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Sea-level rise in relation to international law

First issues paper by Bogdan Aurescu and Nilüfer Oral, Co-Chairs of the Study Group on sea-level rise in relation to international law

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Introduction

I. Inclusion of the topic in the Commission's programme of work; consideration of the topic by the Commission

1. At its seventieth session (2018), the Commission decided to recommend the inclusion of the topic "Sea-level rise in relation to international law" in its long-term programme of work.[1]

2. Subsequently, in its resolution 73/265 of 22 December 2018, the General Assembly noted the inclusion of the topic in the long-term programme of work of the Commission, and in that regard called upon the Commission to take into consideration the comments, concerns and observations expressed by Governments during the debate in the Sixth Committee.

3. At its 3467th meeting, on 21 May 2019, the Commission decided to include the topic in its current programme of work. The Commission also decided to establish an open-ended Study Group on the topic, to be co-chaired, on a rotating basis, by Mr. Bogdan Aurescu, Mr. Yacouba Cissé, Ms. Patrícia Galvão Teles, Ms. Nilüfer Oral and Mr. Juan José Ruda Santolaria.

4. At its 3480th meeting, on 15 July 2019, the Commission took note of the joint oral report of the Co-Chairs of the Study Group. At a meeting on 6 June 2019, the Study Group had considered an informal paper on the organization of its work containing a road map for 2019 to 2021. The discussion of the Study Group had focused on its composition, its proposed calendar and programme, and its methods of work.

5. At the same meeting, the Study Group had decided that, of the three subtopics identified in the syllabus prepared in 2018,[2] it would examine the first – issues related to the law of the sea – in 2020, under the co-chairpersonship of Mr. Aurescu and Ms. Oral, and the second and third – issues related to statehood and issues related to the protection of persons affected by sea-level rise – in 2021, under the co-chairpersonship of Ms. Galvão Teles and Mr. Ruda Santolaria.

6. The Study Group had agreed that, prior to each session, the Co-Chairs would prepare an issues paper, which would be edited, translated and circulated as an official document to serve as the basis for the discussions and for the annual contribution of the members of the Study Group. It would also serve as the basis for subsequent reports of the Study Group on each subtopic. Members of the Study Group would then be invited to put forward contribution papers that could comment upon, or complement, the issues paper prepared by the Co-Chairs (by addressing, for example, regional practice, case law or any other aspects of the subtopic). Recommendations would be made at a later stage regarding the format of the outcome of the work of the Study Group. At the end of each session of the Commission, the work of the Study Group would be reflected in a substantive report, taking due account of the issues paper prepared by the Co-Chairs and the related contribution papers by the members, while summarizing the discussion of the Study Group. That report would be agreed upon in the Study Group and subsequently presented by the Co-Chairs to the Commission, so that a summary could be included in the annual report of the Commission.[3]

[1] *Official Records of the General Assembly, Seventy-third Session, Supplement No. 10* (A/73/10), para. 369.

[2] *Ibid.*, annex B.

[3] *Official Records of the General Assembly, Seventy-fourth Session, Supplement No. 10* (A/74/10), paras. 270–271.

7. The Study Group had also examined and decided upon a number of other organizational matters.[4]

II. Debate in the Sixth Committee of the General Assembly;[5] level of support for the topic from the Member States and outreach

8. In the course of the debate in the Sixth Committee at the seventy-second session of the General Assembly, in 2017, 15 States requested the inclusion of this topic in the programme of work of the Commission,[6] while nine further delegations mentioned, in their national statements, the importance of the problem.[7] During an informal meeting held in New York on 26 October 2017, at the Permanent Mission of Romania to the United Nations, representatives of the 35 States that attended showed interest in the Commission embarking on the topic.

9. In the course of the debate in the Sixth Committee at the seventy-third session of the General Assembly, in 2018, of 50 statements in which the topic was mentioned following its inclusion by the Commission in its long-term programme of work: 26 welcomed that decision of the Commission and supported (explicitly or implicitly)

[4] *Ibid.*, paras. 272–273: "The Study Group also recommended that the Commission invite the comments of States on specific issues that are identified in chapter III of the report of the Commission. The possibility of requesting a study from the Secretariat of the United Nations was discussed in the Study Group as well. The knowledge of technical experts and scientists will continue to be considered, possibly through side events organized during the next sessions of the Commission … [W]ith the assistance of the Secretariat, the Study Group will update the Commission on new literature on the topic and related meetings or events that might be organized in the next two years."

[5] See documents A/CN.4/713 (chap. II, sect. G), A/CN.4/724 (chap. II, sect. E) and A/CN.4/734 (chap. II, sect. D) containing the topical summaries prepared by the Secretariat of the discussions held in the Sixth Committee of the General Assembly at its seventy-second, seventy-third and seventy-fourth sessions, respectively. The debate in the Sixth Committee is reflected in the summary records contained in documents A/C.6/72/SR.20 and 22 to 24, A/C.6/73/SR.20 to 24, 27, 29 and 30, and A/C.6/74/SR.23 to SR.31 and SR.33, which contain a summarized form of the statements made by delegations. The full texts of the statements made by delegations participating in the plenary debate are available from the United Nations PaperSmart portal, at http://papersmart.unmeetings.org/en/ga/sixth.

[6] Indonesia (A/C.6/72/SR.24, para. 126), Marshall Islands, on behalf of the Pacific small island developing States (i.e., Fiji, Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu) (A/C.6/72/SR.22, paras. 51–53), Micronesia (Federated States of) (A/C.6/72/SR.20, paras. 63–66), Peru (A/C.6/72/SR.22, para. 116), Romania (on file with the Codification Division), and Tonga (A/C.6/72/SR.20, para. 32).

[7] Austria (on file with the Codification Division), Chile (on file with the Codification Division), India (A/C.6/72/SR.22, para. 119), Israel (A/C.6/72/SR.24, para. 104), Malaysia (*ibid.*, para. 115), New Zealand *(ibid.,* para. 72), Republic of Korea (*ibid.,* para. 99), Singapore (on file with the Codification Division), and Sri Lanka (A/C.6/72/SR.23, para. 51).

the inclusion of the topic in the current programme of work;[8] 11 welcomed its inclusion in the long-term programme of work;[9] 6 expressed interest in the topic;[10] 4 were against its inclusion;[11] 1 delegation expressed certain reservations, without expressing opposition as such;[12] 1 delegation "took note of the suggestion to include" the topic in the long-term programme of work;[13] and 1 delegation mentioned the topic without qualifying its position.[14] It should be noted that the number of supportive States was in fact higher than these figures, taking into account that a number of statements were made on behalf of regional groups or bodies.

10. In addition to the expression of support or interest for/in the topic, or otherwise, it is worth setting forth some considerations raised by Member States in the debate in the Sixth Committee in 2018 that are of value for the present issues paper.

11. Member States expressed various views as to the State practice on the topic. For example, Australia[15] encouraged the Commission to "draw on the substantial practice of States in the Pacific region and elsewhere which had worked hard to define base points, baselines and outer limits of their maritime zones, consistent with the United Nations Convention on the Law of the Sea". Denmark, speaking on behalf of the Nordic countries (Denmark, Finland, Iceland, Norway and Sweden) also referred to State practice, which was "rapidly developing".[16] To the contrary, Greece[17] – one of the four Member States opposing the inclusion of this topic in the programme of work of the Commission – wondered what such State practice was with regard to "the legal implications of the above phenomenon, which [was] still in the process of developing and evolving continuously", considering that "[a] few sparse examples would not by any means constitute a conclusive body of established practices." It also referred to a need for a "minimum threshold of available State practice, which would allow the Commission to associate, according to its mandate, progressive development with

[8] Australia (A/C.6/73/SR.23, para. 74), Canada (A/C.6/73/SR.22, paras. 65–66), Bahamas, on behalf of the Caribbean Community (A/C.6/73/SR.20, para. 30), Colombia (A/C.6/73/SR.27, para. 35), Fiji (A/C.6/73/SR.23, paras. 60–64), Gambia, on behalf of the African Group) (A/C.6/73/SR.20, para. 28), Malawi (A/C.6/73/SR.24, para. 42), Marshall Islands, on behalf of members of the Pacific Islands Forum (A/C.6/73/SR.20, paras. 40–43), Mauritius (A/C.6/73/SR.21, para. 17), Mexico (A/C.6/73/SR.22, para. 23), Micronesia (Federated States of) (*ibid.*, para. 56–61), Monaco (A/C.6/73/SR.24, para. 46), New Zealand (A/C.6/73/SR.22, paras. 4–6), Papua New Guinea (A/C.6/73/SR.23, paras. 33–36), Peru (A/C.6/73/SR.20, para. 86), Poland (*ibid.*, para. 99), Portugal (A/C.6/73/SR.21, para. 3), Romania (A/C.6/73/SR.22, paras. 8–9), Samoa (A/C.6/73/SR.23, paras. 65-66), Seychelles (A/C.6/73/SR.24, paras. 11–12), Slovenia (A/C.6/73/SR.21, para. 51), South Africa (A/C.6/73/SR.23, para. 15), Tonga (A/C.6/73/SR.22, paras. 62–63), Viet Nam (A/C.6/73/SR.30, para. 48), and Holy See (Observer) (A/C.6/73/SR.24, paras. 50–51).

[9] Denmark, on behalf of the Nordic countries, namely Denmark, Finland, Iceland, Norway and Sweden (A/C.6/73/SR.20, para. 57), Ecuador (A/C.6/73/SR.23, para. 18), El Salvador (A/C.6/73/SR.24, para. 38), Estonia (A/C.6/73/SR.21, para. 58), Indonesia (A/C.6/73/SR.24, para. 64), Israel (A/C.6/73/SR.23, para. 32), Republic of Korea (*ibid.*, para. 71), Sierra Leone (A/C.6/73/SR.22, para. 73), Togo (*ibid.,* para. 103), United Kingdom of Great Britain and Northern Ireland (*ibid.*, para. 78), and Uruguay (A/C.6/73/SR.24, para. 32).

[10] Brazil (A/C.6/73/SR.21, para. 43), China (A/C.6/73/SR.20, para. 68), Italy (*ibid.*, para. 82), Japan (A/C.6/73/SR.20, para. 101), Thailand (A/C.6/73/SR.22, para. 18), and Turkey (*ibid.*, para. 26).

[11] Cyprus (A/C.6/73/SR.23, paras. 48–51), Czech Republic (A/C.6/73/SR.21, para. 15), Greece (*ibid.,* para. 68), and Slovakia (*ibid.*, para. 28).

[12] United States of America (A/C.6/73/SR.29, para. 27).

[13] Ukraine (A/C.6/73/SR.23, para. 37).

[14] Permanent Court of Arbitration (A/C.6/73/SR.24, paras. 67–68).

[15] Australia (A/C.6/73/SR.23, para. 75).

[16] Denmark, on behalf of the Nordic countries (namely, Denmark, Finland, Iceland, Norway and Sweden) (A/C.6/73/SR.20, para. 57).

[17] Greece (A/C.6/73/SR.21, para. 68).

codification". Failing that, the Commission risked embarking upon "an exercise of a prevailing [*de*] *lege ferenda* character".[18] Cyprus[19] – another of the four Member States opposing the inclusion of this topic in the programme of work of the Commission – recognized that "the rise in sea levels was already a fact whose negative impact would only grow and whose legal effects would have to be clarified. The best methodology to follow was for [States] to examine the effects of sea-level rise in an inclusive manner on the basis of State practice". The United States of America[20] "questioned whether the issues of statehood and protection of persons as specifically related to sea-level rise were at a sufficiently advanced stage of State practice" (meaning that this Member State does not however have the same reservation as to the existence of State practice related to law of the sea issues in relation to sea-level rise).

12. Canada,[21] which strongly supported the topic, emphasized that the consideration of the three subtopics identified by the Commission in the 2018 syllabus "might lead to the discussion of broader issues, which would unnecessarily complicate the study of the topic". Hence, when considering the "possible legal effects of sea-level rise on the status of islands, including rocks", Canada took the nuanced view that the Commission should indeed consider those potential effects, "without entering into a complex debate regarding the specific characteristics of island status".

13. Member States emphasized the need for the Commission to respect, in the course of its work on the topic, the provisions of the United Nations Convention on the Law of the Sea; a commitment that had already been clearly assumed by the Commission in the 2018 syllabus: "This topic will not propose modifications to existing international law, such as the 1982 [United Nations] Convention on the Law of the Sea".[22] China,[23] for example, expressed the hope that "the Commission would fully take into consideration the provisions and spirit of the existing international law, including the United Nations Convention on the Law of the Sea". Cyprus[24] stressed the indispensability of "fully respecting the letter and spirit of the Convention" in conducting such work and of ensuring that the content of any further study would fully comply with the Convention: "[a]ttempts to modify or undermine the Convention would have adverse consequences". Greece[25] also recommended that the Commission "should preserve the integrity of the United Nations Convention on the Law of the Sea". Indonesia[26] stressed that "the deliberations [within the Commission] must not undermine the existing regime on the law of the sea under the United Nations Convention on the Law of the Sea". Israel,[27] while encouraging "the examination of the legal aspects of sea-level rise and related issues" and seeing value in mapping "the key legal questions arising from it", noted that in addressing the legal issues related to sea-level rise "it would be prudent to address each issue according to the legal framework applicable to it, rather than adopt an integrative approach" and "as noted in the … syllabus, any output of the Study Group … should be based on the application of existing principles of customary international law, rather than the development of new legal principles or the modification of existing international law". New Zealand[28] considered that the topic reflected "the needs of States and the

[18] *Ibid*.
[19] Cyprus (A/C.6/73/SR.23, para. 49).
[20] United States (A/C.6/73/SR.29, para. 27).
[21] Canada (A/C.6/73/SR.22, paras. 65–66).
[22] A/73/10, annex B, para. 14.
[23] China (A/C.6/73/SR.20, para. 68).
[24] Cyprus (A/C.6/73/SR.23, para. 50).
[25] Greece (A/C.6/73/SR.21, para. 68).
[26] Indonesia (A/C.6/73/SR.24, para. 64).
[27] Israel (A/C.6/73/SR.23, para. 32).
[28] New Zealand (A/C.6/73/SR.22, paras. 4–6).

pressing concerns of the international community" as a whole, and stated that the Government "had considered the international legal challenges presented by sea-level rise and had confirmed its commitment to working with partners to ensure that, in the face of changing coastlines, the current balance of rights and obligations under the United Nations Convention on the Law of the Sea was preserved".

14. Nevertheless, some Member States pointed out that the effects of sea-level rise were not covered or regulated by the current international law, underlining that there was a pressing need to fill in that lacuna. For example, Fiji[29] stressed that it was concerned about sea-level rise in relation to international law "with regard to the regulation of maritime entitlements, the delimitation of maritime zones and the right of a coastal State to an extended continental shelf". In that connection, Fiji was of the view that a lacuna existed in international law to address the present implications of rising sea levels on the law of the sea. The Observer for the Holy See[30] was of a similar view: "The attention given by the Commission to that question would fill in a lacuna in current international law and would prepare better those States and communities directly concerned, as well as the international community as a whole, to meet the challenges that faced them". In its opinion, the efforts of the Commission "should not be just an academic exercise but rather a pointed effort towards the progressive development of international law". The Republic of Korea,[31] after expressing the view that the topic reflected "new developments in international law and pressing concerns of the international community as a whole", stated that "[s]ea-level rise was an inter-generational issue, and the current generation must accept its obligation to work to establish a legal system" for sea-level rise, and that the issue "should be dealt with comprehensively from the perspective of *lex ferenda*, not just *lex lata*". Romania[32] also stated that "[i]t could be that the [Commission's work] identif[ied] areas where the law as it [stood was] not sufficient, prompting the international community to take diligent and timely action in ensuring the adequate regulatory framework". Samoa[33] stressed the need for "progressive development" of the topic. Slovenia[34] considered that there was an immediate need not only to analyse the topic "from the perspective of international law", but also to agree on possible conclusions and recommendations for future action. South Africa[35] stressed that it heard the "concerns raised in relation to whether State practice was at a sufficiently advanced stage to warrant progressive development and codification", but international law was often accused of being too reactive and slow to address issues and there was now "the opportunity to … deal [in a timely manner] with the legal questions that [would] be created as a result [of] sea-level rise."

15. The position expressed by the Federated States of Micronesia[36] was quite comprehensive. It should be recalled that this Member State had put forward a proposal dated 31 January 2018 for inclusion of a topic on the long-term programme of work of the Commission entitled "Legal implications of sea-level rise",[37] which was taken into account when the 2018 syllabus was prepared.[38] In its statement during the 2018 debate in the Sixth Committee, the Federated States of Micronesia

[29] Fiji (A/C.6/73/SR.23, para. 62).
[30] Holy See (Observer) (A/C.6/73/SR.24, paras. 50–51).
[31] Republic of Korea (A/C.6/73/SR.23, para. 71).
[32] Romania (A/C.6/73/SR.22, para. 8–9).
[33] Samoa (A/C.6/73/SR.23, para. 66).
[34] Slovenia (A/C.6/73/SR.21, para. 51).
[35] South Africa (A/C.6/73/SR.23, para. 15).
[36] Micronesia (Federated States of) (A/C.6/73/SR.22, paras. 56–61).
[37] Document ILC(LXX)/LT/INFORMAL/1 of 31 January 2018 (on file with the Codification Division).
[38] A/73/10, annex B, para. 7.

mentioned five points related to the topic.[39] First, the Commission's examination of the topic in a Study Group was ideal, as it would allow for a comprehensive mapping exercise of the relevant legal implications of sea-level rise in relation to the specific issues identified by the syllabus. Second, States must participate actively in the work of the Study Group, including by providing information on relevant State practice.[40] Third, while it was undeniable that sea-level rise raised serious issues of international law with respect to small island developing States, sea-level rise was an issue of relevance to the international community as a whole:[41] the fact that "over 100 States from all the major geographical regions of the world – including coastal States and landlocked countries, continental States and small island States, and developed and developing countries – had spoken in favour of the Commission's studying the topic … was a testament to its relevance to the international community as a whole, not just to a small group of particularly vulnerable States." Fourth, the Federated States of Micronesia acknowledged that the syllabus limited the scope of the topic, so that "the Study Group would not consider the protection of the environment, climate change *per se*, causation, responsibility, or liability; and would not propose modifications of existing international law, including the United Nations Convention on the Law of the Sea". In the light of those limitations, the syllabus "should be sufficient to address" the concerns of States with respect to the scope of the topic. "The Study Group would discuss and map, but would not supplant, ongoing work in existing legal forums, including intergovernmental treaty bodies". The Federated States of Micronesia "trusted that the Study Group would be able to conduct its work in a careful and comprehensive manner". Fifth, it stressed the urgency of addressing the implications of sea-level rise on international law, given alarming scientific findings: "The international law implications [of such sea-level rise] must be examined in an objective and authoritative manner as soon as possible. The Commission's work [was] key to that endeavour and should begin with all urgency".

