitlements are particularly unstable or significant changes are imminent) can be seen as an irregularity. Therefore, a delimitation approach that ignores inevitable future changes to coastal geography can result in an inequitable solution because the irregularity (the unusual importance of the date of delimitation) is exaggerated by the delimitation method. The delimitation process should take account of relevant changes in the coastal geography to neutralize the inequality otherwise produced by the date of delimitation, and achieve a boundary that is equitable not only on that particular date but in the foreseeable future.

The ICJ's finding that the concavity of the German coastline and relative convex nature of its neighbouring States' coastlines should not be exaggerated by use of the equidistance method did not translate into the refashioning of geography. It was simply a matter of 'abating the effects of an incidental special feature from which an unjustifiable difference of treatment could result'.⁹²³ Similarly, adjusting an equidistance line or choosing another delimitation method by reference to the special circumstances brought on by changing circumstances would not amount to any disregard for natural geography. On the contrary, it would ensure consideration for ongoing developments of the natural geography and prevent an 'unjustifiable difference of treatment' between neighbouring States where one State would otherwise suffer and the other one benefit from changing circumstances.

Several measures are available for minimizing irregularities caused by foreseeable changes to coastal geography. Four viable options have been identified and these are explained in the following sections.

3.4.1. Selection of Base Points

An equidistance line is constructed on the basis of selected base points, which are located on relevant coastlines and coastal features. Therefore, courts and tribunals are required to determine which parts of the relevant coastlines are to form the basis of an

⁹²³ *Ibid.*

equidistance line and, consequently, which base points to use.⁹²⁴ In this respect, they cannot rely solely on the base points proposed by the disputing parties.⁹²⁵ When constructing an equidistance line, courts and tribunals must assess the status of coastal features to determine whether they are islands, rocks, shoals, reefs, low-tide elevations or submerged features, and thus, which maritime zones they can generate, if any.⁹²⁶ Subsequently, courts and tribunals must choose ‘the most appropriate points on the coasts of the two States concerned’.⁹²⁷ Arguably, the most appropriate base points for an equitable boundary are those that will continue to generate maritime entitlements in the near future.

As mentioned in section 3.2.2.3, the selection of base points should take account of all relevant circumstances throughout the delimitation process, so when originally drawing a provisional equidistance line courts and tribunals should look to foreseeable changes to relevant coasts and refrain from using any base points that will become inappropriate in the near future. This is different from the adjustment of a provisional equidistance line by reference to relevant circumstances, which happens at the second stage, after a provisional boundary has been established on the basis of appropriate base points. Thus, under the equidistance/relevant circumstances method, coastal instability can affect the drawing of a boundary at two stages.

The selection of base points is a very delicate matter because ‘[t]he slightest irregularity in a coastline is automatically magnified by the equidistance line as regards the consequences for the delimitation’.⁹²⁸ The effect of any irregularity is exaggerated when it is further from the coastline, and, therefore, the unreasonableness of a boundary that is based on an irregularity of the coastline increases in correlation with the extent of the irregularity and the distance from the coastline to the boundary.⁹²⁹ Furthermore, ‘any variation or error in situating [base points at a close proximity] would become disproportionately magnified in the resulting equidistance line’.⁹³⁰

⁹²⁴ See, e.g., *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) para 200; *Cameroon v Nigeria: Equatorial Guinea intervening* (n 624) para 290.

⁹²⁵ *Romania v Ukraine* (n 284) para 137.

⁹²⁶ See, e.g., *Philippines v China* (n 26) (Merits) and *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) para 145.

⁹²⁷ *Romania v Ukraine* (n 284) para 117.

⁹²⁸ *North Sea Continental Shelf* (n 99) para 89.

⁹²⁹ *Ibid.*

⁹³⁰ *Nicaragua v Honduras* (n 620) para 277.

Therefore, a choice between two possible base points can affect drastically the resulting equidistance boundary, making the choice significant. This is why base points must be selected with great care.

According to ITLOS ‘neither case law nor State practice indicates that there is a general rule concerning the effect to be given to islands in maritime delimitation. It depends on the particular circumstances of each case.’⁹³¹ The same applies to low-tide elevations and individual base points: the decision to place a base point on a coastal feature must always depend ‘on the particular circumstances of each case’ and coastal instability is an example of circumstances that should factor into such decisions.

Courts and tribunals have chosen not to establish base points on coastal features by reference to their size and distance from the mainland. For example, in the *Black Sea* case, the ICJ decided that no base points would be located on Serpents’ Island (a feature of 0.17 square km, 20 nautical miles from Ukraine’s coastline) because doing so ‘would amount to grafting an extraneous element onto Ukraine’s coastline; the consequence would be a judicial refashioning of geography, which neither the law nor practice of maritime delimitation authorizes’.⁹³² Similarly, in the *Nicaragua v Colombia* case, the Court decided not to place any base points on Quitasueño, a ‘tiny feature’ of Colombia 38 nautical miles from the nearest Colombian island, because its effect on an equidistance line would be to ‘push that line significantly closer to Nicaragua’.⁹³³

In *Gulf of Maine*, the ICJ held that base points should not be placed on ‘tiny islands, uninhabited rocks or low-tide elevations’, as to do so can distort the equidistance line.⁹³⁴ Similarly, in *Nicaragua v Honduras*, the ICJ confirmed that it is appropriate to disregard very small coastal features, when selecting base points, if they otherwise ‘distort the relevant geography’.⁹³⁵ This same rationale can be applied when constructing boundary lines in light of future changes to coastal geography. Thus, insignificant coastal features could be disregarded for the purpose of selecting base

⁹³¹ *Bangladesh/Myanmar* (n 25) para 147.

⁹³² *Romania v Ukraine* (n 284) para 149.

⁹³³ *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) para 202.

⁹³⁴ *Delimitation of the Maritime Boundary in the Gulf of Maine Area* (n 282) para 201.

⁹³⁵ *Nicaragua v Honduras* (n 620) para 202.

points if they will otherwise distort the relevant geography in the near future. For example, low-tide elevations or unstable parts of the coastline could be omitted where they are expected to be submerged in the foreseeable future due to sea level rise or coastal erosion.

In *Bangladesh v India*, the tribunal considered ‘that base points located on low-tide elevations do not fit the criteria elaborated by the International Court of Justice (hereinafter ICJ or the Court) in the *Black Sea* case and confirmed in more recent cases’.⁹³⁶ ‘If alternative base points situated on the coastline of the parties are available, they should be preferred to base points located on low-tide elevations.’⁹³⁷ The tribunal went on a site visit to ascertain the nature of proposed features⁹³⁸ and it found no low-tide elevation that it deemed suitable for base points.⁹³⁹ The visibility of a base point on South Talpaty/New Moore Island could not be denied and yet, the feature ‘could in no way be considered as situated on the coastline, much less as a “protuberant coastal point”’.⁹⁴⁰ The reasoning put forth by the arbitral tribunal in *Bangladesh v India* supports the conclusion that continuously reliable base points, situated on the coastline, should be preferred to those on low-tide elevations. The same logic could apply to base points on *terra firma* that are not low-tide elevations but similarly unstable; stable base points on concrete coastlines might be preferable to those on deltaic coastlines or submerging rocks and islands. The more reliable the base points are, the more likely it is that the resulting boundary produces an equitable boundary for years to come.

3.4.2. Adjustment of a Provisional Boundary Line

The selection of base points and construction of a provisional equidistance line is ‘nothing more than a first step and in no way prejudices the ultimate solution which must be designed to achieve an equitable result’.⁹⁴¹ The second step under the equidistance/relevant circumstances method is the adjustment of the provisional

⁹³⁶ *Bangladesh v India* (n 25) para 261.

⁹³⁷ *Ibid* para 262.

⁹³⁸ *Ibid* para 22.

⁹³⁹ *Ibid* paras 360-362.

⁹⁴⁰ *Ibid* para 263, referring to *Romania v Ukraine* (n 284) para 117.

⁹⁴¹ *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) para 196.

boundary by reference to relevant circumstances. Courts and tribunals must consider ‘whether there are factors calling for the adjustment or shifting of that line in order to achieve an “equitable result”’.⁹⁴²

Jurisprudence has evidenced that courts and tribunals may decide to give specific coastal features limited or no effect, i.e., less than ‘their full potential entitlement to maritime zones, should such an approach have a disproportionate effect on the delimitation line under consideration’.⁹⁴³ For example, two delimitation lines may be drawn, one giving any feature full effect and another one ignoring the feature. ‘The delimitation line actually adopted is then drawn between the first two lines, either in such a way as to divide equally the area between them, or as bisector of the angle which they make with each other, or possibly by treating the island as displaced toward the mainland by half its actual distance therefrom.’⁹⁴⁴ Thus, foreseeable changes to coastal geography can affect the construction of an equidistance line at two stages: first, when choosing viable base points, and, second, when adjusting the provisional boundary line and determining the relative weight given to each feature. Moreover, other boundary lines can also be adjusted by reference to relevant circumstances. Therefore, an angle-bisector line may be adjusted in the same manner as a provisional equidistance line.⁹⁴⁵

The size of islands has played a role in maritime boundary delimitation as small islands have been given less than full effect when constructing boundary lines. This was done, for example, in the *Anglo-French Continental Shelf* case (in respect of the Scilly Islands), the *Tunisia/Libya* case (in respect of the Kerkennah Islands)⁹⁴⁶ and the *Gulf of Maine* case (in respect of Seal Island).⁹⁴⁷ All of these islands were given half effect.⁹⁴⁸ Similarly, future changes to coastal geography can amount to relevant circumstances, and such circumstances can lead to the adjustment of provisional

⁹⁴² *Cameroon v Nigeria: Equatorial Guinea intervening* (n 624) para 288.

⁹⁴³ See *Romania v Ukraine* (n 284) para 185; *Libyan Arab Jamahiriya/Malta* (n 78) 48, para 64; *Qatar v Bahrain* (n 133) para 219; *Nicaragua v Honduras* (n 620) paras 302 *et seq.*

⁹⁴⁴ *Tunisia/Libyan Arab Jamahiriya* (n 302) para 129.

⁹⁴⁵ See *Nicaragua v Honduras* (n 620) para 294.

⁹⁴⁶ *Tunisia/Libyan Arab Jamahiriya* (n 302) para 129.

⁹⁴⁷ *Delimitation of the Maritime Boundary in the Gulf of Maine Area* (n 282) para 222.

⁹⁴⁸ Robin R Churchill (n 756).

boundary lines, giving coastal features partial or no effect on the grounds that they cannot maintain the ability to generate maritime entitlements for the foreseeable future.

The ICJ had to decide, in *Qatar v Bahrain*, whether the tiny, uninhabited and unstable island of Qit'at Jaradah met the requirements to constitute an island under UNCLOS article 121.⁹⁴⁹ The parties disputed its status as an island or a low-tide elevation; Bahrain submitted that the upper part of the feature's surface had been removed in 1986 and that it had, thereafter, 'recovered its island status by natural accretion'.⁹⁵⁰ Qatar, however, argued that Qit'at Jaradah had never been portrayed as an island on nautical charts, but rather, as a low-tide elevation, even though Bahrain had sought to alter its nature in 1985-1986.⁹⁵¹ The physical status of Qit'at Jaradah had changed significantly in the decades leading up to the case but scientific experts supported the Court's conclusion that it was, at the time of delimitation, above water at high tide and could, therefore, qualify as an island, at the time of delimitation.⁹⁵² Judge Vereshchetin commented on the instability of the feature and said that because of its constantly changing physical condition it should not be considered an island.⁹⁵³ In fact, the Court decided, after having determined that the feature met the requirements of UNCLOS article 121, to give it less than full effect, noting that 'a disproportionate effect would be given to an insignificant maritime feature' if the boundary line would be measured from Qit'at Jaradah.⁹⁵⁴ Furthermore, the Court drew two provisional boundary lines, one with a base point on Fasht al Azm (regarding it as part of another island) and another line without a base point on Fasht al Azm (regarding it as a separate low-tide elevation). The feature in question was a small island and less than 20% of the island was permanently above water. In light of this feature's limited significance, the Court decided to let the boundary line pass between the two provisional lines, giving it limited effect.⁹⁵⁵

⁹⁴⁹ *Qatar v Bahrain* (n 133) para 191.

⁹⁵⁰ *Ibid* para 192.

⁹⁵¹ *Ibid* para 193.

⁹⁵² *Ibid* paras 194-5.

⁹⁵³ Declaration of Judge Vereshchetin in *Qatar v Bahrain* (n 133) 184.

⁹⁵⁴ *Qatar v Bahrain* (n 133) para 219.

⁹⁵⁵ *Ibid* para 218.

It seems very likely that the coastal instability had an effect on the Court's decision, although it only explicitly referred to the features' 'insignificance' and its size.⁹⁵⁶ The features should arguably have been disregarded for the purpose of plotting the provisional equidistance line but the reason why they were given any effect was that coastal features under Bahraini sovereignty would fall on the Qatari side of the boundary if Qit'at Jaradah and Fasht al Azm were given no effect. Therefore, the boundary line was adjusted to give both features limited effect⁹⁵⁷ and make sure that specific features would fall on the 'right' side of the boundary.⁹⁵⁸ This decision demonstrates that the adjustment of a provisional boundary line does not necessarily require geometric calculations from coastal features that have been assigned a specific weight; instead, an equitable solution can be arrived at in an *ad hoc* manner.

Submerging features have been given partial or no effect in maritime boundary agreements. This was done, for example, in the boundary agreements between Belgium/France and Belgium/UK⁹⁵⁹ and the agreement between Iceland and Denmark (Greenland).⁹⁶⁰ The British low-tide elevation Long Sand Head was given only about one-third effect in the agreement between Belgium and UK relating to the delimitation of the continental shelf between the two countries.⁹⁶¹ Similarly, Kolbeinsey, an islet that is expected to be submerged by 2020, was given only about one-third effect in the agreement between Iceland and Denmark (Greenland) in 1997.⁹⁶² Furthermore, the boundary line delimiting the continental shelf between Belgium and France was arrived at by drawing a line with consideration for the low-tide elevations in front of

⁹⁵⁶ *Ibid* para 219.

⁹⁵⁷ See further discussion regarding Fasht al Azm in section 3.4.1.

⁹⁵⁸ *Qatar v Bahrain* (n 133) para 218-220.

⁹⁵⁹ Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Kingdom of Belgium relating to the Delimitation of the Continental Shelf between the two Countries (n 805).

⁹⁶⁰ Agreement between the Government of the Kingdom of Denmark along with the Local Government of Greenland on the one hand, and the Government of the Republic of Iceland on the other hand on the Delimitation of the Continental Shelf and the Fishery Zone in the Area between Greenland and Iceland (n 458).

⁹⁶¹ Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Kingdom of Belgium relating to the Delimitation of the Continental Shelf between the two Countries (n 805).

⁹⁶² Agreement between the Government of the Kingdom of Denmark along with the Local Government of Greenland on the one hand, and the Government of the Republic of Iceland on the other hand on the Delimitation of the Continental Shelf and the Fishery Zone in the Area between Greenland and Iceland (n 458).

the French and Belgian coasts and another line following the low-water line of the coasts.⁹⁶³ Thus, the low-tide elevations of both France and Belgium were given roughly half effect.

3.4.3. The Angle-Bisector Method as a Response to Coastal Instability

The equidistance/relevant circumstances method has been the preferred method of delimitation ‘because it is easy and objective and can be regarded, *prima facie*, as equitable because it divides the overlapping areas of the projections of the two coasts almost equally’ and also ‘because it reflects the legal ideas at the root of the title of States to maritime areas and expresses the modern conception of maritime delimitation’.⁹⁶⁴ However, an equitable solution is not necessarily an equal solution⁹⁶⁵ and the equidistance method is not the only one that is centred on the root of maritime entitlements, i.e., coastal geography. The equidistance/relevant circumstances method has been described as having ‘a certain intrinsic value because of its scientific character and the relative ease with which it can be applied’.⁹⁶⁶ Nonetheless, both methods are ‘based upon geometric techniques’.⁹⁶⁷ The tribunal in *Bangladesh v India* gave the following reasons for preferring the equidistance method over the angle-bisector method:

the advantage of the equidistance/relevant circumstances method lies in the fact that it clearly separates the steps to be taken and is, thus, more transparent. The identification of a provisional equidistance line is based on geometrically objective criteria, while at the same time account is taken of the geography of the area through the selection of appropriate base points. By contrast, depicting the relevant coasts as straight lines under the angle-bisector method involves subjective considerations.⁹⁶⁸

Accordingly, the equidistance method has been preferred on the grounds of a perceived predictability and objectivity. However, ‘it is the virtue – though it may also be the weakness – of the equidistance method to take full account of almost all variations in

⁹⁶³ Agreement between the Government of the French Republic and the Government of the Kingdom of Belgium on the delimitation of the continental shelf (n 625) article 2.

⁹⁶⁴ Prosper Weil, *The Law of Maritime Delimitation – Reflections* (n 783) 282.

⁹⁶⁵ *North Sea Continental Shelf* (n 99) para 9.

⁹⁶⁶ *Guinea/Guinea-Bissau* (n 770) para 102.

⁹⁶⁷ *Bangladesh v India* (n 25) para 343.

⁹⁶⁸ *Ibid* (n 25) para 343.

the relevant coastlines'.⁹⁶⁹ These considerations for all relevant circumstances may well be seen as a weakness insofar as they involve various subjective considerations and, consequently, make the equidistance/relevant circumstances method less objective than it may appear at first glance. The second stage of the equidistance/relevant circumstances method involves arbitrary adjustments by reference to numerous different circumstances and the disproportionality test has been described as 'completely unpredictable'.⁹⁷⁰ '[I]t is unnecessary to proceed with the three-stage methodology simply for the sake of standardisation,⁹⁷¹ if clarity and objectivity will be sacrificed thereby'.⁹⁷² Therefore, the equidistance approach should be abandoned when another method is more suitable. Indeed, equidistance is not obligatory as a preliminary step,⁹⁷³ relevant circumstances can render it wholly unsuitable,⁹⁷⁴ and the obligation to reach an equitable solution may require the use of a different method, even for the delimitation of a territorial sea boundary.⁹⁷⁵

UNCLOS makes one reference to unstable coastlines and that is in article 7(2), which prescribes the use of straight baselines at coastlines that are highly unstable due to the presence of a delta or other natural conditions. Thus, UNCLOS expressly indicates that where coastal instability is present, it may be appropriate to determine a State's maritime entitlements on the basis of an approximation of the coastline, which is precisely the effect of the angle-bisector method. The angle-bisector method is based upon the '[g]eneral direction of the coast, minimizing the effects of irregularities, reducing them to their truer proportions'.⁹⁷⁶ Furthermore, 'one of the practical advantages of the bisector method is that a minor deviation in the exact position of endpoints, which are at a reasonable distance from the shared point, will have only a

⁹⁶⁹ *Tunisia/Libyan Arab Jamahiriya* (n 302) para 126.

⁹⁷⁰ Malcolm Evans, 'Maritime Boundary Delimitation: Where Do We Go From Here?' in David Freestone, Richard Barnes and David Ong (eds), *The Law of the Sea: Progress and Prospects* (Oxford University Press 2006) 137, 153.

⁹⁷¹ Fayokemi Olorundami, 'Objectivity versus Subjectivity in the Context of the ICJ's Three-Stage Methodology of Maritime Boundary Delimitation' (2017) 32 *The International Journal of Marine and Coastal Law* 36, 53, referring to *Territorial and Maritime Dispute (Nicaragua v Colombia)* (n 329) Declaration of Judge Xue, para 9.

⁹⁷² Fayokemi Olorundami (n 971) 53.

⁹⁷³ See e.g. *Libyan Arab Jamahiriya/Malta* (n 78) 47, para 63.

⁹⁷⁴ *Libyan Arab Jamahiriya/Malta* (n 78) 44, para 56.

⁹⁷⁵ *Nicaragua v Honduras* (n 620) para 281.

⁹⁷⁶ *North Sea Continental Shelf* (n 99) para 98.

relatively minor influence on the course of the entire coastal front line'.⁹⁷⁷ Therefore, the angle-bisector approach is particularly suitable for unstable coastlines; the boundary does not correlate precisely to the coastline and, thus, minor changes will usually be of little, if any, significance for the equitableness of the solution. Accordingly, future changes to the coastline would not affect the equitable nature of an angle-bisector boundary line unless they were significant enough to alter the linear approximation of relevant coastlines. The submergence of small or incidental coastal features might have no effect as such features would generally not impact the location of an angle-bisector line. For these reasons, the angle-bisector method seems optimal for achieving long-lasting and equitable solutions where coastal geography is expected to undergo insignificant changes. However, more significant changes that affect one coastline more than the other, such as a volcanic eruption or the submergence of an island on one side of the boundary, could contort an angle-bisector line and make it inequitable.

The use of straight baselines might be associated with application of the angle-bisector method because an equidistance line constructed by reference to long straight baseline segments could have a similar end result. However, courts and tribunals generally refrain from reliance upon straight baselines unilaterally established by coastal States. Instead, they tend to identify new base points for the delimitation of maritime boundaries. For example, in *Bangladesh v India* both States agreed not to rely on previously established straight baselines but to propose base points for the specific purpose of delimiting a bilateral boundary.⁹⁷⁸ The tribunal held that although low-tide elevations could be appropriate base points for measuring the breadth of the territorial sea, under UNCLOS article 13, they might not be appropriate for delimitation of a bilateral boundary.⁹⁷⁹ The tribunal was right not to place base points on submerging low-tide elevations in *Bangladesh v India* and baselines that are appropriate for unilateral delineation may indeed be inappropriate for bilateral delimitation.

⁹⁷⁷ *Nicaragua v Honduras* (n 620) para 294.

⁹⁷⁸ *Bangladesh v India* (n 25) para 250.

⁹⁷⁹ *Ibid* para 260.

Nonetheless, the base points used for boundary delimitation should always reflect the general direction of relevant coastlines.⁹⁸⁰

The ICJ was faced with particular difficulties in relation to the selection of viable base points in the *Nicaragua v Honduras* case because of extreme coastal instability.⁹⁸¹ The Court ultimately constructed an angle-bisector boundary line⁹⁸² because the circumstances of the case made it ‘impossible for the Court to identify base points and construct a provisional equidistance line for the single maritime boundary delimiting maritime areas off the Parties’ mainland coasts’.⁹⁸³ In their arguments, both Nicaragua and Honduras referred to changing circumstances as relevant for the delimitation process. Nicaragua argued for use of the angle-bisector method because of the instability of the river delta, while Honduras relied on the principle of *uti possidetis juris* and on a tacit agreement between the parties allegedly constituting a traditional boundary. However, Honduras also asked the Court to take the changing geographical characteristics of the mouth of the River Coco into account when determining the location of this boundary.⁹⁸⁴ Moreover, it did ‘not deny that geometrical methods of delimitation, such as perpendiculars and bisectors, are methods that may produce equitable delimitations in some circumstances’.⁹⁸⁵

Nicaragua maintained that it would be ‘technically impossible to draw an equidistance line because it would have to be entirely drawn on the basis of the two outermost points of the mouth of the river, which are extremely unstable and continuously change position’.⁹⁸⁶ The instability of these two base points should not matter if the relevant coastal geography was only that existing at the date of the award, but the Court clearly looked beyond a snapshot of the existing circumstances and that is why the identification of viable base points was impossible. The Court concluded that the ‘continued accretion at the Cape might render any equidistance line so constructed

⁹⁸⁰ *Romania v Ukraine* (n 284) para 127.

⁹⁸¹ *Nicaragua v Honduras* (n 620) para 28.

⁹⁸² Further discussion in section 3.4.2.

⁹⁸³ *Nicaragua v Honduras* (n 620) para 280.

⁹⁸⁴ *Ibid* 668, para 18.

⁹⁸⁵ *Ibid* para 274.

⁹⁸⁶ *Nicaragua v Honduras* (n 620) para 102.

today arbitrary and unreasonable in the near future⁹⁸⁷ and, therefore, established an angle-bisector boundary.⁹⁸⁸

Bangladesh and India also disagreed on the method best suited for the purpose of achieving an equitable maritime boundary in *Bangladesh v India*. India argued for the application of the equidistance/relevant circumstances method and maintained that no adjustment of equidistance line was warranted by relevant circumstances. Bangladesh, however, argued that the instability due to coastal erosion at the Bengal Delta called for an angle-bisector boundary line or, in the alternative, an adjustment of a provisional equidistance line.⁹⁸⁹ According to Bangladesh, ‘instability of the coastline is a major factor weighing against the use of the provisional equidistance/relevant circumstances method’; this was particularly relevant ‘in view of the potential effect of climate change and sea level rise in the Bay of Bengal’ because within a few years of the delimitation many of the low-tide elevations proposed as base points by Bangladesh would be submerged.⁹⁹⁰

The tribunal rejected Bangladesh’s arguments relating to coastal instability and opted for the equidistance/relevant circumstances method instead of an angle-bisector. The tribunal did not reject the idea that the angle-bisector method could be permissible but it submitted that the equidistance/relevant circumstances method should be preferred over the angle-bisector method unless particular factors made its use inappropriate.⁹⁹¹ It held that the delimitation process should aim for transparency and predictability,⁹⁹² and asserted that the angle-bisector method involved ‘subjective considerations’ because ‘there may be more than one way of depicting the relevant coast with straight lines’. However, as previously explained, the equidistance/relevant circumstances method is also immersed in subjective considerations; the perceived transparency and predictability comes from the preliminary first step but is lost at the two subsequent

⁹⁸⁷ *Ibid* para 277.

⁹⁸⁸ *Ibid* 748, para 294.

⁹⁸⁹ *Bangladesh v India* (n 25) paras 208 and 210.

⁹⁹⁰ *Ibid* para 213.

⁹⁹¹ *Ibid* paras 344-345.

⁹⁹² *Ibid* para 339.

stages. Indeed, there may be more than one way of adjusting a provisional equidistance line by reference to relevant circumstances.