16. The positions in 2018 of the four Member States that opposed the inclusion of the topic in the programme of the Commission are based on the following arguments (besides those already mentioned above, mainly related to the issue of State practice). Cyprus[42] expressed concerns about the "method used" and the "lack of prior consultation with the Sixth Committee", "overlap with other pre-existing work of the International Law Association" and difficulties in agreeing a definition of statehood. For the Czech Republic,[43] "the topic was predominantly scientific, technical and political in character", so "[i]t should be taken up by the relevant technical and scientific bodies and an intergovernmental forum with a mandate to address the law of the sea, in order to preserve the integrity of the law of the sea regime". Greece[44] cited the lack of a "a conclusive body of established practices". Lastly, for Slovakia,[45] the topic was not "at a sufficiently advanced stage in terms of State practice to permit progressive development and codification", and it was not sufficiently concrete or

[39] Micronesia (Federated States of) (A/C.6/73/SR.22, paras. 56–61).

[40] "This interaction should not be limited to statements in the Sixth Committee and the submissions of national [c]omments to the Commission, but could also include briefings, interactive seminars, and other informal modes of engagement." (Statement of the Federated States of Micronesia.)

[41] "As just one example, sea-level rise could alter maritime baselines and maritime boundaries, which could in turn alter the entitlements of coastal States as well as landlocked countries under the law of the sea to various maritime zones whose parameters are based on such baselines and boundaries. As another example, sea-level rise could induce human migration, which is a matter of concern for the international community as a whole, including States that are transition and destination countries for such migrants. A mapping exercise of what international law currently says about these and other illustrative scenarios will be of great use for the international community as a whole." (Statement of the Federated States of Micronesia.)

[42] Cyprus (A/C.6/73/SR.23, paras. 49 and 51).

[43] Czech Republic (A/C.6/73/SR.21, para. 15).

[44] Greece (*ibid.*, para. 58).

[45] Slovakia (*ibid.*, para. 28).

feasible for progressive development and codification. Slovakia also took the view that legal questions arising potentially from the sea-level rise fell within the scope of the law of the sea, and "should primarily be addressed within the framework of the United Nations Convention on the Law of the Sea". There was thus "virtually no room for the Commission to engage either in codification or progressive development".

17. It should be recalled, first, that the proponents of the topic, the Co-Chairs of the Study Group, have undertaken a series of outreach efforts in 2017, 2018 and 2019, as set out below. Second, a large number of Member States, as evident from the information given above, support the topic and have asked for its inclusion in the programme of work of the Commission; the Commission, as subsidiary body of the General Assembly, cannot ignore the demands by Member States to include a topic in its programme of work. Third, as mentioned in the 2018 syllabus, the work of the International Law Association is duly acknowledged, and will be taken into account; however, the methodology of the Commission is specific and different to that of the International Law Association. Fourth, from this perspective, the relevance of State practice – where it exists – is obvious. At the same time, the syllabus is clear as to the need to respond to the pressing needs of the international community, including through progressive development, if necessary, and that has been acknowledged by many Member States in their statements in the Sixth Committee. Fifth, as to the "predominantly scientific, technical and political … character"[46] of the topic, it has to be recalled that, in accordance with the syllabus, the Commission will examine the topic on the premise that sea-level rise is a factual reality and is scientifically proven,[47] and it will deal only "with the legal implications of sea-level rise" and not with "protection of environment, climate change *per se*, causation, responsibility and liability".[48] As is clear from the syllabus, the topic is not limited to the study of the effects of sea-level rise in relation to the law of the sea; on the contrary, it is complex and covers, in a manner that takes account of interrelationships, various aspects of international law.

18. Last but not least, it is important to mention the position expressed by a number of Member States regarding the crucial issue of stability and security in international law in relation to the topic and to its outcome. For example, Australia,[49] recalling the efforts by Member States in the affected regions to "define base points, baselines and outer limits of their maritime zones, consistent with the United Nations Convention on the Law of the Sea" and "to resolve outstanding maritime delimitations and make extended continental shelf submissions", underlined that States had thus sought "to maximize the stability and clarity that the Convention brought to oceans governance and maritime jurisdiction". China[50] mentioned the need for the Commission to maintain, to the extent possible, "the stability and predictability of the current legal regime and provide legal guidance for the international community to address sea-level rise appropriately". Greece[51] stressed that the outcome of the Commission's work "should safeguard the entitlements to maritime zones, the stability of maritime boundaries and the stability of relevant treaties". Indonesia[52] recommended that the issue "be approached with caution because of its sensitivity, particularly in relation to the issues of borders and delimitation". New Zealand[53] spoke in the same sense: put simply, "the goal was to find a way, as quickly as possible, to provide certainty to vulnerable coastal States that they would not lose their rights over their marine resources and zones because of rising sea levels. As the Prime Minister of New Zealand had said recently, coastal States' baselines and maritime boundaries should

[46] Czech Republic (*ibid.*, para. 15).
[47] A/73/10, annex B, paras. 1–4.
[48] *Ibid.*, para. 14.
[49] Australia (A/C.6/73/SR.23, para. 76).
[50] China (A/C.6/73/SR.20, para. 68).
[51] Greece (A/C.6/73/SR.21, para. 68).
[52] Indonesia (A/C.6/73/SR.24, para. 64).
[53] New Zealand (A/C.6/73/SR.22, paras. 4–5).

not have to change because of human-induced sea level rise". Papua New Guinea[54] also mentioned the prioritization of "securing maritime boundaries" in the region, while the Permanent Court of Arbitration[55] quoted recent relevant case law, the *Bay of Bengal Maritime Boundary Arbitration (Bangladesh v. India)*:[56] "maritime boundaries, just like land boundaries, must be", in the words of the Tribunal, "stable and definitive to ensure a peaceful relationship between the States concerned in the long term".[57] Such stability was deemed all the more essential "when the exploration and exploitation of the resources of the continental shelf [were] at stake". Tonga[58] considered it important "to factor in interrelated topics and issues such as … security in the context of human security, environmental security, and resource security, and … migration. It [was] also crucial that … existing rights and entitlements of States [be] upheld, in particular maritime boundary delimitation pursuant to the stipulations of the [Convention]". Taking into account those views, it is important for the Study Group to duly consider the issue of preserving the legal stability and security at the very heart of the topic.

19. During the debate in the Sixth Committee at the seventy-fourth session of the General Assembly, in 2019, 57 delegations – a larger number than in the previous year – referred to the present topic in their interventions. Of that number, 49 delegations (some of them making statements on behalf of regional groups or organizations) expressed support for the decision taken by the Commission to include the topic in its current programme of work,[59] 3 delegations noted the decision,[60]

[54] Papua New Guinea (A/C.6/73/SR.23, para. 34).

[55] Permanent Court of Arbitration (A/C.6/73/SR.24, paras. 67–68).

[56] *Bay of Bengal Maritime Boundary Arbitration (Bangladesh v. India)*, Case No. 2010-16, Award, Permanent Court of Arbitration, 7 July 2014. Available at www.pca-cpa.org/en/cases/18.

[57] *Ibid.*, para. 216.

[58] Tonga (A/C.6/73/SR.22, para. 63).

[59] Argentina (A/C.6/74/SR.29, para. 35), Australia (*ibid.*, paras. 87–88), Austria (A/C.6/74/SR.27, para. 104), Bangladesh (A/C.6/74/SR.31, para. 49), Belarus (which mentioned that the topic merited seriousness and also that "it was not a matter of interest to the entire international community") (A/C.6/74/SR.28, para. 22), Belize (A/C.6/74/SR.30, para. 68–71), Brazil (A/C.6/74/SR.29, para. 80), Canada (A/C.6/74/SR.30, paras. 10–11), Colombia *(ibid.,* paras. 113–114), Côte d'Ivoire (A/C.6/74//SR.26, para. 121), Croatia (A/C.6/74/SR.25, para. 58), Cuba (*ibid.*, para. 23), Ecuador (A/C.6/74/SR.27, para. 38), Egypt (A/C.6/74/SR.30, para. 30), Estonia *(ibid.,* paras. 61–62), Fiji, on behalf of the Pacific small island developing States (namely, Fiji, Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu) (A/C.6/74/SR.27, paras. 78–79), Honduras (A/C.6/74/SR.26, paras. 94–95), India (A/C.6/74/SR.29, para. 26), Indonesia (A/C.6/74/SR.31, para. 29), Ireland (A/C.6/74/SR.29, para. 43), Israel (A/C.6/74/SR.24, para. 27), Italy (A/C.6/74/SR.28 para. 29), Jamaica (A/C.6/74/SR.27, paras. 2–3), Japan (A/C.6/74/SR.26, para. 41, and A/C.6/74/SR.30, para. 34), Lebanon (A/C.6/74/SR.30, para. 103), Liechtenstein *(ibid.,* para. 95), Malaysia (*ibid.*, para. 83), Mexico (A/C.6/74/SR.29, para. 114), Micronesia (Federated States of) (*ibid.*, paras. 89–92), Netherlands (A/C.6/74/SR.28, para. 79), New Zealand (A/C.6/74/SR.26, paras. 86–89), Nicaragua (A/C.6/74/SR.30, para. 131), Norway, on behalf of the Nordic countries (namely Denmark, Finland, Iceland, Norway and Sweden) (A/C.6/74/SR.23, paras. 43–44), Papua New Guinea (A/C.6/74/SR.30, paras. 18–21), Peru (A/C.6/74/SR.27, para. 64, and A/C.6/74/SR.31, para. 5), Philippines (*ibid.*, para. 52, and A/C.6/74/SR. 31, para. 9), Poland (A/C.6/74/SR.29, para. 23), Portugal (*ibid.*, para. 108), Republic of Korea (A/C.6/74/SR.30, para. 67), Romania (A/C.6/74/SR.28, paras. 14–15), Sierra Leone, on behalf of the African Group (A/C.6/74/SR.23, para. 39), Sierra Leone (A/C.6/74/SR.29, paras. 70–71), Singapore (A/C.6/74/SR.28, para. 61), Slovenia (A/C.6/74/SR.29, paras. 145–146), Thailand (A/C.6/74/SR.24, para. 109, and A/C.6/74/SR.29, paras. 99–100), Turkey (A/C.6/74/SR.29, para. 151), Tuvalu, on behalf of members of the Pacific Islands Forum with permanent missions to the United Nations (A/C.6/74/SR.27, paras. 80–81), United Kingdom (A/C.6/74/SR.23, para. 102), Viet Nam (A/C.6/74/SR.30, para. 40), Holy See (Observer) (A/C.6/74/SR.31, para. 59).

[60] China, which also expressed "hope that the Commission, with a full recognition of the complexity of this topic, will thoroughly analyse various State practice across the spectrum as well as related legal questions in order to produce objective, balanced and valuable outcomes" (A/C.6/74/SR.27, paras. 126–127), France (A/C.6/74/SR.28, paras. 47–48) and Slovakia (A/C.6/74/SR.28, para. 41).

1 delegation reiterated the reservations it had expressed in 2018, but without expressing opposition as such,[61] 2 delegations continued to express opposition to the inclusion of this topic in the programme of work of the Commission,[62] and 2 other delegations continued to express opposition, but with nuances compared to the positions expressed in 2018.[63]

20. The majority of the delegations supporting the topic also supported the establishment of the Study Group and the proposed division of work over the following two years, with the three subtopics. One delegation[64] expressed concern over the degree of transparency of the Study Group's work and made the suggestion that the Commission to appoint co-rapporteurs for the topic. The Co-Chairs believe that the manner of work as set forth in the report of the Commission on its seventy-first session (2019)[65] and in paragraph 6 above responds to the issues raised regarding transparency.

21. On the substance of the topic, the positions expressed by the delegations in their 2019 statements were largely similar to those expressed in the previous year. For example, some delegations touched upon the need for the Study Group to focus on codification of customary law, while other delegations stressed that the effort of the Commission should also concentrate on progressive development. Israel[66] reiterated that "any product of the Study Group should be based on the application of existing principles of customary international law, rather than on developing new legal principles". Cuba[67] emphasized that it was useful to discuss the topic "in order to propose viable solutions between the changes occurring in the climate and the law of the sea in force, reflected mainly in the United Nations Convention on the Law of the Sea, as depositary of customary law". Jamaica[68] stressed that "[p]roviding clarity on the underlying general principles of international law and customary norms and suggestions as to how the law [might] be progressively developed on various issues … in relation to sea-level rise would be a welcome and valuable contribution by the [Commission]". The Republic of Korea[69] mentioned that, "to progressively develop international law", the topic should be dealt with comprehensively "from the perspective of *lex ferenda*, rather than limit itself to *lex lata*". Belize[70] also stated that the Commission would need "to look beyond existing law and listen to the voices of the most vulnerable States in its progressive development of international law". Estonia[71] was of the view that it was necessary "to consider unconventional solutions".

22. The positions in 2019 of the four Member States that had previously opposed the inclusion of the topic in the programme of work of the Commission were as

[61] United States, which mentioned that it continued to have concerns that the topic as proposed to the Commission "did not meet two of the Commission's criteria for selection of a new topic. In particular, it questioned whether the issues of Statehood and protection of persons as specifically related to sea-level rise were at a sufficiently advanced stage of State practice." At the same time, it also stated that "[a]s the Commission had moved the topic to its current programme of work", it considered it was appropriate that the Commission chose to do so via a Study Group, and that it has decided to focus its work during the 2020 session on issues related to the law of the sea." (See A/C.6/74/SR.24, para. 70, and A/C.6/74/SR.30, para. 126.)

[62] Czech Republic (A/C.6/74/SR.28, para. 66) and Greece (*ibid.*, paras. 56–57).

[63] Cyprus (A/C.6/74/SR.30, para. 102), and Slovakia (A/C.6/74/SR.28, para. 41).

[64] France (A/C.6/74/SR.28, paras. 47–48).

[65] A/74/10, paras. 270–271.

[66] Israel (A/C.6/74/SR.24, para. 27).

[67] Cuba (A/C.6/74/SR.25, para. 23).

[68] Jamaica (A/C.6/74/SR.27, paras. 2–3).

[69] Republic of Korea (A/C.6/74/SR.30, para. 67).

[70] Belize (A/C.6/74/SR.30, paras. 68–71).

[71] Estonia (*ibid.*, paras. 61–62).

follows. Greece[72] stated once again that "the matter [did] not lend itself for codification at the present stage, as lack of State practice in addressing legal issues related to sea-level rise and the ensuing lack of generally accepted rules [did] not provide solid ground for such an endeavour", and that it was concerned that the consideration of the matter within that "uncertain context might call into question cardinal and well-established law of the sea rules reflected in the United Nations Convention on the Law of the Sea". The Czech Republic[73] repeated that it was still of the opinion that "the topic was predominantly scientific and technical in character. It should therefore be taken up by the relevant technical and scientific bodies and intergovernmental forums, with a mandate to address law of the sea issues". Slovakia[74] nuanced its previous opinion: it noted the inclusion of the topic in the Commission's programme of work and welcomed the agreement of the Study Group "on its composition, methods and programme of work", based on the three subtopics identified in the syllabus. Cyprus[75] reiterated that the Commission "had no mandate for codification, and that State practice was also insufficient. Any attempt to modify … the Convention would have adverse consequences". However, Cyprus also expressed its support for the exercise "on potential effects of rising sea levels on statehood and migration".

23. At the same time, the essential issue of stability and security in international law in relation to the present topic and to its outcome was stressed in 2019 with even more vigour. Israel[76] mentioned that "it was critical that the work of the Commission and the Study Group on the topic not upset or undermine the delicate balance achieved by existing maritime border agreements, which meaningfully and significantly contributed to increased regional and international stability". Cuba[77] expressed hope that the Commission would "take into consideration the letter and the spirit of existing international law, including the United Nations Convention on the Law of the Sea, in order to maintain its stability and predictability as far as possible". New Zealand[78] referred to the global significance of the topic: "[a]ll States had an interest in preserving the balance of rights and responsibilities under the Convention. It was also in the interests of all States to ensure there was certainty regarding maritime zones, to avoid potential disputes". Jamaica[79] expressed hope "that the Commission's work on sea-level rise would spur the development of the international law on climate change in a manner that supported security and stability and protected the most vulnerable communities and States". Norway,[80] speaking on behalf of the Nordic countries (namely, Denmark, Finland, Iceland, Norway and Sweden), mentioned that the Convention provided "predictability and stability. It was therefore a core priority for the Nordic countries to safeguard and strengthen the Convention system. Those considerations would guide their approach" to the Commission's work and to the issue in general. Romania[81] stressed that "it understood that the Study Group would approach the subject matter without questioning the applicable legal regimes as codified under the United Nations Convention on the Law of the Sea and would duly take into consideration the need to maintain legal stability in international law" in relation to the topic and to its outcome. Greece[82] stressed the "principle of stability of

[72] Greece (A/C.6/74/SR.28, paras. 56–57).
[73] Czech Republic (*ibid.*, para. 66).
[74] Slovakia (*ibid.*, para. 41).
[75] Cyprus (A/C.6/74/SR.30, para. 102).
[76] Israel (A/C.6/74/SR.24, para. 27).
[77] Cuba (A/C.6/74/SR.25, para. 23).
[78] New Zealand (A/C.6/74/SR.26, para. 89).
[79] Jamaica (A/C.6/74/SR.27, paras. 2–3).
[80] Norway (*ibid.*, para. 87).
[81] Romania (A/C.6/74/SR.28, paras. 14–15).
[82] Greece (*ibid.*, paras. 56–57).

maritime boundaries which [could] not be affected by climate change and its effects". Poland[83] shared the view of the International Law Association that "any proposals in [that] area should aim to facilitate orderly relations between States and, ultimately, the avoidance of conflicts, bearing in mind that one of the principal motivations of the [Convention] [was] to contribute to the maintenance of international peace and security". The Federated States of Micronesia[84] also mentioned "the preference in international law for stability, certainty and orderly affairs" in connection with the topic, while Thailand[85] stressed that "existing entitlements should be upheld in order to maintain peace, stability and friendly relations among nations". Canada[86] recommended that the Commission "take a cautious approach [on those matters] – that favoured certainty and stability for the delimitation of maritime boundaries". Papua New Guinea[87] affirmed that, "[i]n order to foster legal certainty and stability, facilitate orderly relations between States and avoid conflict, affected States should be able to maintain existing entitlements to maritime zones in accordance with the United Nations Convention on the Law of the Sea". Estonia[88] mentioned the need to "maintain legal certainty", while Belize[89] underlined, *inter alia*, that the economies of small island developing States "depended on the stability of baselines". The United States[90] "supported efforts to protect States' maritime entitlements under the international law of the sea" in a manner that was consistent "with the rights and obligations of third States". Those statements show, once again, how important it is for the Study Group to duly consider the issue of preserving the legal stability and security in relation to the topic.

24. The proponents of the inclusion of the present topic in the programme of work of the Commission, the Co-Chairs of the Study Group, have undertaken a series of outreach efforts both prior to and after the inclusion of the topic in the long-term programme of work and in the current programme of work. The purpose of those démarches was, first, to consult Member States on the feasibility of the inclusion of the topic in the programme of work (an effort that was welcomed by Member States), and, second, to explain the progress of the work of the Commission on the topic, as well as the proposed steps and methodology. At the same time, all the events organized or attended by the said proponents were used to highlight the pressing need for the Commission to receive as much as possible information on the relevant State practice, in due time.

25. As already mentioned, the first such event, entitled "The legal effects of the ocean/sea-level rise", was organized in New York in October 2017, at the Permanent Mission of Romania to the United Nations, and was attended by 35 States.[91] On 23 October 2018, the proponents of the inclusion of the topic in the programme of work of the Commission attended a side event to the Sixth Committee, entitled "Sea-level rise and implications for international law", organized in New York by New Zealand, Peru and the Alliance of Small Island States. A side event to the seventy-first session of the Commission, entitled "The physical science of sea-level rise", was organized on 22 May 2019, in Geneva. On 7 June 2019, Bogdan Aurescu, Co-Chair of the Study Group, attended the session of Working Party on Public International Law of the Council of the European Union in Brussels upon the invitation of the Council of the European Union, and presented the current work of

[83] Poland (A/C.6/74/SR.29, para. 23).
[84] Micronesia (Federated States of) (*ibid.*, para. 90).
[85] Thailand (*ibid.*, paras. 99–100).
[86] Canada (A/C.6/74/SR.30, para. 11).
[87] Papua New Guinea (*ibid.*, para. 19).
[88] Estonia (*ibid.*, para. 62).
[89] Belize (*ibid.*, para. 69).
[90] United States (*ibid.*, para. 127).
[91] A/73/10, annex B, para. 6.

the Commission, focusing on the topic "Sea-level rise in relation to international law". On 4 September 2019, Mr. Aurescu, Ms. Galvão Teles and Ms. Oral attended the conference "International law responses to challenges of the global environment", organized by the Romanian Branch of the International Law Association, the Romanian Embassy in The Hague and Leiden University, and presented the status of the work of the Commission on the present topic. On 4 October 2019, Bogdan Aurescu presented the progress of the work of the Commission on the present topic during a conference entitled "Sea-level rise and the impact on international law" organized by the Fridtjof Nansen Institute in Oslo. On 29 and 30 October 2019, respectively, Ms. Galvão Teles, Ms. Oral and Mr. Ruda Santolaria participated at the event entitled "Sea-level rise and implications on international law", co-organized in New York, during the International Law Week, by New Zealand, Peru, Portugal, Romania and Turkey with the support of the Alliance of Small Island States and the Pacific Islands Forum, and the side event organized by the Asian-African Legal Consultative Organization, entitled "The effects of changing baselines: a threat to the maritime legal order?". On 14 and 15 November 2019, Mr. Aurescu, Ms. Galvão Teles, Ms. Oral and Mr. Ruda Santolaria participated in the Roundtable on Sea-level Rise and the Law of the Sea, organized by the Centre for International Law of the National University of Singapore. That event benefited from the participation of representatives of States from the region,[92] other members of the Commission[93] and representatives from academia, and occasioned an extensive exchange of views and presentation of State practice information. On 10 December 2019, Ms. Oral attended a side event to the twenty-fifth session of the Conference of the Parties to the United Nations Framework Convention on Climate Change, on maritime boundaries and climate change, organized in Madrid by the Pacific Community.

26. The Co-Chairs of the Study Group have also published papers related to the topic.[94]

27. In conclusion, it is highly important and relevant for the Study Group in its work on the present topic to duly consider the issue of preserving legal stability, security, certainty and predictability. This would also be in line with the general purpose of the United Nations Convention on the Law of the Sea, whose preamble states that "the codification and progressive development of the law of the sea achieved in this Convention will contribute to the strengthening of peace, security, co-operation and friendly relations among all nations in conformity with the principles of justice and equal rights and will promote the economic and social advancement of all peoples of the world, in accordance with the Purposes and Principles of the United Nations as set forth in the Charter".

III. Scientific findings and prospects of sea-level rise and relationship with the topic

28. As already mentioned, the Commission will consider the present topic on the premise that sea-level rise is a fact, already proved by the science. The various

[92] Cambodia, Indonesia, Myanmar, Philippines, Singapore, Thailand and Viet Nam.

[93] Mr. Mahmoud D. Hmoud and Mr. Nguyễn Hồng Thao. Mr. Kriangsak Kittichaisaree, former member of the Commission, also attended.

[94] Bogdan Aurescu, "The legal effects of the sea-level rise on the work programme of the UN International Law Commission", *Romanian Journal of International Law*, No. 20 (2018), pp. 72–81; and Nilüfer Oral, "International law as an adaptation measure to sea-level rise and its impact on islands and offshore features, *International Journal of Marine and Coastal Law*, vol. 34 (2019), pp. 415–439.

scientific data show that the phenomenon is already affecting a large number of States, either directly or indirectly. According to the 2018 syllabus,

> more than 70 States are or are likely to be directly affected by sea-level rise, a group which represents more than one third of the States of the international community. Indeed, as is well known, this phenomenon is already having an increasing impact upon many essential aspects of life for coastal areas, for low-lying coastal States and small island States, and especially for their populations. Another quite large number of States is likely to be indirectly affected (for instance, by the displacement of people or the lack of access to resources). Sea-level rise has become a global phenomenon and thus creates global problems, impacting on the international community as a whole.[95]

29. The awareness of the negative impact of sea-level rise is growing. The phenomenon is mentioned in an increasing number of official documents; for example, in paragraph 14 of the 2030 Agenda for Sustainable Development.[96] At the same time, according to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, this phenomenon is likely to accelerate in the future: the global mean sea-level rise is likely to be between 26 and 98 cm by the year 2100.[97] As a result, low-lying coastal areas and of islands will be permanently inundated. The recent Intergovernmental Panel on Climate Change Special Report on the Ocean and Cryosphere in a Changing Climate confirms that evolution.[98]

30. According to the Panel's Special Report,[99] 680 million people (nearly 10 per cent of the global population in 2010) live in low-lying coastal areas. Coastal areas are home to approximately 28 per cent of the global population, including approximately 11 per cent living on land less than 10 metres above sea level.[100] Approximately 65 million people live in small island developing States,[101] which are especially at risk from sea-level rise. The Panel stated that it was virtually certain that global mean sea level was rising and indicated (with high confidence) that it would accelerate.[102] The Special Report has revised previous estimates of global mean sea level rise projections by the end of 2100 to possibly being between 0.61–1.10 metres (medium confidence), depending on certain scenarios.[103]

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[95] A/73/10, annex B, para. 1.

[96] General Assembly resolution 70/1, para. 14 (see also A/73/10, annex B, para. 2): "Climate change is one of the greatest challenges of our time and its adverse impacts undermine the ability of all countries to achieve sustainable development. Increases in global temperature, sea level rise, ocean acidification and other climate change impacts are seriously affecting coastal areas and low-lying coastal countries, including many least developed countries and small island developing States. The survival of many societies, and of the biological support systems of the planet, is at risk."

[97] Intergovernmental Panel on Climate Change, 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, United Kingdom, Cambridge University Press, 2013), p. 25.

[98] Intergovernmental Panel on Climate Change, *The Ocean and Cryosphere in a Changing Climate: A Special Report of the Intergovernmental Panel on Climate Change* (forthcoming). The "Summary for policymakers" was approved by the Panel's Working Groups I and II at their second joint session; report accepted by the Panel at its fifty-first session, held in Monaco, on 24 September 2019.

[99] Intergovernmental Panel on Climate Change, "Sea level rise and implications for low-lying islands, coasts and communities", *The Ocean and Cryosphere in a Changing Climate* (see previous footnote).

[100] Intergovernmental Panel on Climate Change, "Framing and context of the report", *ibid.*, p. 77, sect. 1.1.

[101] *Ibid*.

[102] Intergovernmental Panel on Climate Change, "Sea level rise and implications for low-lying islands, coasts and communities", *ibid.*, pp. 334–335, sects. 4.2.2.1.1, and 4.2.2.2.

[103] *Ibid*., p. 352, table 4.4.

31. Sea-level rise is not uniform, as it varies regionally. The Panel's Fifth Assessment Report indicated that, "[s]ince 1993, the regional rates for the Western Pacific are up to three times larger than the global mean, while those for much of the Eastern Pacific are near zero or negative".[104] The Report also concluded that it was very likely that there would be an increase in the occurrence of sea-level extremes in some regions by 2100.[105] The Report further noted that some 70 per cent of the global coastlines were projected to experience a relative sea-level change within 20 per cent of the global mean sea-level change.[106] Risks related to sea-level rise, such as erosion, flooding and salinization, are expected to significantly increase by the end of 2100 along all low-lying coasts without major additional adaptation efforts (the Report attributed very high confidence to this assessment).

32. The relationship between these scientifically proven facts and the topic included in the Commission's programme of work was set forth in the syllabus: as mentioned already, the Commission will only deal with "the legal implications of sea-level rise", and not with "protection of environment, climate change *per se*, causation, responsibility and liability".[107] Taking into account these limitations, it is however important – as emphasized in the 2018 syllabus – for the law to be able to "contribute to the endeavours of the international community to respond to [the] issues"[108] provoked by the phenomenon, and the topic "reflects … pressing concerns of the international community as a whole",[109] "to assist States in developing practicable solutions in order to respond effectively to the issues prompted by sea-level rise".[110] That objective was also highlighted by Member States in their statements in the Sixth Committee, as evidenced above.

IV. Previous references to the topic in the works of the Commission

33. The topic was tangentially referred to in the fourth report on the protection of the atmosphere (A/CN.4/705, paras. 66–67), examined during the sixty-ninth session of the Commission in 2017. As a result of the debates during the session, the Commission decided to provisionally adopt, *inter alia*, a paragraph in the preamble[111] and another paragraph[112] where the sea-level rise issue is mentioned incidentally. On that occasion, several members of the Commission, including the proponents of this

[104] Intergovernmental Panel on Climate Change, Climate Change 2014: Synthesis Report. *Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Geneva, 2014), sect. 1.1.4, p. 42.

[105] Intergovernmental Panel on Climate Change, , Executive Summary, "Sea level change", *Climate Change 2013: The Physical Science Basis* (see footnote 97 above), p. 1140.

[106] *Ibid*.

[107] A/73/10, annex B, para. 14.

[108] *Ibid.*, para. 18.

[109] *Ibid.*, para. 25.

[110] *Ibid.*, para. 18.

[111] "Aware also, in particular, of the special situation of low-lying coastal areas and small island developing States due to sea-level rise". Draft sixth preambular para. of the draft guidelines on protection of the atmosphere, provisionally adopted by the Commission, *Official Records of the General Assembly, Seventy-second Session, Supplement No. 10* (A/72/10), p. 149, para. 66.

[112] "When applying paragraphs 1 and 2, special consideration should be given to persons and groups particularly vulnerable to atmospheric pollution and atmospheric degradation. Such groups may include, *inter alia*, indigenous peoples, people of the least developed countries and people of low-lying coastal areas and small island developing States affected by sea-level rise." Para. 3 of draft guideline 9 of the draft guidelines on protection of the atmosphere, provisionally adopted by the Commission, *ibid.*, p. 150, para. 66.

topic, suggested that the issue of the sea-level rise be treated in a truly comprehensive manner, as a matter of priority, as a separate topic of the Commission.

34. Sea-level rise was also mentioned incidentally in the commentary of the draft articles on the protection of persons in the event of disasters, topic completed by the Commission in 2016:[113] the draft articles were considered in the commentary to be applicable to different types of "disasters",[114] including with regard to "sudden-onset events (such as an earthquake or tsunami) and to slow-onset events (such as drought or sea-level rise), as well as frequent small-scale events (floods or landslides)".[115]

V. Consideration of the topic by the International Law Association

35. The topic of sea-level rise was initially examined by the Committee on Baselines under the International Law of the Sea of the International Law Association, whose final report was considered at the Association's Sofia Conference in 2012.[116] The 2012 report recognized "that substantial territorial loss resulting from sea-level rise is an issue that extends beyond baselines and the law of the sea and encompasses consideration at a junction of several parts of international law".[117]

36. As a consequence, the International Law Association established the Committee on International Law and Sea Level Rise in 2012. That Committee decided to focus its work on three main issue areas: the law of the sea; forced migration and human rights; and issues of statehood and international security. An interim report of that Committee, which was presented at the 2016 Johannesburg Conference,[118] focused on issues regarding the law of the sea and migration/human rights. Another report was considered at the 2018 Sydney Conference, which completed the Committee's work on law of the sea issues. The Committee recommended that the International Law Association adopt a resolution containing two "*de lege ferenda*" proposals. The report and resolution 5/2018 adopted at the Sydney Conference partially endorsed these

[113] Adopted by the International Law Commission at its sixty-eighth session, in 2016, and submitted to the General Assembly as a part of the Commission's report covering the work of that session, *Official Records of the General Assembly, Seventy-first Session, Supplement No. 10* (A/71/10), para. 48.

[114] Defined as "a calamitous event or series of events resulting in widespread loss of life, great human suffering and distress, mass displacement, or large-scale material or environmental damage, thereby seriously disrupting the functioning of society." Draft art. 3, subpara. (a), of the draft articles on the protection of persons in the event of disasters, *ibid.*, para. 48, at p. 14.

[115] Para. (4) of the commentary to draft art. 3, *ibid.*, para. 49, at p. 23.

[116] Final report of the Committee on Baselines under the International Law of the Sea in International Law Association, *Report of the Seventy-fifth Conference, Held in Sofia, August 2012*, vol. 75 (2012), p. 385, at p. 424. That report stated that "the existing law of the normal baseline applies in situations of significant coastal change caused by both territorial gain and territorial loss. Coastal States may protect and preserve territory through physical reinforcement, but not through the legal fiction of a charted line that is unrepresentative of the actual low-water line."

[117] Resolution 1/2012, para. 7, *ibid.*, p. 17.

[118] Interim report of the Committee on International Law and Sea Level Rise in International Law Association, *Report of the Seventy-seventh Conference, Held in Johannesburg, August 2016*, vol. 77 (2017), p. 842.

proposals, while maintaining their general conceptual orientation.[119] Furthermore, the 2018 report proposed 12 principles with commentary comprising the Sydney Declaration of Principles on the Protection of Persons Displaced in the Context of Sea Level Rise.[120] The mandate of the Committee was extended in order to continue the study of the statehood question and other relevant issues of international law.

VI. Purpose and structure of the issues paper

37. The present issues paper is preliminary in nature, as will be the second issues paper, to be presented by the Co-Chairs of the Study Group in 2021. The intention of the Co-Chairs is to prepare, in the next quinquennium, consolidated issues papers based on the substantive reports reflecting the work of the Study Group that will be issued at the end of the Commission's sessions (see paragraph 6 above).

38. The issues paper is divided into the introduction and four parts.

39. The introduction addresses certain general matters: the consideration of the topic by the Commission; the positions of the Member States during the debates in the Sixth Committee in the previous years; outreach undertaken by the Co-Chairs of the Study Group; and scientific findings and prospects of sea-level rise, and the relationship thereof to the topic. It also addresses the previous references to the topic in the works of the Commission and the consideration of the topic by the International Law Association.

40. Part One presents the scope and outcome of the topic, the issues to be considered by the Commission, the final outcome to be reached, as well as the methodology to be used by the Study Group.