It is also interesting to note that the final boundary established between Bangladesh and India was very similar to the one proposed by Bangladesh.⁹⁹³ Assuming that the end result was equitable, and considering the similarities between the end result and the boundary proposed by Bangladesh, one might conclude that application of the angle-bisector method would also have produced an equally equitable boundary, which is the ‘paramount objective’ of boundary delimitation.⁹⁹⁴ If the equidistance/relevant circumstances method would lead to a solution almost identical to that of another method, such as the angle-bisector method, then the equidistance/relevant circumstances could well be preferential as the most predominant method in the field of delimitation. However, the legal reasoning underpinning judicial decisions is of great importance for subsequent cases and for the development of the law. An equitable solution may have been achieved in *Bangladesh v India* with no consideration for changing circumstances through subjective adjustments to the provisional equidistance line. However, this may not be possible in all cases (e.g., *Nicaragua v Honduras*) and, therefore, the relevance of changing circumstances should never be rejected *a priori*.

3.4.4. Fluctuating Boundaries

Foreseeable changes can be accounted for by selecting base points that are viable by reference to changing circumstances, adjusting provisional baselines or using the angle-bisector method. However, these methods do not ensure that a maritime boundary continues to reflect relevant maritime entitlements in the wake of significant and unforeseeable geographical changes. Fluctuating boundaries, however, could do just that. In *Bangladesh v India*, Bangladesh submitted that ‘it would be against equity and common sense to draw a permanent boundary line using base points on an unstable

⁹⁹³ Marcin Kaldunski, ‘A Commentary on Maritime Boundary Arbitration between Bangladesh and India Concerning the Bay of Bengal’ (2015) 28 (4) *Leiden Journal of International Law* 799, 845.

⁹⁹⁴ *Bangladesh v India* (n 25) para 339.

coast’.⁹⁹⁵ Inequity caused by permanent boundaries might be avoided by the use of fluctuating boundaries.

The ICJ addressed the possibility of constructing a maritime boundary by reference to changing environmental circumstances in the *Gulf of Maine* case in 1984, in which the United States proposed a boundary that was ‘a recognizable limit in the marine environment’.⁹⁹⁶ The ICJ was not ‘convinced of the possibility of discerning any genuine, sure and stable “natural boundaries” in so fluctuating an environment as the waters of the ocean, their flora and fauna’.⁹⁹⁷ Furthermore, it was particularly hesitant to consider the oceano-biological boundary in the Georges Bank because it was tasked with the construction of a fixed, single-purpose boundary. An expert witness from the United States admitted upon cross-examination, however, that relevant ecosystems were bound to change.⁹⁹⁸ Leaving aside the question of whether ecological circumstances and natural boundaries are relevant for maritime boundary delimitation,⁹⁹⁹ this case highlights an important question concerning the relationship between stable boundaries and changes in the relevant circumstances essential to those boundaries.

Baselines and maritime limits are ambulatory (as explained in Chapter II) and boundaries that are measured from baselines, as opposed to fixed coordinates, can also be ambulatory. According to Caron, ‘baselines and boundaries generated from them are ‘ambulatory’ [...] that is, the baselines – and therefore the boundaries – adjust themselves to a changing coastline’.¹⁰⁰⁰ ‘Caron, referring to the outer limits of maritime zones as ‘boundaries’, writes: maritime boundaries under the 1982 Convention generally are contingent upon the continued existence of the baseline. If the baseline moves, the boundary moves. If a baseline point such as an exposed rock disappears, the boundary generated by that point also disappears.’¹⁰⁰¹ Just as maritime limits fluctuate with the baselines from which they are measured, maritime boundaries

⁹⁹⁵ *Ibid* 112. See Bangladesh’s Memorial, paragraph 6.83

⁹⁹⁶ *Delimitation of the Maritime Boundary in the Gulf of Maine Area* (n 282) para 52.

⁹⁹⁷ *Ibid* para. 54.

⁹⁹⁸ *Delimitation of the Maritime Boundary in the Gulf of Maine Area* (n 282) C I/CR 84/16, 31.

⁹⁹⁹ This decision suggests that they might be if sufficiently important, evident and conclusive. See *Delimitation of the Maritime Boundary in the Gulf of Maine Area* (n 282) para 56.

¹⁰⁰⁰ David D Caron Caron (n 79) 2.

¹⁰⁰¹ ‘Conference Report Sofia 2012’ (n 94) 22 referring to David D Caron (n 52) 634.

can fluctuate if they are established by reference to baselines or other ambulatory limits.

Wherever the territorial seas of neighbouring States overlap, boundaries are established in accordance with UNCLOS article 15, which bars States from extending their territorial sea beyond a line that is equidistant from relevant coasts. States are urged to agree upon a territorial sea boundary, but if they fail to do so article 15 provides for a provisional boundary – the equidistance or median line. Therefore, until otherwise agreed, the territorial sea boundary between States with overlapping entitlements is based on fluctuating phenomena (the median or equidistance line) and must, therefore, be a fluctuating boundary. This was evidenced in *Guyana v Suriname*, as discussed in section 2.4., where the equidistance line for delimitation of the territorial sea had shifted from the ‘historical equidistance line’ to the time of delimitation.¹⁰⁰²

States could agree to establish fluctuating boundaries, which would, much like the provisional territorial sea boundaries, follow the equidistance or median line and have no fixed coordinates or specified base points.¹⁰⁰³ This method might very well produce equitable boundaries as it would guarantee continuing adherence to the ‘land dominates the sea’ principle and ensure that maritime entitlements of relevant parties would correspond to the coastal front generating such entitlements, on an ongoing basis. This would not refashion nature in any way; on the contrary, the fluctuating boundary would continuously reflect natural geography of relevant coastal states. Furthermore, fluctuating boundaries might be the most equitable solution in circumstances where geographical changes are expected to occur but cannot be predicted with enough certainty to construct an equidistance line by reference to those changes, or when the general direction of the coastline will be altered (making the angle-bisector method inappropriate).

¹⁰⁰² *Guyana v Suriname* (n 251) para 325.

¹⁰⁰³ This was done, for example, in the Convention between the Government of the French Republic (Wallis and Futuna) and the Government of the Kingdom of Tonga on the delimitation of economic zones (adopted 11 January 1980, entered into force 11 January 1980) 1183 UNTS 343.

The construction of fluctuating boundaries should not be a drastic change from the existing legal order because all maritime frontiers are ambulatory¹⁰⁰⁴ until agreements establishing boundaries are concluded. This applies not only to unilateral maritime limits but also to provisional boundaries effected by UNCLOS article 15. Furthermore, as mentioned earlier, a large number of the world's overlapping maritime zones have not yet been delimited,¹⁰⁰⁵ and all of those limits are, presumably, ambulatory because the coastlines giving rise to maritime entitlements are moving.

States have established international boundaries by reference to naturally fluctuating phenomena,¹⁰⁰⁶ such as the thalweg of a river or watersheds, instead of fixed locations.¹⁰⁰⁷ This method has been employed not only in establishing maritime boundaries but also for boundaries demarcating land territory.¹⁰⁰⁸ These phenomena can undergo changes due to floods, earthquakes, and other environmental occurrences, which can affect the interpretation and application of boundary treaties,¹⁰⁰⁹ whether they establish land or maritime boundaries. The 1825 Treaty concerning the border of Alaska and, arguably, the maritime boundary in the Beaufort Sea,¹⁰¹⁰ refers to the 'frozen ocean',¹⁰¹¹ a natural limit that is undoubtedly receding with global warming. Furthermore, the maritime boundary agreement between France and Tonga establishes an exclusive economic zone boundary by reference to the equidistance line, without fixing any coordinates.¹⁰¹² Consequently, the boundary must fluctuate with relevant coastlines. Similarly, the 2003 State Border Régime Treaty between Romania and

¹⁰⁰⁴ Except for permanently described limits of the outer continental shelf, established on the basis of recommendations of the CLCS.

¹⁰⁰⁵ Clive Schofield (n 92) 48.

¹⁰⁰⁶ See David Freestone and John Pethick, 'Sea level Rise and Maritime boundaries' in Gerald H Blake (n 85) 73, 78.

¹⁰⁰⁷ Julia Lisztwan (n 247) 190.

¹⁰⁰⁸ For example the 1799 border between Suriname and Berbice (a former colony where Guyana is now) ran along the west bank of the Corentyne River. See *Guyana v Suriname* (n 251) para 137.

¹⁰⁰⁹ Extract from the Yearbook of the International Law Commission 1966, vol II 'Fifth Report on the Law of Treaties by Sir Humphrey Waldock, Special Rapporteur' (15 November 1965-18 January 1966) UN Doc A/CN.4/183 and Add.1-4, 44.

¹⁰¹⁰ Canada and the US have different positions on this matter. See Michael Byers, *International Law and the Arctic* (Cambridge University Press 2013) 59.

¹⁰¹¹ Great Britain/Russia: Limits of their Respective Possessions on the North-West Coast of America and the Navigation of the Pacific Ocean (adopted 16 February 1825) 75 Consolidated Treaty Series 95.

¹⁰¹² Convention between the Government of the French Republic (Wallis and Futuna) and the Government of the Kingdom of Tonga on the delimitation of economic zones (adopted 11 January 1980, entered into force 11 January 1980) 1183 UNTS 343.

Ukraine provides that ‘objective modifications due to natural phenomena’ may lead to the revision of coordinates.¹⁰¹³

Even land boundaries can fluctuate if established by reference to fluctuating phenomena; this was the case where the boundary between the US and Mexico followed the Rio Grande. The United States and Mexico first agreed to delimit their land territory by reference to the thalweg of the river in 1850, when signing a treaty establishing their boundary. However, the course of the river changed drastically soon after the ratification of the treaty, resulting in land territory that previously belonged to the United States being on Mexico’s side of the river and vice versa.¹⁰¹⁴ This resulted in a century long dispute between the two States because they both claimed sovereignty over land territory that was on the opposite side of the border after the relocation of the river. The United States Supreme Court found in its decision of December 12 1927 that the boundary between US and Mexico was a fixed line following the channel of the Rio Grande, but since the river was ambulatory the Court said that the channel of the river should be where it was at the time of the conclusion of the 1850 treaty. This decision was somewhat contradictory since the boundary could clearly not be both a fixed line *and* the channel of the river as long as the river was ambulatory.¹⁰¹⁵ Hence, it did not end the feud between the United States and Mexico, but in 1963 the two States finally made a new treaty establishing the boundary between their land territories. Again, the boundary would follow the thalweg of the Rio Grande but this time a concrete river channel was built, preventing floods that could affect the course of the river. The new boundary afforded 366 acres of the disputed land territory to the Mexican side and 193 acres to the United States, which shows that both States agreed that the boundary had moved with the thalweg of the river, making it a fluctuating boundary.

The dispute concerning the Rio Grande shows that international boundaries can fluctuate due to environmental changes. However, the case also demonstrates the

¹⁰¹³ Treaty between Romania and Ukraine on the Romanian-Ukrainian State border regime, collaboration and mutual assistance on border matters (entered into force 27 May 2004) 2277 UNTS 3, article 1.

¹⁰¹⁴ J J Bowden (861) 225.

¹⁰¹⁵ *Ibid* 236-237.

shortcomings of this proposed method for maritime boundary delimitation. The fluctuating boundary between the United States and Mexico was a source of friction for over a century and the end result was a fixed boundary. The exact location of baselines might be even more contentious than the location of the thalweg of a river,¹⁰¹⁶ which means that the location of a fluctuating boundary could be subject to regular disputes. For that reason, courts and tribunals have emphasised the importance of transparency and predictability, and, just like land boundaries, maritime boundaries are meant to be stable. ‘Certainty, equity, and stability are thus integral parts of the process of delimitation.’¹⁰¹⁷ Fluctuating boundaries may not meet these requirements and, therefore, it seems unlikely that courts and tribunals will ever establish fluctuating boundaries without the express consent of relevant parties. ‘Perfect stability, however, is impossible when the coastline is used as the baseline’, as it is ‘an impermanent feature’.¹⁰¹⁸ Furthermore, fluctuating boundaries may be the only viable option capable of incorporating consideration for unforeseeable changes to relevant coastal geography. States can establish fluctuating boundaries through bilateral agreements, as evidenced by the examples cited above, and they can also confer such competence upon courts and tribunals.

3.5. Conclusion

UNCLOS articles 74 and 83 require that an equitable solution is achieved on the basis of international law and this entails an obligation to consider all relevant circumstances. The tribunal in *Bangladesh v India* expressed its concerns that settled maritime boundaries would be jeopardised if climate-related changes were allowed to influence the delimitation process. However, a significant portion of the world’s overlapping maritime boundaries have yet to be delimited¹⁰¹⁹ and the maritime boundary agreements that have been concluded are often partial or incomplete in character, only dealing with part of the disputed area or not all maritime zones.¹⁰²⁰

¹⁰¹⁶ For example, claims to straight baselines have been contested worldwide.

¹⁰¹⁷ *Barbados v Trinidad and Tobago* (n 25) para 244.

¹⁰¹⁸ Louis B Sohn and John E Noyes (n 207) 235, referring to Robert D Hodgson and Robert W Smith, ‘The Informal Single Negotiating Text (Committee II): A Geographical Perspective’ (1976) 3 *Ocean Development and International Law* 225, 234.

¹⁰¹⁹ Davor Vidas (n 76) 76.

¹⁰²⁰ Clive Schofield (n 92) 48.

Furthermore, two wrongs do not make a right; the fact that previously settled maritime boundaries showed no consideration for relevant changes does not justify continued disregard for such changes. Finally, the delimitation of new boundaries has no effect on the validity of previously settled boundaries; whether agreed upon or decided judicially, they are permanently binding under *pacta sunt servanda* and *res judicata*. Maritime boundary agreements may be subject to termination by virtue of a fundamental change of circumstances, as will be explained in Chapter IV, but the delimitation of maritime boundaries between third States cannot amount to a fundamental change of circumstances in the sense of *rebus sic stantibus* or VCLT article 62.¹⁰²¹ In fact, there are no legal grounds for terminating existing maritime boundaries by reference to a different approach taken in subsequent delimitations, resulting in more equitable solutions.

The environmental changes described in Chapter I are bound to affect maritime entitlements, upon which maritime boundary delimitation is based. Maritime limits fluctuate on an ongoing basis, as discussed in Chapter II, and it seems unsensible to ignore this fact when establishing permanent and equitable maritime boundaries. Future changes should become increasingly relevant as the Anthropocene emerges and alters coastlines worldwide to an unprecedented extent.¹⁰²² No compelling legal arguments support the notion that coastal instability should be irrelevant for maritime boundary delimitation. Judicial decisions rejecting the relevance of such changes seem to have been based on policy arguments rather than rules of law and without adequate consideration for the available scientific evidence.

Courts and tribunals are not obligated to employ the equidistance/relevant circumstances method and they should not resort to this method in instances where it requires significant subjective adjustments and where a different method would lead to the same equitable solution. Significant adjustments to the provisional equidistance line can defeat the purpose of transparency and predictability and strict adherence to a provisional equidistance line can be a form of anchoring, which inevitably shapes the

¹⁰²¹ Iceland argued that changes in the applicable law amounted to a fundamental change of circumstance in the Icelandic Fisheries case but the argument was not upheld by the ICJ. See *Fisheries Jurisdiction (United Kingdom of Great Britain and Northern Ireland v Iceland)* (Jurisdiction) [1973] ICJ Rep 3.

¹⁰²² See section 1.3.

end result. For these reasons, different methods must be permissible in the pursuit of an equitable solution. Foreseeable future changes, such as the imminent inundation of islands or ongoing changes to sand and mud banks, should be taken into account when selecting base points, adjusting provisional boundaries and choosing delimitation methods.

Courts and tribunals have taken future changes into account in contentious cases when considering access to exploitable fish stocks,¹⁰²³ determining the status of coastal features,¹⁰²⁴ assessing potential base points¹⁰²⁵ and choosing delimitation methods.¹⁰²⁶ Relevant changes do not necessarily have to affect the final position of a boundary but they should be considered before they are discarded. Foreseeable or ongoing changes that have a bearing on the essential basis of a maritime boundary should never be ignored simply as a matter of principle. On the contrary, potential effects of future changes should be assessed before drawing permanent boundaries, to minimise the inequitable effect of imminent changes and timing of the delimitation.

An unforeseen fundamental change of circumstance has the potential to justify termination of non-territorial maritime boundaries.¹⁰²⁷ However, States will only seek to terminate maritime boundaries that have, in their view, become inequitable or unjust. Consideration for all imminent changes to coastal geography may reduce the risk of boundaries being negatively affected by subsequent changes and, thus, provide greater stability for international maritime boundaries.

¹⁰²³ *Denmark v Norway* (n 643) para 78.

¹⁰²⁴ *Philippines v China* (n 26) (Merits) para 487.

¹⁰²⁵ *Nicaragua v Honduras* (n 620) para 280.

¹⁰²⁶ See, e.g., *Nicaragua v Honduras* (n 620) para 32.

¹⁰²⁷ Section 4.4.1.

IV. AGREED BOUNDARIES AND FUNDAMENTAL GEOGRAPHICAL CHANGES

4.1. Introduction

Environmental changes will inevitably affect maritime entitlements under UNCLOS as coastlines recede through erosion or the submergence of rocks, shoals and islands, and as coastlines extend further seawards through accretion, land rise and volcanic eruptions. Maritime limits will fluctuate to reflect changing coastlines¹⁰²⁸ and maritime boundaries will, in some instances, be constructed with reference to coastal instability and/or imminent changes to coastal geography.¹⁰²⁹ Thus, changing circumstances have an effect on unilateral maritime limits and potentially also on the delimitation process. Maritime boundaries generally remain stable once they are fixed through agreements, regardless of subsequent changes, because they are safeguarded by *pacta sunt servanda*.¹⁰³⁰ However, the principle of *pacta sunt servanda* does not provide that all agreements remain inviolable till the end of time.¹⁰³¹

Maritime boundary agreements most commonly establish single maritime boundaries at fixed coordinates. However, some agreements make a clear distinction between different maritime zone, even where the boundaries are aligned.¹⁰³² There are also examples of separate boundaries for the exclusive economic zone and the continental shelf; the limits to these zones do not necessarily have to be aligned even though they fall within the 200 nm mark.¹⁰³³ In addition to establishing maritime boundaries, maritime boundary agreements often entail provisions on cooperation between the

¹⁰²⁸ See Chapter II.

¹⁰²⁹ See Chapter III.

¹⁰³⁰ See *Burkina Faso/Republic of Mali* (n 425) para 46.

¹⁰³¹ Rein Müllerson, 'The ABM Treaty: Changed Circumstances, Extraordinary Events, Supreme Interests and International Law' (2001) 50 *International and Comparative Law Quarterly* 509, 525.

¹⁰³² Cissé Yacouba and Donald McRae, 'The Legal Regime of Maritime Boundary Agreements' in David A Colson and Robert W Smith (eds) *International Maritime Boundaries*, vol V (Martinus Nijhoff 2005) 3281, 3283-3285.

¹⁰³³ *Ibid* 3287.

parties relating to joint development zones, the exploitation and management of natural resources or other issues such as protection of the marine environment.¹⁰³⁴ Furthermore, it is common practice to include a provision concerning dispute settlement, although the boundaries are generally meant to be final and binding.¹⁰³⁵

Treaties generally rely on the assumption that certain circumstances, essential to the conclusion of the treaty, will remain unchanged. It is on the basis of those circumstances that parties reach an agreement specifying their shared expectations and *pacta sunt servanda* aims to safeguard those shared expectations.¹⁰³⁶ However, '[t]he *pacta sunt servanda* rule was intended to ensure the stability of law; not stability at any price, but stability based on justice'¹⁰³⁷ and it may be just to change maritime boundaries as maritime entitlements undergo significant changes. In fact, States can be freed from their contractual obligations through peaceful means, when circumstances leading to the conclusion of a treaty have changed and obligations under a treaty have become 'unduly burdensome'.¹⁰³⁸ The doctrine of *rebus sic stantibus* provides that an unforeseen fundamental change of circumstance can be invoked as grounds for terminating a treaty if it affects the essential basis of the treaty and radically transforms obligations still to be performed. This customary rule has been codified in the VCLT.¹⁰³⁹

Treaties establishing boundaries are explicitly excluded from termination due to a fundamental change of circumstance by the VCLT.¹⁰⁴⁰ However, as explained in section 4.3.5., this does not necessarily apply to all maritime boundary treaties.

This chapter provides a doctrinal analysis of VCLT article 62 to determine whether maritime boundaries can be subject to termination on the grounds of fundamentally changed circumstances. The origin and *travaux préparatoires* of VCLT article 62 are

¹⁰³⁴ *Ibid* 3291.

¹⁰³⁵ *Ibid* 3300.

¹⁰³⁶ Eric Stein and Dominique Carreau, 'Law and Peaceful Change in a Subsystem: "Withdrawal" of France from the North Atlantic Treaty Organisation' (1968) 62 *American Journal of International Law* 577, 617.

¹⁰³⁷ United Nations Conference on the Law of Treaties: 'First session: Summary records of the plenary meetings and of the meetings of the Committee of the Whole' (26 March-24 May 1968) UN Doc A/CONF.39/11, 150, para 56.

¹⁰³⁸ See Eric Stein and Dominique Carreau (n 1036) 617.

¹⁰³⁹ VCLT article 62.

¹⁰⁴⁰ VCLT article 62(2)(a).

examined, and its application in relation to treaties establishing territorial and non-territorial boundaries. This analysis indicates that certain types of maritime boundaries may indeed be set aside by virtue of VCLT article 62 when relevant coastal geography has undergone drastic and unforeseen changes, leading to the radical transformation of maritime entitlements under UNCLOS. Indeed, it seems that the exclusion of treaties establishing boundaries only excludes boundaries delimiting sovereign territory, which suggests that non-territorial maritime boundaries may be subject to termination due to fundamental changes.

4.2. Origin of VCLT Article 62

The ILC proposed to codify the law of treaties during its first session in 1949 and decided, at its thirteenth session in 1961, to prepare draft articles for a subsequent convention on the law of treaties.¹⁰⁴¹ Doing this, the members of the ILC and its Special Rapporteurs first had to identify relevant rules of customary international law and determine if and how they should be codified. ‘International law was like a great and ancient edifice the doors of which were being opened so that it could be put in order’.¹⁰⁴² It was a lengthy process of approximately 20 years and it resulted in the adoption of the VCLT on 22 May 1969 and subsequent entry into force on 27 January 1980.

Fitzmaurice, Special Rapporteur of the ILC on the law of treaties, first presented a draft article implementing the *clausula rebus sic stantibus* to the law of treaties in his second report dated 15 March 1957.¹⁰⁴³ The doctrine was heavily debated, some members of the ILC raised objections to the existence of a customary rule justifying termination of a treaty due to changed circumstances and others did not want to include it in the law of treaties since derogating from the principle of *pacta sunt servanda* might cause friction in international relations. Nonetheless, *rebus sic stantibus* was eventually codified in the law of treaties. Therefore, the right to invoke a fundamental

¹⁰⁴¹ ‘First session: Summary records of the plenary meetings and of the meetings of the Committee of the Whole’ (n 1037) xi.

¹⁰⁴² Yearbook of the ILC, 1949 ‘Summary Record of the First Session’ (12 April 1949) UN Doc A/CN.4/SR.1, para 2.

¹⁰⁴³ Yearbook of the ILC, 1957, vol II, ‘Second Report on the Law of Treaties, by Mr GG Fitzmaurice, Special Rapporteur’ (15 March 1957) UN Doc A/CN.4/107, 32.

change of circumstance as grounds for terminating a treaty exists under VCLT and customary international law.¹⁰⁴⁴

4.2.1. Rebus Sic Stantibus

Pacta sunt servanda is a customary principle, fundamental to the law of treaties and public international law in general. International cooperation relies on States honouring this principle and its importance cannot be overstated. The doctrine of *rebus sic stantibus* allows for derogation from the general principle of *pacta sunt servanda*, but only under exceptional circumstances. It serves the purpose of freeing States from treaty obligations that have become ‘unduly burdensome’ due to radically changed circumstances and thus, promotes peaceful change.¹⁰⁴⁵ The *clausula rebus sic stantibus* was long considered to be an integral part of the *pacta sunt servanda* principle, tacitly attached to every treaty.¹⁰⁴⁶ This changed over time as *rebus sic stantibus* achieved recognition as an independent rule in public international law with general scope, making it applicable regardless of whether express or implied consent could be derived from treaty provisions.¹⁰⁴⁷

Gentilis introduced the maxim *omnis conventio intelligitur rebus sic stantibus* in the sixteenth century and he is believed to have been the first legal scholar to discuss the principle. According to Pal of the ILC, the theory derives from canon law, it was affirmed by Suárez and Vattel but rejected by Grotius in the seventeenth century.¹⁰⁴⁸ Grotius made a distinction between treaties and contracts and was reluctant to accept the termination of treaties due to changed circumstances because of derivative complications. Bynkershoek is also said to have rejected the theory of *rebus sic stantibus* in the eighteenth century, although he held that an impossibility of performance might allow for derogation from treaty obligations.¹⁰⁴⁹ One might argue

¹⁰⁴⁴ Jeremy Waldron, ‘F.W. Guest Memorial Lecture: August 22nd, 2005: The Half-Life of Treaties: Waitangi, Rebus Sic Stantibus’ (2006) 11 Otago Law Review 161, 168

¹⁰⁴⁵ Eric Stein and Dominique Carreau (n 1036) 617.

¹⁰⁴⁶ James W Garner ‘The Doctrine of Rebus Sic Stantibus and the Termination of Treaties’ (1927) 21 (3) American Journal of International Law 509, 509.

¹⁰⁴⁷ Extract from the Yearbook of the International Law Commission, 1963, vol I ‘Summary Record of the 695th Meeting’ (7 June 1963) UN Doc A/CN.4/SR.695, 148.

¹⁰⁴⁸ Extract from the Yearbook of the International Law Commission, 1963, vol I ‘Summary Record of the 694th Meeting’ (6 June 1963) UN Doc A/CN.4/SR.694, 136.