41. Part Two deals with the possible legal effects of sea-level rise on the baselines and outer limits of the maritime spaces measured from the baselines, on maritime

[119] Final report of the Committee on International Law and Sea Level Rise, International Law Association, *Report of the Seventy-eighth Conference, Held in Sydney, 19–24 August 2018*, vol. 78 (2019), p. 866: (a) "proposing that States should accept that, once the baselines and the outer limits of the maritime zones of a coastal or an archipelagic State have been properly determined in accordance with the detailed requirements of the 1982 Law of the Sea Convention, that also reflect customary international law, these baselines and limits should not be required to be readjusted should sea level change affect the geographical reality of the coastline"; and (b) proposing "that, on the grounds of legal certainty and stability, the impacts of sea level rise on maritime boundaries, whether contemplated or not by the parties at the time of the negotiation of the maritime boundary, should not be regarded as a fundamental change of circumstances" (*ibid.*, pp. 866 and 895, respectively). For the text of resolution 5/2018, see *ibid.*, p. 29: "The 78th Conference of the International Law Association, held in Sydney, Australia, 19–24 August 2018: … ENDORSES the proposal of the Committee that, on the grounds of legal certainty and stability, provided that the baselines and the outer limits of maritime zones of a coastal or an archipelagic State have been properly determined in accordance with the 1982 Law of the Sea Convention, these baselines and limits should not be required to be recalculated should sea level change affect the geographical reality of the coastline; ENDORSES ALSO the Committee's proposal that the interpretation of the 1982 Law of the Sea Convention in relation to the ability of coastal and archipelagic States to maintain their existing lawful maritime entitlements should apply equally to maritime boundaries delimited by international agreement or by decisions of international courts or arbitral tribunals; CONFIRMS that the Committee's recommendations regarding the maintenance of existing maritime entitlements are conditional upon the coastal State's existing maritime claims having been made in compliance with the requirements of the 1982 Law of the Sea Convention and duly published or notified to the Secretary-General of the United Nations as required by the relevant provisions of the Convention, prior to physical coastline changes brought about by sea level rise".

[120] Final report of the Committee on International Law and Sea Level Rise, *ibid*., pp. 897 *ff*., and resolution 6/2018, annex, *ibid*., p. 33.

delimitations, and on the exercise of sovereign rights and jurisdiction of the coastal State and its nationals, as well as on the rights of third States and their nationals in maritime spaces in which boundaries or baselines have been established. It also includes the possible legal effects of sea-level rise on islands insofar as their role in the construction of baselines and in maritime delimitations is concerned.

42. Part Three covers possible legal effects of sea-level rise on the status of islands, including rocks, and on the maritime entitlements of a coastal State with fringing islands. It also deals with the legal status of artificial islands, reclamation or island fortification activities as a response/adaptive measures to sea-level rise.

43. Part Four presents observations and the future programme of work.

Part One: General

I. Scope and outcome of the topic

44. The present topic concerns the issue of "Sea-level rise in relation to international law". In accordance with the 2018 syllabus, the Study Group will examine the possible legal effects or implications of sea-level rise in three main areas: (a) law of the sea; (b) statehood; and (c) protection of persons affected by sea-level rise.[121] The syllabus also indicates that "[t]hese three issues reflect the legal implications of sea-level rise for the constituent elements of the State (territory, population and Government/statehood) and are thus interconnected and should be examined together".[122]

45. The 2018 syllabus also sets out the limits of action by the Study Group on the present topic. It emphasizes that the topic "does not deal with protection of environment, climate change *per se*, causation, responsibility and liability", and that it "does not intend to provide a comprehensive and exhaustive scoping of the application of international law to the questions raised by sea-level rise, but to outline some key issues" in the above-mentioned three areas.[123] The 2018 syllabus is also clear as to the fact that these "three areas to be examined should be analysed only within the context of sea-level rise notwithstanding other causal factors that may lead to similar consequences".[124] Another clear limit set forth by the syllabus is that "[t]his topic will not propose modifications to existing international law, such as [the Convention]".[125] At the same time, the syllabus does not exclude that, in relation to the topic, "[o]ther questions may arise in the future requiring analysis".[126]

46. Lastly, while the United Nations Convention on the Law of the Sea is the principal source of codified law for the purposes of the present paper, this is without prejudice to the position of States that have not ratified the Convention.

A. Issues to be considered by the Commission

47. As already mentioned, the Study Group will examine the possible legal effects or implications of sea-level rise in three main areas: (a) law of the sea; (b) statehood; and (c) protection of persons affected by sea-level rise.

[121] A/73/10, annex B, para. 12.
[122] *Ibid.*, para. 13.
[123] *Ibid.*, para. 14.
[124] *Ibid*.
[125] *Ibid*.
[126] *Ibid*.

48. On the law of the sea, the issues to be examined are listed in the 2018 syllabus as follows: (a) possible legal effects of sea-level rise on the baselines and outer limits of the maritime spaces that are measured from the baselines; (b) possible legal effects of sea-level rise on maritime delimitations; (c) possible legal effects of sea-level rise on islands insofar as their role in the construction of baselines and in maritime delimitations is concerned; (d) possible legal effects of sea-level rise on the exercise of sovereign rights and jurisdiction of the coastal State and its nationals in maritime spaces in which boundaries or baselines have been established, especially regarding the exploration, exploitation and conservation of their resources, as well as on the rights of third States and their nationals (for example, innocent passage, freedom of navigation and fishing rights); (e) possible legal effects of sea-level rise on the status of islands, including rocks, and on the maritime entitlements of a coastal State with fringing islands; and (f) the legal status of artificial islands, reclamation or island fortification activities under international law as a response/adaptive measures to sea-level rise.[127]

49. On statehood, the issues to be examined are listed in the 2018 syllabus as follows: (a) analysis of the possible legal effects on the continuity or loss of statehood in cases where the territory of island States is completely covered by the sea or becomes uninhabitable; (b) legal assessment regarding the reinforcement of islands with barriers or the erection of artificial islands as a means to preserve the statehood of island States against the risk that their land territory might be completely covered by the sea or become uninhabitable; (c) analysis of the legal fiction according to which, considering the freezing of baselines and the respect of the boundaries established by treaties, judicial judgments or arbitral awards, the continuity of statehood of the island States could be admitted due to the maritime territory established as a result of territories under their sovereignty before the latter become completely covered by the sea or uninhabitable; (d) assessment of the possible legal effects regarding the transfer – either with or without transfer of sovereignty – of a strip or portion of territory of a third State in favour of an island State whose terrestrial territory is at risk of becoming completely covered by the sea or uninhabitable, in order to maintain its statehood or any form of international legal personality; and (e) analysis of the possible legal effects of a merger between an island developing State whose land territory is at risk of becoming completely covered by the sea or uninhabitable and another State, or of the creation of a federation or association between them, regarding the maintenance of statehood or of any form of international legal personality of the island State.[128]

50. On the protection of persons affected by sea-level rise, the issues to be examined are listed in the 2018 syllabus as follows: (a) the extent to which the duty of States to protect the human rights of individuals under their jurisdiction applies to consequences related to sea-level rise; (b) whether the principle of international cooperation may be applied to help States cope with the adverse effects of sea-level rise on their population; (c) whether there are any international legal principles applicable to measures to be taken by States to help their population to remain *in situ*, despite rising sea levels; (d) whether there are any international legal principles applicable to the evacuation, relocation and migration abroad of persons owing to the adverse effects of sea-level rise; and (e) possible principles applicable to the protection of the human rights of persons who are internally displaced or who migrate owing to the adverse effects of sea-level rise.[129]

[127] *Ibid.*, para. 15.
[128] *Ibid.*, para. 16.
[129] *Ibid.*, para. 17.

B. Final outcome

51. According to the 2018 syllabus, the Study Group will perform "a mapping exercise of the legal questions raised by sea-level rise and its interrelated issues … This effort could contribute to the endeavours of the international community to respond to these issues and to assist States in developing practicable solutions in order to respond effectively to the issues prompted by sea-level rise."[130]

52. The 2018 syllabus indicates that the final outcome will be a final report of the Study Group, accompanied by a set of conclusions on its work. After the presentation of the final report, "it could be considered whether and how to pursue further the development of the topic or parts of it within the Commission or other [forums]".[131]

II. Methodological approach

53. According to the 2018 syllabus, the Study Group will analyse the existing international law, including treaty and customary international law, in accordance with the mandate of the Commission, which is to undertake progressive development of international law and its codification.[132] The work of the Study Group will be based, using a systemic and integrative approach, on the practice of States, international treaties, other international instruments, judicial decisions of international and national courts and tribunals, and the analyses of scholars.[133] Other organizational matters were addressed in chapter X of the 2019 annual report of the Commission[134] and in paragraph 5 above.

54. The Co-Chairs also acknowledge the valuable contributions of the members of the Commission received in the process of drafting the present paper. After the circulation of the issues paper, "[m]embers of the Study Group will then be invited to put forward contribution papers that could comment upon, or complement, the issues paper prepared by the Co-Chairs (by addressing, for example, regional practice, case law or any other aspects of the subtopic)".[135] However, upon request of the Co-Chairs, in order to facilitate information on State practice, a number of members of the Commission kindly offered to prepare such contributions in advance, prior to the finalization of the present paper. The Co-Chairs would like to express their appreciation to Mr Nguyễn Hồng Thao for his valuable paper on State practice in the Asia-Pacific region.[136]

55. As is well known, State practice is essential for the work of the Commission, and especially for the work of the Study Group on the present topic. The Co-Chairs would like to express their deep gratitude to those Member States that responded to the request by the Commission for such practice in chapter III of the 2019 annual

[130] *Ibid.*, para. 18.
[131] *Ibid.*, para. 26.
[132] *Ibid.*, para. 18.
[133] *Ibid.*, para. 20.
[134] A/74/10, paras. 263–273.
[135] *Ibid.*, para. 270.
[136] On file with the Codification Division.

report of the Commission,[137] either directly to the Commission[138] or through organizations such as the Asian-African Legal Consultative Organization[139] (to which the Co-Chairs are also very grateful).

Part Two: Possible legal effects of sea-level rise on the baselines and outer limits of the maritime spaces measured from the baselines, on maritime delimitations, and on the exercise of sovereign rights and jurisdiction of the coastal State and its nationals, as well as on the rights of third States and their nationals in maritime spaces in which boundaries or baselines have been established

56. As a result of sea-level rise, the coastal configuration of a State and, as a consequence, its baselines may change. The importance of baselines lies in the rule that, in accordance with the United Nations Convention on the Law of the Sea, the outer limits of the maritime spaces of a State, with some exceptions as will be shown below, are measured from the baselines.

57. As a further result, the relevant points that were used or are intended to be used for establishing a maritime boundary, either by agreement or by adjudication, may also change.

58. In both cases mentioned above, the role of islands might be of relevance, either as they are integrated in the baseline, if they are part of the coastal configuration, or, in the case of maritime delimitations, as relevant points used for drawing the delimitation line(s) and/or as relevant or special circumstances.

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[137] *Ibid*., paras. 31–33:
"31. The Commission would welcome any information that States, international organizations and the International Red Cross and Red Crescent Movement could provide on their practice and other relevant information concerning sea-level rise in relation to international law.
"32. At the seventy-second session (2020), the Study Group will focus on the subject of sea-level rise in relation to the law of the sea. In this connection, the Commission would appreciate receiving, by 31 December 2019, examples from States of their practice that may be relevant (even if indirectly) to sea-level rise or other changes in circumstances of a similar nature. Such practice could, for example, relate to baselines and where applicable archipelagic baselines, closing lines, low-tide elevations, islands, artificial islands, land reclamation and other coastal fortification measures, limits of maritime zones, delimitation of maritime boundaries, and any other issues relevant to the subject. Relevant materials could include: (a) bilateral or multilateral treaties, in particular maritime boundary delimitation treaties; (b) national legislation or regulations, in particular any provisions related to the effects of sea-level rise on baselines and/or more generally on maritime zones; (c) declarations, statements or other communications in relation to treaties or State practice; (d) jurisprudence of national or international courts or tribunals and outcomes of other relevant processes for the settlement of disputes related to the law of the sea; (e) any observations in relation to sea-level rise in the context of the obligation of States parties under the United Nations Convention on the Law of the Sea to deposit charts and/or lists of geographical coordinates of points; and (f) any other relevant information, for example, statements made at international forums, as well as legal opinions, and studies.
"33. The Commission would further welcome receiving in due course any information related to statehood and the protection of persons affected by sea-level rise, as outlined in the syllabus of the topic, both of which will be considered by the Study Group during the seventy-third session (2021) of the Commission."

[138] Croatia, Maldives, Micronesia (Federated States of), the Netherlands, Romania, Singapore, United Kingdom, United States, and Pacific Islands Forum.

[139] Iraq, Qatar and Syrian Arab Republic.

59. At the same time, the most important aspect related to the possible effect of sea-level rise on maritime spaces and maritime delimitations refers to the entitlements, in accordance with the legal regime(s) provided by the Convention, of the coastal State(s) and, as the case may be, of the third States.

I. Possible legal effects of sea-level rise on the baselines and outer limits of the maritime spaces that are measured from the baselines

A. Provisions of the United Nations Convention on the Law of the Sea on the role of baselines in establishing maritime spaces and their outer limits

60. According to article 5 of the Convention, "[e]xcept where otherwise provided in this Convention, the normal baseline … is the low-water line along the coast as marked on large-scale charts officially recognised by the coastal State". Straight baselines are defined under article 7, paragraph 1: "[i]n localities where the coastline is deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity, the method of straight baselines joining appropriate points may be employed in drawing the baseline from which the breadth of the territorial sea is measured." The drawing of straight baselines must follow the conditions provided for under article 7, paragraphs 3 to 6. For the present topic, article 7, paragraph 4, is of relevance, since it allows baselines to be drawn to and from low-tide elevations only when "lighthouses or similar installations which are permanently above sea level have been built on them or … in instances where the drawing of baselines to and from such elevations has received general international recognition". Article 7, paragraph 2,[140] which deals with the situation of a coastline that is highly unstable because of the presence of a delta and other natural conditions, is also of interest for the present topic, and will be discussed below.

61. Other provisions of the Convention related to baselines and relevant to the present topic are those referring to reefs (article 6: "[i]n the case of islands situated on atolls or of islands having fringing reefs, the baseline for measuring the breadth of the territorial sea is the seaward low-water line of the reef, as shown by the appropriate symbol on charts officially recognized by the coastal State"), mouths of rivers (article 9: "[i]f a river flows directly into the sea, the baseline shall be a straight line across the mouth of the river between points on the low-water line of its banks"), bays (article 10, paragraph 4: "[i]f the distance between the low-water marks of the natural entrance points of a bay does not exceed 24 nautical miles, a closing line may be drawn between these two low-water marks, and the waters enclosed thereby shall be considered as internal waters"; and article 10, paragraph 5: "[w]here the distance between the low-water marks of the natural entrance points of a bay exceeds 24 nautical miles, a straight baseline of 24 nautical miles shall be drawn within the bay in such a manner as to enclose the maximum area of water that is possible with a line of that length"), low-tide elevations (article 13, paragraph 1: "[w]here a low-tide elevation is situated wholly or partly at a distance not exceeding the breadth of the territorial sea from the mainland or an island, the low-water line on that elevation may be used as the baseline for measuring the breadth of the territorial sea") and

[140] "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."

archipelagic baselines (article 47, paragraph 1: "[a]n archipelagic State may draw straight archipelagic baselines joining the outermost points of the outermost islands and drying reefs of the archipelago provided that within such baselines are included the main islands and an area in which the ratio of the area of the water to the area of the land, including atolls, is between 1 to 1 and 9 to 1"; article 47, paragraphs 2 to 9, sets forth the conditions for establishing such baselines).

62. In practice, the baseline may be drawn by the coastal State using a combination of the methods presented in articles 3 to 7 and 9 to 13, as provided for by article 14 of the Convention ("[t]he coastal State may determine baselines in turn by any of the methods provided for in the foregoing articles to suit different conditions").[141]

63. Internal waters are provided for under article 8, paragraph 1: "waters on the landward side of the baseline of the territorial sea form part of the internal waters of the State". Article 8, paragraph 2,[142] is also of interest for the present topic, and will be discussed below in chapter IV of the present Part.

64. At the same time, the breadth and the outer limits of territorial seas are provided for by the Convention in article 3 ("[e]very State has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles, measured from baselines determined in accordance with this Convention") and article 4 ("[t]he outer limit of the territorial sea is the line every point of which is at a distance from the nearest point of the baseline equal to the breadth of the territorial sea").

65. The breadth and the outer limits of contiguous zones are established in article 33 of the Convention: "[t]he contiguous zone may not extend beyond 24 nautical miles from the baselines from which the breadth of the territorial sea is measured".

66. The breadth of exclusive economic zones is set forth in article 57 of the Convention: "[t]he exclusive economic zone shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured".

67. The outer limits of the continental shelf are regulated under article 76 of the Convention. According to article 76, paragraph 1, "[t]he continental shelf of a coastal State comprises the sea-bed 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*" (emphasis added). Under article 76, paragraph 2, "[t]he continental shelf of a coastal State shall not

[141] See David D. Caron, "When law makes climate change worse: rethinking the law of baselines in light of a rising sea level", *Ecology Law Quarterly*, vol. 17 (1990) p. 621, at p. 633: "[T]he 'normal' baseline is the low water mark along the coast. To make this baseline continuous, 'closing lines' may be used across the mouths of rivers or the entrances to bays if the distance between the low water marks of the natural entrance points to the bay does not exceed twenty-four nautical miles. Although the low water mark is the 'normal' baseline, it often may not be the baseline normally encountered because of the just-mentioned special features or because of some other exception. The major exception to the combination of the low water mark and closing lines is the use of straight baselines following the general direction of a deeply indented coast or joining the outermost points of an archipelagic State."

[142] "Where the establishment of a straight baseline in accordance with the method set forth in article 7 has the effect of enclosing as internal waters areas which had not previously been considered as such, a right of innocent passage as provided in this Convention shall exist in those waters."

extend beyond the limits provided for in paragraphs 4 to 6". Article 76, paragraph 4[143] sets forth the way in which the coastal State establishes the outer edge of the continental margin, which is necessary given the alternative provisions in article 76, paragraph 1, concerning the outer limits of the continental shelf. Article 76, paragraph 5, is also important: "[t]he fixed points comprising the line of the outer limits of the continental shelf on the sea-bed, drawn in accordance with paragraph 4 (a) (i) and (ii), 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" (emphasis added). Article 76, paragraph 6, provides an exception: "[n]otwithstanding the provisions of paragraph 5, on submarine ridges, the outer limit of the continental shelf shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured". Article 76, paragraph 7, sets forth the way in which a coastal State shall delineate the outer limits of the continental shelf where the shelf extends beyond the 200 nautical miles from the baselines ("by straight lines not exceeding 60 nautical miles in length, connecting fixed points, defined by co-ordinates of latitude and longitude"). Article 76, paragraph 8, is also of interest for our topic, since it provides that when a coastal State intends to establish the outer limits of its continental shelf beyond 200 nautical miles from the baselines, it is required to submit information to the Commission on the Limits of the Continental Shelf – set up under annex II to the Convention – which "shall make recommendations to coastal States on matters related to the establishment of the outer limits of their continental shelf", and also provides that the shelf limits "established by a coastal State on the basis of these recommendations shall be *final and binding*" (emphasis added). Last but not least, article 76, paragraph 9, is also relevant to the present topic: "[t]he coastal State shall deposit with the Secretary-General of the United Nations charts and relevant information, including geodetic data, *permanently* describing the outer limits of its continental shelf" (emphasis added).

B. Effects of the ambulation of the baseline as a result of sea-level rise

68. In the case of a normal baseline where, owing to the permanent inundation of coastal areas, the low-water line moves in a landward direction, thus changing the configuration of the coast, if a new baseline is to be drawn, its position will also move landward from the position of the previous baseline.

69. In the case of a straight baseline, if the points[144] used to draw the baseline are permanently inundated due to sea-level rise, then, where a new baseline is to be drawn, the position of the new baseline will likewise be landward compared to the previous one.

[143] "(a) For the purposes of this Convention, the coastal State shall establish the outer edge of the continental margin wherever the margin extends beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, by either:
"(i) a line delineated in accordance with paragraph 7 by reference to the outermost fixed points at each of which the thickness of sedimentary rocks is at least 1 per cent of the shortest distance from such point to the foot of the continental slope; or
"(ii) a line delineated in accordance with paragraph 7 by reference to fixed points not more than 60 nautical miles from the foot of the continental slope.
"(b) In the absence of evidence to the contrary, the foot of the continental slope shall be determined as the point of maximum change in the gradient at its base."

[144] Such as islands or, as set forth in article 7, paragraph 4, of the Convention, low-tide elevations on which lighthouses or similar installations that are permanently above sea level have been built or in instances where the drawing of baselines to and from such elevations has received general international recognition.

70. The same landward repositioning of the baseline will occur in the case of the permanent inundation of the points used to draw the baseline in the case of reefs (regulated by article 6 of the Convention), mouths of rivers (art. 9), bays (art. 10), low-tide elevations (art. 13) and archipelagic baselines (art. 47), as set out in section A above.

71. If a new baseline is drawn in a landward position (compared to the position of the previous baseline), then the seaward limits of the various maritime spaces that are measured from the baseline also move in the same direction. Based on the Convention rules presented in section A of the present chapter, this is the case for the territorial sea, the contiguous zone and the exclusive economic zone. In the case of the internal waters, depending on the effect of the sea-level rise on the configuration of the coast, their surface will either be maintained (mainly in the case of normal baselines) or reduced (in the case of straight baselines).

72. In the case of the continental shelf, the Convention provides for the permanency of the outer limits of the continental shelf in article 76, paragraph 9, which provides that the "coastal State shall deposit with the Secretary-General of the United Nations charts and relevant information, including geodetic data, permanently describing the outer limits of its continental shelf". There are, of course, Convention rules providing for the representation of the baselines and limits of maritime spaces on charts (or, alternatively, lists of geographical coordinates of points, specifying the geodetic datum) and for their publicity: see article 16 regarding the territorial sea, article 47, paragraphs 8 and 9, regarding the archipelagic waters and article 75 regarding exclusive economic zones. But none of these norms provide for the permanent character of the limits of these maritime zones. That means that, in the case of the continental shelf, once the coastal State deposited the "charts and relevant information, including geodetic data" describing the outer limits of its continental shelf, this description is permanent and cannot be replaced with another one. So, the outer limits of the continental shelf cannot be affected, as a rule, by the effects of sea-level rise on the baselines, provided that the coastal State deposited the respective charts and information.[145]

73. The question arises of what happens where the coastal State did not deposit the charts and relevant information, including geodetic data describing the outer limits of its continental shelf. Since in this case the permanency of the outer limits of the continental shelf is not ensured, it means that these limits may be changed, including as an effect of sea-level rise in those instances when such limits are dependent on the position of the baselines. Indeed, article 76, paragraph 1, of the Convention provides that the continental shelf is measured from the baseline to the outer edge of the continental margin or to a distance of 200 nautical miles from the baselines from which the territorial sea is measured. In addition, according to article 76, paragraph 5, the outer limits of the continental shelf can be up to 350 nautical miles from the baselines from which the breadth of the territorial sea is measured or up to 100 nautical miles from the 2,500 metre isobath. Therefore, where the coastal State did not "deposit with the Secretary-General of the United Nations charts and relevant information, including geodetic data, permanently describing the outer limits of its continental shelf", the seaward limit of the continental shelf will not be impacted by the movement of the baseline only where this outer limit is fixed on the basis of the outer edge of the continental margin rule or on the 2,500 metre isobath rule.

74. Another provision regulating the permanency of the outer limits is article 76, paragraph 8, which provides that, when a coastal State intends to establish the outer limits of its continental shelf beyond 200 nautical miles from the baselines, the shelf

[145] See, for instance, David D. Caron, "When law makes climate change worse" (footnote 141 above), pp. 634–635.

limits established by a coastal State on the basis of the recommendations of the Commission on the Limits of the Continental Shelf are final and binding. Thus, sea-level rise effects upon the baselines can no longer affect these limits once they are fixed in accordance with that provision of the Convention.

75. So, following the implementation of the above-mentioned provisions of the Convention, the outer limits of the continental shelf are permanent, but the outer limits of the exclusive economic zone are not. If, owing to the effects of sea-level rise on the baselines, a new baseline is drawn in a position more landward, the outer limits of the exclusive economic zone also move landward. The Convention does not provide for the coincidence of the outer limits of the continental shelf and the ones of the exclusive economic zone. In theory, such a difference may exist, but in practice, in the vast majority of cases, the outer limits of the continental shelf and the ones of the exclusive economic zone coincide. So, there might be situations when the water surface above a portion of the continental shelf belongs to the high seas. The legal regime of the high seas is quite different from that of the continental shelf (and of the exclusive economic zone) as far as the entitlements of the coastal State go, especially the "sovereign rights for the purpose of exploring it and exploiting its natural resources",[146] while the legal regime of the exclusive economic zone is rather similar to that of the continental shelf. Such a situation may create difficulties for the coastal State in exercising its rights in relation to the continental shelf, and therefore should be avoided (as discussed below in chapter IV of the present Part). This is one more argument in favour of maintaining the baselines and the outer limits of maritime zones measured therefrom.

76. In general, if the baselines and the outer limits of the various maritime spaces move landward, this means that the legal status and legal regime of the maritime zones change: for example, part of the internal waters becomes territorial sea, part of the territorial sea becomes contiguous zone and/or exclusive economic zone, and part of the exclusive economic zone becomes high seas,[147] with implications for the specific rights of the coastal State and third States, and their nationals (innocent passage, freedom of navigation, fishing rights etc.).[148] Sea-level rise also poses a risk to an archipelagic State's baselines. As a result of the inundation of small islands or drying reefs, the existing archipelagic baseline could be impacted, resulting in the loss of archipelagic State status of baselines if the water to the area of land ratio exceeds 9:1. In addition, it could result in an appreciable departure from the general configuration of the archipelago and affect the distance/percentage criterion for the archipelagic baselines, regulated under article 47, paragraph 2, of the Convention.[149]

77. These implications will be examined below, in chapter IV of the present Part. For the purposes of the present chapter, it suffices to note that such implications affect legal

[146] United Nations Convention on the Law of the Sea, art. 77, para. 1.

[147] And part of the continental shelf becomes part of the international seabed where the coastal State did not deposit with the Secretary-General of the United Nations charts and relevant information, including geodetic data, permanently describing the outer limits of its continental shelf, meaning that the seaward limit of the continental shelf moves along with the move of the baseline (with the exception of the cases when this outer limit is fixed on the basis of the outer edge of the continental margin rule or on the 2,500 metre isobath rule).

[148] See, for example, Sarra Sefrioui, "Adapting to sea level rise: a law of the sea perspective", Gemma Andreone (ed.), *The Future of the Law of the Sea* (Springer International, 2017), pp. 3-22, at pp. 10 and 16 ("by applying the ambulatory baseline approach and if baselines are not marked on large-scale charts, navigation charts would not be precise in determining the maritime limits and boundaries and ships would not know exactly in which zone they navigate and to which rights they are subject (right of innocent passage, fishing rights, etc.)").

[149] See, for example, Stuart Kaye, "The Law of the Sea Convention and sea level rise after the *South China Sea Arbitration*", *International Law Studies Series, US Naval War College*, vol. 93 (2017), p. 423, at pp. 433–436.

stability, security, certainty and predictability, as well as the balance of rights between the coastal State and third States in these maritime zones, as emphasized by the Member States in their statements to the Sixth Committee (see paragraphs 18 and 23 above).

78. The question is whether the provisions of the Convention could be interpreted and applied so as to address those effects of sea-level rise on the baselines, outer limits of maritime zones and entitlements in these zones. International law scholars dealing with the topic observe that the Convention was drafted at a time when sea-level rise was not perceived as a problem that needed to be addressed by the law of the sea. The only provisions expressly referring to permanency are those related to continental shelf (already addressed above) and the regulation in article 7, paragraph 2, of the situation on a coastline that is highly unstable because of the presence of a delta and other natural conditions (which will be discussed below). This has led to the Convention being interpreted to the effect that the outer limits of the territorial sea, contiguous zone and exclusive economic zone are ambulatory.[150] Nevertheless, it is quite important to underline that the Convention does not indicate *expressis verbis* that new baselines must be drawn, recognized (in accordance with article 5)[151] or notified (in accordance with article 16) by the coastal State when coastal conditions change; the same observation is valid also with regard to the new outer limits of maritime zones (which move when baselines move).[152] Also, it should be noted that the obligation under article 16 for the coastal State to show the baselines for measuring the breadth of the territorial sea or the limits "derived therefrom" on charts (or a list of geographical coordinates of points, specifying the geodetic datum), and to "give due publicity to such charts or lists of geographical coordinates" and to deposit copies of them with the Secretary-General of the United Nations, applies only in the case of straight baselines (art. 7), mouths of rivers (art. 9) and bays (art. 10). So, normal baselines are exempted from this obligation.[153]

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[150] See, for instance, David D. Caron, "When law makes climate change worse" (footnote 141 above), pp. 635–636: "the 1982 Convention appears to provide that … the outer boundary of the exclusive economic zone, the contiguous zone, and the territorial sea are ambulatory in that they will move with the baselines from which they are measured. Apparently, the conference of experts who met throughout the decade of the 1970's did not anticipate that there could be a significant global regression of coastlines".

[151] Under article 5, "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 *recognised* by the coastal State" (emphasis added), meaning that the coastal State has to mark the low-water line on such charts and to recognize them officially in order for a new baseline to be assumed.

[152] See, for example, Rosemary Rayfuse, "International law and disappearing States: utilising maritime entitlements to overcome the statehood dilemma", University of New South Wales Law Research Paper No. 52 (2010), p. 3; Alfred H.A. Soons, "The effects of a rising sea level on maritime limits and boundaries", *Netherlands International Law Review*, vol. 37 (1990), pp. 207–232, at pp. 216–218; Caron, "When law makes climate change worse" (footnote 141 above), p. 634: "[The Third United Nations Conference on the Law of the Sea] does not expressly provide that boundaries shall move with the baselines. It does do so, however, by negative implication."

[153] A number of authors, such as Clive Schofield and David Freestone ("Options to protect coastlines and secure maritime jurisdictional claims in the face of global sea level rise", in Michael B. Gerrard and Gregory E. Wannier (eds.), *Threatened Island Nations: Legal Implications of Rising Seas and a Changing Climate* (Cambridge, Cambridge University Press, 2013), pp. 141–165, (from which the following citations are used)), suggest, based on the language of article 5 of the Convention (which mentions the "low-water line along the coast as marked on *large-scale charts officially recognised* by the coastal State" (emphasis added)), that "the key requirement is that the chart be recognized by the coastal States". In this case, "if States do not update their charts to reflect the loss of land territory or basepoints", they can freeze their baselines. However, they note that "a policy of not updating charts would pose potential dangers to seafarers as official charts become more and more inaccurate over time. *A dual charts system of official charts for maritime jurisdictional purposes and navigational charts, however, could resolve this problem*." *Ibid.*, pp. 21–22 (emphasis added.)

79. The interpretation of the Convention to the effect that baselines (and, consequently, the outer limits of maritime zones) have, generally, an ambulatory character does not respond to the concerns of the Member States prompted by the effects of sea-level rise and the consequent need to preserve the legal stability, security, certainty and predictability. The only express exception in the Convention to this ambulatory character – other than the permanency of the continental shelf following the deposit with the Secretary-General of the United Nations of charts and relevant information, including geodetic data, describing its outer limits – is article 7, paragraph 2: "[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." Although there were notable attempts by scholars to argue in favour of the use of this provision to respond to sea-level rise concerns in general,[154] the overall view is that this text is only applicable to situations where deltas are involved.[155]

80. Another possible option suggested by scholars for using the existing provisions of the Convention to address the effects of sea-level rise on the baselines is the interpretation of the rules of article 7 referring to straight baselines. It is argued that

> [u]nlike normal baselines, where the rising sea levels can influence any part of the baseline, straight baselines are only vulnerable to change at the points that anchor the straight baselines to the land. Even if there is some advance of the low-water line landward at some of these points, there is no limit on the length of lines that can be drawn in straight baseline systems. Thus, the existing line could simply be extended to reach the new low-water line.
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> It will be generally true that those straight baselines drawn between points established on rocks on coasts will not be significantly affected by rising sea levels.[156]

In addition, the argument is made that it is possible to use to this purpose article 7, paragraph 4, which allows for baselines to be drawn to and from low-tide elevations on which lighthouses or similar installations that remain permanently above sea level have been built or in instances where such baselines have received general international recognition ("Thus, in cases where former islands were still visible at low tide, and *the State's prior system of straight baselines had achieved international recognition*, nothing would change"),[157] and article 7, paragraph 5, under which "account may be taken, in determining particular baselines, of economic interests peculiar to the region concerned, the reality and the importance of which are clearly

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[154] See 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 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, Proceedings of the 1989 IBRU Conference* (Durham, University of Durham, 1990), p. 279, quoted by Caron "When law makes climate change worse" (footnote 141 above), p. 635; as well as Samuel Pyeatt Menefee, "'Half seas over': The impact of sea level rise on international law and policy", *UCLA Journal of Environmental Law and Policy* (1990), pp. 175–218, at p. 205.

[155] The text of article 7, paragraph 2, had at its basis a proposal by Bangladesh, which underwent a lot of changes during the negotiations. If at some point the text included the wording "delta *or* other natural conditions", in the end it was agreed in the current shape ("delta *and* other natural conditions"), which clearly restricts its application to situations were a delta is present (although some authors point to the fact that the Russian version of the Convention includes the word "or" instead of "and"). See, e.g., Prescott and Bird, "The influence of rising sea levels on baselines …" (see previous footnote), pp. 288–291.

[156] *Ibid.*, p. 292, quoted by Menefee, "'Half seas over'" (see footnote 154 above), p. 206.

[157] Menefee, "'Half seas over'" (see footnote 154 above), p. 207.

evidenced by long usage", which "arguably provides for retention of baselines connecting certain points overtaken by sea-level rise".[158] But the same authors concede that such solutions based on using the provisions of the Convention on straight baselines are not efficient when the sea-level rise is significant.[159]

81. The Committee on Baselines under the International Law of the Sea of the International Law Association, in its final report adopted by the Sofia Conference in 2012, concluded that "the normal baseline is ambulatory" and that consequently "if the legal baseline changes with human-induced expansions of the actual low-water line to seaward, then it must also change with contractions of the actual low-water line to landward".[160] It also stated that "the existing law of normal baseline applies in situations of significant coastal change caused by both territorial gain and territorial loss. Coastal States may protect and preserve territory through physical reinforcement, but not through the legal fiction of a charted line that is unrepresentative of the actual low-water line".[161]

82. Such a position does not respond to the concerns of the Member States impacted by sea-level rise or the need to preserve the legal stability, security, certainty and predictability. That is why the International Law Association, at its 2018 Conference, endorsed a proposal of its Committee on International Law and Sea Level Rise on this issue, by means of resolution 5/2018, which reads that, "on the grounds of legal certainty and stability, provided that the baselines and the outer limits of maritime zones of a coastal or an archipelagic State have been properly determined in accordance with the 1982 Law of the Sea Convention, these baselines and limits should not be required to be recalculated should sea level change affect the geographical reality of the coastline".[162] This resolution also confirmed that "the Committee's recommendations regarding the maintenance of existing maritime entitlements are conditional upon the coastal State's existing maritime claims having been made in compliance with the requirements of the 1982 Law of the Sea Convention and duly published or notified to the Secretary-General of the United Nations as required by the relevant provisions of the Convention, prior to physical coastline changes brought about by sea level rise."[163]

83. As discussed above, there is a strong degree of convergence in the positions expressed by the Member States in the submissions to the Commission in response to the request for State practice and in their statements before the Sixth Committee as to the need for preserving legal stability, security, certainty and predictability in connection with the present topic. They also provide clear examples of State practice that, on one hand, refer to the establishment of fixed baselines (and outer limits of maritime zones) and, on the other hand, physical protection of their coasts against sea-level rise effects (the issue of the legal aspects of physical protection will be examined below in Part Three).