¹⁰⁴⁹ *Ibid.*

that such a contention does not necessarily reject the doctrine of *rebus sic stantibus* since, as will be discussed in following sections, some members of the ILC did not distinguish between *rebus sic stantibus* and impossibility of performance while drafting the articles for the VCLT. Several members wanted to merge the two rules into one article while others suggested that even if dealt with under separate articles, they might apply in tandem.¹⁰⁵⁰

The existence of the customary rule *rebus sic stantibus* in public international law has been evidenced by State practice tracing back to the eighteenth century.¹⁰⁵¹ States have invoked the doctrine *eo nomine* or referenced a general principle allowing the termination or modification of a treaty due to changed circumstances.¹⁰⁵² Russia raised the principle in 1870 in order to withdraw from the 1856 Treaty of Paris concerning the neutralization of the Black Sea. The endeavour proved successful, despite some opposition; Russia was released from the treaty obligations at a London conference soon after declaring termination under *rebus sic stantibus*. Critics claimed that treaties could not be terminated without the acceptance of all parties but even if renegotiations lead to Russia's withdrawal and not a unilateral denunciation, the negotiations were clearly a result of Russia invoking *rebus sic stantibus*.¹⁰⁵³

Some commentators have maintained that the principle involves nothing more than the obligation to renegotiate¹⁰⁵⁴ and if so, it served its purpose when invoked by Russia in 1870. However, it should be noted that *rebus sic stantibus* has developed through the course of time and the rule codified in VCLT article 62 explicitly provides for termination, suspension and withdrawal from a treaty.

Rebus sic stantibus was advanced in several cases in the years and decades leading up to the codification of the Vienna Convention. For example, in 1922, the Norwegian

¹⁰⁵⁰ *Ibid* 141.

¹⁰⁵¹ Rein Müllerson (n 1031) 527.

¹⁰⁵² Extract from the Yearbook of the International Law Commission, 1963, vol II 'Second Report on the Law of Treaties, by Sir Humphrey Waldock, Special Rapporteur' (5 June 1963) UN Doc A/CN.4/156 and Add.1-3, 81; Athanassios Vamvoukos, *Termination of Treaties in International Law: The Doctrines of Rebus Sic Stantibus and Desuetude* (Clarendon Press 1985) 122-123.

¹⁰⁵³ Rein Müllerson (n 1031) 527.

¹⁰⁵⁴ *Ibid* 529-530; David J Bederman 'The 1871 London Declaration, Rebus Sic Stantibus and A Primitivist View of the Law of Nations' (1988) 82 (1) American Journal of International Law 1, 29.

Government denounced its treaty with France, Germany, Great Britain and Russia without referring explicitly to the doctrine of *rebus sic stantibus* but referring to altered circumstances prompted by changes in foreign politics and stating that the foundations of the treaty were consequently lost.¹⁰⁵⁵ The French Government also relied on *rebus sic stantibus* in 1922 to terminate a treaty in the *Nationality Decrees* case and proclaimed that the principle was applicable to all treaties of indefinite duration.¹⁰⁵⁶ The USSR declared in 1924 that it wished to renegotiate and determine the status of old treaties with the United Kingdom since they were no longer enforceable according to the principle of *rebus sic stantibus* due to changed circumstances generated by World War I.¹⁰⁵⁷ Again, the Soviet Government invoked the rule of *rebus sic stantibus* to denounce a treaty of neutrality with the Japanese in 1945. The reasoning provided was that circumstances had changed fundamentally after the German invasion of the Soviet Union and Japan's alignment with Germany and Japan's war with the United States and United Kingdom, allies of the Soviet Union.¹⁰⁵⁸

Judicial decisions had never been based on the rule of *rebus sic stantibus* in 1963, when the Commission was in the midst of codifying the principle as an objective rule of law. Yet, it was 'regarded as one of the fundamental assumptions in public international law'.¹⁰⁵⁹ The ICJ never rejected the existence of *rebus sic stantibus* before the implementation of VCLT article 62, although it was and still is quite reluctant to apply the doctrine; the same is true for municipal courts.¹⁰⁶⁰

Vagts considers the doctrine of *rebus sic stantibus* to be an 'odd corner' of the law of treaties¹⁰⁶¹ and as such, it has been the object of scrutiny and controversy. It was quite controversial among members of the ILC; their opinions on the principle ranged from

¹⁰⁵⁵ – – 'Chronique Des Faits Internationaux' (1924) 6 *Revue Générale de Droit International Public* 291, 299-301.

¹⁰⁵⁶ *Nationality Decrees Issued in Tunis and Morocco (French Zone) on November 8th 1921 (Great Britain v France)* (Advisory Opinion) (1923) PCIJ Series C, No 2: Speeches made and documents read before the court, 187-188.

¹⁰⁵⁷ Rein Müllerson (n 1031) 527.

¹⁰⁵⁸ *Ibid.*

¹⁰⁵⁹ 'Summary Record of the 695th Meeting' (n 1047) 147.

¹⁰⁶⁰ 'Second Report on the Law of Treaties, by Sir Humphrey Waldock, Special Rapporteur' (n 1052) 80.

¹⁰⁶¹ Detlev Vagts 'Review of Dahm et al., *Volkerrecht*' (2004) 98 *American Journal of International Law* 614, 615.

complete denial of its existence to regarding it as a rule of *jus cogens*.¹⁰⁶² The doctrine of *rebus sic stantibus* was referred to as ‘one of the most controversial in the history of international law’ and its implementation to the law of treaties, a matter of great responsibility.¹⁰⁶³ Yasseen, a member of the ILC, derived the existence of *rebus sic stantibus* from the nature of written law, he said that ‘conventional rules could not be adapted *ad infinitum*’, that *rebus sic stantibus* was a rule of *jus cogens* and, consequently, an inseparable part of the law of treaties.¹⁰⁶⁴ Sir Humphrey Waldock, Special Rapporteur of the ILC, disagreed with Yasseen’s contentions and advised that States should take changing circumstances into account when negotiating treaties, thereby preventing the need for *rebus sic stantibus* under given circumstances.¹⁰⁶⁵ Amado, while promoting the implementation of the doctrine of *rebus sic stantibus*, called it the ‘serpent of the law’.¹⁰⁶⁶ According to him, the defensive opposition to the doctrine was based on believe in the sanctity of *pacta sunt servanda*, something that seems to have been an outdated view in his mind. Therefore, Amado encouraged other members of the ILC to abandon their defensive attitudes.¹⁰⁶⁷ Paredes asserted that:

No one could enter into an undertaking for ever. That was why, under most systems of municipal law, contracts of service for life were prohibited. The same should apply even more strongly to States, because their life was much longer.¹⁰⁶⁸

On the opposite spectrum, Gros was of the view that ‘anyone who cast doubt on the durability of treaties was contributing not to the progress of international law, but to its ruin. That theory could only lead to a regionalization of international undertakings, not to the development of friendly relations between States.’¹⁰⁶⁹ Despite this, Gros did not object to the inclusion of *rebus sic stantibus* in the VCLT.¹⁰⁷⁰ Bartos agreed with

¹⁰⁶² ‘Summary Record of the 695th Meeting’ (n 1047) 144.

¹⁰⁶³ ILC ‘63rd Meeting of the Committee of the Whole’ (10 May 1968) in ‘First session: Summary records of the plenary meetings and of the meetings of the Committee of the Whole’ (n 1037) 365, 367-368.

¹⁰⁶⁴ ‘Summary Record of the 694th Meeting’ (n 1048) 141-142.

¹⁰⁶⁵ Extract from the Yearbook of the International Law Commission, 1963, vol I ‘Summary Record of the 697th Meeting’ (11 June 1963) UN Doc A/CN.4/SR.697, 157.

¹⁰⁶⁶ ‘Summary Record of the 694th Meeting’ (n 1048) 142.

¹⁰⁶⁷ *Ibid.*

¹⁰⁶⁸ ‘Summary Record of the 695th Meeting’ (n 1047) 147.

¹⁰⁶⁹ Extract from the Yearbook of the International Law Commission, 1963, vol I ‘Summary Record of the 696th Meeting’ (10 June 1963) UN Doc A/CN.4/SR.696, 153.

¹⁰⁷⁰ *Ibid.*

Yasseen in that *rebus sic stantibus* was a rule of *jus cogens*, although it was susceptible to criticism. He said that the principle of *pacta sunt servanda* could not apply without anomalies and that *rebus sic stantibus* provided a necessary countermeasure to deal with instances where the literal application of *pacta sunt servanda* would lead to injustice and thus impair relations between States.¹⁰⁷¹

Members of the ILC who objected to the implementation of a *rebus sic stantibus* clause did so because it represented a way to avoid a lawfully concluded treaty for the benefit of one of the contracting States. Despite those concerns, the Special Rapporteur and a majority of the ILC agreed that the doctrine had been established as a customary rule in international law.¹⁰⁷² According to Tunkin, the existence of the rule in international law had been made evident by State practice and scholarly review¹⁰⁷³ and as he pointed out, States generally acknowledged this fact when confronted with the principle, even if its application to the case at hand was contested.¹⁰⁷⁴ Special Rapporteur Waldock reached the conclusion that there was ample evidence of the principle's general acceptance in international law, which called for its codification. According to him, there existed 'a general belief in the need for a safety-valve of this kind in the law of treaties'.¹⁰⁷⁵

The Commission ultimately concluded that the principle should be included in the law of treaties so that States would have some legal means of terminating treaties when the requirements of *rebus sic stantibus* were satisfied and would not be driven to take action outside the law.¹⁰⁷⁶

¹⁰⁷¹ 'Summary Record of the 695th Meeting' (n 1047) 148.

¹⁰⁷² *Ibid* 143; Extract from the Yearbook of the International Law Commission, 1966, vol II 'Draft articles on the law of treaties: text as finally adopted by the Commission on 18 July 1966 (reproduced at para 38 of document A/6309/Rev.1)' (18 July 1966) UN Doc A/CN.4/190, 258.

¹⁰⁷³ 'Summary Record of the 695th Meeting' (n 1047) 144-5.

¹⁰⁷⁴ *Ibid* 143.

¹⁰⁷⁵ 'Second Report on the Law of Treaties, by Sir Humphrey Waldock, Special Rapporteur' (n 1052) 82.

¹⁰⁷⁶ 'Draft articles on the law of treaties: text as finally adopted by the Commission on 18 July 1966 (reproduced at para 38 of document A/6309/Rev.1)' (n 1072) 258.

4.2.2. Draft Articles

Deciding to codify *rebus sic stantibus* in the law of treaties was only the beginning of an arduous process; what ensued were years of discussions and redrafting before the ILC could reach a compromise on what exactly the provision should entail and how to articulate it. The article was controversial from the very beginning because, according to Special Rapporteur Waldock, the principle posed ‘a certain threat to the security of treaties’.¹⁰⁷⁷

The article is not an exact replica of the original customary rule. Members of the Commission decided, after lengthy discussions and with regard to State commentary, to implement a modified version that constituted, in the words of the Commission, ‘progressive development of customary international law’.¹⁰⁷⁸

There are two clear differences between the original customary rule of *rebus sic stantibus* and the rule codified in VCLT article 62. First, the latter applies to treaties of limited duration as well as perpetual treaties but members of the Commission and other consultants agreed that the customary rule only applied to treaties that were inherently infinite.¹⁰⁷⁹ Second, the Commission decided to exclude treaties establishing boundaries from the scope of *rebus sic stantibus* to avoid dangerous frictions in international relations.¹⁰⁸⁰ However, this exclusion did not seem to have existed under customary international law. The Commission’s decision to exclude treaties establishing boundaries was heavily criticised throughout the codification process and it seems to have been the primary reason why twelve State representatives, of 105, did not accept the article when it was finally put to a vote on 13 May 1969.¹⁰⁸¹

¹⁰⁷⁷ ‘Second Report on the Law of Treaties, by Sir Humphrey Waldock, Special Rapporteur’ (n 1052) 38.

¹⁰⁷⁸ Extract from the Yearbook of the International Law Commission, 1966, vol I(1) ‘Summary record of the 833th meeting’ (18 January 1966) UN Doc A/CN.4/SR.833, 77. This is only one of the occasions where a member of the Commission (Mr. Briggs) refers to the article in those terms.

¹⁰⁷⁹ United Nations Conference on the Law of Treaties: ‘First and second sessions’ (26 March-24 May 1968 and 9 April-22 May 1969) UN Doc A/CONF.39/11/Add.2, 79.

¹⁰⁸⁰ *Ibid.*

¹⁰⁸¹ ILC ‘Twenty-second plenary meeting’ (13 May 1969) in Extract from the Official Records of the United Nations Conference on the Law of Treaties ‘Second session: Summary records of the plenary meetings and of the meetings of the Committee of the Whole’ (9 April- 22 May 1969) UN Doc A/CONF.39/11/Add.1, 116, 121-122.

The following sections give an account of the drafting history of VCLT article 62, with an emphasis on issues relating to fundamental changes to the environment and the exclusion of treaties establishing boundaries. The drafting history is highly relevant for subsequent sections of this thesis because it sheds light on how the article may operate in grey areas, particularly in relation to treaties establishing maritime boundaries. Furthermore, it explains why the boundary exclusion was introduced and how its scope was narrowed. Furthermore, the drafting history demonstrates that the concerns State often have in relation to termination, suspension or withdrawal from treaties are not limited to treaties establishing boundaries. VCLT Article 62 met with great opposition on every stage of the codification process. Yet, despite the clear desire for stability, members of the ILC and State representatives agreed that there had to be a lawful way to terminate or revise treaties when the essential basis for consent was radically affected.

4.2.2.1. Draft Article From 1957

Special Rapporteur Fitzmaurice presented his first report on the law of treaties on 14 March 1956.¹⁰⁸² This report focused on the framing and conclusion of treaties but also gave an overview of the arrangement of subsequent subject matters. Fitzmaurice proposed that the law of treaties should be divided into two chapters, the first dealing with validity of treaties and the second dealing with effects. The first chapter would include three parts; part I on formal validity, part II on essential validity and part III on temporal validity. Temporal validity included the topics of duration, termination, revision and modification of treaties;¹⁰⁸³ a provision implementing the principle of *rebus sic stantibus* would belong to that category. One year later, on 15 March 1957, Fitzmaurice presented his draft articles on part III of the first chapter.¹⁰⁸⁴ This included draft article 22, as reproduced below, concerning *rebus sic stantibus*.¹⁰⁸⁵

¹⁰⁸² ILC 'Report by G. G. Fitzmaurice, Special Rapporteur' (14 March 1956) UN Doc A/CN.4/101 in Yearbook of the ILC 1956, vol II, UN Doc A/CN.4/SER.A/1956/Add.I, 104-128.

¹⁰⁸³ *Ibid* 106.

¹⁰⁸⁴ 'Second Report on the Law of Treaties, by Mr GG Fitzmaurice, Special Rapporteur' (n 1043) 16-70.

¹⁰⁸⁵ *Ibid* 19.

Article 22 - Termination or suspension by operation of law. Case of essential change of circumstances or principle of *rebus sic stantibus* (conditions and limitations of application)

The application of the principle *rebus sic stantibus* is subject to conditions and limitations broadly analogous, *mutatis mutandis*, to those set out in article 19 above regarding the case of termination resulting from a fundamental breach of the treaty:

1. Limitations arising out of the type of treaty involved.

(i) The principle *rebus* finds its sphere of application mainly in the field of bilateral treaties. As regards multilateral treaties, its application is governed by paragraphs (ii) to (iv) below.

(ii) The principle *rebus* cannot, as such, be invoked in the case of treaties of the kind described in article 19, paragraph 1 (iv) above.

(iii) As regards treaties of the type described in article 19, paragraph 1, subparagraph (iii) (a) above, the principle “*rebus*” cannot, in the case of an essential change of circumstances affecting one or more parties only, be invoked as a ground for the termination of the treaty itself, but only as a ground for the withdrawal, or for the suspension of the obligations of such particular party or parties.

(iv) In the case of treaties of the type described in subparagraph (iii) (b) of paragraph 1 of article 19 above, the withdrawal, or the suspension of the obligations of one party, on grounds of *rebus sic stantibus*, may justify the withdrawal of the other parties or a suspension of their obligations.

2. Limitations as to the character of the change necessary before the principle *rebus* can be invoked.

A change can only be regarded as being an essential one for the purpose of invoking the principle *rebus* if it has the following character:

(i) The change must be an objective change in the factual circumstances relating to the treaty and its operation, and not merely a subjective change in the attitude towards the treaty of the party invoking the principle.

(ii) The change must relate to a situation of fact, or state of affairs, existing at the time of the conclusion of the treaty, with reference to which both the parties contracted, and the continued existence of which, without essential change, was envisaged by both of them as a determining factor moving them jointly to enter into the treaty, or into the particular obligation to which the changed circumstances are said to relate.

(iii) The change must have the effect either (a) of rendering impossible the realization, or further realization, of the objects and purposes of the treaty itself, or of those to which the particular obligation concerned relates; or (b) of destroying or completely altering the foundation of the obligation based on the situation of fact or state of affairs referred to in subparagraph (ii) above.

(iv) A change in the motives that led a party to enter into the treaty, or in the inducement to that party to continue performance of it, or of any particular obligation under it, is not in itself either an essential change of circumstances, or a change having one of the effects specified in sub-paragraph (iii) above.

(v) The change must not be one that was foreseen by the parties, or be such as they might, by the exercise of reasonable foresight, have anticipated. It must not, therefore, either expressly or by necessary implication, be a change which is provided for in the treaty, or in any other relevant agreement between the parties, for in that case the treaty or agreement would prevail, and the principle *rebus* would, as such, be inapplicable.

3. Limitations arising from particular circumstances operating to preclude a party from invoking the principle *rebus*:

Even where the character of the change of circumstances itself is such as to conform to the foregoing conditions, it may not be invoked:

(i) Unless the treaty is of indefinite duration, and contains no provision, express or implied, for its expiry or termination on giving notice;

(ii) Unless the change is invoked within a reasonable time after the date of its occurrence or completion—failing which it must be presumed not to be fundamental;

(iii) If the change of circumstances has been caused, brought about, or directly or proximately contributed to, by the act or omission of the party invoking it.¹⁰⁸⁶

The draft articles of part III were provisional draft articles, containing many imperfections but they provided an analysis of the field, essential for the eventual codification of the law of treaties.¹⁰⁸⁷

When discussing the juridical basis of *rebus sic stantibus*, Fitzmaurice built on Hill's study, 'The Doctrine of "Rebus sic stantibus" in International Law',¹⁰⁸⁸ which proposed seven different theories. Fitzmaurice reduced them to three main theories: According to the first, parties are assumed to have predicted that certain circumstances that were the foundation of their agreement would remain and to have intended its termination by virtue of an implied condition, in case of an essential change of said circumstances. The second theory presupposes the existence of a customary rule

¹⁰⁸⁶ 'Second Report on the Law of Treaties, by Mr GG Fitzmaurice, Special Rapporteur' (n 1043) 32-33.

¹⁰⁸⁷ *Ibid* 19.

¹⁰⁸⁸ Chesney Hill, *The Doctrine of 'Rebus sic stantibus' in International Law* (University of Missouri 1934).

allowing contracting parties to request the termination of a treaty because of a fundamental change of circumstances. Fitzmaurice's third theory on the juridical basis of *rebus sic stantibus* combines the other theories by assuming that *rebus sic stantibus* is an objective rule of law which imposes an implied condition to all treaties.¹⁰⁸⁹

The Special Rapporteur noted that there was no substantial difference between the two latter theories since they both resulted in universal applicability of the *rebus sic stantibus* doctrine, regardless of contracting parties' intentions. There was one important difference though; termination of a treaty by virtue of an implied condition of the treaty would be automatic while invoking an objective rule of law would be up to the discretion of each party. The third theory would thus induce an automatic termination of a treaty which, in the view of Fitzmaurice, would be an incorrect use of the principle. He maintained that the doctrine of *rebus sic stantibus* could not result in an automatic termination of treaties, rather it operated by granting parties the right to invoke it by requesting termination or modification of a treaty. Therefore, the Special Rapporteur rejected the third theory and recommended basing the provision implementing the doctrine of *rebus sic stantibus* on the second theory.¹⁰⁹⁰

Fitzmaurice asserted that *rebus sic stantibus* would not allow denunciation of or withdrawal from a treaty if termination was expressly prohibited by treaty provisions or implied terms. Thus, temporary agreements were excluded from the application of draft article 22 since agreeing on duration for a fixed number of years would imply prohibition on termination within the set time frame. This, however, would not affect the parties' right to agree on termination.¹⁰⁹¹ Treaties of infinite duration could be subject to withdrawal or denunciation if circumstances that formed an essential basis of the parties' consent had changed but this would not warrant an automatic termination, as explained earlier. Nonetheless, parties could, according to Fitzmaurice, suspend performance of the treaty obligations pending negotiated modification of the treaty, agreed termination or an arbitral or judicial decision determining its fate.

¹⁰⁸⁹ 'Second Report on the Law of Treaties, by Mr GG Fitzmaurice, Special Rapporteur' (n 1043) 58-59.

¹⁰⁹⁰ *Ibid.*

¹⁰⁹¹ *Ibid* 39.

Suspension of a treaty could have dire consequences and, therefore, it should only be exercised when requirements of the provision were seemingly fulfilled.¹⁰⁹²

Fitzmaurice said that treaties containing provisions on termination could not be subject to the objective rule of *rebus sic stantibus* if the treaty provisions or implied terms could lead to termination of the agreement. The same would apply if the treaty incorporated the rule of *rebus sic stantibus* because in such a scenario, the termination would be governed by the terms of the treaty but not by operation of law, the objective rule of *rebus sic stantibus* being the residual ground of termination. Fitzmaurice further concluded that application of the principle would never result in the termination of a multilateral treaty unless all parties agreed to that eventuality. A fundamental change of circumstances affecting one or more of the parties could only be invoked to withdraw from or suspend the operation of a treaty in relation to the party invoking it.¹⁰⁹³

The Special Rapporteur explained what could constitute an essential change of circumstances justifying the invocation of the *rebus sic stantibus* rule; first of all there would have to be an objective and genuine change of circumstances concerning the treaty and its operation, a subjective change in the parties perspectives towards the treaty would not suffice.¹⁰⁹⁴ Second, the change would have to relate to circumstances that existed when the treaty was concluded and which led to the parties giving their consent to be bound by the treaty or the treaty obligation affected by the change. Furthermore, parties should have been relying on the continuance of those circumstances and not anticipating an essential change. Third, an essential change of circumstances under *rebus sic stantibus* should either prevent the realisation of the treaty or specific treaty obligations¹⁰⁹⁵ or destroy or seriously alter the basis on which parties acceded to the treaty. Fourth, a change in a party's motives or incentives to be bound by a treaty would not constitute an essential change of circumstances permitting withdrawal or denunciation of a treaty. Finally, parties to a treaty should not have

¹⁰⁹² *Ibid* 32.

¹⁰⁹³ 'Second Report on the Law of Treaties, by Mr GG Fitzmaurice, Special Rapporteur' (n 1043) 32.

¹⁰⁹⁴ *Ibid*.

¹⁰⁹⁵ This demonstrates the close link between the principle of *rebus sic stantibus* and the rule allowing termination of a treaty by virtue of impossibility of performance.

foreseen the essential change of circumstances or have been reasonably expected to do so. If the anticipation of such change had been made evident by a treaty provision or subsequent agreement then those provisions would prevail over *rebus sic stantibus*.

¹⁰⁹⁶

Special Rapporteur Fitzmaurice emphasised that even when all the aforementioned conditions were met, the rule could only be invoked in regards to treaties that were inherently indefinite and had no provisions governing termination, if it was invoked within a reasonable time and if the change had not been induced by the act or omission of the party invoking it.¹⁰⁹⁷

4.2.2.2. Draft Articles From 1963

The ILC continued its study of validity and duration of treaties at the fifteenth session, having provisionally adopted part I of the draft articles during its fourteenth session. The new Special Rapporteur Waldock dealt with Fitzmaurice's draft article 22 in his second report on the law of treaties, which he submitted to the Commission on 20 March 1963.¹⁰⁹⁸ Waldock's draft was articulated in the following terms:

Article 22 - The doctrine of *rebus sic stantibus*

1. (a) A change in the circumstances which existed at the time when a treaty was entered into does not, as such, affect the continued validity of the treaty.
(b) Under the conditions set out in the following paragraphs of this article, however, the validity of a treaty may be affected by an essential change in the circumstances forming the basis of a treaty.
2. An essential change in the circumstances forming the basis of a treaty occurs when:
 - (a) a change has taken place with respect to a fact or state of facts which existed when the treaty was entered into;
 - (b) it appears from the object and purpose of the treaty and from the circumstances in which it was entered into, that the parties must both, or all, have assumed the continued existence of that fact or state of facts to be an essential foundation of the obligations accepted by them in the treaty; and
 - (c) the effect of the change in that fact or state of facts is such as —

¹⁰⁹⁶ 'Second Report on the Law of Treaties, by Mr GG Fitzmaurice, Special Rapporteur' (n 1043) 33.

¹⁰⁹⁷ *Ibid.*

¹⁰⁹⁸ 'Second Report on the Law of Treaties, by Sir Humphrey Waldock, Special Rapporteur' (n 1052) 38.

(i) in substance to frustrate the further realization of the object and purpose of the treaty; or

(ii) to render the performance of the obligations contained in the treaty something essentially different from what was originally undertaken.

3. A change in the policies of the State claiming to terminate the treaty, or in its motives or attitude with respect to the treaty, does not constitute an essential change in the circumstances forming the basis of the treaty within the meaning of paragraph 2.

4. An essential change in the circumstances forming the basis of a treaty may not be invoked for the purpose of denouncing or withdrawing from a treaty if —

(a) it was caused, or substantially contributed to, by the acts or omissions of the party invoking it;

(b) the State concerned has failed to invoke it within a reasonable time after it first became perceptible, or has otherwise precluded itself from invoking the change of circumstances under the provisions of article 4 of this part;

(c) such change of circumstances has been expressly or impliedly provided for in the treaty itself or in a subsequent agreement concluded between the parties in question.

5. An essential change in the circumstances forming the basis of a treaty may not be invoked for the purpose of terminating —

(a) stipulations of a treaty which effect a transfer of territory, the settlement of a boundary, or a grant of territorial rights;

(b) stipulations which accompany a transfer of territory or boundary settlement and are expressed to be an essential condition of such transfer or settlement;

(c) a treaty which is the constituent instrument of an international organization.