84. For example, in its submission to the Commission, Maldives clearly states that:

> once a State has determined the extent of its maritime entitlements in accordance with [the Convention] and deposited the appropriate charts and/or geographic coordinates with the … Secretary-General, as the Maldives has done, these entitlements are fixed and will not be altered by any subsequent physical changes to a States' geography as a result of sea-level rise. The Maldives takes

[158] *Ibid.*
[159] *Ibid*.
[160] Final report of the Committee on Baselines under the International Law of the Sea (see footnote 116 above), pp. 422 and 426.
[161] *Ibid.,* p. 424.
[162] International Law Association, resolution 5/2018 (see footnote 119 above).
[163] *Ibid*.

> this view for two key reasons: (a) this position is most consistent with the principles of stability and certainty of international law; and (b) the considerations of equity and fairness require that [small island developing States'] maritime entitlements are protected, especially given the particular vulnerability of [small island developing States] to climate change.
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> …
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> Maritime entitlements determined in accordance with [the Convention] must remain stable regardless of sea-level rise. … The principles of stability and certainty of international law require that maritime entitlements should not be affected by sea-level rise.[164]

Maldives has also undertaken "coastal fortification efforts in an attempt to try and protect islands and communities from rising sea levels", [165] which "displays Maldives' commitment to preserving its land territory as well as its maritime entitlements, despite the high costs and technical challenges associated with such projects". [166]

85. The Federated States of Micronesia, in its submission to the Commission, while aligning itself with the comments made by the Pacific Islands Forum in its submission to the Commission (see below), also submitted a copy of a set of observations included by Micronesia in its 24 December 2019 deposit with the Secretary-General of the United Nations of charts and lists of geographical coordinates of points for the Federated States of Micronesia in compliance with article 16, paragraph 2, and article 75, paragraph 2, of the Convention. In these observations, the Federated States of Micronesia "states its understanding that it is not obliged to keep under review the maritime zones reflected in the present official deposit of charts and lists of geographical coordinates of points, delineated in accordance with [the Convention], and that the Federated States of Micronesia intends to maintain these maritime zones in line with that understanding, notwithstanding climate change-induced sea-level rise".[167]

86. The Pacific Islands Forum, in its submission to the Commission on behalf of its member States,[168] which is relevant for evidencing the regional State practice, emphasizes that

> [p]reservation of existing maritime zones and the entitlements that flow from them is essential. As early as 2010, [Pacific Islands Forum] Leaders committed to preserving [Forum] Members' existing rights stemming from maritime zones in the face of sea-level rise.[169]
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> …

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[164] Submission of Maldives, forwarded through note verbale No. 2019/UN/N/50 of 31 December 2019 to the United Nations, p. 9. Available from https://legal.un.org/ilc/guide/8_9.shtml#govcoms.

[165] *Ibid*., p. 8: "The most prominent example of this is the construction of the artificial island, Hulhumalé, which has been constructed next to the capital Malé. The island has been built at 2.1m above sea level (60cm higher than the normal island elevation of 1.5m) in order to take into account future sea-level rise."

[166] *Ibid*.

[167] Submission of the Federated States of Micronesia, forwarded through note verbale No. FSMUN 058-2019 of 27 December 2019 to the United Nations.

[168] I.e., Australia, Fiji, Kiribati, Marshall Islands, Micronesia (Federated States of), Nauru, New Zealand, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

[169] Submission of the Pacific Islands Forum, forwarded through letter of 30 December 2019 of the Permanent Representative of Tuvalu to the United Nations, on behalf of the Pacific Islands Forum members, p. 2 (available from https://legal.un.org/ilc/guide/8_9.shtml#govcoms), quoting Cristelle Pratt and Hugh Govan, "Our sea of islands, our livelihoods, our Oceania – Framework for a Pacific Oceanscape: a catalyst for implementation of ocean policy" (2010) (available at www.forumsec.org/wp-content/uploads/2018/03/Framework-for-a-Pacific-Oceanscape-2010.pdf).

> At their August 2019 meeting in Tuvalu, [Pacific Islands Forum] Leaders also committed all [its] Members to a collective effort, including to develop international law, with the aim of ensuring that once a [Forum] Member's maritime zones are delineated in accordance with [the Convention], that Members' maritime zones could not be challenged or reduced as a result of sea-level rise and climate change.[170]
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> [Pacific Islands Forum] Members also favour stable maritime zones for practical reasons. Acquiring baseline data, and then generating and declaring baselines and the outer limits of maritime zones, requires substantial time and resources. This reality precludes regular review, which in any event is not required under [the Convention], as it is the responsibility of the coastal State to mark or to show baselines and establish outer limits of maritime zones, including via "large-scale charts officially recognised by the coastal State". Regular review would impose a significant burden on States, is administratively costly and disruptive, and leads to more uncertainty about maritime zones and their entitlements. This would defeat an important purpose of [the Convention].[171]
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> …
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> [Pacific Islands Forum] Members have also pursued stability of maritime zones through defining the outer limits of their continental shelves beyond 200 nautical miles and reference to neutral decision making processes under [the Convention]. [Forum] Members have made ten submissions to the Commission on the Outer Limits of the Continental Shelf (CLCS).[172] It is important to note in this context that article 76 (8) of [the Convention] provides that the outer limits of the continental shelf established by a coastal State on the basis of CLCS recommendations shall be final and binding.[173]
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> …
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> Recently, State practice from among [Pacific Islands Forum] Members has shifted from using nautical charts as the sole or primary method to show the location of the normal, strait, or archipelagic baseline and the outer limits of maritime zones to the use of geographic coordinates specifying points on the baseline and outer limits. … Describing baselines and maritime zone limits in this way is more accurate and certain with regard to the rights and responsibilities of coastal and third States.[174]

87. The elements of State practice outlined in submissions by Qatar to the Co-Chairs of the Study Group through the Asian-African Legal Consultative Organization[175] (see paragraph 55 above), show that this State is also concerned with the effects of sea-level rise and, in order to cope with it, it undertook a series of researches, studies and

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[170] *Ibid*., quoting communiqué of the Fiftieth Pacific Islands Forum, held in Funafuti, Tuvalu from 13 to 16 August 2019, document PIF(19)14 (available at www.forumsec.org/wp-content/uploads/2019/08/50th-Pacific-Islands-Forum-Communique.pdf); Palau Declaration on "The Ocean: Life and Future": Charting a course to sustainability (1 August 2014). Available at www.hokulea.com/wp-content/uploads/2016/08/Palau-Declaration-on-The-Ocean-Life-and-Future.pdf.

[171] *Ibid*.

[172] Australia (15 November 2004); Cook Islands (16 April 2009); New Zealand (19 April 2006); Fiji (20 April 2009); Micronesia (Federated States of), Papua New Guinea and Solomon Islands (5 May 2009); Palau (8 May 2009); Tonga (11 May 2009); France, New Zealand and Tuvalu (7 December 2012); Kiribati (24 December 2012); Micronesia (Federated States of) (30 August 2013).

[173] Submission of the Pacific Islands Forum (see footnote 169 above), pp. 3–4.

[174] *Ibid*., p. 4.

[175] On file with the Codification Division.

plans for physically protecting its coast, as well as "planting of more than 100,000 mangrove seedlings" and planning infrastructure to address the possibility of sea-level rise in the future. Similar information is included in the submission, also through the Asian-African Legal Consultative Organization, from the Syrian Arab Republic. In the submission forwarded by Singapore to the Commission, it is mentioned that:

> [a]t the national level, we have embarked on a nation-wide strategy to protect Singapore against the threat of sea-level rise … We are also developing long-term strategies to protect Singapore's coasts from rising sea levels. Coastal protection measures include engineered solutions such as building sea walls and dykes, and are complemented by nature-based solutions such as active mangrove restoration. … This comprehensive effort to build up our coastal defences island-wide could cost S$100 billion or more over the next 50 to 100 years.[176]

88. The submission of the United Kingdom to the Commission emphasizes that "the legislation establishing the [country's] Territorial Sea … provides for ambulatory baselines" in accordance with the Convention.[177] In its submission to the Commission, the Netherlands reports that it also uses an ambulatory baselines system.[178] The Netherlands reports on the physical protection measures on its coast, which have effects on the baselines and the outer limits of its maritime zones (including by moving them seaward).[179] Romania, in its submission to the Commission, informs that its domestic legislation[180] includes a provision according to which "[i]n case of objective evolutions due to influence the points between which the straight baselines are drawn, the coordinates of the new points are established through Governmental Decision", which may be interpreted as setting forth an ambulatory baselines system (although the connection between this provision and sea-level rise is highly improbable since the Black Sea is a semi-enclosed sea, less exposed to this phenomenon).[181] The United States, in its submission to the Commission, reports that:

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[176] Submission of Singapore, forwarded through note verbale No. SMUN 054/2020 of 5 February 2020 to the United Nations, paras. 6–7. Available from https://legal.un.org/ilc/guide/8_9.shtml#govcoms.

[177] Submission of the United Kingdom of Great Britain and Northern Ireland, forwarded through note verbale No. 007/2020 of 10 January 2020 to the United Nations. Available from https://legal.un.org/ilc/guide/8_9.shtml#govcoms.

[178] Submission of the Netherlands, forwarded through note verbale No. DC2-0566 of 27 December 2019 to the United Nations, p. 3 (available from https://legal.un.org/ilc/guide/8_9.shtml#govcoms): "The southern North Sea is a relatively shallow sea with a dynamic seabed behaviour. The normal baselines are created from the low water line along the coast, relative to the Lowest Astronomical Tidal chart datum as published in the official charts. Due to a high re-survey frequency and a dynamic seabed, the low water line has a dynamic behaviour. Additionally, low tide elevations within the distance of the 12 NM appear and disappear, causing further changes to the determination of the normal baselines. *When such a change occurs at a distance exceeding 0.1 NM, the normal baselines are adjusted accordingly.* When a Notice to Mariners or New Edition of a Chart is published, the newly adjusted normal baselines and associated Territorial Sea boundaries are published." (emphasis added.)

[179] *Ibid*.: "As the Netherlands is largely situated under mean sea level, coastal defence is very important. In recent years, various major projects were undertaken which had a large impact on the baselines of the Dutch coast. The first … is the construction of Maasvlakte 2, an extension to the Rotterdam harbour which was built on land that was reclaimed from the North Sea. As a result of this construction the outer limit of the territorial sea was extended almost three miles. The second project … which had effect on the baselines of the Netherlands is the Sand engine or Sand Motor ('Zandmotor' in Dutch). Close to the city of The Hague, a large amount of sand was put on the beach and in front of it, extending almost one kilometre from the original coastline."

[180] Art. 2, para. 3, of Law No. 17/1990 concerning the Legal Regime of the Internal Waters, the Territorial Sea and the Contiguous Zone of Romania.

[181] Submission of Romania, forwarded through note verbale No. 84 of 9 January 2020 to the United Nations. Available from https://legal.un.org/ilc/guide/8_9.shtml#govcoms.

> [u]nder existing international law, coastal baselines are generally ambulatory, meaning that if the low-water line along the coast shifts (either landward or seaward), such shifts may impact the outer limits of the coastal State's maritime zones.

The United States conducts routine surveys of its coasts and evaluates potential resulting changes to its baselines. For shifts other than *de minimis* ones (i.e., shifts that are greater than 500 metres), an interagency baseline committee reviews and approves any changes to the U.S. baselines. In these instances, any associated changes to the outer limits of maritime zones are also made on official charts. The baseline committee also reviews and approves closing lines, such as those drawn across the mouths of bays and rivers.[182]

89. The statements of Member States in the Sixth Committee on the present topic are also indicative of State practice. (The present paper has already set forth the statements emphasizing the support of Member States for legal stability and security in relation to the present topic, and they will not be repeated.) All statements tackling the issue of baselines (and limits of maritime zones) have advocated for the solution of fixed baselines and/or maintaining the position of maritime zones/the maritime entitlements, while no statement was in favour of an ambulatory system. Some statements also reported the measures taken or planned by the respective States for the physical protection of their coast, which are also intended to preserve the baselines and the consequent outer limits of the maritime zones measured from the baselines.

90. In its 2018 statement,[183] Australia recommended that the Commission "draw on the substantial practice of the States in the Pacific region and elsewhere which have worked hard to define base points, baselines and outer limits of their maritime zones, consistent with the United Nations Convention on the Law of the Sea".

91. The statement of Belize[184] in 2019 was in favour of fixed baselines: "Moving towards the adoption of fixed baselines was consistent with existing international law. A number of small island developing States had defined their baselines, in accordance with the language of article 5 of the Convention, as those 'marked on large-scale charts officially recognized by the coastal State'". Belize itself continued to recognize the relevance of official maritime charts in determining the exact placement of its baselines. "If official maritime charts, and not the actual low-water line, could serve as conclusive evidence of baselines, then legal baselines would shift only when their positions were updated on those charts. That practice gave coastal States greater agency in maintaining their maritime entitlements". Fixed baselines were the next step down the path that State practice had already begun to walk.

92. In its 2019 statement, Papua New Guinea[185] reported that it had submitted on 4 April 2019 its revised Maritime Boundaries Delimitation Charts and List of Geographical Coordinates to the Secretary-General of the United Nations and stressed, in that connection, that "affected States should be able to maintain existing entitlements to maritime zones", notwithstanding sea-level rise. Cuba declared in its 2019 statement[186] that the 2017 State Plan to Tackle Climate Change comprised measures for combating and/or mitigating the impact of the loss of shorelines caused by rising sea levels, including the reinforcement of some coastal areas, and that

[182] Submission of the United States, forwarded through note verbale of 18 February 2020 to the United Nations, pp. 1–2. Available from https://legal.un.org/ilc/guide/8_9.shtml#govcoms.
[183] Australia (A/C.6/73/SR.23, para. 76).
[184] Belize (A/C.6/74/SR.30, para. 70).
[185] Papua New Guinea (*ibid.*, para. 19).
[186] Cuba (A/C.6/74/SR.25, para. 23).

"modifying baselines" would have a negative impact on small island developing States, not to mention the respective legal insecurity.

93. In its 2018 statement, New Zealand[187] stated that "[a]s the Prime Minister of New Zealand had said recently, coastal States' baselines and maritime boundaries should not have to change because of human-induced sea level rise". In its 2019 statement, New Zealand[188] stated that it "was committed to working with partners to ensure that, in the face of changing coastlines, the maritime zones of coastal States were protected". It also recalled that at the Pacific Islands Forum Leaders' Meeting in Tuvalu in August 2019, the leaders had made a strong commitment to a "collective effort, including to develop international law, with the aim of ensuring that once a Forum member's maritime zones [were] delineated in accordance with the [Convention], they could not be challenged or reduced as a result of sea-level rise and climate change".

94. Jamaica,[189] in its 2019 statement, mentioned the proposals made in the International Law Association's 2018 report, according to which the baselines and the outer limits of maritime zones should be maintained and need not be recalculated should sea-level changes affect the geographical reality of the coastline. It recalled the declaration made by the Polynesian Leaders Group on 16 July 2015 (Taputapuatea Declaration on Climate Change[190]), and the March 2018 declaration by eight Pacific Island leaders (the Delap Commitment on "Securing Our Common Wealth of Oceans – reshaping the future to take control of the fisheries"),[191] which "call for the acceptance of defined baselines in perpetuity irrespective of the possible implications of sea-level rise". Jamaica also reported that it had undertaken extensive work to address coastal erosion.

95. Fiji, speaking on behalf of the Pacific small island developing States (namely Kiribati, Micronesia (Federated States of), Nauru, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu and his own country),[192] also recalled in its 2019 statement the Pacific Islands Forum Leaders' Meeting in Tuvalu in August 2019 and called "on other Member States to recognize the need to retain maritime zones and the entitlements derived therefrom once such zones had been delineated in accordance with the Convention". The 2019 statement of Tuvalu, speaking on behalf of members of the Pacific Islands Forum with permanent missions to the United Nations,[193] was in a similar vein: mentioning the call of the Tuvalu meeting of August 2019, it stressed that States in the Pacific aimed to ensure that their maritime zones and the entitlements flowing from those zones were not "challenged or reduced as a result of sea-level rise", and called "on Member States to recognize the need to retain maritime zones and the entitlements derived therefrom once such maritime zones had been delineated in accordance with the Convention".

96. Thailand[194] also expressed the view in its 2019 intervention that "existing entitlements should be upheld in order to maintain peace, stability and friendly relations among nations … The rights of Member States in relation to maritime zones and boundaries established pursuant to by the United Nations Convention on the Law of the Sea must be protected."

[187] New Zealand (A/C.6/73/SR.22, para. 5).
[188] New Zealand (A/C.6/74/SR.26, para. 87).
[189] Jamaica (A/C.6/74/SR.27, paras. 2–3).
[190] Available at www.samoagovt.ws/wp-content/uploads/2015/07/The-Polynesian-P.A.C.T.pdf.
[191] Available at www.pnatuna.com/sites/default/files/Delap%20Commitment_2nd%20PNA%20Leaders%20Summit.pdf.
[192] Fiji (A/C.6/74/SR.27, paras. 78–79).
[193] Tuvalu (*ibid.*, paras. 80–81).
[194] Thailand (A/C.6/74/SR.24, paras. 99–100).

97. Canada,[195] in its 2019 statement, recommended that the Commission follow a cautious approach on the ambulatory method related to baselines and the outer limits of maritime zones measured from baselines, an approach that supported certainty and stability. In its 2019 statement, the United States[196] stressed that it "supported efforts to protect States' maritime entitlements under the international law of the sea" in a manner that was consistent "with the rights and obligations of third States. Such efforts could include coastal reinforcement, for example through the construction of sea walls; coastal protection and restoration; and maritime boundary agreements." The United States was also supportive of efforts by States to delineate and publish "the limits of their maritime zones in accordance with the United Nations Convention on the Law of the Sea".[197] A similar statement is included in the submission of the United States to the Commission.[198]

98. The contribution paper on State practice in the Asia-Pacific region (as mentioned in paragraph 54 above), received by the Co-Chairs of the Study Group from Mr Nguyễn Hồng Thao, member of the Commission, also provides valuable information on State practice. It indicates that a number of physical protection measures were taken by States in that region. For example, Australia adopted in 2008 a plan for the mitigation of and adaptation to climate change, which developed a portfolio of potential approaches and options, including coastal embankment

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[195] Canada (A/C.6/74/SR.30, para. 11).

[196] United States (*ibid.*, para. 127).

[197] The United States practice following United States domestic case law related to the Submerged Lands Act of 1953 seems to also support the stability of the baselines. According to Caron, "When law makes climate change worse" (footnote 141 above), p. 646, "The Submerged Lands Act addressed the question of federal versus states' rights in the offshore seabed through a quitclaim by the United States to the several states of the lands underlying the waters within three miles of the coastline. … In 1965 in *United States v. California*, the U.S. Supreme Court held that the line delimiting inland waters was to be determined in accordance with the 1958 Convention on the Territorial Sea and the Contiguous Zone. By doing so, the Court rendered ambulatory the baseline described in the Submerged Lands Act. Given that title to valuable offshore oil reserves would move with this ambulatory baseline, litigation was inevitable particularly in the case of Louisiana where the shoreline of the soft silt-like delta of the Mississippi River constantly shifts. In 1969 in *United States v. Louisiana*, the Court stated that, because in its view the Submerged Lands Act refers the Court to the 1958 Convention, the Court could not accept Louisiana's argument that the Court should adopt a fixed rather than ambulatory line. Justice Black wrote in dissent that: '… [Adoption of a fixed boundary would] put a stop to eternal litigation and help relieve this Court of the heavy burden repeatedly brought upon us to make decisions none of us have the time or competence to make'. *To avoid such 'interminable litigation,' the federal government and Louisiana in effect froze the boundary by entering into a special boundary agreement - although even with the agreement, a final decree was not entered until 1981. As a general solution to the possibility of such interminable litigation with other states, legislation has been proposed in both the House and the Senate authorizing the federal government to enter into seabed boundary agreements with the several states and setting forth a process whereby such boundaries may become immovable.*" (Emphasis added.)

[198] Submission of the United States (see footnote 182 above): "The United States recognizes that sea-level rise may lead to increases in inundation and coastal erosion, which may result in changes to baselines and the corresponding limits of a coastal State's maritime zones. In this regard, the United States supports efforts to protect States' maritime zones in a manner that is consistent with the rights and obligations of other States. Such efforts could include physical measures for coastal reinforcement, such as the construction of seawalls, and coastal ecosystem protection and restoration. The United States also supports States' negotiation and conclusion of maritime boundary agreements, as well as the delineation and publication of the limits of their maritime zones in accordance with international law as reflected in the Convention."

projects,[199] while Singapore estimated in August 2019 that around US$ 100 billion or more may be needed over the long term to protect Singapore against rising sea levels; building polders to protect the coastline or reclaiming offshore islands are suggested engineering solutions to address the problem.[200] Tonga developed the Joint Action Plan on climate change and disaster risk management 2010–2015, followed by a second for 2018–2028,[201] which provides, *inter alia*, for strengthening of the coastal infrastructure. The Viet Nam National Climate Change Strategy 2011 and its National Action Plan to Respond to Climate Change 2012 recommended the strengthening and elevation of coastal embankments nationwide.[202] Bangladesh launched the National Adaptation Programme of Action in 2005 and its Climate Change Strategy and Action Plan 2009, providing for a 10-year programme running until 2018 to meet the challenge of climate change, including sea-level rise.[203]

99. According to Mr. Nguyễn Hồng Thao's study, the States in this region are not pursuing policies to change – as an effect of sea-level rise – fixed baselines or national laws on maritime zones as set out in accordance with the Convention, but, on the contrary, favour geoengineering or land reclamation work to consolidate their fixed basepoints and maintain baselines and maritime zones established in accordance with the Convention. According to the study, for Pacific Island Countries, the rate of notification of geographical coordinates of their respective maritime zones to the Secretariat of the United Nations before 2010 was slow. However, in the context of acknowledging the risk of sea-level rise, some States officially notified or reconfirmed their claims to maritime baselines and zones.[204] In 2011, Fiji, Nauru and Palau declared information about their baselines, archipelagic baselines, or the outer limits of their exclusive economic zones in accordance with the Convention.[205] In

[199] Nicole Gurran *et al*., "Planning for climate change adaptation in Coastal Australia: State of practice", Report No. 4 for the National Sea Change Taskforce (University of Sydney, Sydney, November 2011), available at www.aph.gov.au/DocumentStore.ashx?id=f3395f51-b8a5-4e55-af57-85189e6e2da0 (last accessed on 31 March 2020); Antarctic Climate and Ecosystems Cooperative Research Centre, "Position analysis: Climate change, sea-level rise and extreme events: impacts and adaptation issues" (2008), pp. 15–17, available at www.cmar.csiro.au/sealevel/downloads/SLR_PA.pdf (last accessed on 31 March 2020).

[200] Singapore, Prime Minister's Office, "National Day Rally 2019: PM Lee Hsien Loong delivered his National Day Rally speech on 18 August 2019 at the Institute of Technical Education College Central", 18 August 2019, available at www.pmo.gov.sg/Newsroom/National-Day-Rally-2019 (last accessed on 31 March 2020); Chang Ai-Lien, "National Day Rally 2019: $100 billion needed to protect Singapore against rising sea levels", *The Straits Times*, 18 August 2019, available at www.straitstimes.com/singapore/national-day-rally-2019-100-billion-needed-to-protect-singapore-against-rising-sea-levels (last accessed on 31 March 2020).

[201] Tonga, "Joint National Action Plan 2 on Climate Change and Disaster Risk Management 2018–2028". Available at https://www.preventionweb.net/files/60141_tongajnap2final.pdf (last accessed on 31 March 2020).

[202] Philip Gass, Hilary Hove and Jo-Ellen Parry, *Review of Current and Planned Adaptation Action: East and Southeast Asia*, (International Institute for Sustainable Development, 2011), p. 194. Available from www.iisd.org/project/review-current-and-planned-adaptation-action-developing-countries-supporting-adaptation (last accessed on 31 March 2020).

[203] Bangladesh, *Bangladesh Climate Change Strategy and Action Plan 2009* (Ministry of Environment and Forests, Dhaka, 2009). Available at www.iucn.org/downloads/bangladesh_climate_change_strategy_and_action_plan_2009.pdf (last accessed on 31 March 2020).

[204] Kaye, "The Law of the Sea Convention and sea level rise after the *South China Sea Arbitration*" (see footnote 149 above), pp. 443-444: "[S]ome States are already taking steps to prepare for sea level rise by designating not just new archipelagic waters, an action taken in the past five years by Kiribati, the Marshall Islands and Tuvalu, but also by designating the outer edges of their EEZs".

[205] Emily Artack and Jens Kruger, "Status of maritime boundaries in Pacific Island countries", 9th SPC Heads of Fisheries Meeting, 6-12 March 2015, working paper No. 11, para. 13. Available at http://star.gsd.spc.int/meeting_docs/presentations/Session2b-4_Outer%20limits%20of%20maritime%20zones_ArtackE.pdf (last accessed on 31 March 2020).

2013, Tuvalu deposited the lists of geographical coordinates as contained in the Declaration of Territorial Sea Baselines 2012,[206] the Declaration of Archipelagic Baselines 2012,[207] the Declaration of the Outer Limits of the Territorial Sea 2012,[208] the Declaration of the Outer Limits of the Exclusive Economic Zones 2012,[209] and the Declaration of the Outer Limits of the Continental Shelf 2012.[210] The Cook Islands and Niue also declared information on their baselines and maritime zones to the United Nations, while Papua New Guinea, Solomon Islands and Vanuatu have declared only their archipelagic baselines. On 18 March 2016, the Marshall Islands renewed its 1984 Maritime Zones Declaration Act in the context of sea-level rise.[211] According to Mr. Nguyễn Hồng Thao's study, the new Australian Seas and Submerged Lands (Territorial Sea Baseline) Proclamation 2016 is not intended to effect any substantive changes to the baselines defined in the previous proclamation made in 2006.[212] On 7 April 2016, the Secretariat notified of the deposit of a list of geographical coordinates of points concerning the straight baselines for measuring the breadth of the territorial sea of Bangladesh.[213] China declared the straight baselines of territorial sea adjacent to Diaoyu Dao and its affiliated islands on 10 September 2012.[214] Mr. Nguyễn Hồng Thao's study also mentions that certain archipelagic States did not intend to change archipelagic baselines in response to the impact of sea-level rise: that is the case of both Indonesia and the Philippines in their new declarations on their archipelagic baselines. The study concludes that there is a trend of maintaining permanent baselines defined in accordance with the Convention, notwithstanding sea-level rise.

100. In connection with the notification in accordance with the Convention of baselines and outer limits of maritime zones, the survey and research kindly performed by the Secretariat of the Commission[215] show that such notifications[216] by the parties (and one non-party) to the Convention are short and do not usually include explanations of the reasons for which they replace previous notifications, if such previous notifications exist. The survey shows that none of the maritime zone

[206] Declaration of Territorial Sea Baselines (2012). Available at www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/tuv_declaration_territorial_sea_baselines2012_1.pdf (last accessed on 31 March 2020).

[207] Available from www.ecolex.org/fr/details/legislation/declaration-of-archipelagic-baselines-2012-ln-no-7-of-2012-lex-faoc126507/.

[208] Available at www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/tuv_declaration_outer_limits_territorial_sea2012_1.pdf.

[209] Available from www.un.org/Depts/los/LEGISLATIONANDTREATIES/STATEFILES/TUV.htm.

[210] Available at www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/tuv_declaration_outer_limits_continental_shelf2012_1.pdf.

[211] Marshall Islands, Republic of the Marshall Islands Maritime Zones Declaration Act 2016. Available at www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/DEPOSIT/mhl_mzn120_2016_1.pdf (last accessed on 31 March 2020).

[212] Australia, Seas and Submerged Lands (Territorial Sea Baseline) Proclamation 2016. Available from www.legislation.gov.au/Details/F2016L00302/Explanatory%20Statement/Text (last accessed on 31 March 2020).

[213] Maritime Zone Notification No. MZN.118.2016.LOS of 7 April 2016. Available at www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/mzn_s/mzn118.pdf (last accessed 31 March 2020). The notification of Bangladesh in 2015 replaced Sections 3 and 5 of the Territorial Waters and Maritime Zones Act of 1974 (*ibid.*).

[214] China, Statement of the Government of the People's Republic of China on the straight baselines of territorial sea of Diaoyu Dao and its affiliated islands of 10 September 2012. Available at www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/DEPOSIT/chn_mzn89_2012_e.pdf (last accessed on 31 March 2020). The base points are defined at the outermost points at the lowest low water line of reef islands at the moment of declaration.

[215] On file with the Codification Division.

[216] Usually received by means of notes verbales and circulated by the Division for Ocean Affairs and the Law of the Sea as maritime zone notifications.

notifications circulated before 26 November 2019[217] (the date when the survey was finalized) appear to contain express reference to sea-level rise or climate change, or include the documents on which the maritime zone notifications are based. Under these circumstances, the recent notification by the Federated States of Micronesia effected on 24 December 2019, which was joined by observations expressly linking the notification to sea-level rise, is a model to be followed by other interested States. It is useful for the States concerned to make public statements about the reasons for their respective notifications. Official submissions to the Commission in response to its request for State practice contained in chapter III of the 2019 annual report are also extremely helpful in this regard, since they can explain when such deposits of data with the United Nations are linked to sea-level rise and are therefore strongly encouraged.

101. The survey and research by the Secretariat of the Commission[218] also show that there are, however, some communications objecting to the notifications of other States; the objections relate to a lack of accuracy of the method of drawing baselines or of certain baseline points *vis-à-vis* the requirements of the Convention (although they do not refer to sea-level rise either). It is also noted that the legislation accompanying notifications is a publicly available source of information with respect to baselines, as it may indicate that a State implements ambulatory baselines through its domestic legislation.[219]

102. The practice of regional organizations is also relevant to State practice; it indicates the same trend evidenced above. The 2010 Framework for a Pacific Oceanscape – "Our sea of islands, our livelihoods, our Oceania" – calls upon States to address their baselines that are highly vulnerable due to sea-level rise "through concerted regional unity and diplomatic efforts that advocates for the permanent

[217] According to the survey by the Secretariat, as of 26 November 2019, the Division for Ocean Affairs and the Law of the Sea had published Maritime Zone Notifications pertaining to deposits by 82 States: by 61 States relating to article 16 on the territorial sea, by 43 States relating to article 75 on the exclusive economic zone, by 29 States relating to articles 76 and 84 on the continental shelf, and by 14 States relating to article 47 on archipelagic baselines. For a more recent status of deposits as of 31 March 2020, see the Note by the Secretariat on the practice of the Secretary-General in respect of the deposit of charts and lists of geographical coordinates of points under the United Nations Convention on the Law of the Sea (doc. SPLOS/30/12, para. 12).

[218] See footnote 215 above.

[219] For example, the survey shows that the maritime zone notifications of Vanuatu pertain only to the exclusive economic zone and the continental shelf, but the country's Maritime Zones Act 2010 does include information on the coordinates of the baselines for measuring the territorial sea, which are based on historical coordinates of British Admiralty Charts. Legislation submitted along with the notification of Bangladesh provides that the baseline "consists of straight and normal baselines that join the outermost points of the lowest water line, islands and reefs along the coast as marked on the large scale charts published or, as the case may be, notified *from time to time* by the Government of the People's Republic of Bangladesh". In the case of the Finnish legislation relating to the maritime zone notification, the anticipation of change is time bound, providing that the information regarding the base points of the outer limits of the internal waters will be valid from 1995 to 2024. The German Proclamation referenced in its maritime zone notification states that baselines have "been drawn on the proviso that they are subject to pertinent agreements with the neighbouring States concerned in each case" and that the "coordinates are given on the proviso that they are subject to a more precise calculation by the Federal Ministry of Transport (if and where appropriate) using the latest methods". The Netherlands has produced legislation for the "extension" of the territorial sea, providing a new set of baseline coordinates in conjunction with this exercise. As an example of unilateral amendment to baseline information, the note accompanying the deposit of maritime zone information by Kenya in 2005 explicitly provided that "the Proclamation, the first and second schedules attached thereto, together with the illustrative map deposited herewith constitute an adjustment to and are in replacement of the Proclamation made by the President of the Republic of Kenya on 28 February 1979".

establishment of declared baselines and maritime zones".[220] The Palau Declaration on "The Ocean: Life and Future" of 2014 called, in its paragraph 10, "for strengthened regional efforts to fix baselines and maritime boundaries to ensure that the impact of climate change and sea level rise does not result in reduced jurisdiction".[221] On 16 July 2015, Polynesian Leaders Group (Samoa, Tonga, Tuvalu and the Cook Islands, Niue, French Polynesia and Tokelau), issued the Taputapuatea Declaration on Climate Change underlining the importance of the exclusive economic zones for Polynesian Island States and Territories, whose area is calculated according to emerged lands, and permanently established baselines in accordance with the Convention, without taking into account sea-level rise.[222] On 2 March 2018, in Majuro, the Delap Commitment on "Securing our common wealth of oceans – reshaping the future to take control of the fisheries"[223] was signed by eight Pacific island leaders attending the second Leaders' Summit of the Parties to the Nauru Agreement.[224] Those leaders, in paragraph 8 of the Commitment, agree "[t]o pursue legal recognition" that "the defined baselines established under the United Nations Convention on the Law of the Sea … remain in perpetuity irrespective of the impacts of sea level rise". A communiqué of the Fiftieth Pacific Islands Forum, held in Funafuti from 13 to 16 August 2019, reaffirmed the importance of preserving its members' existing rights stemming from maritime zones in the face of sea-level rise. The Forum leaders committed to a collective effort, including the development of international law, with the aim of ensuring that, once a Forum member's maritime zones were delineated in accordance with the Convention, that the member's maritime zones could not be challenged or reduced as a result of sea-level rise and climate change.[225]

103. It is worth mentioning that, after analysing some of the declarations of regional bodies mentioned above, the Committee on International Law and Sea Level Rise, in its final report to the 2018 Sydney Conference of the International Law Association, concluded that:

> there is at least *prima facie* evidence of the development of a regional State practice in the Pacific islands – many of which are the most vulnerable to losses of territory and, consequently, baseline points from sea level rise. The Pacific island States would of course be among those "States whose interests are specially affected", a significant attribute regarding the establishment of a general practice in the formation of a new rule of customary international law … The emergence of a new customary rule will require a pattern of State practice, as well as *opinio juris*.[226]

104. In concluding the present chapter, the following observations of preliminary nature can be made:

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[220] Pratt and Govan, "Our sea of islands, our livelihoods, our Oceania – Framework for a Pacific Oceanscape: a catalyst for implementation of ocean policy" (see footnote 169 above), p. 32.

[221] See footnote 170 above.

[222] Polynesian Leaders Group, Taputapuatea Declaration on Climate Change. Available at www.samoagovt.ws/wp-content/uploads/2015/07/The-Polynesian-P.A.C.T.pdf.

[223] Delap Commitment on "Securing our common wealth of oceans – reshaping the future to take control of the fisheries", available at www.pnatuna.com/sites/default/files/Delap%20Commitment_2nd%20PNA%20Leaders%20Summit.pdf. The declaration was signed by the Heads of State, or their representatives, of Kiribati, the Marshall Islands, the Federal States of Micronesia, Nauru, Palau, Papua New Guinea, Solomon Islands and Tuvalu.