6. A party shall only be entitled to terminate or withdraw from a treaty on the ground of an essential change in the circumstances forming the basis of the treaty —

(a) by agreement under the provisions of articles 18 and 19; or

(b) under the procedure laid down in article 25.¹⁰⁹⁹

Waldock agreed with Fitzmaurice on the juridical basis for the *rebus sic stantibus* provision, affirming the doctrine's status as an objective rule of law that parties had the right to invoke in order to terminate a treaty when an essential change of

¹⁰⁹⁹ 'Second Report on the Law of Treaties, by Sir Humphrey Waldock, Special Rapporteur' (n 1052) 79-80.

circumstances had occurred.¹¹⁰⁰ The preceding theory that the doctrine of *rebus sic stantibus* applied to treaties by virtue of an implied condition was thereby rejected.¹¹⁰¹

Waldock changed the terminology of article 22 in a number of ways. Perhaps most notably, he expressed the rule in negative terms to emphasise that legitimate treaties should generally remain in force despite a change of circumstances. This was meant to prevent abuse, and ensure that the article would not be used ‘as a pretext to escape from inconvenient obligations’.¹¹⁰² Also, to this end, the rule was made subject to several procedural requirements.¹¹⁰³

Fitzmaurice’s draft article from 1957 was meant to exclude treaties of limited duration because provisions governing duration would imply the parties’ understanding that the treaty could not be terminated earlier than expressly provided.¹¹⁰⁴ However, Waldock disagreed with Fitzmaurice on this issue and proposed that the provision implementing *rebus sic stantibus* could be applicable to treaties before their intended duration had lapsed, in addition to perpetual agreements.¹¹⁰⁵ Waldock maintained that unilateral denunciation of treaties of limited duration was generally prohibited because fixing the duration of a treaty indicated the parties’ will to exclude the right of termination within the relevant time frame.¹¹⁰⁶ However, the Special Rapporteur seems to have intended to exclude only the right of withdrawal or denunciation for treaties of limited duration when circumstances did not warrant extreme measures. After all, termination under the principle of *rebus sic stantibus* would constitute an exception to the general rule and be applied as *lex specialis*. The Commission seemed to unanimously support Waldock’s innovation to include treaties of limited duration within the scope of the *rebus sic stantibus* provision.¹¹⁰⁷

¹¹⁰⁰ *Ibid* 83.

¹¹⁰¹ *Ibid* 59.

¹¹⁰² *Ibid* 39.

¹¹⁰³ *Ibid* 39.

¹¹⁰⁴ ‘Second Report on the Law of Treaties, by Mr GG Fitzmaurice, Special Rapporteur’ (n 1043) 39.

¹¹⁰⁵ ‘Second Report on the Law of Treaties, by Sir Humphrey Waldock, Special Rapporteur’ (n 1052) 83.

¹¹⁰⁶ *Ibid* 65.

¹¹⁰⁷ ‘Summary Record of the 696th Meeting’ (n 1069) 156.

Paragraph 5 of Waldock's draft, providing that an essential change of circumstances could not be invoked for the purpose of terminating treaties or provisions concerning territorial rights or boundaries, was heavily criticized by several members of the ILC. Some asserted that sub-paragraph (b) was unnecessary or too thorough while others objected to paragraph 5 in its entirety.¹¹⁰⁸ Elias wished to delete the paragraph so as not to exclude treaties establishing boundaries or transferring territory from the application of *rebus sic stantibus*. He noted that the Permanent Court of International Justice (hereinafter PCIJ) in the case of the *Free Zones of Upper Savoy* had not put forth such a requirement when addressing the substantive elements of *rebus sic stantibus*.¹¹⁰⁹ He recognized the importance of respect for territorial rights and frontiers but suggested that courts should be entrusted with decision making in individual cases rather than laying down a general rule in the VCLT.¹¹¹⁰ Bartos was also reluctant to accept paragraph 5 of the Special Rapporteur's draft article, sub-paragraph (a) in particular because recent examples showed that boundary lines might be drawn precisely because of circumstances existing at the time of the conclusion of the treaty, which might later change. Therefore, Bartos proposed the removal of paragraphs 3, 4 and 5.¹¹¹¹

Ago did not wish to exclude the categories of treaties referred to in paragraph 5 entirely. He recommended leaving some latitude for exceptional instances,¹¹¹² while admitting that certain dangers could ensue if boundary treaties were susceptible to termination under *rebus sic stantibus*.¹¹¹³ De Luna saw no reason to prevent the application of *rebus sic stantibus* to boundary treaties¹¹¹⁴ and for that reason, De Luna and Verdross jointly submitted a revised draft of article 22 where no mention is made of treaties relating to frontiers or territories.¹¹¹⁵ Castren doubted that the draft article proposed by De Luna and Verdross could prevent misuse of the *rebus sic stantibus* principle, therefore, he also proposed an alternative, simplified version of the article

¹¹⁰⁸ 'Summary Record of the 697th Meeting' (n 1065) 157.

¹¹⁰⁹ See *Switzerland v France* (n 634).

¹¹¹⁰ 'Summary Record of the 695th Meeting' (n 1047) 147.

¹¹¹¹ *Ibid* 149.

¹¹¹² *Ibid* 143.

¹¹¹³ 'Summary Record of the 696th Meeting' (n 1069) 154.

¹¹¹⁴ *Ibid* 153.

¹¹¹⁵ *Ibid* 152.

excluding sub-paragraph (b) and rephrasing the requirements put forth in sub-paragraph (a).¹¹¹⁶

Erian was also unwilling to accept the exclusion of an entire category of treaties from the application of *rebus sic stantibus*.¹¹¹⁷ Erian and the Chairman of the Commission, De Aréchaga, agreed that paragraph 5 should be omitted, but not so that boundary treaties could be terminated – rather, because the situation created by treaties establishing territorial rights could not be reversed by termination of such treaties. They maintained that the issue was adequately dealt with by draft article 28 which stated that the termination of a treaty could not affect the validity of any act performed or of any right acquired under the provisions of the treaty prior to its termination.¹¹¹⁸ Briggs also submitted that executed treaty provisions could not fall under the scope of *rebus sic stantibus*. However, unlike Erian and De Aréchaga, Briggs wished to include paragraph 5 in the article, presumably to emphasise the fact that a change of circumstances could not be invoked to invalidate already established boundaries or the completed transferral of territorial rights. He did not expressly consider treaty obligations that had not been fully executed at the time when an essential change in circumstances might occur.¹¹¹⁹

The arguments advanced by Erian, De Aréchaga and Briggs, and the material content of draft article 28, are based on the doctrine of executed treaties which provides that the termination of a treaty does not undo the legal situation that has been created through the rightful execution of treaty obligations. This may seem like a compelling reason to omit the exclusion of treaties relating to boundaries or territorial rights but even if provisions establishing boundaries would always be excluded under the doctrine of executed treaty provisions, some boundary treaties might require continued performance inferring rights and obligations upon contracting parties. Without

¹¹¹⁶ *Ibid* 154. Mr. Castren's draft article can be found in 'Summary Record of the 694th Meeting' (n 1048) 136.

¹¹¹⁷ 'Summary Record of the 695th Meeting' (n 1047) 144.

¹¹¹⁸ *Ibid* 150.

¹¹¹⁹ 'Summary Record of the 695th Meeting' (n 1047) 146.

paragraph 5, these continuing rights and obligations could be denounced on the grounds of *rebus sic stantibus*.¹¹²⁰

Waldock maintained that paragraph 5 of article 22 was of considerable significance. In formulating it, he had relied on the *Bremen v Prussia* case from 1925, which demonstrated that treaties concerning the transfer of territory could entail ongoing rights and obligations for contracting parties, such as exploitation of fishing ports.¹¹²¹ In Waldock's view, the article implementing *rebus sic stantibus* should explicitly refer to stipulations of a treaty which effect a transfer of territory, the settlement of a boundary, or a grant of territorial rights and stipulations which accompany a transfer of territory or boundary settlement and are expressed to be an essential condition of such transfer or settlement.¹¹²² The reason for this was that otherwise parties could denounce obligations derived from a boundary treaty while retaining the territory they had acquired by virtue of the same treaty. This eventuality would be unjust, in the view of the Special Rapporteur, therefore, he believed all treaties and treaty provisions relating to the transfer of territory or settlement of boundaries should be excluded from the application of *rebus sic stantibus*.¹¹²³

Waldock accepted that referring to 'a grant of territorial rights' was unnecessary and he deleted paragraph 5(c) from article 22 because another convention on the law of treaties in relation to international organisations was created: the Vienna Convention from 1986 on the Law of Treaties between States and International Organizations or between International Organizations.¹¹²⁴ However, Waldock disagreed with members of the Commission who argued that article 28 was an adequate safeguard against denunciation of boundary treaties for the reason that the situation created by such treaties could not be undone by termination. The Special Rapporteur anticipated energetic attempts to invoke the principle of *rebus sic stantibus* in relation to such

¹¹²⁰ See 'Summary Record of the 697th Meeting' (n 1065) 158.

¹¹²¹ 'Summary Record of the 697th Meeting' (n 1065) 157. See *Bremen v Prussia* (29 June 1925) German Staatsgerichtshof, Annual Digest of Public International Law Cases, 1925-1926, case no 266.

¹¹²² 'Summary Record of the 697th Meeting' (n 1065) 157.

¹¹²³ *Ibid.*

¹¹²⁴ *Ibid* 157-158.

treaties if they were not specifically excluded and thus remained adamant on expressly referring to treaties relating to the settlement of a boundary.¹¹²⁵

Members of the Commission disagreed in regards to whether changed circumstances should necessarily relate to an essential foundation of the agreement. Some members maintained that the rule could only apply if the change affected circumstances that constituted an essential basis of the treaty while others asserted that the rule was an overriding principle of law, applicable to all treaties following a change of circumstances, irrespective of the foundation of the treaty. This led to proposals to omit paragraphs 2(b) and 2(c).¹¹²⁶ Ago was among those members of the ILC who supported the inclusion of paragraph 2(b) since the requirement that the change affected circumstances essential to the agreement was an important element of the *rebus sic stantibus* rule. According to him, it should not be applicable unless the circumstances that existed at the time of the conclusion of the treaty and were affected by subsequent changes were so important to contracting parties that they would not have entered into the treaty under the circumstances that later arose.¹¹²⁷ The Commission's final conclusion was to include the material requirements of paragraph 2(b), in what now is VCLT article 62(1)(a).

Waldock noted some disagreement as to whether the article should provide a right of denunciation or a right to seek revision of a treaty, obligating the other party to cooperate by renegotiating in good faith.¹¹²⁸ As demonstrated earlier by reference to precedents and State practice, the invocation of the principle often led to revision of treaties. Accordingly, the Commission decided that application of the codified rule would allow for termination, subject to procedural requirements. If the doctrine only granted the right of modification, the State seeking revision would be upon the mercy of other State parties. However, the Special Rapporteur anticipated that invocation of the principle might also lead to modification of treaties since termination would only

¹¹²⁵ *Ibid* 157.

¹¹²⁶ *Ibid* 156.

¹¹²⁷ 'Summary Record of the 696th Meeting' (n 1069) 154.

¹¹²⁸ 'Summary Record of the 697th Meeting' (n 1065) 157.

be a last resort and the threat of such extreme measures might induce amicable negotiations.¹¹²⁹

Lachs suggested that the title of the article should be altered, omitting the term '*rebus sic stantibus*' since it had, in his view, acquired a negative meaning amongst lawyers and the general public.¹¹³⁰ Tunkin supported the proposal¹¹³¹ and it was evidently accepted by the Commission since later drafts do not expressly refer to the customary rule.

Waldock presented an alternative text for article 22 at the 710th meeting of the ILC in 1963.¹¹³² That second draft article was much shorter than the previous version but substantially very similar; it had only been simplified and made more precise. Members of the ILC generally agreed that this version was an improvement over previous draft articles and yet, some objections were raised. Again, Tabibi, Bartos, Paredes and Verdross agreed that treaties establishing a territorial settlement should not be excluded from the scope of the article and thus, proposed that paragraph 3(a) should be deleted.¹¹³³

4.2.2.3. Draft Articles From 1965

The draft article was referred back to the drafting committee, which completed a revised version in 1965 and the article was then enumerated 44. It was submitted to States, who replied with written commentary, delegations in the Sixth Committee of the General Assembly gave their comments and Special Rapporteur Waldock made observations and amendment proposals in his Fifth Report on the Law of Treaties.¹¹³⁴ The article, as formulated by the drafting committee, read as follows:

Article 44 - Fundamental change of circumstances

¹¹²⁹ 'Summary Record of the 697th Meeting' (n 1065) 157.

¹¹³⁰ Extract from the Yearbook of the International Law Commission, 1963, vol I 'Summary Record of the 693rd Meeting' (5 June 1963) UN Doc A/CN.4/SR.693, 135.

¹¹³¹ 'Summary Record of the 695th Meeting' (n 1047) 144-5.

¹¹³² Extract from the Yearbook of the ILC: 1963, vol I 'Summary Record of the 710th meeting' (28 June 1963) UN Doc A/CN.4/SR.710.

¹¹³³ *Ibid* 251-252.

¹¹³⁴ 'Fifth Report on the Law of Treaties by Sir Humphrey Waldock, Special Rapporteur' (n 1009) 2.

1. A change in the circumstances existing at the time when the treaty was entered into may only be invoked as grounds for terminating or withdrawing from a treaty under the conditions set out in the present article.
2. Where a fundamental change has occurred with regard to a fact or situation existing at the time when the treaty was entered into, it may be invoked as a ground for terminating or withdrawing from the treaty if:
 - (a) The existence of the fact or situation constituted an essential basis of the consent of the parties to the treaty; and
 - (b) The effect of the change is to transform in an essential respect the character of the obligations undertaken in the treaty.
3. Paragraph 2 above does not apply:
 - (a) To a treaty fixing a boundary; or
 - (b) To changes of circumstances which the parties have foreseen and for the consequences of which they have made provision in the treaty itself.
4. Under the conditions specified in article 46, if the change of circumstances referred to in paragraph 2 above related to particular clauses of the treaty, it may be invoked as a ground for terminating those clauses only.

The United Kingdom had several reservations concerning this draft article; it submitted that the rule should only apply to treaties that had no provisions for denunciation or were at least of very long duration. Moreover, the British delegation endorsed a suggestion put forth by the Turkish Government, obliging States to negotiate before offering arbitral settlement.¹¹³⁵ The United States delegates were not convinced that the doctrine of *rebus sic stantibus* should be incorporated into the law of treaties because of difficulties related to preventing its abuse.¹¹³⁶ The Chinese delegation was concerned that the principle might be misused and advocated further study. Italy suggested that the article should be made subject to compulsory jurisdiction¹¹³⁷ and Denmark promoted the idea of making the article subject to mandatory dispute settlement by submitting disagreements to an arbitral or judicial tribunal.¹¹³⁸ Waldock said that the issue of dispute settlements before independent

¹¹³⁵ 'Fifth Report on the Law of Treaties by Sir Humphrey Waldock, Special Rapporteur' (n 1009) 40.

¹¹³⁶ *Ibid.*

¹¹³⁷ *Ibid* 41.

¹¹³⁸ *Ibid* 39.

tribunals related to several articles and would, thus, be dealt with in a separate article on procedural requirements.¹¹³⁹

The Cameroonian delegation did not wish to exclude boundary treaties from the scope of the article because that would go against the principle of self-determination and be particularly unjust insofar as it related to boundaries that were forced upon States.¹¹⁴⁰ Canadian representatives suggested that paragraph 3(a) would be paraphrased in order to exempt boundary treaties in such cases where the boundary was based on a thalweg or other natural phenomena that subsequently moved. This would mean that treaties establishing boundaries by reference to a thalweg of a river, for an example, could be terminated under *rebus sic stantibus*.¹¹⁴¹ The Australian Government wished to extend the scope of the exclusion found in paragraph 3(a) so that all treaties concerned with determinations of territorial sovereignty would be exempt. Representatives of the Netherlands also suggested widening the scope of paragraph 3(a) so as to include all treaties affecting a transfer of territory or the settlement of a boundary.¹¹⁴²

Waldock addressed these issues relating to paragraph 3(a) and concluded that, even though several States opposed the exclusion of boundary treaties a majority seemed to endorse it. He looked favourably upon the proposals put forth by the Governments of Australia and the Netherlands and, consequently recommended that the paragraph should be redrafted to also refer to treaties transferring territory.¹¹⁴³ Waldock also addressed concerns raised by the Canadian Government, which envisioned a scenario where the location of a natural phenomena, forming the basis of a boundary treaty, later changed (changing coastlines could be an example of such a phenomenon). He agreed that a natural catastrophe could possibly alter the location of a thalweg or other feature referenced in boundary delimitation but he doubted that such a change of circumstances should lead to the termination of a treaty under *rebus sic stantibus*.

¹¹³⁹ *Ibid* 44.

¹¹⁴⁰ 'Fifth Report on the Law of Treaties by Sir Humphrey Waldock, Special Rapporteur' (n 1009) 41.

¹¹⁴¹ *Ibid* 39.

¹¹⁴² *Ibid*.

¹¹⁴³ *Ibid* 43.

Instead, he believed that this type of a change in geographical circumstances should raise questions regarding the interpretation and application of the treaty.¹¹⁴⁴

Bearing in mind the views expressed by participating governments, the Special Rapporteur proposed an alternative text to draft article 44. The following version was presented in his Fifth Report on the Law of Treaties, dated 15 November 1965:¹¹⁴⁵

1. A fundamental change which has occurred with regard to a fact or state of facts existing at the time when a treaty was entered into may be invoked by a party as a ground for terminating or withdrawing from the treaty only if:

(a) The existence of that fact or state of facts constituted an essential basis of the consent of the parties to be bound by the treaty;

(b) The effect of the change is to transform in an essential respect the character of continuing obligations undertaken in the treaty; and

(c) The change has not been foreseen by the parties and its consequences provided for in the treaty.

2. A fundamental change may not be invoked as a ground for terminating or withdrawing from a treaty provision fixing a boundary or effecting a transfer of territory.

The ILC considered both draft articles at its 833rd meeting on 18 January 1966.¹¹⁴⁶

Verdross stated that the provision excluding treaties fixing a boundary or affecting a transfer of territory was merely a reiteration of a general rule: the doctrine of executed treaties, which provided that the termination of fully executed treaties could not affect a legal situation already created. Verdross said that the *rebus sic stantibus* rule could only be applicable to treaties that required further performance of treaty obligations. He, therefore, suggested that the article would exempt treaties which had been fully executed, instead of referring specifically to treaties fixing a boundary or affecting the transfer of territory.¹¹⁴⁷ Yasseen and Ruda agreed with Verdross that the principle of *rebus sic stantibus* could only apply to treaties that had not yet been fully executed.¹¹⁴⁸

¹¹⁴⁴ *Ibid* 44.

¹¹⁴⁵ *Ibid* 44.

¹¹⁴⁶ 'Summary record of the 833th meeting' (n 1078) 75-78; 'Summary record of the 834th meeting' (n 1156) 75.

¹¹⁴⁷ 'Summary record of the 833th meeting' (n 1078) 76.

¹¹⁴⁸ 'Summary record of the 834th meeting' (n 1156) 80.

However, Ruda was in favour of explicitly excluding treaties fixing a boundary because of their exceptional character.¹¹⁴⁹

Ago said that a provision excluding treaties which had been fully executed might be meaningless since treaties generally ceased to exist once they were fully executed. He was of the opinion that treaties fixing boundaries were not automatically terminated when the frontier had been established, for example, a treaty fixing a boundary along the thalweg of a river had continuous effect and was continuously enforceable. Furthermore, Ago considered the reference to a treaty affecting a transfer of territory unnecessary because such treaties would be covered by the provision excluding a treaty fixing a boundary.¹¹⁵⁰ This contention was echoed by Ruda.¹¹⁵¹ De Aréchaga supported Verdros' proposal to exclude treaties that had been executed rather than boundary treaties, having suggested a similar provision in 1963.¹¹⁵² The Special Rapporteur confronted and rejected the assertion that *rebus sic stantibus* would be inapplicable to boundary treaties on the grounds that they were fully executed. He said that the purpose of paragraph 2 was not to exclude all executed treaties but only treaties fixing a boundary or affecting the transfer of territory and the reason behind that exclusion was not that those treaties had ceased to exist but that they belonged to a category of treaties that required stability.¹¹⁵³

The Commission raised similar concerns as representatives of governments did before them concerning mandatory dispute settlement to prevent unilateral application of the principle and again, Waldock emphasised the importance of making the article subject to procedural safeguards.¹¹⁵⁴

4.2.2.4. Final Draft Article from 1966 and the Ratified Provision

The Commission referred the draft article from 1963 again to the drafting committee.¹¹⁵⁵ The final request for revision was accompanied by general remarks and

¹¹⁴⁹ *Ibid* 78.

¹¹⁵⁰ *Ibid* 82.

¹¹⁵¹ *Ibid* 78.

¹¹⁵² *Ibid* 83.

¹¹⁵³ Extract from the Yearbook of the International Law Commission, 1966, vol I(1) 'Summary record of the 835th meeting' (20 January 1966) UN Doc A/CN.4/SR.835, 86.

¹¹⁵⁴ *Ibid* 85.

¹¹⁵⁵ 'Summary record of the 835th meeting' (n 1153) 87.

suggestions of alternative wording.¹¹⁵⁶ The final draft article codifying the customary rule *rebus sic stantibus* was discussed during the Commission's 842nd meeting on 27 January 1966 and agreed upon with amendments, by 13 votes to 1, with 1 abstention.¹¹⁵⁷ Thereafter, the article became part of the draft articles on the law of treaties, adopted by the ILC on 18 July 1966, which prompted the Commission's recommendation to the General Assembly to convene an international conference with the aim to conclude a convention on the Law of Treaties.¹¹⁵⁸ The draft article was presented as draft article 44 at the 842nd meeting but it was enumerated 59 after all the draft articles were joined together and it will be referred to as draft article 59 in the subsequent discussion.

Article 59 – Fundamental change of circumstances

1. A fundamental change which has occurred with regard to a circumstance 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 that circumstance constitutes 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 scope of obligations still to be performed under the treaty.

2. A fundamental change of circumstances may not be invoked:

(a) as a ground for terminating or withdrawing from a treaty establishing a boundary;

(b) if the fundamental change is the result of a breach by the party invoking it either of the treaty or of another international obligation owed to the parties to the treaty.

The final draft article was considered at the conference convened by the General Assembly, by the Committee of the Whole during the 63rd, 64th and 65th meetings in May 1968. The provision was discussed in general terms and amendments, submitted

¹¹⁵⁶ 'Summary record of the 833th meeting' (n 1078) 75-78; Extract from the Yearbook of the International Law Commission, 1966, vol I(1) 'Summary record of the 834th meeting' (19 January 1966) UN Doc A/CN.4/SR.834, 78-85; 'Summary record of the 835th meeting' (n 1155) 85-87.

¹¹⁵⁷ Extract from the Yearbook of the ILC: 1966, vol I(1) 'Summary Record of the 842nd meeting' (27 January 1966) UN Doc A/CN.4/SR.842, 130.

¹¹⁵⁸ Extract from the Yearbook of the ILC, 1966, vol II 'Report of the of the International Law Commission on the work of its Eighteenth Session, 4 May-19 July 1966, Official Records of the General Assembly, Twenty-First Session, Supplement No. 9 (A/6309/Rev.1)' (4 May-19 July 1966) UN Doc A/CN.4/191, 177.

by the Republic of Vietnam, Venezuela, Canada, Finland, the United States of America and Japan, were reviewed.

Thinh, a representative of Vietnam, stated that the rule of *rebus sic stantibus* was essential to the law of treaties due to constant changes in the international arena. His delegation proposed amendments to paragraphs 2(a) and 2(b) because these paragraphs were considered to limit the application of the rule more than necessary. The Vietnamese delegation did not wish to unconditionally exclude treaties establishing boundaries or application of the principle when the changed circumstances were induced by the party invoking the article since the application of *rebus sic stantibus* was particularly important in relation to political and perpetual treaties.¹¹⁵⁹ The delegation of Venezuela proposed that the rule should be stated in positive terms rather than negative.¹¹⁶⁰ The Canadian delegation was of the view that fundamentally changed circumstances should in some cases lead to suspension of a treaty and that this possible consequence should be explicitly provided for in the provision. Consequently, it proposed an amendment to paragraph 1, adding the word ‘suspending’ before the word ‘terminating’.¹¹⁶¹

The Finnish delegation proposed two amendments. First, it wished to incorporate the principle of separability so that application of the article could lead to termination of specific treaty provisions and not necessarily the entire treaty. Second, it suggested that paragraph 1 should refer to the possibility of suspending the operation of a treaty on the basis of changed circumstances,¹¹⁶² effectively agreeing with the Canadian delegation regarding the right to suspend the operation of a treaty.¹¹⁶³ Kearney, a representative from the United States, was of the view that the term ‘treaty establishing

¹¹⁵⁹ VCLT Amendment proposals ‘Republic of Viet-Nam (A/CONF.39/C.1/L.299)’ in United Nations Conference on the Law of Treaties: ‘First and second sessions’ (26 March-24 May 1968 and 9 April-22 May 1969) UN Doc A/CONF.39/11/Add.2, 184.

¹¹⁶⁰ VCLT Amendment proposals ‘Venezuela (A/CONF.39/C.1/L.319)’ in United Nations Conference on the Law of Treaties: ‘First and second sessions’ (26 March-24 May 1968 and 9 April-22 May 1969) UN Doc A/CONF.39/11/Add.2, 183.

¹¹⁶¹ VCLT Amendment proposals ‘Canada (A/CONF.39/C.1/L.320)’ in United Nations Conference on the Law of Treaties: ‘First and second sessions’ (26 March-24 May 1968 and 9 April-22 May 1969) UN Doc A/CONF.39/11/Add.2, 184.

¹¹⁶² VCLT Amendment proposals ‘Finland (A/CONF.39/C.1/L.333)’ in United Nations Conference on the Law of Treaties: ‘First and second sessions’ (26 March-24 May 1968 and 9 April-22 May 1969) UN Doc A/CONF.39/11/Add.2, 184.

¹¹⁶³ ‘63rd Meeting of the Committee of the Whole’ (n 1063) 366.

a boundary' was too restrictive and thus failed to provide sufficient safeguard against unilateral termination of treaties that established territorial status or settled territorial disputes. Consequently, he proposed that sub-paragraph 2(a) should be rephrased.¹¹⁶⁴ The Japanese delegation proposed an alternative text to paragraph 1(b) and endorsed the proposal submitted by the United States.¹¹⁶⁵ Several other delegations supported the amendment proposed by the United States, including the Australian Government¹¹⁶⁶ but it was eventually rejected by 43 votes to 14, with 28 abstentions.¹¹⁶⁷

Stuyt of the Dutch delegation suggested combining articles 59 and 62, dealing with the procedure to be followed in cases of invalidity, termination, withdrawal from or suspension of the operation of a treaty. He commented on the ambiguity of several terms in article 59 and said that his delegation would not accept the article unless it was made subject to procedural requirements to prevent misuse of the principle.¹¹⁶⁸ The Ukrainian delegation expressly supported the Finnish and Canadian suggestions to allow suspension of the operation of a treaty under *rebus sic stantibus*.¹¹⁶⁹ So did the Indian delegation,¹¹⁷⁰ the Chilean delegation,¹¹⁷¹ the Greek delegation,¹¹⁷² the Hungarian delegation¹¹⁷³ and the delegation of the Union of Soviet Socialist Republics.¹¹⁷⁴ The delegation of Switzerland emphasised that the article should not allow unilateral denunciation unless subject to procedural safeguards and, consequently, withheld its consent.¹¹⁷⁵ The British delegation was also unwilling to

¹¹⁶⁴ VCLT Amendment proposals 'United States of America (A/CONF.39/C.1/L.335)' in United Nations Conference on the Law of Treaties: 'First and second sessions' (26 March-24 May 1968 and 9 April-22 May 1969) UN Doc A/CONF.39/11/Add.2, 184.

¹¹⁶⁵ '63rd Meeting of the Committee of the Whole' (n 1063) 367.

¹¹⁶⁶ ILC '64th Meeting of the Committee of the Whole' (10 May 1968) in 'First session: Summary records of the plenary meetings and of the meetings of the Committee of the Whole' (n 1037) 370, 372.

¹¹⁶⁷ Egon Schwelb, 'Fundamental Change of Circumstances Notes on Article 59 of the Draft Convention on the Law of Treaties as recommended for Adoption to the United Nations Conference on the Law of Treaties by its Committee of the Whole in 1968' (1969) 29 *Zeitschrift für Ausländisches Öffentliches Recht und Völkerrecht* 39, 57.

¹¹⁶⁸ '63rd Meeting of the Committee of the Whole' (n 1063) 368.

¹¹⁶⁹ *Ibid* 368.

¹¹⁷⁰ '64th Meeting of the Committee of the Whole' (n 1166) 373.

¹¹⁷¹ *Ibid* 375.

¹¹⁷² ILC '65th Meeting of the Committee of the Whole' (11 May 1968) in 'First session: Summary records of the plenary meetings and of the meetings of the Committee of the Whole' (n 1037) 378, 378.

¹¹⁷³ *Ibid* 379.

¹¹⁷⁴ '64th Meeting of the Committee of the Whole' (n 1166) 374.

¹¹⁷⁵ '63rd Meeting of the Committee of the Whole' (n 1063) 368.

approve the article until the content of article 62 had been decided¹¹⁷⁶ and similar concerns were expressed by the Australian delegation.¹¹⁷⁷

The Bolivian delegation rejected paragraph 2(a), considering it unreasonable to expect all boundary treaties to endure and be immune forever, despite of changed circumstances. It considered the article indispensable to allow for peaceful modification of treaties. The Bolivian delegation maintained that there were no legal grounds for excluding treaties establishing boundaries from possible termination due to changed circumstances.¹¹⁷⁸ Tabibi, representing the delegation from Afghanistan, also promoted the deletion of paragraph 2(a) because the exclusion of boundary treaties would undermine the rule stated in paragraph 1 and compromise the right of self-determination and peaceful relations between States.¹¹⁷⁹

The Moroccan representative also raised objections to paragraph 2(a), noting that the exclusion of boundary treaties had never been affirmed by legal theorists, judicial or arbitral decisions or State practice.¹¹⁸⁰ In this context, Tabibi referenced the *Free Zones of Upper Savoy* case from 1932, a case often cited when discussing whether boundary treaties should be excluded from the application of *rebus sic stantibus*. The case involved a treaty establishing customs zones, the French Government invoked *rebus sic stantibus* to terminate the treaty but the argument was rejected because merits of the case did not warrant the application of the doctrine - not because of an alleged exclusion of boundary treaties.¹¹⁸¹

The Committee agreed to include a provision allowing States to suspend the operation of a treaty, as suggested by the delegations of Canada and Finland, but the other proposals were rejected. Thus, the draft article was referred back to the drafting committee¹¹⁸² which then produced the final version of the article:

Article 59 – Fundamental change of circumstances

¹¹⁷⁶ *Ibid* 369.

¹¹⁷⁷ ‘64th Meeting of the Committee of the Whole’ (n 1166) 373.

¹¹⁷⁸ ‘63rd Meeting of the Committee of the Whole’ (n 1063) 370.

¹¹⁷⁹ ‘64th Meeting of the Committee of the Whole’ (n 1166) 373.

¹¹⁸⁰ ‘65th Meeting of the Committee of the Whole’ (n 1172) 379.

¹¹⁸¹ *Switzerland v France* (n 634).

¹¹⁸² ‘65th Meeting of the Committee of the Whole’ (n 1172) 382.

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.

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; or

(b) If the fundamental change is the result of a breach by the party invoking it either of an obligation under the treaty or of any other international obligation owed to any other party to the treaty.

3. If, under the foregoing paragraphs, a party may invoke a fundamental change of circumstances as a ground for terminating or withdrawing from a treaty it may also invoke the change as a ground for suspending the operation of the treaty.¹¹⁸³

Before finally approving the article, some objections were raised, mainly in regard to the exception found in paragraph 2(a). The Syrian delegation was among those that were reluctant to accept the exclusion of boundary treaties from the general scope of *rebus sic stantibus* and, therefore, rejected the provision.¹¹⁸⁴ Tabibi, of the Afghani delegation, expressed the view that paragraph 2(a) greatly weakened the principle enshrined in the article.¹¹⁸⁵ The Moroccan delegation agreed with Tabibi and suggested the deletion of paragraph 2(a).¹¹⁸⁶

Fleischhauer, of the German delegation, pointed out a flaw in the wording of paragraph 1; the literal interpretation of the provision suggests that a fundamental change of circumstances may be invoked as a ground for terminating or withdrawing from a treaty, even if changes are foreseen, if all other requirements are met. This was clearly not the intended meaning of the article since all parties agreed that changes had to be unforeseen. Therefore, Fleischhauer suggested an amendment for clarification.¹¹⁸⁷

¹¹⁸³ ‘Twenty-second plenary meeting’ (n 1081) 116-117.

¹¹⁸⁴ *Ibid* 117.

¹¹⁸⁵ *Ibid* 118.

¹¹⁸⁶ *Ibid* 120.

¹¹⁸⁷ *Ibid* 118.

Yet, the provision was not rephrased before adoption of the VCLT and, consequently, it remains flawed.

The article was adopted at the 22nd plenary meeting on 13 May 1969, by 93 votes to 3, with 9 abstentions¹¹⁸⁸ and VCLT was adopted by the Conference in Vienna, nine days later, 22 May 1969.

4.3. Analysis of VCLT Article 62

The VCLT is limited to treaties between States¹¹⁸⁹ that are in written form and governed by international law.¹¹⁹⁰ Questions concerning State succession are not within the scope of the Convention¹¹⁹¹ and the Convention is non-retroactive, making it inapplicable to treaties that were concluded before the entry into force of the VCLT.¹¹⁹² Nonetheless, rules that are binding upon States under customary international law remain applicable, independently of the VCLT.¹¹⁹³ Therefore, *rebus sic stantibus* will apply to many instances not covered by the VCLT and perhaps its scope is broader than that of VCLT Article 62. For example, it applies to treaties concluded between international organisations under article 62 of the 1986 Vienna Convention on the Law of Treaties between States and International Organizations or between International Organizations.¹¹⁹⁴ This Convention is not yet in force but it suggests that the customary rule might be applicable to treaties between non-State parties. Furthermore, the customary rule might apply to non-written agreements and judicial decisions effected by agreements. However, the terms of VCLT article 62 clearly set out the objective elements of *rebus sic stantibus* and both sources of law carry the same material content.¹¹⁹⁵ Therefore, even if the scope of the customary rule

¹¹⁸⁸ *Ibid* 121.

¹¹⁸⁹ VCLT article 1.

¹¹⁹⁰ VCLT article 2(1)(a).

¹¹⁹¹ VCLT article 73. See also Ian Brownlie, *The Vienna Convention on the Law of Treaties* (Manchester University Press 1984) 6.

¹¹⁹² VCLT article 4.

¹¹⁹³ VCLT article 3(b).

¹¹⁹⁴ See article 62 of the Vienna Convention on the Law of Treaties between States and International Organizations or between International Organizations (adopted 21 March 1986) 25 ILM 543.

¹¹⁹⁵ See *Case Concerning the Gabčíkovo-Nagymaros Project* (n 427) para 46; Athanassios Vamvaoukos, *Termination of Treaties in International Law: The Doctrines of Rebus Sic Stantibus and Desuetude* (Clarendon Press 1985) 150-51.

may be somewhat broader, the following discussion focuses primarily on VCLT article 62.

As evident from the drafting history, members of the ILC and State representatives were quite concerned about the procedural requirements applicable to VCLT article 62. Consequently, the rule was made subject to the procedural requirements of VCLT articles 65-67¹¹⁹⁶ and of those, article 65 is of particular importance.¹¹⁹⁷ A State invoking a fundamental change of circumstance to justify termination, suspension or withdrawal from a treaty, ‘must notify the other parties of its claim. The notification shall indicate the measure proposed to be taken with respect to the treaty and the reasons therefor.’¹¹⁹⁸ If opposing States raise no objections to said notification within three months, or less ‘in cases of special urgency’, the State seeking termination, withdrawal from or suspension of a treaty may carry out the proposed measure, in accordance with VCLT article 67.¹¹⁹⁹ However, if objections are raised within the time frame determined in accordance with VCLT article 65(2), the States must ‘seek a solution through the means indicated in Article 33 of the Charter of the United Nations’.¹²⁰⁰

Stuyt, a representative of the Dutch delegation, noted that VCLT article 62 was the only article in the draft convention that contained numerous concepts of ambiguous meaning and he warned that employing such terms in a legislative text might be dangerous.¹²⁰¹ The following sections will decipher these ambiguous meanings and provide an analysis of each requirement of VCLT article 62, all of which must be satisfied to justify its use.¹²⁰²

¹¹⁹⁶ Yearbook of the ILC, 1966, vol II: Documents of the second part of the seventeenth session and of the eighteenth session including the reports of the Commission to the General Assembly ‘Report of the International Law Commission on the work of its eighteenth session’ (4 May-19 July 1966) UN Doc A/CN.4/SER.A/1966/Add. 1, 187-274.

¹¹⁹⁷ Anthony Aust (n 575) 300.

¹¹⁹⁸ VCLT article 65(1).

¹¹⁹⁹ VCLT article 65(2).

¹²⁰⁰ VCLT article 65(3).

¹²⁰¹ ‘63rd Meeting of the Committee of the Whole’ (n 1063) 367.

¹²⁰² Thomas Giegerich ‘Article 62. Fundamental Change of Circumstances’ in Oliver Dörr and Kirsten Schmalenbach (n 557) 1067, 1078.

4.3.1. A Fundamental Change of Circumstances

The requirement that a change must be fundamental to justify the application of *rebus sic stantibus* has little significance as an independent requirement because the same can be deduced from other requirements of VCLT article 62; the change must affect the essential basis of the treaty and radically transform remaining obligations. Therefore, the reference to fundamentality can be understood as a safeguard ensuring that a change, justifying termination of a treaty, is severe or fundamental in character.¹²⁰³

A fundamental change should be objective, and it should affect the factual circumstances surrounding the treaty rather than the parties' attitudes towards the treaty.¹²⁰⁴ The change should relate to circumstances, existing at the time of the conclusion of the treaty, the continuance of those circumstances should have been anticipated by both parties and motivated them to consent to the treaty or specific obligations affected by the fundamental change. The change should either render the performance of treaty obligations impossible or destroy or alter the foundation of the obligations under the treaty. Fitzmaurice noted two instances that would not suffice for the invocation of the principle: first, a change affecting the party's will to enter into a treaty or to continue performing treaty obligations and, second, a foreseeable change.¹²⁰⁵

To qualify as a fundamental change under VCLT article 62, a change must be of a qualitative and quantitative nature.¹²⁰⁶ The qualitative element relates to the requirement that the change affects the facts that led both parties to give their consent to be bound by the treaty, as suggested in paragraph 2(1)(a). The quantitative element is embodied in paragraph 2(1)(b), which provides that the change must be so extensive that it alters the conditions of the treaty and its *raison d'être*.¹²⁰⁷ The drying up of a river or the silting up of a harbour would be examples of fundamental changes

¹²⁰³ *Ibid* 1085.

¹²⁰⁴ 'Second Report on the Law of Treaties, by Mr GG Fitzmaurice, Special Rapporteur' (n 1043) 32-33.

¹²⁰⁵ *Ibid*.

¹²⁰⁶ Paul Reuter, *Introduction to the Law of Treaties* (Kegan Paul International 1995) 189.

¹²⁰⁷ *Ibid*.

potentially justifying termination, withdrawal from, or suspension of a treaty, i.e., if other requirements of VCLT article 62 were met.¹²⁰⁸ Similarly, other geographical changes might qualify as fundamental changes, but only when they relate to the essential basis of a treaty.

However, according to Waldock, fluctuations of natural phenomena, such as rivers, could not justify the termination of treaties establishing boundaries. They would rather affect their interpretation.¹²⁰⁹ Consequently, it seems that drastic geographical changes can amount to fundamental changes within VCLT article 62 while fluctuations may not – at least in the context of boundary treaties. However, the categorisation of any change will always depend on the material content of a treaty; if the exact location of a geographical phenomenon is essential to a treaty, then changes affecting that location may well qualify as fundamental changes.

A fundamental change of circumstances can affect almost any type of circumstances, e.g., factual, political, legal, economic or social circumstances.¹²¹⁰ However, there are three exceptions to this otherwise general assumption; fundamental changes due to State succession, outbreak of hostilities and the severance of diplomatic relations cannot qualify as fundamental changes under VCLT article 62. The first two categories fall outside the scope of the 1969 Vienna Convention¹²¹¹ and the severance of diplomatic or consular relations does not affect the legal relations established between the parties unless and insofar as such relations are indispensable, as per VCLT article 63.¹²¹² Nonetheless, the European Court of Justice has confirmed that the outbreak of hostilities can amount to a fundamental change of circumstances under the customary rule *rebus sic stantibus*.¹²¹³ Therefore, as previously suggested, the scope of the customary principle may be somewhat broader than that of VCLT article 62.

¹²⁰⁸ Jeremy Waldron (n 1044) 170.

¹²⁰⁹ 'Fifth Report on the Law of Treaties by Sir Humphrey Waldock, Special Rapporteur' (n 1009) 44.

¹²¹⁰ Georg Dahm; Jost Delbrück and Rüdiger Wolfrum, *Völkerrecht: Die Grundlagen. Die Völkerrechtssubjekte* (De Gruyter 2002) 751.

¹²¹¹ VCLT article 73.

¹²¹² Thomas Giegerich (n 1202) 1081.

¹²¹³ *A Racke GmbH & Co v Hauptzollamt Mainz*, European Court of Justice: Racke C-162/96 [1998] European Court Reports I-3655, paras 53 *et seq.*

Fundamental changes do not necessarily have to be factual; they can be political, legal¹²¹⁴ or economic, e.g., changes relating to the costs derived from treaty obligations and changes in the fiscal situation of a contracting party.¹²¹⁵ However, the total extinction of one of the parties to a treaty, such as might result from the complete submergence of an island State, would not constitute a fundamental change in circumstances within the meaning of VCLT article 62. Rather, according to Waldock, it would qualify as an impossibility of performance and, consequently, be subject to VCLT article 61 or rules on State succession if there was a change in the identity of one of the State parties.¹²¹⁶

4.3.2. Foreseeability

Paragraph 1 of VCLT article 62 provides that a fundamental change of circumstances may not be invoked as a ground for terminating, suspending or withdrawing from a treaty if the change was foreseen by the parties at the conclusion of the treaty. Fitzmaurice noted his interpretation that parties to a treaty should not have been able to anticipate the fundamental change of circumstances with reasonable foresight. In other words, the principle should not be invoked to withdraw from, suspend or terminate a treaty if the treaty provides for the change in any way, either expressly or by implied terms.¹²¹⁷ This suggests that the foreseeability test involves an objective rather than a subjective standard and a high threshold; a fundamental change cannot be invoked as grounds for terminating a treaty if terms of the treaty indicate actual awareness that the change may occur.

VCLT article 62 contains a flaw, relating to the condition of foreseeability. The literal interpretation of the provision suggests that an *unforeseen* fundamental change of circumstances may be invoked as a ground for terminating or withdrawing from a treaty if all other requirements are met. An amendment was proposed to correct this flaw, but only at a very late stage and it was not adopted.¹²¹⁸ Nonetheless, it seems

¹²¹⁴ See Thomas Giegerich (n 1202) 1081-2.

¹²¹⁵ Jeremy Waldron (n 1044) 170.

¹²¹⁶ ‘Second Report on the Law of Treaties, by Sir Humphrey Waldock, Special Rapporteur’ (n 1052) 78

¹²¹⁷ ‘Second Report on the Law of Treaties, by Mr GG Fitzmaurice, Special Rapporteur’ (n 1043) 33.

¹²¹⁸ ‘Twenty-second plenary meeting’ (n 1081) 118.

quite clear that the ILC did not intend to allow termination in cases where parties had foreseen the fundamental change. Such interpretation would be ‘manifestly unreasonable’.¹²¹⁹ Consequently, any ambiguity relating to the foreseeability requirement would surely be interpreted in accordance with the clear intent of the legislator which makes this drafting mistake rather insignificant.

4.3.3. Essential Basis of the Treaty

The essential basis of a treaty refers to the circumstances that shaped the drafting process and the content of treaty provisions.¹²²⁰ These are the circumstances that existed when the treaty was concluded and motivated the parties to give their consent.¹²²¹ A fundamental change cannot be invoked as grounds for terminating, suspending or withdrawing from a treaty unless it affects the essential basis of that treaty. In other words, a fundamental change of circumstances must directly affect the very obligation that States seek to terminate by invocation of the principle. For example, the fundamental change relied upon by Iceland in the *Fisheries Jurisdiction* case could not suffice because it related to fishing techniques and had no clear connection to the ICJ compromissory clause that Iceland sought to terminate.¹²²²

The ICJ also addressed this condition in the *Gabčíkovo-Nagymaros* case when Hungary sought to terminate a treaty relating to the construction and operation of a system of dams due to a fundamental change of circumstances. Hungary argued that ‘profound changes of a political nature, the Project’s diminishing economic viability, the progress of environmental knowledge and the development of new norms and prescriptions of international environmental law’ could cumulatively amount to a fundamental change of circumstances justifying termination.¹²²³ The Court found that although the political and economic circumstances had certainly been relevant for the conclusion of the treaty, they were not sufficiently linked to the object and purpose of

¹²¹⁹ Thomas Giegerich (n 1202) 1086.

¹²²⁰ Shaw and Fournet (n 1300) 774.

¹²²¹ ‘Second Report on the Law of Treaties, by Mr GG Fitzmaurice, Special Rapporteur’ (n 1043) 32-33.

¹²²² Thomas Giegerich (n 1202) 1085, referring to *Fisheries Jurisdiction (United Kingdom of Great Britain and Northern Ireland v Iceland)* (Merits) (n 698) paras 38 *et seq.* See also Eduardo Jiménez de Aréchaga, *International law in the past third of a century* (Sijthoff 1978) 73 *et seq.*

¹²²³ *Case Concerning the Gabčíkovo-Nagymaros Project* (n 427) para 104.

the treaty to have ‘constituted an essential basis of the consent of the parties’.¹²²⁴ This does not exclude the possibility of political and economic considerations forming an essential basis in other treaties. However, it demonstrates the importance of establishing a causal link between the specific circumstances that have undergone changes and the subject matter of the treaty.

4.3.4. Radical Transformation of Ongoing Obligations

VCLT article 62(1)(b) provides that the effect of a change must be to radically transform the extent of obligations still to be performed under a treaty, otherwise the change cannot justify termination, suspension or revision. The ILC did not explain how a radical transformation should be qualified but this requirement relates to the condition of a fundamental change and suggests that the change must affect ongoing obligations to a large extent.¹²²⁵ The reference to obligations still to be performed aims to clarify that VCLT article 62 is not applicable to treaties that have been fully executed; there have to be obligations that have not yet been performed or a requirement of continuing performance.¹²²⁶ ‘The extent of obligations still to be performed can be radically transformed either directly or indirectly. Direct transformation means that the onerousness of the obligation is increased, whereas indirect transformation means that the value to be gained by further performance is diminished.’¹²²⁷ The reference to obligations in plural does not seem to suggest that all obligations must be radically transformed but only the obligations of the party invoking a fundamental change of circumstances.¹²²⁸

The ICJ considered whether the alleged fundamental changes in the *Gabčíkovo-Nagymaros* case would satisfy the requirement of radically transforming ongoing obligations and while acknowledging that the agreement might have become less profitable, the Court asserted that the viability of the treaty had not diminished to such an extent that would justify invocation of *rebus sic stantibus*.¹²²⁹ This suggests that a

¹²²⁴ *Ibid.*

¹²²⁵ See Thomas Giegerich (n 1202) 1085.

¹²²⁶ ‘Fifth Report on the Law of Treaties by Sir Humphrey Waldock, Special Rapporteur’ (n 1009) 43.

¹²²⁷ Thomas Giegerich (n 1202) 1089 referring to ‘Second Report on the Law of Treaties, by Mr GG Fitzmaurice, Special Rapporteur’ (n 1043) 60, para 151.

¹²²⁸ Thomas Giegerich (n 1202) 1088.

¹²²⁹ *Case Concerning the Gabčíkovo-Nagymaros Project* (n 427) para 104.

change affecting the economic viability of treaties may qualify as a fundamental change radically transforming ongoing obligations, only where economic interests led to the conclusion of a treaty and those interests have been severely affected.

4.3.5. Treaty Establishing a Boundary

‘There is hardly any theoretical reason why certain treaties should *a priori* escape a possible challenge due to a change of circumstances.’¹²³⁰ Yet, treaties establishing boundaries are excluded from the application of the general rule embodied in VCLT article 62. The Commission noted that several ILC members and State representatives had reservations regarding the exclusion of treaties establishing boundaries, finding it too restrictive or incompatible with the principle of self-determination. Those arguing that it was contradictory to the principle of self-determination said that ‘[a]ny attempt to keep a treaty in force against the wishes of a people would involve a greater danger to peace than the application of the *rebus sic stantibus* doctrine.’¹²³¹

Energetic attempts were made to eliminate the boundary exclusion and some States even tried to reduce its weight after it was implemented.¹²³² Yet, the Commission deemed it necessary and ‘concluded that treaties establishing boundaries should be recognized to be an exception to the rule, because otherwise the rule, instead of being an instrument of peaceful change, might become a source of dangerous frictions’.¹²³³

The decision to exclude boundary treaties was supported by reference to the fact that most jurists, at the time of codification of the VCLT, seemed to assume the existence of such an exception and so did France and Switzerland in the 1932 *Free Zones* case.¹²³⁴ However, the *Free Zones* case was also referenced by those who opposed the

¹²³⁰ Paul Reuter (n 1206) 189.

¹²³¹ Egon Schwelb (n 1167) 57.

¹²³² The Government of the Syrian Arab Republic made a reservation to the VCLT upon ratification stating that it ‘does not in any case accept the non-applicability of the principle of a fundamental change of circumstances with regard to treaties establishing boundaries, referred to in article 62, paragraph 2 (a), inasmuch as it regards this as a flagrant violation of an obligatory norm which forms part of general international law and which recognizes the right of peoples to self-determination’ VCLT (with annex), 505-506.

¹²³³ ‘64th Meeting of the Committee of the Whole’ (n 1166) 371.

¹²³⁴ ‘Draft articles on the law of treaties: text as finally adopted by the Commission on 18 July 1966 (reproduced at para 38 of document A/6309/Rev.1)’ (n 1072) 259 referring to *Switzerland v France* (n 634).

exclusion of boundary treaties because, while upholding other points on the substantive elements of the principle, the PCIJ did not confirm the parties' contentions that boundary treaties were excluded from the application of *rebus sic stantibus*.¹²³⁵ Instead of rejecting the *rebus sic stantibus* argument by reference to a boundary exclusion, it was rejected because of insufficient proof that the changed circumstances formed an essential basis of the treaty.¹²³⁶

Regardless of whether the boundary exclusion formed part of customary international law before the codification of VCLT or not, boundaries are now excluded. However, as the *Free Zones* case highlights, the term boundary can be used to refer to different lines of delimitation. This case involved a boundary which constituted a 'customs barrier' and a 'political frontier of the District of Gex, that is to say, of the Gex free zone.'¹²³⁷ This was not a conventional land boundary but it did demarcate territorial rights between different States, which raises a fundamental but often overlooked question for the interpretation of VCLT article 62: what type of boundaries are excluded under paragraph 2(a)?

The following sections take a closer look at the boundary concept, in the context of VCLT article 62(2)(a), the object and purpose of the boundary exclusion and, finally, the difference between territorial and non-territorial boundaries.

4.3.5.1. Boundary, in the Context of VCLT Article 62(2)(a)

The ICJ has confirmed that treaty interpretation is based, primarily, on the text of a treaty,¹²³⁸ which must be interpreted in accordance with the ordinary meaning of the terms and the context they appear in.¹²³⁹ The word boundary can be broadly construed for different purposes but the fact that a line qualifies as a boundary in some respects,

¹²³⁵ See 'Twenty-second plenary meeting' (n 1081) 121; 'Summary Record of the 695th Meeting' (n 1047) 147. See *Switzerland v France* (n 634) 158: 'As the French argument fails on the facts, it becomes unnecessary for the Court to consider [...] the question whether it would apply to treaties establishing rights such as that which Switzerland derived from the treaties of 1815 and 1816.'

¹²³⁶ *Switzerland v France* (n 634) 157.

¹²³⁷ *Ibid* 148.

¹²³⁸ See, e.g., *Libya v Chad* (n 556) para 41; *Serbia and Montenegro v Belgium* (n 556) para 100.

¹²³⁹ VCLT article 31(1).

does not automatically make it a boundary within the meaning of VCLT article 62(2)(a).¹²⁴⁰

The ILC explained, when codifying the Vienna Convention on the Law of Treaties Between States and International Organizations or Between International Organizations, that the ‘term ‘boundary’ customarily denotes the limit of the land territory of a State, but it could conceivably be taken more broadly to designate the various lines which fix the spatial limits of the exercise of different powers.’¹²⁴¹ The ILC explained that lines could be boundaries for certain purposes and not others, e.g., opposable to other States while not conferring exclusive jurisdiction.¹²⁴² The Commission asserted that territorial sea boundaries were ‘true limit[s] of the territory of the State’ but further noted that even if other maritime boundaries, and boundaries to air space, could also be categorised as ‘true boundaries’, they might not fall within the boundary exclusion of VCLT article 62(2)(a).¹²⁴³

When codifying VCLT article 62, the ILC explained that the phrase, ‘treaty establishing a boundary’, was broader than ‘treaty fixing a boundary’; broad enough to encompass treaties of cession and delimitation.¹²⁴⁴ Cession refers to ‘[t]he transfer of sovereignty over a territory by means of a treaty’¹²⁴⁵ and delimitation can be described as ‘marking off, or describing the limits or boundary line of a territory or country’.¹²⁴⁶ The term clearly covers treaties delimiting land territory because the Commission only referred to such treaties when discussing the types of treaties encompassed by the boundary exclusion.¹²⁴⁷ However, the reference to treaties of

¹²⁴⁰ Yearbook of the ILC 1982, volume II, part 2 ‘Report of the Commission to the General Assembly on the work of the thirty-fourth session’ (3 May-23 July 1982) UN Doc A/CN.4/SER.A/1982/Add.I (Part 2) 60-61. See also Thomas Giegerich (n 1202) 1093.

¹²⁴¹ *Ibid* 60.

¹²⁴² *Ibid* 60-61.

¹²⁴³ *Ibid* 61.

¹²⁴⁴ ‘Draft articles on the law of treaties: text as finally adopted by the Commission on 18 July 1966 (reproduced at para 38 of document A/6309/Rev.1)’ (n 1072) 259.

¹²⁴⁵ ‘Cession’ in Jonathan Law (ed) *A Dictionary of Law*, 8th ed, (Oxford University Press 2015) available at: <http://www.oxfordreference.com/view/10.1093/acref/9780199664924.001.0001/acref-9780199664924-e-541?rskey=CVnHKn&result=2> accessed 20 September 2017.

¹²⁴⁶ ‘Delimitation’ in *Black’s Law Dictionary: Free Online Legal Dictionary* 2nd ed, available at: <http://thelawdictionary.org/delimitation/> accessed 20 September 2017.

¹²⁴⁷ Except when inconclusively dealing with the *Free Zones* case: ‘Draft articles on the law of treaties: text as finally adopted by the Commission on 18 July 1966 (reproduced at para 38 of document

cession and delimitation leaves it unclear whether the boundary exclusion extends beyond treaties that establish boundaries on land territory.

The only definition of a boundary ever advanced in the extensive drafting history of VCLT article 62 was Oppenheim's definition, defining State boundaries as 'the imaginary lines on the surface of the earth which separate the territory of one State from that of another, or from unappropriated territory, or from the open sea'.¹²⁴⁸ This definition makes a distinction between boundaries between two or more States or between a State and unappropriated territory and boundaries where territory of a State meets the ocean. It implies that boundaries are either drawn between territory of different States or where territory ends, which must be at the baselines of coastal States or the territorial sea, depending on an interpretation of the word territory. It is unclear whether the reference to open sea covers all maritime zones or only maritime zones that do not fall within the first category, i.e., territory. The legal regime of the exclusive economic zone did not exist at the time of these discussions but the contiguous zone, fisheries zone and continental shelf were well established legal regimes. Nonetheless, there was no category for boundaries delimiting the maritime zones of different States, except potentially the territorial sea boundaries. Just as the explanations referred to above, this definition rests on an interpretation of the word territory.

VCLT article 62(2)(a) extends to 'treaties establishing or modifying the territory of States'.¹²⁴⁹ However, treaties that establish territorial status are not excluded unless they also create boundaries; '[t]reaties on territorial regimes such as those granting servitudes, long-term leases of territory, condominium agreements or other agreements on the exercise of territorial sovereignty are therefore not covered by the exception.'¹²⁵⁰

The United States delegation proposed an amendment to VCLT article 62, explicitly excluding treaties 'establishing territorial status' (specific regimes within territories),

A/6309/Rev.1)' (n 1072) 259; 'Twenty-second plenary meeting' (n 1081) 121; 'Summary Record of the 695th Meeting' (n 1047) 147.

¹²⁴⁸ '63rd Meeting of the Committee of the Whole' (n 1063) 367. See Lassa Oppenheim, *Oppenheim's International Law, vol I, Peace, 8th ed* (Longman 1992) 531.

¹²⁴⁹ 'Report of the Commission to the General Assembly on the work of the thirty-fourth session' (n 1240) 60, para 4.

¹²⁵⁰ Thomas Giegerich (n 1202) 1093.

as well as treaties establishing boundaries. The delegation of Switzerland supported this proposal since it would mean that treaties concerning the joint utilization of rivers forming boundaries, freedom of navigation in rivers or rights of passage could not be terminated under *rebus sic stantibus*.¹²⁵¹ The delegation of the United States referred to the Antarctic Treaty as an example of a treaty that recognized a status quo or created a regime, a category of treaties that was not excluded under paragraph 2(a), but should be. The Australian delegation agreed with that contention and confirmed that the Antarctic Treaty, which set up a system of scientific co-operation and demilitarization, would not be excluded under paragraph 2(a) as it did not establish boundaries.¹²⁵² Waldock contemplated widening the scope of paragraph 2(a) in accordance with the proposal put forth by the United States but the Commission was adamant on keeping the final wording of the article because it did not want to restrict the general rule of *rebus sic stantibus* too much.¹²⁵³ Thus, the proposal to widen the scope of paragraph 2(a) was rejected.

The ICJ's decision in the *Aegean Sea* case indicates that treaties delimiting the continental shelf should fall within the boundary exclusion of VCLT article 62(2).¹²⁵⁴ However, the Court's *obiter dictum* regarding continental shelf boundaries does not definitively settle whether the provision covers all maritime boundaries and, consequently, the question is still disputed amongst scholars.¹²⁵⁵

The *Aegean Sea* case dealt with the admissibility of a dispute concerning the delimitation of a continental shelf boundary between Greece and Turkey and involved a thorough analysis of the term 'territorial status'. Greece had accepted compulsory jurisdiction of the PCIJ through a unilateral declaration, submitted in 1929, which excluded 'disputes relating to the territorial status of Greece, including disputes relating to its rights of sovereignty over its ports and lines of communication'.¹²⁵⁶ When subsequently acceding to the 1928 General Act on the Pacific Settlement of

¹²⁵¹ Egon Schwelb (n 1167) 56.

¹²⁵² '64th Meeting of the Committee of the Whole' (n 1166) 372-373.

¹²⁵³ '65th Meeting of the Committee of the Whole' (n 1172) 381.

¹²⁵⁴ *Aegean Sea Continental Shelf* (n 77) para 85.

¹²⁵⁵ Julia Lisztwan (n 247) 186.

¹²⁵⁶ *Aegean Sea Continental Shelf* (n 77) para 57.

International Disputes in 1931,¹²⁵⁷ Greece invoked article 39(2)(b), excluding '[d]isputes concerning questions which by international law are solely within the domestic jurisdiction of States'. The ICJ found that the earlier reservation had to be read into article 39(2)(b) and, consequently, both categories were excluded from compulsory jurisdiction, i.e., disputes under the domestic jurisdiction of either State and disputes relating to territorial status.¹²⁵⁸

Turkey invoked Greece's reservation concerning disputes relating to territorial status and, thus, maintained that the case fell outside the ICJ's jurisdiction. Greece asserted that references to 'territorial status', 'territorial situation' and 'territorial integrity' from the 1920s were 'to be given a restrictive interpretation limited to the maintenance of the *status quo* established by treaties, normally as the result of post-war settlement'.¹²⁵⁹ The Court rejected this narrow approach and noted that reservations of disputes relating to territorial status should be interpreted broadly.¹²⁶⁰ It found that the historical evidence presented by Greece confirmed 'that the expression "territorial status" was used in its ordinary, generic sense of any matters properly to be considered as relating to the integrity and legal régime of a State's territory'.¹²⁶¹ Furthermore, the generic nature of the term 'territorial status' led the Court to apply an evolutive interpretation, finding that the term covered the continental shelf, even though the concept was unknown to the Parties at the time of the conclusion of the 1928 General Act.¹²⁶²

The ICJ reached the conclusion that the dispute concerning the delimitation of the continental shelf between Turkey and Greece was excluded from mandatory jurisdiction under the Greek reservation.¹²⁶³ However, this was not due to the continental shelf being classified as territory or having 'territorial status'. In the words of the Court, '[t]he question is not, as Greece seems to assume, whether continental

¹²⁵⁷ General Act (Pacific Settlement of International Disputes (adopted on 26 September 1928, entered into force 16 August 1929) 93 League of Nations Treaty Series 343.

¹²⁵⁸ *Aegean Sea Continental Shelf* (n 77) para 68.

¹²⁵⁹ *Ibid* para 72.

¹²⁶⁰ *Ibid* para 73.

¹²⁶¹ *Ibid* para 74.

¹²⁶² *Ibid* para 77.

¹²⁶³ *Ibid* para 90.

shelf rights are territorial rights or are comprised within the expression “territorial status”. The real question for decision is, whether the dispute is one which relates to the territorial status of Greece.’¹²⁶⁴ This differs from the test applicable to VCLT article 62(2)(a) as it only excludes treaties that, in fact, establish (territorial) boundaries, and not those *relating* to such boundaries or otherwise creating ‘territorial status’. The standard to be applied to treaties establishing boundaries under VCLT article 62(2)(a) must be stricter because ‘territorial status’ has a broader connotation than ‘territory’ or ‘boundary’, within the meaning of VCLT article 62(2)(a). This is supported by the drafting history discussed above, and the fact that the proposal to broaden the scope of the provision by referring to ‘territorial status’ was rejected.¹²⁶⁵

Furthermore, the fact that continental shelf delimitation *relates* to territorial status¹²⁶⁶ does not justify an equation between a continental shelf boundary and a territorial boundary. The Court concluded, in the *Aegean Sea* case, that the delimitation of the continental shelf was not ‘entirely extraneous to the notion of territorial status’¹²⁶⁷ and, therefore, it was encompassed by the reservation of disputes relating to ‘territorial status’.¹²⁶⁸ Maritime boundaries are certainly not ‘entirely extraneous’ to treaties establishing territorial boundaries but that is not the standard to be applied when determining the scope of VCLT article 62(2)(a).

It was in this context and in support of its decision to categorise continental shelf delimitation as a ‘dispute relating to territorial status’ that the ICJ made the following statement: ‘Whether it is a land frontier or a boundary line in the continental shelf that is in question, the process is essentially the same, and inevitably involves the same element of stability and permanence, and is subject to the rule excluding boundary agreements from fundamental change of circumstances.’¹²⁶⁹ This *obiter dictum* cannot suffice to conclude that VCLT article 62(2)(a) covers all maritime boundary treaties because the Court presented no analysis of the provision or the boundary concept and made no reference to other types of maritime boundaries. Moreover, the Court’s finding was premised on the preceding conclusion that ‘disputes relating to territorial status’ encompass delimitation of the continental shelf and on the alleged need for permanence and stability for continental shelf boundaries. However, as previously explained, VCLT article 62(2)(a) cannot be

¹²⁶⁴ *Ibid* para 81. See also para 86.

¹²⁶⁵ See section 4.3.5.1.

¹²⁶⁶ *Aegean Sea Continental Shelf* (n 77) paras 83-84.

¹²⁶⁷ *Ibid* para 84.

¹²⁶⁸ *Ibid* para 86.

¹²⁶⁹ *Ibid* para 85.

interpreted so broadly as to cover all treaties relating to boundaries delimiting territorial status. At any rate, the desire for stable continental shelf boundaries has been addressed through UNCLOS articles 76(8) and (9), which, arguably, makes the categorical exclusion of continental shelf boundaries under VCLT article 62(2)(a) superfluous.

4.3.5.2. The Sanctity of Boundaries

Having analysed VCLT article 62(2)(a) with an emphasis on the boundary concept, it is now appropriate to examine the rationale behind the exclusion of boundary treaties and determine whether it applies to non-territorial boundaries, as well as territorial boundaries. After all, the provision must be interpreted in accordance with the ordinary meaning of relevant terms and in light of the treaty's object and purpose.¹²⁷⁰ The object and purpose behind VCLT article 62(2)(a) was to safeguard the stability of boundaries, promote peace and security in the international spectrum¹²⁷¹ and avoid friction in international relations.¹²⁷² This reasoning could be applied to a variety of boundary treaties and it does not suffice to determine what 'boundaries' really are. A further step is necessary to conclude which boundaries must be safeguarded.

Treaties establishing land boundaries are binding *erga omnes* and this objective character is rooted in the principle of territorial integrity. '[A] State is by its very existence competent to consolidate its territory within the limits established by public international law.'¹²⁷³ States are bound to respect the competence of other States to demarcate their own sovereign territory, and consequently, the territorial boundaries they establish.¹²⁷⁴ According to this, the sanctity of boundaries may be traced back to title to territory and the principle of territorial integrity, which clearly safeguards only territorial boundaries. This highlights an important difference between land and maritime boundaries relating to the object and purpose of the boundary exclusion of VCLT article 62(2)(a): Land boundaries are rooted in title to territory, title which is assumed to be infinite and binding *erga omnes*. This title may be lost when land

¹²⁷⁰ VCLT article 31(1).

¹²⁷¹ '64th Meeting of the Committee of the Whole' (n 1166) 371.

¹²⁷² 'First and second sessions' (n 1080) 79.

¹²⁷³ Alexander Proelß, 'Article 34. General rule regarding third States' in Oliver Dörr and Kirsten Schmalenbach (n 557) 605, 630-631.

¹²⁷⁴ *Ibid.*

territory is submerged but title over land cannot be transferred from one State to another through application of law. Conversely, title to maritime zones extends from, and fluctuates with, coastal geography and fluctuations can generate new rights for third States, i.e., when areas become subject to the regimes of the high seas and the international seabed area due to coastline recession. Such changes can affect the validity of maritime boundaries and their opposability to third States.

Boundary treaties are generally said to constitute an exception to the *pacta tertiis* rule, i.e., they create obligations *erga omnes*.¹²⁷⁵ The *erga omnes* validity of boundaries is based on the absence of competence for third States to regulate the issue.¹²⁷⁶ However, this reasoning does not apply equally to maritime boundaries as it does to land boundaries because fundamental changes to coastal geography can generate new maritime entitlements and third States may challenge agreed maritime boundaries that infringe their lawful entitlements. In other words, bilateral maritime boundaries are not opposable to third States, the same way as land boundaries.¹²⁷⁷ The sanctity of boundaries is, arguably, linked to this *erga omnes* effect and the lack of competence for third States in relation to sovereign territory. This does not apply to maritime boundaries if they can be challenged by third States, which suggests that maritime boundaries should not enjoy the sanctity of land boundaries.

However, the inviolability of boundaries is also rooted in the principle of territorial integrity, which applies not only to territorial land boundaries but also to boundaries delimiting territorial sovereignty at sea, i.e., the territorial sea and internal/or archipelagic waters. Therefore, the sanctity of boundaries may extend to maritime boundaries delimiting territorial sovereignty, as well as territorial boundaries on land.

VCLT article 62 was intended to strike a balance between stability or sanctity of treaties and ‘principles of equity and justice calling for the adaptation of treaties to a profoundly changing environment.’¹²⁷⁸ The stability of treaties is extremely important

¹²⁷⁵ Alan E Boyle and Christine Chinkin, *The Making of International Law* (Oxford University Press 2007) 239.

¹²⁷⁶ Alexander Proelß (n 1273) 631.

¹²⁷⁷ See, e.g., Nuno Sérgio Marques Antunes, ‘The Pending Maritime Delimitation in the Cameroon v Nigeria Case: A Piece in the Jigsaw Puzzle of the Gulf of Guinea’ (2000) 15 (2) *The International Journal of Marine and Coastal Law* 163, 174.

¹²⁷⁸ Thomas Giegerich (n 1202) 1068-9.

for international peace and security.¹²⁷⁹ This applies to all treaties, whether they establish boundaries or not, and the object and purpose of boundary treaties is generally ‘to create a stable legal position’.¹²⁸⁰ This may apply equally to treaties establishing territorial and non-territorial boundaries, indeed, ‘when two countries establish a frontier between them, one of the primary objects is to achieve stability and finality’.¹²⁸¹ However, the object and purpose of VCLT article 62(2)(a) is not to safeguard the stability of all international treaties or all treaties that establish some sort of boundaries; rather, it is to safeguard the stability of boundaries delimiting territorial sovereignty. Therefore, an objective interpretation of VCLT article 62(2)(a) leads to the conclusion that treaties establishing non-territorial boundaries can be subject to termination by virtue of fundamentally changed circumstances.

4.3.5.3. Territorial vs Non-Territorial Boundaries

It can be concluded from the foregoing analysis of relevant *travaux préparatoires* that the ordinary meaning of the term ‘boundary’, in the context of the boundary exclusion, refers only to territorial boundaries and that the object and purpose of this exclusion was to ensure the stability of territorial boundaries. This section seeks to explain how territorial boundaries can be distinguished from non-territorial boundaries.

Brownlie asserts that courts connote the term territory to the exercise of territorial jurisdiction¹²⁸² and ‘State territory is that defined portion of the surface of the globe which is subjected to the sovereignty of a state.’¹²⁸³ States have the right to exercise the functions of a State, within their sovereign territory, and to do so ‘to the exclusion of any other State.’¹²⁸⁴ This exclusive jurisdiction to exercise State functions only exists in regard to land, internal waters, archipelagic waters and the territorial sea, which suggests, that a treaty establishing a boundary, under VCLT article 62, is a treaty

¹²⁷⁹ ‘Draft articles on the law of treaties: text as finally adopted by the Commission on 18 July 1966 (reproduced at para 38 of document A/6309/Rev.1)’ (n 1072) 260, para 13.

¹²⁸⁰ Thomas Giegerich (n 1202) 1090.

¹²⁸¹ *Temple of Preah Vihear (Cambodia v Thailand)* (Merits) [1962] ICJ Rep 6, 34.

¹²⁸² Ian Brownlie, *Principles of Public International Law* (Clarendon Press 1998) 113.

¹²⁸³ ‘Territory’ in John P Grant and J Craig Barker (eds) *Encyclopaedic Dictionary of International Law*, 3rd ed (Oxford University Press 2009) available at:

<http://www.oxfordreference.com/view/10.1093/acref/9780195389777.001.0001/acref-9780195389777-e-2256?rskey=6S7iTH&result=9> accessed 20 September 2017.

¹²⁸⁴ *Island of Palmas case (Netherlands/USA)* (1928) II RIAA 829, 838.

establishing a land or territorial sea boundary. This interpretation corresponds with the most recent international law definition published by Oxford University Press, which defines a boundary as:

[a]n imaginary line that determines the territorial limits of a state. Such boundaries define the limitation of each state's effective jurisdiction. They are three-dimensional in nature in that they include the airspace and subsoil of the state, the terra firma within the boundary, and the maritime domain of the state's internal waters and territorial sea.¹²⁸⁵

Territorial boundaries are distinct from all other boundaries insofar as they define a State's territory and delimit full sovereignty. This category only includes boundaries delimiting land territory, internal and archipelagic waters and/or territorial waters, whereas the category of non-territorial boundaries comprises all other lines that can be referred to as boundaries.

Boundaries to the territorial sea delimit territorial rights and full sovereignty over the sea-bed and the superjacent waters and air column.¹²⁸⁶ However, other maritime boundaries must be categorised as non-territorial boundaries since they do not demarcate a State's territory and only delimit sovereign rights for specific purposes – limited functional powers as opposed to full sovereignty. The ICJ has confirmed this distinction, noting that agreements on 'State borders' cannot easily be understood as referring to 'areas beyond territory, including territorial seas'.¹²⁸⁷ Thus, the Court concluded, in the *Black Sea* case, that an agreement delimiting the State borders of Romania and Ukraine, established a territorial boundary and not a boundary to the exclusive economic zone or continental shelf.¹²⁸⁸

Not all boundary treaties can be neatly categorised as establishing either territorial or non-territorial boundaries. Treaties can delimit territorial boundaries, as well as non-territorial boundaries, and boundary treaties can entail provisions unrelated to the construction of boundaries. It may be possible to separate treaty provisions and

¹²⁸⁵ 'Boundary' in Jonathan Law (ed) *A Dictionary of Law*, 8th ed, (Oxford University Press 2015) available at: <http://www.oxfordreference.com/view/10.1093/acref/9780199664924.001.0001/acref-9780199664924-e-414?rskey=t6kvk8&result=2> accessed 20 September 2017.

¹²⁸⁶ *Qatar v Bahrain* (n 133) paras 173-174.

¹²⁸⁷ *Romania v Ukraine* (n 284) para. 64.

¹²⁸⁸ *Ibid* para. 76.

terminate only those that are affected by the fundamental change and not establishing territorial boundaries under VCLT article 44(2) and (3). However, the principle of separability does not allow for termination of isolated provisions if the establishment of a territorial boundary forms an integral part of the treaty.¹²⁸⁹ Thus, treaties that establish land or territorial sea boundaries will often be excluded from termination under VCLT article 62(2)(a) in their entirety, even if they govern other issues as well, such as environmental protection or exploitation of resources.

It may be unclear, in some cases, whether boundaries are of a territorial nature or not. For example, single purpose maritime boundaries may be difficult to categorise as they delimit the territorial sea, exclusive economic zone and continental shelf with a single line, i.e., a territorial and non-territorial boundary. Where such boundaries lie entirely beyond 12 nm from baselines they do not separate overlapping territorial waters and should, consequently, be classified as non-territorial boundaries. However, single purpose boundaries between adjacent States and States with coastlines that are less than 24 nm apart in some areas, will partially delimit the territorial sea and, therefore, assumedly qualify as territorial boundaries.

Likewise, boundaries to joint development zones or protected areas may be difficult to define as they define the outer limits of a State's territory in some sense but do not separate the territory of one State from that of another or establish boundaries around areas that are subject to full sovereignty.¹²⁹⁰ The classification of boundaries surrounding special regimes and joint development zones may depend on whether they are seen as constituting the frontier to a State's territory even though some form of (non-exclusive) territorial jurisdiction extends into the delimited area.

4.3.6. Not a Change Resulting from a Breach of the Party Invoking It

VCLT article 62(2)(b) provides that a fundamental change of circumstance cannot be invoked as grounds for terminating a treaty if it 'is the result of a breach by the party

¹²⁸⁹ Thomas Giegerich (n 1202) 1093.

¹²⁹⁰ An example of an agreement that delimits a boundary around territory which is not subject to exclusive sovereignty is the Agreement between the Kingdom of Saudi Arabia and the State of Kuwait on the Partition of the Neutral Zone (adopted 7 July 1965, entered into force 25 July 1966) 4 ILM 1134.

invoking it either of an obligation under the treaty or of any other international obligation owed to any other party to the treaty'. This requirement is quite clear and, therefore, easily interpreted; States cannot be freed from contractual obligations by violating any international obligations owed to other parties to the treaty. This does not have to be a material breach, as referred to in VCLT article 60(3).¹²⁹¹

Earlier versions of the provision used different terminology and were more explicit than VCLT article 62(2)(b). For example, under the draft article from 1957, a fundamental change could not be used to justify termination of a treaty when the change was 'caused, brought about, or directly or proximately contributed to, by the act or omission of the party invoking it.'¹²⁹² Similarly, the draft article from 1963 provided that the fundamental change could not have been 'caused, or substantially contributed to, by the acts or omissions of the party invoking it.'¹²⁹³ No conscious decision was made to limit the scope of this provision so even though VCLT article 62(2)(b) is less detailed than earlier draft versions, it can be understood as covering both acts and omissions, as well as a substantial contribution to a breach that leads to a fundamental change. However, the breach must be attributable to the party invoking the breach, under article 2 of the ILC articles on State Responsibility for Internationally Wrongful Acts.¹²⁹⁴

Environmental changes, such as sea level rise, coastal erosion, volcanic and seismic activity, are generally not considered to be consequences of the conduct of individual States. The emergence of the Anthropocene and accelerated climate-change have been attributed to greenhouse gas emissions and human impact on the Earth and, in that regard, some States have certainly been larger contributors than others. However, fundamental changes to the natural environment can generally not be directly attributed to single States or traced back to violations of public international law. Therefore, such changes should not be excluded as fundamental changes justifying

¹²⁹¹ Thomas Giegerich (n 1202) 1094.

¹²⁹² 'Second Report on the Law of Treaties, by Mr GG Fitzmaurice, Special Rapporteur' (n 1043) 32-33.

¹²⁹³ *Ibid* 33.

¹²⁹⁴ Thomas Giegerich (n 1202) 1094.

termination under VCLT article 62, on the grounds that they are attributable to a contracting State as per VCLT article 62(2)(b).

4.3.7. Termination, Suspension or Withdrawal from a Treaty

VCLT article 62 does not provide for the right of unilateral denunciation of a treaty even if all requirements put forth in the article are met. Rather, it gives a State the right to invoke the *rebus sic stantibus* principle before a court or a tribunal, requiring the relevant, independent organ to determine whether the conditions allow for termination or withdrawal from the treaty.¹²⁹⁵ However, pending such a decision, a State invoking VCLT article 62 may suspend the operation of the treaty, as per VCLT article 62(3).¹²⁹⁶ The article does not explicitly provide for the modification or revision of a treaty but States are generally free to negotiate such changes and negotiations can be triggered by the threat of termination.¹²⁹⁷

VCLT article 62 is subject to the procedural requirements of article 65.¹²⁹⁸ Consequently, States invoking a fundamental change of circumstances are obliged to notify opposing parties of the invocation, in writing, and such notification shall be signed by the Head of State, Head of Government or Minister for Foreign Affairs.¹²⁹⁹ The State invoking VCLT article 62 shall give other parties at least three months (unless in cases of special urgency) to raise objections to its invocation of the rule and if objections are raised within the set period of time, the parties must seek a solution to their dispute through the means indicated in article 33 of the Charter of the United Nations. Those means are a solution by negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means of their own choice. Furthermore, a treaty cannot be terminated unless the State seeking termination, based on changed circumstances, has first sought

¹²⁹⁵ Herbert W Briggs ‘Unilateral Denunciation of Treaties: The Vienna Convention and the International Court of Justice’ (1974) 68 (1) American Journal of International Law 51, 66.

¹²⁹⁶ ‘Second Report on the Law of Treaties, by Mr GG Fitzmaurice, Special Rapporteur’ (n 1043) 33.

¹²⁹⁷ See Thomas Giegerich (n 1202) 1070.

¹²⁹⁸ ‘Report of the International Law Commission on the work of its eighteenth session’ (n 1196) 187-274. See further discussion in section 4.3.

¹²⁹⁹ VCLT article 76.

consultation and negotiations in good faith;¹³⁰⁰ such consultations should be conducted by providing relevant information in a timely manner with sincere effort to balance the interests of opposing States.¹³⁰¹ Thus, a State may not withdraw from, or terminate a treaty, unless it has sought to engage in good faith negotiations or given the opposing party at least three months to react to the invocation of VCLT article 62.

4.4. Application of VCLT Article 62 in Relation to Treaties Establishing Maritime Boundaries

The present section aims to determine whether, and in what circumstances, VCLT article 62 may be invoked to terminate, suspend or withdraw from treaties establishing maritime boundaries. It also gives a brief overview of alternative options for revising territorial boundaries that are excluded from termination under VCLT article 62(2)(a).

4.4.1. Treaties Establishing Non-Territorial Maritime Boundaries

The ILC presented no firm conclusions relating to the scope of the boundary concept when discussing it in 1982; it somewhat avoided the subject by stating that it was ‘not equipped to interpret either the Vienna Convention or the Convention on the Law of the Sea’.¹³⁰² Yet, a distinction was clearly drawn between territorial and non-territorial boundaries because the Commission noted that ‘[t]he term “boundary” customarily denotes the limit of the land territory of a State’¹³⁰³ and that ‘[s]ince an international organization has no territory, it has no “boundaries” in the traditional meaning of the word and cannot therefore “establish a boundary” for itself’.¹³⁰⁴

In the words of the ILC:

The term “boundary” customarily denotes the limit of the land territory of a State, but it could conceivably be taken more broadly to designate the various lines which fix the spatial limits of the exercise of different powers. Customs

¹³⁰⁰ Mark E Villiger ‘Article 62: Fundamental Change of Circumstances’ in *Commentary on the 1969 Vienna Convention on the Law of Treaties* (Martinus Nijhoff 2009) 767.

¹³⁰¹ See *Chagos Marine Protected Area* (n 248) para 528.

¹³⁰² ‘Report of the Commission to the General Assembly on the work of the thirty-fourth session’ (n 1240) 61.

¹³⁰³ *Ibid* 60-61.

¹³⁰⁴ *Ibid* 61.

lines, the limits of the territorial sea, continental shelf and exclusive economic zone and also certain armistice lines could be considered as boundaries in this sense. But it is important to be quite clear about the effects attaching to the classification of a particular line as a “boundary”; some of the lines may be “boundaries” for one purpose (opposability to other States, for example) and not for others (totality of jurisdiction). In regard to article 62, the effect of the quality of “boundary” is a stabilizing one. To say that a line is a “boundary” within the meaning of article 62 means that it escapes the disabling effects of that article.¹³⁰⁵

The ILC noted that ‘the outer limit of the territorial sea is a true limit of the territory of the State, which is not the case with other lines.’¹³⁰⁶ Furthermore, it asserted that even if a line delimiting maritime entitlements might constitute a boundary in a general sense it might not fall under the scope of VCLT Article 62(2)(a): ‘Lines of maritime delimitation (not to mention the delimitation of air space) may in fact have special features and it is possible that the stabilizing effect of article 62 does not extend to certain lines of maritime delimitation, even if, to all intents and purposes, they constitute true boundaries.’¹³⁰⁷ This demonstrates that, although fundamental changes cannot be invoked to terminate territorial boundaries requiring stability, the opposite might be true of boundaries delimiting the exclusive economic zone or continental shelf, i.e., non-territorial maritime boundaries.¹³⁰⁸

The foregoing analysis suggests that VCLT article 62(2)(a) applies to boundaries delimiting territorial sovereignty and that the need for stable boundaries relates to sovereignty and territorial integrity. Therefore, it may be argued that a fundamental change of circumstances can be invoked as grounds for terminating treaties establishing non-territorial maritime boundaries.

Maritime boundaries are sometimes referred to as ‘boundaries’ in maritime boundary agreements.¹³⁰⁹ However, as discussed in the *Aegean Sea Continental Shelf* case,

¹³⁰⁵ ‘Report of the Commission to the General Assembly on the work of the thirty-fourth session’ (n 1240) 60-61.

¹³⁰⁶ *Ibid*, here a reference was made, in a footnote, to continental shelf limits.

¹³⁰⁷ ‘Report of the Commission to the General Assembly on the work of the thirty-fourth session’ (n 1240) 61.

¹³⁰⁸ Thomas Giegerich (n 1202) 1093.

¹³⁰⁹ See, e.g., Agreement between Poland and Sweden concerning the delimitation of the continental shelf and fishing zones (adopted 10 February 1989, entered into force 30 June 1989) 1590 UNTS 361, article 1; Agreement between France and Belgium relating to the delimitation of the territorial sea (adopted 8 October 1990, entered into force 7 April 1993) 1728 UNTS 273, article 1.

different expressions may be used to refer to the same legal concept.¹³¹⁰ Likewise, a treaty that clearly deals with the delimitation of a non-territorial maritime boundary remains a maritime boundary treaty even if it refers to the delimitation line as a ‘boundary’. The terminology alone cannot turn a non-territorial boundary into a territorial boundary and make it subject to VCLT article 62(2)(a).

State practice demonstrates that continental shelf boundaries may be referred to as ‘boundaries’ while boundaries to other maritime zones are, in the same treaty, referred to as ‘maritime boundaries’.¹³¹¹ This, in combination with the Court’s decision in the *Aegean Sea Continental Shelf* case, suggests that there may be a distinction between continental shelf boundaries and other maritime boundaries; that continental shelf boundaries are in some sense true boundaries while other maritime boundaries are not. However, State practice is not conclusive in this regard. Lines delimiting fishery zones have also been referred to as ‘boundaries’ in bilateral agreements¹³¹² but few would argue that such boundaries delimit State territory. When determining whether a specific type of boundary treaty is excluded from termination under VCLT article 62(2)(a) the nature of the boundary is more relevant than the terminology employed; what matters is whether it delimits State territory or not. After all, maritime boundaries may be ‘true boundaries’ without qualifying as ‘boundaries’ in the context of VCLT article 62(2)(a).¹³¹³

The exclusive economic zone and continental shelf differ from the territorial sea in that they are ‘zones of partial jurisdiction’, limited to functional powers over clearly defined resources; they do not reflect the established territorial concepts of full

¹³¹⁰ *Aegean Sea Continental Shelf* (n 77) para 72.

¹³¹¹ See, e.g., Agreement between the Government of the Republic of Turkey and the Government of the Union of Soviet Socialist Republics concerning the Delimitation of the Continental Shelf (adopted 23 June 1978, entered into force 15 May 1981) 1247 UNTS 141; Annex 17, Vol 2, article 1.

¹³¹² See, e.g., Agreement between Norway and Denmark concerning the delimitation of the continental shelf in the area between Jan Meyen and Greenland and concerning the boundary between the fishery zones in the area (adopted 18 December 1995, entered into force 18 December 1995) 1903 UNTS 171, article 3.

¹³¹³ ‘Report of the Commission to the General Assembly on the work of the thirty-fourth session’ (n 1240) 60-61. See also Thomas Giegerich (n 1202) 1093.

sovereignty typical for *terra firma*¹³¹⁴ and may, therefore, be categorised as non-territorial boundaries.

One can distinguish between several different types of maritime boundary treaties and only those establishing territorial maritime boundaries fall unequivocally within VCLT Article 62(2)(a). However, as explained in section 4.3.5.3., the nature of boundary treaties is sometimes difficult to define. For example, maritime boundaries can entail specific provisions establishing territorial status and where these provisions can be separated from the boundary, they may be terminated despite being part of a boundary treaty.¹³¹⁵ Moreover, treaties delimiting maritime entitlements can establish territorial status without constructing boundaries,¹³¹⁶ for example by setting quotas to defined fish stocks, and such treaties are not excluded from termination under VCLT article 62. Maritime boundary agreements can also establish provisional arrangements or special regimes, such as joint development zones and marine protected areas. Such boundaries should be categorised with treaties establishing boundaries to the exclusive economic zone and continental shelf, insofar as they do not establish frontiers to a State's territory.

Another example of maritime boundaries that should not be hastily classified as either permanent or subject to termination are those delimiting the continental shelf. There should be no ambiguities relating to the non-territorial nature of continental shelf boundaries. However, the outer limits of the continental shelf may be permanently described¹³¹⁷ and treaties establishing continental shelf limits are sometimes used as a basis for final and binding continental shelf delineation.¹³¹⁸ Therefore, the outer limits of the continental shelf may remain permanent and opposable to other States, even if a treaty, establishing the corresponding boundary is terminated.

The ICJ noted, in the *Temple of Preah Vihear* case, that 'when two countries establish a frontier between them, one of the primary objects is to achieve stability and

¹³¹⁴ Thomas Cottier (n 642) 67.

¹³¹⁵ Athanassios Vamvoukos (n 1052) 205.

¹³¹⁶ Cissé Yacouba and Donald McRae (n 1032) 3293.

¹³¹⁷ UNCLOS article 76(9).

¹³¹⁸ Mexico used the Gulf of Mexico boundary between Mexico and the US for its submission to the CLCS.

finality'.¹³¹⁹ According to the arbitral tribunal of *Bangladesh v India*, this applies also to maritime boundaries¹³²⁰ but continental shelf boundaries in particular because the exploration and exploitation of the continental shelf calls for 'important investments and the construction of off-shore installations'.¹³²¹ The tribunal further noted that stable continental shelf boundaries were necessary for 'development and investment' and that the very purpose of delimitation was to acquire such stability.¹³²²

However, this economically motivated need for stability in relation to the continental shelf is adequately addressed by UNCLOS articles 76(8) and 76(9) – at least if the latter applies to all continental shelf limits, at and beyond 200 nm from baselines – for even if maritime boundaries are set aside these limits will endure. There is no need to categorically exclude continental shelf boundaries from termination under VCLT article 62 if the outer limits to all continental shelf limits are permanently described. Furthermore, the purpose of maritime boundary agreements cannot affect the objective interpretation of VCLT article 62(2)(a) since it is only the object and purpose of the VCLT that is relevant when interpreting that particular provision in accordance with VCLT article 31.

Having concluded that treaties establishing maritime boundaries beyond the territorial sea are not excluded from termination under VCLT article 62(2)(a), the focus will be shifted to the general requirements of *rebus sic stantibus*. As explained in Chapters I and II, coastal geography is expected to undergo significant changes in coming decades and this can have catastrophic effects on maritime entitlements worldwide. However, such changes cannot justify the invocation of VCLT article 62, or *rebus sic stantibus*, unless they were unforeseen at the conclusion of the treaty subject to termination, unless they affect the essential basis of the treaty and, also, alter the extent of ongoing obligations.¹³²³

First, it is necessary to identify the essential basis of treaties establishing maritime boundaries because a fundamental change, justifying termination of such treaties, must

¹³¹⁹ *Temple of Preah Vihear (Cambodia v Thailand)* (Merits) [1962] ICJ Rep 6, 34.

¹³²⁰ *Bangladesh v India* (n 25) para 216.

¹³²¹ *Ibid* para 218.

¹³²² *Ibid*.

¹³²³ VCLT article 62(1).

affect the circumstances that shaped treaty provisions and led to the conclusion of the treaty.¹³²⁴ Lisztwan has noted that maritime boundary treaties generally contain no explicit reference to the essential basis or confirmation of the significance attached to relevant coastlines, making it difficult to prove that a change to coastal geography affects a maritime boundary's essential basis.¹³²⁵ However, it has been made abundantly clear, in previous chapters, that maritime entitlements are generated by land territory¹³²⁶ and that the delimitation of boundaries is based, primarily, on coastal geography.¹³²⁷ Therefore, the location of relevant coastlines must generally have an effect on whether States perceive maritime boundaries to be equitable and, thus, whether they accept to be bound by treaties establishing such boundaries. Furthermore, as explained by Lisztwan, the preambles of maritime boundary agreements often refer to 'equitable principles' and the fundamental obligation, in delimiting exclusive economic zone and continental shelf boundaries, is to achieve an equitable solution.¹³²⁸ Thus, it might be argued that the essential basis of such boundary agreements is that they delimit maritime entitlements in an equitable manner, a fact that may certainly be affected by a fundamental change to coastal geography.

Changes in the extent of territory, availability of natural resources or capacity to harvest fish can all qualify as fundamental changes within VCLT article 62.¹³²⁹ Changes to the extent of territory may certainly affect the essential basis of maritime boundary treaties, where the essential basis is coastal geography as described above. Furthermore, agreed maritime boundaries are sometimes constructed by reference to environmental and economic circumstances, i.e., exploitation of natural resources.¹³³⁰ Therefore, it is conceivable that changes affecting natural resources may also be invoked as grounds for terminating such treaties or separable provisions.¹³³¹ However, changes to coastal geography will more often be of relevance as maritime boundaries are first and foremost delimited on the basis of coastal geography.

¹³²⁴ Mark E Villiger (n 1300) 774.

¹³²⁵ Julia Lisztwan (n 247) 191.

¹³²⁶ See, e.g., *Aegean Sea Continental Shelf* (n 77) para 86.

¹³²⁷ See, e.g., Davor Vidas (n 76) 76.

¹³²⁸ UNCLOS articles 74(1) and 83(1).

¹³²⁹ Thomas Giegerich (n 1202) 1081.

¹³³⁰ *Ibid* 76.

¹³³¹ See Snjólaug Árnadóttir, 'Ecological changes justifying termination or revision of EEZ and EFZ boundaries' (2017) 84 C Marine Policy 287-292.

When discussing the codification of *rebus sic stantibus*, the Canadian Government suggested a modification to paragraph 2(a) specifying that boundary treaties were excluded from termination on the grounds of a fundamental change of circumstances, except where the treaty was based on natural features that were relocated by virtue of natural occurrences. The re-location of a thalweg of a river was mentioned as an example of what could potentially qualify as a fundamental change of circumstance in relation to a land boundary established by reference to said thalweg.¹³³² Waldock acknowledged that a natural occurrence, such as a flood or an earthquake, could cause the relocation of a river channel or other natural feature. However, he rejected the proposal put forth by the Canadian delegation and expressed his view that such changes might not qualify as fundamental changes leading to termination. Instead, Waldock believed that natural occurrences, altering the location of geographical features, might affect the interpretation of treaties based on such features.¹³³³

Lisztwan submits that this demonstrates a conscious decision to exclude termination of boundary agreements on the basis of changes affecting the geographical features they were dependent upon. She further remarks that State representatives must have been aware that such features could undergo changes and that boundary agreements could be formulated and interpreted in such a way that boundaries could fluctuate in accordance with the natural phenomena they were based upon.¹³³⁴ However, it must be assumed that this alternative approach, of changing the interpretation of a treaty instead of affecting its validity, should only apply if and when termination was not available, that is, to otherwise excluded boundary treaties. Nothing in the ILC's discussions suggests that the nature of geographical changes should categorically exclude them. On the contrary, Waldock's comments and the Canadian proposal suggest that even those treaties excluded from termination under VCLT article 62(2)(a) could be altered by fundamental geographical changes, even if only through revised interpretation.

¹³³² See 'Fifth Report on the Law of Treaties by Sir Humphrey Waldock, Special Rapporteur' (n 1009) 39.

¹³³³ Ibid 44.

¹³³⁴ See Julia Lisztwan (n 247) 190.

Any change to coastal geography would have to radically transform ongoing obligations.¹³³⁵ Therefore, only a significant shift in relevant coastlines could justify an invocation of a geographical change as grounds for terminating a non-territorial maritime boundary. The change would have to affect entitlements to extensive maritime areas. Gradual sea level rise may not suffice where it has minor effects on maritime entitlements but natural changes can have drastic effects on coastal geography and the severity and scale of such changes will only increase in coming decades, as we enter the Anthropocene.¹³³⁶ In addition to climate-related changes, such as sea level rise and coastal erosion, coastal geography can go through dramatic changes resulting from volcanic activity, through which islands can disappear almost as quickly as they emerge.¹³³⁷ The disappearance of an island can significantly alter the maritime entitlements of coastal States, but changes to coastal geography can have even worse consequences, threatening the existence of coastal States. These changes can ‘redraw the physical geographical reality of the world, radically altering coastlines, creating new ocean areas, and potentially inundating entire nation states.’¹³³⁸ Hence, there can be no doubt that changes to coastal geography can be fundamental in character and they can radically affect the extent of rights and obligations in surrounding maritime zones.

Fundamental changes cannot be invoked as grounds for terminating treaties establishing non-territorial maritime boundaries if they are foreseen by States at the conclusion of the treaty in question; if they are anticipated by the treaty in any way.¹³³⁹ The most reliable data predicting climate-related changes on the marine environment are the assessment reports of the IPCC,¹³⁴⁰ as discussed in section 3.3.2.2. However, the first such report was published in 1990, after the conclusion of numerous maritime boundary treaties, and the predictions have changed significantly in subsequent reports

¹³³⁵ See VCLT article 62(1)(b).

¹³³⁶ See e.g. Davor Vidas (n 76) 72.

¹³³⁷ Banua Wuhu, in Indonesia, was formed by a submarine volcano in 1919 and disappeared in 1935; a volcanic island appeared halfway between the Terceira and San Miguel islands in 1720 and disappeared in 1722; Falcon Island appeared off the coast of Australia in 1933 and disappeared by 1949; Kolbeinsey, the northernmost point of Iceland, appeared through a volcanic eruption in 1372 and is expected to disappear by 2020. See Julia Lisztwan (n 247) 160.

¹³³⁸ Rosemary Rayfuse (n 120) 2.

¹³³⁹ ‘Second Report on the Law of Treaties, by Mr GG Fitzmaurice, Special Rapporteur’ (n 1043) 33.

¹³⁴⁰ Navraj Singh Ghaleigh (n 882) 61.

with increasingly advanced technology. The IPCC reports are not exhaustive insofar as they cannot predict all consequences of climate-related changes in specific localities or changes that fall outside the scope of the IPCC, such as those related to seismic and volcanic activity. Furthermore, even when the occurrence of certain events is foreseeable, the precise consequences can rarely be foreseen. For example, the risk of extreme weather events may be increasing but no one can predict how hurricanes or floods will affect individual coastal features. At any rate, foreseeable fundamental changes are generally not referred to in treaties establishing maritime boundaries, either through express or implied terms, but this would be required to exclude them on the basis of foreseeability.¹³⁴¹

The above discussion indicates that a fundamental change of coastal geography may be invoked to justify termination, suspension or withdrawal from a treaty establishing non-territorial maritime boundaries. However, VCLT article 62 seems to have limited practical relevance¹³⁴² and the reluctance of courts and tribunals in employing the principle makes the termination of non-territorial boundaries, on these grounds, unlikely.¹³⁴³ However, unless VCLT article 62 has become a dead letter, it can be invoked to incite termination or revision of treaties establishing non-territorial maritime boundaries, i.e., boundaries to the contiguous zone, exclusive economic zone, exclusive fisheries zone, continental shelf and single maritime boundaries beyond the territorial sea.

Finally, it should be mentioned that treaties establishing maritime boundaries commonly contain provisions governing the settlement of disputes, whereas treaties establishing land boundaries generally do not. According to Anderson, '[i]t would require some unusual reason [. . .] to prompt the negotiators to include in the terms of a boundary treaty a provision for its denunciation or termination.'¹³⁴⁴ However, such provisions exist in maritime boundary treaties and, as noted by Yacouba and McRae,

¹³⁴¹ 'Second Report on the Law of Treaties, by Mr GG Fitzmaurice, Special Rapporteur' (n 1043) 33.

¹³⁴² See Thomas Giegerich (n 1202) 1070.

¹³⁴³ Julia Lisztwan (n 247) 184.

¹³⁴⁴ See David Anderson, 'Negotiating Maritime Boundary Agreements: A Personal View' in Rainer Lagoni and Daniel Vignes (eds) *Maritime Delimitation* (Martinus Nijhoff 2006) 129, 132-33.

they would be unnecessary if the treaties were meant to remain permanent regardless of subsequent developments.¹³⁴⁵

4.4.2. Treaties Establishing Territorial Maritime Boundaries

A fundamental change of circumstances can never justify termination, suspension or withdrawal from a territorial boundary treaty under VCLT article 62 or the customary rule, *rebus sic stantibus*. Therefore, treaties establishing boundaries on land, or territorial waters, are not subject to change on these grounds. Yet, this does not necessarily mean that all territorial maritime boundaries are fixed in place to the end of time. As once noted by Waldock, VCLT article 62(2)(a) does not indicate that boundaries should be immutable; rather that termination of boundary treaties should be achieved through other means than the application of VCLT article 62.¹³⁴⁶ Some of these alternative means are addressed in the following discussion.

Whether agreed upon or by judicial decision, maritime boundaries do not create obligations for third parties. Treaties cannot create obligations for States without their consent¹³⁴⁷ and decisions of the ICJ have ‘no binding force except between the parties and in respect of that particular case.’¹³⁴⁸ The ICJ has noted that ‘in continental shelf delimitations, an agreement between the parties which is perfectly valid and binding on the treaty level may, when the relations between the parties and a third State are taken into consideration, prove to be contrary to the rules of international law governing the continental shelf.’¹³⁴⁹ Thus, maritime boundaries can be contested by third States if their rights are violated¹³⁵⁰ and even if negotiating States take full account of such rights at the time of delimitation, subsequent changes may affect the validity and opposability of settled maritime boundaries.

This corresponds to an earlier discussion in Chapter II about boundaries becoming redundant; when coastal geography changes, new entitlements can be generated for

¹³⁴⁵ Cissé Yacouba and Donald McRae (n 1032) 3300.

¹³⁴⁶ ‘65th Meeting of the Committee of the Whole’ (n 1172) 381.

¹³⁴⁷ VCLT article 34.

¹³⁴⁸ Article 59 of the ICJ Statute.

¹³⁴⁹ *Burkina Faso/Republic of Mali* (n 425) para 47.

¹³⁵⁰ Cissé Yacouba and Donald McRae (n 1032) 3297.

third States¹³⁵¹ and pre-existing boundary agreements cannot prevent the exercise of those rights. The ICJ confirmed, in the *North Sea Continental Shelf* Cases, that continental shelf boundaries cannot be binding *erga omnes* without a clear legal basis.¹³⁵² Therefore, it can be assumed that a boundary is not binding for a third State if it violates the rights of that State under UNCLOS.

‘It is [...] not uncommon in maritime boundary agreements for the parties to agree that they will negotiate with third parties in the future on potential overlapping jurisdiction.’¹³⁵³ However, it seems that revision of maritime boundaries will be necessary when the rights of third States are violated, regardless of whether relevant treaties expressly refer to such obligations. Disputes concerning newly generated entitlements may be subject to the compulsory dispute settlement of UNCLOS Part XV¹³⁵⁴ even if boundaries have previously been constructed by courts and tribunals because *res judicata* only prevents the revision of boundaries insofar as the same relief is sought on the grounds advanced in previous proceedings between the same parties.¹³⁵⁵ Furthermore, a judicial decision might be revised in light of new facts or subsequent developments¹³⁵⁶ and the opposability of maritime boundaries could be affected by the extinction of a party (submergence of an island State), triggering impossibility of performance.¹³⁵⁷

UNCLOS article 311(3) provides that, although States may generally derogate from UNCLOS provisions in bilateral agreements, such agreements may not affect rights that the Convention attributes to third States or violate basic principles of UNCLOS. A treaty that establishes a maritime boundary and allocates rights to States that do not possess the necessary title may not be an equitable solution for all interested parties and it may well violate the ‘land dominates the sea’ principle. Therefore, a scenario can be envisioned where a maritime boundary treaty goes against UNCLOS article

¹³⁵¹ See section 2.4.

¹³⁵² See *North Sea Continental Shelf* (n 99) paras 35-36.

¹³⁵³ Cissé Yacouba and Donald McRae (n 1032) 3298.

¹³⁵⁴ Unless they are excluded under UNCLOS article 298(1)(a)(i).

¹³⁵⁵ Andreas Kulick ‘Article 60 ICJ Statute, Interpretation Proceedings, and the Competing Concepts of *Res Judicata*’ (2015) 28 (1) *Leiden Journal of International Law* 73, 74.

¹³⁵⁶ See article 61 of the Statute of the ICJ.

¹³⁵⁷ ‘Second Report on the Law of Treaties, by Sir Humphrey Waldock, Special Rapporteur’ (n 1052) 78

311(3) by infringing upon the rights of third States and violating two basic principles of UNCLOS. According to Marston, such a boundary might be seen as a nullity.¹³⁵⁸

Furthermore, Morocco declared, upon accession to the VCLT, that VCLT article 62(2)(a) would not apply to unlawful or inequitable treaties.¹³⁵⁹ It cannot be assumed that the Moroccan interpretative declaration has any effect on the general application of VCLT article 62 in relation to treaties establishing maritime boundaries. However, it highlights the importance of equity in international law. Article 19 of UNCLOS Annex III strikes a similar cord, obligating States to renegotiate and revise contracts concerning exploitation of the international seabed area, the seabed and subsoil beyond the continental shelf, once circumstances have changed, making the treaties inequitable. This provision has no direct implications for maritime boundaries, but it reaffirms that a change of circumstances can make previously equitable agreements inequitable, and that such effects should be remedied.

A fundamental change of circumstances can incite a revised interpretation of a treaty establishing a boundary, even where termination under VCLT article 62 is excluded. This was particularly envisioned, by Special Rapporteur Waldock, in relation to treaties establishing territorial boundaries by reference to natural phenomena; phenomena that might change due to environmental occurrences.¹³⁶⁰ The geographical location of a river can form an essential basis of a treaty and the fluctuation of a river channel can drastically change the rights and obligations of States as they lose or gain acres of land.¹³⁶¹ Consequently, the alteration of a river's location can amount to a fundamental change of circumstances, although the territorial nature of the boundary would always prevent application of VCLT article 62. The same scenario would exist where a boundary delimiting the territorial sea is constructed by reference to ambulatory coastlines: fluctuations of the natural phenomena could qualify as fundamental changes, but the territorial boundary would fall within the exclusion of VCLT article 62(2)(a). However, such changes might affect the interpretation of

¹³⁵⁸ Geoffrey Marston (n 167)156.

¹³⁵⁹ VCLT (with annex) 500.

¹³⁶⁰ 'Fifth Report on the Law of Treaties by Sir Humphrey Waldock, Special Rapporteur' (n 1009) 44.

¹³⁶¹ See 'Fifth Report on the Law of Treaties by Sir Humphrey Waldock, Special Rapporteur' (n 1009) 39.

treaties establishing territorial maritime boundaries, as suggested by Special Rapporteur Waldock.¹³⁶² Chapter III explained how States, courts and tribunals may consciously establish fluctuating boundaries but even if no changes are envisioned at the time of delimitation, subsequent changes can render territorial boundaries ambulatory.

The Rio Grande is a clear example of a natural phenomenon constituting the international boundary between two countries. The United States and Mexico first agreed to delimit their land territory by reference to the thalweg of the river in 1850, when they signed a treaty establishing their boundary. However, the course of the river changed drastically soon after the ratification of the treaty, resulting in land territory that previously belonged to the United States being on Mexico's side of the river and vice versa.¹³⁶³ This resulted in a century long dispute between the two States because they both claimed sovereignty over land territory that was on the opposite side of the border, after the relocation of the river. The United States Supreme Court found in its decision from 12 December 1927 that the boundary between the States was a fixed line following the channel of the Rio Grande but since the river was, in fact, ambulatory the Court said that the channel of the river should be where it was at the time of the conclusion of the 1850 treaty.

This decision of the Court was contradictory since the boundary could clearly not be a fixed line and follow the channel of the ambulatory river at the same time.¹³⁶⁴ Hence, it did not end the feud between the United States and Mexico. However, in 1963 the two countries made a new treaty establishing the boundary between their land territories. Again, the boundary would follow the thalweg of the Rio Grande but this time a concrete river channel was built, with the purpose of preventing floods that could affect the course of the river. The new boundary afforded 366 acres of the disputed land territory to the Mexican side and 193 acres to the United States, which shows that both States agreed that the boundary had indeed moved with the thalweg of the river. Their new agreement confirmed that the boundary would be determined

¹³⁶² *Ibid* 44.

¹³⁶³ J J Bowden (n 861) 225.

¹³⁶⁴ *Ibid* 236-237.

by the location of the river, but to prevent further fluctuations the river was stabilized.¹³⁶⁵ Yet, in 1970, these two States had to enter into another agreement to further modify the international boundary because part of their territory had, again, ended up on the ‘wrong’ side of the Rio Grande. This time, the position of the river was modified, and the boundary remained in place.¹³⁶⁶ This example clearly demonstrates that boundaries may fluctuate when affected by natural occurrences, rendering earlier treaties inapplicable, thus calling for new boundary treaties or amendments to existing ones.

Members of the ILC seem to have been aware of the effect VCLT article 62 might have on boundaries based on natural phenomena when discussing draft article 11 of the Vienna Convention on Succession of States in respect of Treaties in 1972. The article, as adopted in 1978, provides that boundaries established by treaties will not be affected by State succession but Kearney, chairman of the 1194th meeting of the Commission, supported the notion to refer to boundary settlements rather than to boundaries. Explaining his position, Kearney explicitly referred to the boundary between the United States and Mexico in the Rio Grande and said that it was an uncertain boundary because of changes in the river’s location. He indicated that safeguarding the boundary itself might not provide the coveted stability of international boundaries but the Special Rapporteur and other members of the ILC did not respond to his proposal, which was ultimately rejected.¹³⁶⁷ Indeed, the Rio Grande dispute, and the analysis of this chapter, demonstrate that treaties establishing territorial boundaries will generally remain opposable following a fundamental change of circumstances. However, this does not guarantee stability.

4.5. Conclusion

International courts and tribunals have not given an unequivocal answer to whether or not the term ‘boundary’ encompasses maritime boundaries, although the ICJ stated, in

¹³⁶⁵ See Convention Between the United States of America and Mexico, With Exchange of Notes (adopted 29 August 1963, entered into force 14 January 1964) (1963) 2 (5) ILM 874.

¹³⁶⁶ Treaty to resolve pending boundary differences and maintain the Rio Grande and Colorado River as the international boundary between the United Mexican States and the United States of America (adopted 23 November 1970, entered into force 18 April 1972) 11873 UNTS 56.

¹³⁶⁷ Yearbook of the ILC 1972, vol I, ‘Summary records of the twenty-fourth session’ (2 May-7 July 1972) UN Doc A/CN.4/SER.A/1972, 259.

the *Aegean Sea* case, that continental shelf boundaries fall within the scope of VCLT article 62(2)(a). The Court's *obiter dictum* may have been premised on the fact that continental shelf limits are afforded stability under international law, stability that is almost tantamount to that of territorial boundaries because they can be permanently described, as explained in Chapter II. The question whether the term 'boundary' in VCLT article 62(2)(a) encompasses maritime boundaries has been disputed by scholars¹³⁶⁸ but even those who argue that maritime boundaries are generally exempt from the application of *rebus sic stantibus* are unsure when it comes to the complete submergence of islands.¹³⁶⁹ In fact, the *travaux préparatoires* of VCLT and the Law of Treaties Between States and International Organizations or Between International Organizations suggest that VCLT article 62(2)(a) only excludes boundaries delimiting the territory of a State¹³⁷⁰ and that a change in the natural phenomena that territorial boundaries are based upon, can alter the interpretation and application of the treaty.¹³⁷¹ A detailed analysis of the concept of 'State territory' demonstrates that it does not cover maritime zones, except for the territorial sea, archipelagic and internal waters, because States exercise full sovereignty in these areas, as opposed to limited functional powers.

The object and purpose of the boundary exclusion is rooted in the idea that boundaries are inviolable, which stems from the principle of territorial integrity and lack of competence for third States to interfere with territorial boundaries. These reasons for excluding boundaries from termination due to fundamentally changed circumstances do not apply to maritime boundaries, since they may be challenged by third States when title to maritime zones is altered by changed circumstances. The sanctity of boundaries relates to irrefutable title to territory, something that no State enjoys over non-territorial maritime zones. Therefore, the ordinary meaning of the word boundary and the object and purpose behind VCLT article 62(2)(a) both suggest that only territorial boundaries are excluded from the application of *rebus sic stantibus*. This means that a fundamental change to coastal geography may be invoked to justify

¹³⁶⁸ See section 4.3.5.

¹³⁶⁹ Julia Lisztwan (n 247) 187.

¹³⁷⁰ 'Report of the Commission to the General Assembly on the work of the thirty-fourth session' (n 1240) 61.

¹³⁷¹ 'Fifth Report on the Law of Treaties by Sir Humphrey Waldock, Special Rapporteur' (n 1009) 44.

¹³⁷¹ *Ibid* 39.

termination of non-territorial maritime boundaries. Furthermore, although treaties establishing territorial boundaries are excluded from application of VCLT article 62, geographical changes may have an impact on the interpretation of such treaties, as territorial boundaries may shift to reflect changes to river thalwegs, baselines or median lines.

The conditions necessary to invoke a fundamental change of circumstance as grounds for terminating a non-territorial maritime boundary treaty may only be satisfied on very rare occasions. In particular, it may be difficult to show that the obligations still to be performed are radically transformed by a shift in coastal geography. Nonetheless, VCLT article 62 can serve as ‘a lever to induce a spirit of compromise in the other party’¹³⁷² and enable termination as a last result in the most extreme cases.¹³⁷³ After all, the ‘natural remedy (and the one best compatible with the rule of *pacta sunt servanda*) would be a revision of the treaty so as to adapt it to the new circumstances’.¹³⁷⁴

VCLT article 62 was meant to promote peace and stability and prevent friction in international relations. However, if interpreted too broadly, the boundary exclusion may hamper the peaceful settlement of disputes as States will have no legal grounds to seek revision of outdated and inequitable boundaries. As the ILC once noted, ‘the fact that international law recognized no legal means of terminating or modifying the treaty otherwise than through a further agreement between the same parties might impose a serious strain on the relations between the States concerned and the unsatisfied State might ultimately be driven to take action outside the law’.¹³⁷⁵ *Clausula rebus sic stantibus* was ‘indispensable’ to the law of treaties because ‘it would not be in the interest of the international order to maintain in being a treaty which had become anachronistic’.¹³⁷⁶ Indeed, VCLT article 62 should function as ‘an

¹³⁷² See ‘Draft articles on the law of treaties: text as finally adopted by the Commission on 18 July 1966 (reproduced at para 38 of document A/6309/Rev.1)’ (n 1072) 258, para 6.

¹³⁷³ Thomas Giegerich (n 1202) 1070 referring to Georg Dahm; Jost Delbrück and Rüdiger Wolfrum (n 1210) 753.

¹³⁷⁴ Thomas Giegerich (n 1202) 1070.

¹³⁷⁵ ‘Draft articles on the law of treaties: text as finally adopted by the Commission on 18 July 1966 (reproduced at para 38 of document A/6309/Rev.1)’ (n 1072) 258.

¹³⁷⁶ Yearbook of the ILC, 1966, vol, I, Part I ‘Summary records of the second part of the seventeenth session’ (3-28 January 1966) UN Doc A/CN.4/SER.A/1966, 84-85, para 77.

escape clause'¹³⁷⁷ and it should be applied when fundamental changes truly call for revision, suspension, termination or withdrawal from a maritime boundary treaty, e.g., when islands disappear and entitlements are radically altered.

¹³⁷⁷ Thomas Giegerich (n 1202) 1070.

V. CONCLUSION

Coastal geography is changing worldwide and the loss of territory, arguably, constitutes a fundamental change of circumstance. Such changes can radically affect basic assumptions underlying maritime limits and maritime boundaries: maritime entitlements, title to territory and statehood. Thus, in the *spirit of rebus sic stantibus*, the emergence of the Anthropocene and accelerated global warming might justify revision of existing rules. Indeed, it may be necessary to reconsider rules governing statehood, prevention of displacement, international cooperation and the criteria for refugee status. However, it is the conclusion of this thesis that the rules governing maritime limits, maritime boundary delimitation and maritime boundary treaties, require no revision because they can be interpreted so as to take changing circumstances into account while also providing sufficient stability and predictability.

Existing rules provide the option to freeze maritime entitlements, where necessary, through artificial conservation of the natural coastline and they grant conditional stability to straight baselines and outer continental shelf limits. Furthermore, changing circumstances can affect the delimitation process to produce continuously equitable maritime boundaries. Finally, maritime boundaries are permanently fixed, but States may choose to invoke *rebus sic stantibus* to pursue equitable revision or termination of non-territorial boundaries, in the aftermath of catastrophic changes. The only anomalies, under existing rules, are that territorial maritime boundaries may never be terminated on the basis of changed circumstances and that continental shelf limits beyond 200 nm are permanently fixed. However, territorial boundaries can remain equitable as circumstances change if they are delimited with due regard for changing coastal geography and they can always be adjusted with the consent of relevant parties.

Additionally, States may be able to adjust permanently described continental shelf limits to reflect relevant changes if they so choose and third States may challenge unlawful continental shelf limits. At any rate, the discrepancy between the stable continental shelf limits and other fluctuating limits is trivial when considering that entitlement to the outer continental shelf will largely be unaffected by sea levels rise and coastline erosion, i.e., as long as the continental margin remains stable.

5.1. Changing Coastal Geography and Fluctuating Maritime Limits

All baselines are ambulatory under the existing legal framework and so are the outer limits measured from baselines, with the exception of permanently described continental shelf limits. Straight baselines drawn under UNCLOS article 7(2) on highly unstable coastlines enjoy a distinct level of stability, but they too must be adjusted when they depart, to an appreciable extent, from the general configuration of the coastline or the internal waters are no longer closely linked to the land domain. Consequently, the stability provided under UNCLOS article 7(2) is conditional and, therefore, all baselines are ambulatory and subject to ongoing adherence to UNCLOS and so are the outer limits measured from baselines. The outer limits of the continental shelf can be permanently fixed, but only once the requirements of UNCLOS articles 76(8) and 76(9) are satisfied, and they provide no stabilizing effect for baselines. ‘[M]aritime zones under coastal state jurisdiction have no legal existence in the absence of a coastal front’.¹³⁷⁸ Therefore, maritime entitlements disappear when land territory is submerged.

The growing instability of maritime entitlements, caused by climate-related changes, has raised concerns regarding increased international conflicts and waste of resources.¹³⁷⁹ Indeed, challenges to outdated maritime limits may increase as coastal geography changes more drastically and the resources poured into artificial conservation might be better spent on climate change mitigation. Proposals have been put forth to permanently fix all maritime limits in order to minimize the effects of climate change and promote stability in the distribution of maritime entitlements.¹³⁸⁰ However, a new rule, permanently fixing the location of baselines and/or zonal limits, would call for a revision of UNCLOS, an implementing agreement or uniform subsequent practice leading to the development of new customary rules or revised interpretation of existing rules. As an alternative solution, States can maintain their

¹³⁷⁸ Geoffrey Marston (n 167) 154.

¹³⁷⁹ David D Caron Caron (n 79) 12.

¹³⁸⁰ See, e.g., Alfred H A Soons (n 52) 225 and David D Caron Caron (n 79) 14.

most important entitlements through artificial conservation of the coastline, which may be costly but has the benefit of conforming to the applicable international law.

All baselines and zonal limits, except for the outer limits of the continental shelf, are ambulatory. This legal *status quo* is equitable since it does not discriminate landlocked, geographically disadvantaged or developing States when geographical circumstances change. The loss of territory and maritime entitlements for States that bear little responsibility for climate change may seem inequitable, but the application of existing rules is not inequitable because the increased ocean area that lies beyond national jurisdiction will benefit the international community as a whole. Low-lying developing States will certainly need assistance in addressing the threats ahead, but the freezing of maritime limits offers no protection against depletion of oceanic resources and destruction of human habitation or freshwater supply. The willingness to help threatened States by securing their maritime entitlements in a time of need is not a compelling argument for changing the law of the sea because the international community can help in other ways.

The rule of ambulatory baselines and zonal limits allows for predictability in the sense that States know which rule applies and they can gradually adjust to changing coastal geography in small steps. Existing legislation does not prevent artificial conservation of coastlines, which means that coastal States can acquire the stability they find necessary, while remaining free to extend their maritime claims to newly-generated islands and otherwise complying with the existing international law.

5.2. Equitable Delimitation of Fluctuating Maritime Entitlements

Once agreed upon, maritime boundaries enjoy a distinct level of stability because they are safeguarded by the *pacta sunt servanda* principle and *res judicata*, in the case of judicially decided maritime boundaries. This creates a discrepancy between maritime limits and maritime boundaries because maritime limits fluctuate to continuously adhere to the basis for title while boundaries generally do not. Maritime boundaries are always delimited by reference to coastal geography, i.e., the basis for entitlement to maritime zones, and, consequently, there is a clear link between the boundary and

the basis for title at the time of delimitation. However, this link is broken when coastlines shift, and with them all relevant maritime limits, but the boundary remains in place. When such changes occur the permanent boundary essentially safeguards historic rights, which is incompatible with UNCLOS.¹³⁸¹ This is justified by the fact that competent States with overlapping entitlement agree (either directly or through judicial settlement) to a fixed line, and the boundary agreement takes precedence over general rules governing maritime entitlements, where the two are at odds.¹³⁸² However, the link between maritime boundaries and fluctuating entitlements can be strengthened to minimise any risk of discrepancy.

UNCLOS articles 74 and 83 provide that maritime boundaries must represent equitable solutions. Equity enables law to adapt to changed circumstances and respond to new challenges;¹³⁸³ therefore, an equitable solution must be capable of adapting to the challenges of changing coastal geography. Indeed, maritime boundaries can be delimited in a way that reinforces this juridical link between the basis for title and the boundary itself. Such an approach is optimal for achieving solutions that stand the test of time in the sense that subsequent changes to coastal geography do not make them inconsistent with international rules governing maritime entitlements. Selection of base points and adjustment of provisional boundary lines should take account of coastal instability and imminent coastal changes to strengthen the link between coastal geography and maritime boundaries. The juridical link between coastal geography and a maritime boundary can also be firmly established with the angle-bisector method as it can continuously reflect the general direction of the coast, notwithstanding changes to the coastline. Furthermore, maritime boundaries can be based on fluctuating phenomena such as baselines or median lines, as opposed to fixed coordinates, to ensure continued correlation between the basis for title and the resulting maritime boundary.

The ICJ has confirmed, on several occasions, that there is a difference between base points for the purpose of drawing unilateral maritime limits and bilateral boundaries;

¹³⁸¹ See *Philippines v China* (n 26) (Merits) para 266.

¹³⁸² I.e., if circumstances change and maritime entitlements are affected.

¹³⁸³ Thomas Cottier (n 642) 9.

base points that are appropriate for delineation of ambulatory maritime limits may be inappropriate for the construction of permanent maritime boundaries.¹³⁸⁴ This seems logical, given the fact that the fixing of bilateral boundaries does not stabilize ambulatory maritime limits. Maritime limits may be established on the basis of unstable coastal features because the limits can be altered as soon as relevant coastal geography changes. However, the same coastal features may be inappropriate for the construction of permanent maritime boundaries because they are binding on both parties, notwithstanding subsequent changes to relevant coastal geography. Therefore, maritime boundaries should not be based on coastal features unless they are appropriate, in view of the permanence of the boundary. Base points on the coastline are preferable to base points on low-tide elevations¹³⁸⁵ and the same logic must apply to all unstable coastal features, whether they are low-tide elevations or disappearing points attached to the mainland.

The arbitral tribunal in *Philippines v China* recently indicated that coastal features should satisfy relevant UNCLOS requirements ‘over a continuous period of time’ to qualify as islands under article 121.¹³⁸⁶ This evaluation can take place at the time of delimitation and if the same approach is employed in the delimitation process it does not require a detailed prediction on what the future coastal geography will look like. It merely requires that the choice of method and/or choice of base points is made on the basis of coastal features that are sufficiently permanent to generate maritime entitlements on an ongoing basis. This evaluation can take place at the time of delimitation on the basis of relevant scientific evidence. After all, coastal instability can be inherently clear at the time of delimitation and an inseparable part of the existing coastal geography.

5.3. Settled Maritime Boundaries and Fundamental Changes to Coastal Geography

Even with the best intentions, it will prove impossible for States, international courts and tribunals to account for all future changes to coastal geography when delimiting

¹³⁸⁴ See, eg., *Romania v Ukraine* (n 284) para 137; *Bangladesh/Myanmar* (n 25) para 370; *Bangladesh v India* (n 25) para 260.

¹³⁸⁵ *Ibid* para 262.

¹³⁸⁶ *Philippines v China* (n 26) (Merits) para 487.

maritime boundaries. Many maritime boundaries were delimited long before the environmental changes discussed in section 1.3. were foreseeable. Moreover, even if certain changes have now become highly predictable, other changes take place with very little notice and have unpredictable consequences – for example, earthquakes and volcanic eruptions. The cause for change can also be unnatural and completely unforeseeable, for example, coastal features can suddenly become shooting targets for foreign navies (as was the case with the Icelandic Geirfugladrangur).¹³⁸⁷ Predictions relating to climate change are still not precise enough to account for all the effects it may have on coastal geography because there are many variables and volatile changes often have unforeseeable effects. Furthermore, the emergence of the Anthropocene is still not common knowledge and the impacts of this new geological epoch are not yet fully understood. Nonetheless, such changes can be taken into account at the time of delimitation through the construction of ambulatory boundaries,¹³⁸⁸ but where they have been ignored, unforeseeable changes to coastal geography can lead to the termination, suspension, withdrawal from or revision of maritime boundaries.

Coastal States can invoke VCLT article 62 and/or *rebus sic stantibus* as grounds for terminating treaties that establish non-territorial maritime boundaries, as the treaties establishing such boundaries are not excluded under VCLT article 62(2)(a). Coastal geography is often an essential basis of such treaties and the environmental changes that now seem inevitable may have catastrophic effects on coastal geography and the exercise of sovereign rights in the relevant maritime areas. Yet, all the necessary requirements of VCLT article 62 will only be satisfied on rare occasions and the motivation to maintain good political relations with neighbouring States may act as a deterrent for invocation of the principle. Furthermore, courts and tribunals have shown a reluctance to employ VCLT article 62 and *rebus sic stantibus*, not just in relation to treaties that might be classified as boundary treaties, but, in general. Therefore, it may be unlikely that a fundamental change of coastal geography will lead to the revision, suspension or termination of a maritime boundary treaty, without the consent of both parties. However, the possibility is of great significance for this study because it

¹³⁸⁷ British and American soldiers used the Icelandic rock, Geirfugladrangur, as a shooting target around 1940, contributing to its dissolution. See Morgunblaðið ‘Geirfugladrangur telst enn flæðisker’ (2012) available at: <http://www.ruv.is/frett/drangurinn-sem-er-bara-blindsker> accessed 27.08.2017.

¹³⁸⁸ See section 3.4.4.

demonstrates that international law has the means to address the serious repercussions that may ensue from future changes to coastal geography.

The idea of invoking environmental changes to justify termination of maritime boundaries may seem radical and destined to ignite friction in international relations. Indeed, ‘the importance of stable boundaries, the finality of frontier settlements and the general continuity of alignments’ is widely recognized and, therefore, ‘a boundary established in accordance with law attains a compelling degree of continuity and finality’.¹³⁸⁹ However, the environmental changes that now seem inevitable will surely disrupt the geographic stability that public international law has long taken for granted. We may be at the brink of a new world order and this calls for a re-evaluation of traditional views relating to the sanctity of boundaries.

5.4. Final Words

Global warming has widespread and various implications for ocean governance as it stands to affect the extent of maritime entitlements and living conditions of natural resources. In fact, entire ecosystems are at risk as a consequence of ocean acidification, thermal expansion of the oceans, melting glaciers and sea-level rise.¹³⁹⁰ Coastal geography is undergoing significant changes due to sea-level rise, coastal erosion, extreme weather events and deforestation¹³⁹¹ and those physical changes will affect States’ capacity to continuously generate maritime entitlements, the basis for which is the coastal front. Sea-level rise and coastal erosion will reduce islands to rocks and low-tide elevations, which can strip them of their capacity to generate maritime entitlements or form part of valid baselines. Likewise, coastal accretion, land rise and volcanic eruptions can affect maritime entitlements through the expansion of land territory. These changes to coastal geography may affect the opposability of unilaterally declared maritime limits and the delimitation and stability of bilateral maritime boundaries in years and decades to come.

¹³⁸⁹ Kaiyan Homi Kaikobad, ‘Some Observations on the Doctrine of Continuity and Finality of Boundaries’ in Malcolm N Shaw (ed) *Title to Territory* (Dartmouth Publishing 2005) 299.

¹³⁹⁰ See section 1.3.

¹³⁹¹ See section 1.3.

This thesis has analysed the rules applicable to maritime limits and maritime boundaries in times of changing coastal geography and it has concluded that: maritime limits generally fluctuate;¹³⁹² maritime boundaries can be delimited so as to take coastal changes into account; and settled, non-territorial maritime boundaries can be revised or terminated in extreme cases of fundamental change to coastal geography. The applicable international law is flexible enough to successfully govern the division of maritime entitlements in an era of instability, even though it is based on the assumption that coastal geography provides a stable basis for title.¹³⁹³ The changing environment may justify new approaches and interpretations of international law, but this can be accomplished without changing existing rules. Disputes will inevitably arise as treacherous seas dismantle entitlements that coastal States have long relied upon. However, disputes can be settled through peaceful means under UNCLOS Part XV and, instead of resorting to measures outside the law, States will have a legal basis for their claims for revision of outdated maritime boundaries.

The IPCC has concluded that sea levels were between 5 and 10 metres higher in the last interglacial period than they are today.¹³⁹⁴ Sea levels are rising¹³⁹⁵ and the emerging geological epoch is characterised by increased geological instability.¹³⁹⁶ Suddenly, tales of Atlantis seem less mythical. In fact, a civilization was engulfed by the sea when a volcanic eruption devastated the island Santorini in the Aegean Sea no more than 3,600 years ago.¹³⁹⁷

While stability is always preferred in the international spectrum, it must be made clear that stability is inherently linked to stable geography. All the stability afforded to coastal States is conditional on the prerequisite of habitable territory and the continued existence of such territory can no longer be taken for granted. This reality is not altered

¹³⁹² With the exception of permanently described outer continental shelf limits.

¹³⁹³ See Tim Stephens (n 82) 778.

¹³⁹⁴ '2013: Sea Level Change' (n 53) 1139.

¹³⁹⁵ '2013: Summary for Policymakers' (n 54) 11.

¹³⁹⁶ Working Group on the Anthropocene, 'What is the "Anthropocene"? - current definition and status' (2015) available at: <https://quaternary.stratigraphy.org/workinggroups/anthropocene/> accessed 26.08.2017.

¹³⁹⁷ Willie Drye, 'Atlantis' (National Geographic) available at: <http://www.nationalgeographic.com/archaeology-and-history/archaeology/atlantis/> accessed 27.08.2017.

by the assertion that ‘neither the prospect of climate change nor its possible effects can jeopardize the large number of settled maritime boundaries throughout the world’.¹³⁹⁸ Instead of denying or delaying inevitable changes, they should be anticipated, accounted for and incorporated into legal processes to allow for gradual adjustment to change, rather than intermittent chaos.

¹³⁹⁸ *Bangladesh v India* (n 25) para 217.

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