[224] Nauru Agreement concerning Cooperation in the Management of Fisheries of Common Interest (Nauru, 11 February 1982), available from www.ecolex.org/details/treaty/nauru-agreement-concerning-the-cooperation-in-the-management-of-fisheries-of-common-interest-tre-002025/.

[225] Communiqué of the Fiftieth Pacific Islands Forum (see footnote 170 above), paras. 25–26.

[226] Final report of the Committee on Baselines under the International Law of the Sea (see footnote 116 above), p. 887.

(a) At the time of the negotiation of the United Nations Convention on the Law of the Sea, sea-level rise and its effects were not perceived as an issue that needed to be addressed. The Convention was thus interpreted as prescribing an ambulatory character for baselines and the outer limits of the maritime zones measured therefrom, with the exception of the permanency of the continental shelf seaward limits and of coastlines that are highly unstable because of the presence of deltas and other natural phenomena (a situation that allows for the use of a straight baseline);

(b) These two exceptions (and especially the latter) show that the spirit of the Convention was not rigid in cases where it was possible to foresee the occurrence of natural conditions that could affect legal stability, security, certainty and predictability. The permanency of the continental shelf is also an indication of concern manifested in the Convention for ensuring stability, taking into account the importance of preserving the entitlements of the coastal State in this maritime zone (especially when the exploitation of natural resources is at stake). The problem was that, at the time of the drafting of the Convention, sea-level rise was not perceived as an issue necessary to be addressed by the law of the sea;

(c) These two exceptions cannot be used, however, to address the effects of sea-level rise (neither by an extensive interpretation, nor by analogy); nor can the use of straight baselines (as suggested by some scholars) be efficient when there is a substantial rise in sea level;

(d) The ambulatory theory/method regarding baselines and the limits of maritime zones measured from them does not respond to the concerns expressed by Member States that are prompted by the effects of sea-level rise, especially as regards the rights of the coastal State in the various maritime zones, and the consequent need to preserve legal stability, security, certainty and predictability;

(e) An approach responding adequately to these concerns is one based on the preservation of baselines and outer limits of the maritime zones measured therefrom, as well as of the entitlements of the coastal State; the Convention does not prohibit *expressis verbis* such preservation (see paragraph 78 above). In any case, the obligation provided by article 16 to give due publicity to and deposit copies of charts and lists of coordinates about baselines only refers to straight baselines (which are less affected by sea-level rise) and not to normal baselines. Even in the case of straight baselines, the Convention does not indicate an obligation to draw and notify new baselines when coastal conditions change (or, as a consequence, new outer limits of maritime zones measured from the baselines);[227]

(f) Consequently, nothing prevents Member States from depositing notifications, in accordance with the Convention, regarding the baselines and outer limits of maritime zones measured from the baselines and, after the negative effects of sea-level rise occur, to stop updating these notifications in order to preserve their entitlements;

(g) As evidenced by the submissions by Member States to the Commission in response to the request included in chapter III of its 2019 annual report, the statements of the delegations of Member States before the Sixth Committee, and the official declarations of regional bodies, there is a body of State practice under development regarding the preservation of baselines and of outer limits of maritime zones measured from the baselines. That State practice relates to the establishment of fixed baselines and outer limits of maritime zones measured from the baselines, on the one

[227] See footnote 153 above, referring to Schofield and Freestone, “Options to protect coastlines and secure maritime jurisdictional claims in the face of global sea level rise”.

hand, by "freezing" the notifications and, on the other, by ensuring physical protection of their coasts against the effects of sea-level rise;[228]

(h) Information on such State practice was available to the Co-Chairs of the Study Group for the Pacific, Asian (mainly South-East Asian) and (to some extent) North American regions, alongside some indicating a similar trend for the Caribbean. Unfortunately, there were no submissions received by the Commission from Africa or Latin America, although the effects of sea-level rise also affect these regions. A very limited number of submissions from European States indicate that their national legislation provides for the obligation or possibility to apply an ambulatory baselines system; at the same time, the absence, for the time being, of submissions from these regions does not necessarily imply the lack of similar State practice;

(i) Based on the above, it is early to draw, at this stage, a definitive conclusion on the emergence of a particular or regional customary rule (or even of a general customary rule)[229] of international law regarding the preservation of baselines and of outer limits of maritime zones measured from the baselines. *Prima facie*, based on the available data as set forth above, the application of the requirements provided by the Commission's conclusions on identification of customary international law (2018)[230] in conclusions 4 to 8 (and 16) for the material element of the custom, it can be concluded that – at least for the Pacific and South-East Asia regions – there is State practice (supported by practice of international organizations),[231] which: includes both physical and verbal acts,[232] as well as inaction;[233] has the form of diplomatic acts and correspondence, conduct in connection with resolutions adopted by an international organization or at an intergovernmental conference, conduct in connection with treaties, executive conduct, including operational conduct "on the ground", and legislative and administrative acts;[234] and is widespread and

[228] As to the international jurisprudence, it was argued by some scholars (see Katherine J Houghton *et al.*, "Maritime boundaries in a rising sea", *Nature Geoscience*, vol. 3 (2010), pp. 813–816) that the International Court of Justice accepted the flexible baselines concept, because in the *Territorial and Maritime Dispute between Nicaragua and Honduras in the Caribbean Sea (Nicaragua v. Honduras)* the Court decided that the starting point of the maritime boundary between the two States, as established by geographic coordinates by a bilateral commission in 1962 on the basis of the arbitral award rendered by the King of Spain in 1906, was no longer in the mouth of the Coco River (due to the accumulation of sediments and the general evolution of the ocean currents) and could no longer be an appropriate base point. The Court, however, decided to establish the starting point of the maritime boundary at 3 nautical miles off the point established in 1962. This means that, eventually, the Court gave effect to that point which no longer corresponded to the actual geography of the coast. *Territorial and Maritime Dispute between Nicaragua and Honduras in the Caribbean Sea (Nicaragua v. Honduras) Judgment, I.C.J. Reports 2007*, p. 659.

[229] The character of the potential customary rule depends on the availability of the evidence of State practice: it can stay regional if confined (only) to the Pacific and South-East Asia, or, if confirmed for other regions as well and depending on the number of States involved, it can be general or particular (including "thematic" – meaning that it is linked to the specific issue of sea-level rise and it applies among a limited number of States).

[230] General Assembly resolution 73/203 of 20 December 2018. The draft conclusions adopted by the Commission and the commentaries thereto are reproduced in A/73/10, paras. 65–66.

[231] Conclusion 4, para. 2. See in the present paper, above, for the practice of international organizations taking the form of declarations/statements.

[232] Conclusion 6, para. 1. See in the present paper, above, for State practice under the form of statements (submissions to the Commission and statements in the Sixth Committee) and physical protection activities for the coasts.

[233] Conclusion 6, para. 1. Inaction to the sense that States are not willing to renew their baselines (or to deposit new charts or lists of coordinates) after their initial notification, following the modification of coastal configuration because of sea-level rise.

[234] Conclusion 6, para. 2. Notifications (deposit of data) to the Secretary-General of the United Nations, in conformity with the United Nations Convention on the Law of the Sea, of physical protection activities for the coasts and the adoption of legislation regarding baselines and maritime zones.

representative among the States of these regions, as well as consistent.[235] It is more and more frequent.[236] Nevertheless, the existence of the *opinio juris* is not yet that evident, although the general reliance of the conduct[237] of the respective States in their practice (as mentioned) on the grounds of legal stability and security is an indication in that sense. In order for a definitive conclusion to be possible, more submissions by Member States to the Commission in response to the request included in chapter III of its 2019 annual report are needed.

II. Possible legal effects of sea-level rise on maritime delimitations

105. When the specific geographic configuration does not allow for the outer limits of the maritime zones of the coastal States to be established to the maximum extent allowed by the United Nations Convention on the Law of the Sea, maritime delimitations are effected either by treaty as a result of negotiations or by adjudication.[238]

106. The Convention provides for different rules for delimitation of maritime zones: for the delimitation of the territorial sea between States with adjacent or opposite coasts, article 15 establishes the method of equidistance (for adjacent coasts) or median line (for opposite coasts), while, for the delimitation of exclusive economic zones and continental shelf, articles 74, paragraph 1, and 83, paragraph 1, provide for a delimitation "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".

107. The method of maritime delimitation of exclusive economic zones and continental shelf used by international courts and tribunals varied over time, but was crystallized by the International Court of Justice, most recently in its unanimous judgment in the *Maritime Delimitation in the Black Sea* case in 2009, where the Court indicated that a three-stage approach was appropriate.[239]

108. According to the Court, the first stage is to establish a provisional delimitation line that is either an equidistance line for adjacent coasts or median line for opposite coasts.[240] According to paragraph 117 of the judgment, which is of relevance to our topic, "[e]quidistance and median lines are to be constructed *from the most appropriate points on the coasts of the two States concerned*, with particular attention being paid to those *protuberant coastal points* situated nearest to the area to the delimited".[241] In the construction of a provisional equidistance line between adjacent States, "the Court will have in mind *considerations relating to both Parties' coastlines when choosing its own base points for this purpose*. The line thus adopted is *heavily dependent on the physical geography and the most seaward points of the two*

[235] Conclusion 8, para. 1. The practice is uniform (it refers to freezing baselines and outer limits of maritime zones and physical protection for the coasts).

[236] Conclusion 8, para. 2 ("Provided that the practice is general, no particular duration is required.").

[237] Conclusion 10, para. 2.

[238] Kaye, "The Law of the Sea Convention and sea level rise after the *South China Sea Arbitration*" (see footnote 149 above), pp. 433–436.

[239] *Maritime Delimitation in the Black Sea (Romania v. Ukraine), Judgment, I.C.J. Reports 2009*, p. 61, at pp. 101–103, paras. 115–122; Sean D. Murphy, *International Law relating to Islands* (Boston, Brill, 2017), p. 228; Nilüfer Oral, "Case concerning Maritime Delimitation in the Black Sea (*Romania v. Ukraine*) Judgement of 3 February 2009", *International Journal of Marine and Coastal Law*, vol. 25 (2010), p. 115, at p. 139.

[240] *Maritime Delimitation in the Black Sea* (see previous footnote), p. 101, para. 116.

[241] *Ibid.*, para. 117 (emphasis added).

coasts".[242] In stage two, the Court will "consider whether there are factors calling for the adjustment or shifting of the provisional equidistance line in order to achieve an equitable result".[243] And last but not least, paragraph 122 presents the third stage, where the Court is to verify if the line (a provisional equidistance line which may or may not have been adjusted by taking into account the relevant circumstances) does not, as it stands, lead to an inequitable result.[244]

109. Since this method is of relevance not only for adjudicated maritime delimitations, but also for those effected by agreement and since, in drawing the equidistance/median line, an important role is played by "the most appropriate points on the coasts of the two States concerned",[245] especially the "protuberant coastal points",[246] the question is what is the legal impact, if any, of the inundation of these points by sea-level rise. Such points could be low-tide elevations (if they are located within the territorial sea)[247] or fringing reefs;[248] in the case of ports, the sea-level rise may transform them into off-shore installations and, if remedial constructions are undertaken, they may change into artificial islands.[249] (The specific issue of the possible legal effects of sea-level rise on islands insofar as their role in maritime delimitations is concerned will be examined in the following chapter of the present Part, although the same conclusions apply.)

110. This important question is valid not only for effected maritime delimitations, but also for existing claims regarding the entitlement to maritime spaces in the case of future maritime delimitations.

111. As in the case of the possible legal effects of sea-level rise on baselines and the outer limits of maritime zones measured therefrom, and in the case of examining the possible legal effects of sea-level rise on maritime delimitations, a key approach should be to favour the preservation of legal stability, security, certainty and predictability, as emphasized by the Member States in their statements before the Sixth Committee (see paragraphs 18 and 23 above), which is also in line with the general purpose of the United Nations Convention on the Law of the Sea, stated in its preamble, to "contribute to the strengthening of peace, security, co-operation and friendly relations among all nations in conformity with the principles of justice and equal rights and will promote the economic and social advancement of all peoples of the world, in accordance with the Purposes and Principles of the United Nations as set forth in the Charter".

112. In any case, bringing into question effected maritime delimitations would create uncertainty and legal insecurity, and increase the risk of disputes if States were to renegotiate their maritime boundaries. In the case of the existing claims regarding the

[242] *Ibid.* (emphasis added).

[243] *Ibid.*, para. 120. "The Court has also made clear that when the line to be drawn covers several zones of coincident jurisdictions, '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'".

[244] *Ibid.*, p. 103, para. 122.

[245] *Ibid*.

[246] *Bay of Bengal Maritime Boundary Arbitration (Bangladesh v. India)* (see footnote 56 above), para. 211.

[247] Schofield and Freestone, "Options to protect coastlines and secure maritime jurisdictional claims in the face of global sea level rise" (see footnote 153 above), p. 146; Caron, "When law makes climate change worse" (see footnote 141 above), p. 637.

[248] Caron, "When law makes climate change worse" (see footnote 141 above), p. 637.

[249] According to article 11 of the United Nations Convention on the Law of the Sea: "For the purpose of delimiting the territorial sea, the outermost permanent harbour works which form an integral part of the harbour system are regarded as forming part of the coast. Off-shore installations and artificial islands shall not be considered as permanent harbour works". See Menefee, "'Half seas over'" (see footnote 154 above), pp. 209–210.

entitlement to maritime spaces for future maritime delimitations, it is difficult to imagine how a State would be obliged to renounce or diminish such claims: ultimately, the maritime boundaries will be effected either by negotiations in the form of a treaty (which is the result of a compromise between the parties), or by adjudication (which is the result of the application of the delimitation methods).

113. It is worth noting in this respect that the Committee on International Law and Sea Level Rise, in its final report prepared for adoption by the 2018 Sydney Conference of the International Law Association, put forward the following proposal: "on the grounds of legal certainty and stability, the impacts of sea level rise on maritime boundaries, whether contemplated or not by the parties at the time of the negotiation of the maritime boundary, should not be regarded as a fundamental change of circumstances".[250] Resolution 5/2018, adopted at the Sydney Conference included the following text, which departed from the proposal of the Committee, but had the same objective:

> The 78th Conference of the International Law Association, held in Sydney, Australia, 19–24 August 2018:
>
> …
>
> ENDORSES ALSO the Committee's proposal that the interpretation of the 1982 Law of the Sea Convention in relation to the ability of coastal and archipelagic States to maintain their existing lawful maritime entitlements should apply equally to maritime boundaries delimited by international agreement or by decisions of international courts or arbitral tribunals;
>
> CONFIRMS that the Committee's recommendations regarding the maintenance of existing maritime entitlements are conditional upon the coastal State's existing maritime claims having been made in compliance with the requirements of the 1982 Law of the Sea Convention and duly published or notified to the Secretary-General of the United Nations as required by the relevant provisions of the Convention, prior to physical coastline changes brought about by sea level rise.[251]

114. The issue whether sea-level rise represents a fundamental change of circumstances that might be invoked in order to question effected maritime delimitations was also examined by the Committee. Despite the fact that, in its final report to the Sydney Conference, the Committee considered that "the interests of the international community would at this stage not be best served by a proposal undermining existing negotiated and established maritime boundaries", the Committee "took the view that it did not need to come to a determination as to whether it considered Article 62(2) of the 1969 Vienna Convention to apply to maritime boundaries".[252] But this question needs a clear answer.

115. The 1969 Vienna Convention on the Law of Treaties,[253] after defining the fundamental change of circumstances (or *rebus sic stantibus*) in article 62,

[250] Final report of the Committee on International Law and Sea Level Rise (see footnote 119 above), p. 895.

[251] International Law Association, *Report of the Seventy-eighth Conference* (see footnote 119 above), pp. 29–30.

[252] Final report of the Committee on International Law and Sea Level Rise (see footnote 119 above), p. 866.

[253] Vienna Convention on the Law of Treaties (Vienna, 23 May 1969), United Nations, *Treaty Series*, vol. 1155, No. 18232, p. 331.

paragraph 1,[254] mentions in article 62, paragraph 2, that, "[a] fundamental change of circumstances may not be invoked as a ground for terminating or withdrawing from a treaty: … If the treaty establishes a boundary".

116. The Committee on International Law and Sea Level Rise examined the issue of whether article 62, paragraph 2, is applicable to maritime boundaries; it reviewed the literature in favour and against the application thereof, and even invoked the debates of the Commission when working on the draft articles on the law of treaties between States and international organizations or between international Organizations,[255] which seemed to infer that the Commission considered that maritime boundaries other than territorial sea boundaries might not fall within the boundary exclusion of article 62, paragraph 2 (a), thus leaving the question open for maritime boundaries beyond the territorial sea.[256]

117. However, the international jurisprudence assimilated maritime boundaries to the boundaries referred to in article 62, paragraph 2, of the 1969 Vienna Convention.

118. The 1978 judgment of the International Court of Justice in the *Aegean Sea Continental Shelf (Greece v. Turkey)* case states clearly: "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".[257]

119. It results that States cannot invoke article 62, paragraph 2 (a), of the 1969 Vienna Convention on the Law of Treaties in order to unilaterally terminate or to withdraw from a maritime boundary treaty, including because of sea-level rise. At any rate, sea-level rise cannot be assimilated with a fundamental change of circumstances, since it is not a sudden phenomenon and it cannot be claimed that it could not be foreseen (see the definition of the fundamental change of circumstances in article 62, paragraph 1), at least after the 1980s, when the international community started to be aware of it.[258]

120. The award in the *Bay of Bengal Maritime Boundary Arbitration (Bangladesh v. India)* also clearly states that, "maritime delimitations, like land boundaries, must be stable and definitive to ensure a peaceful relationship between the States concerned in the long term", as well as referring specifically to climate change and its effects (which include sea-level rise): "[i]n the view of the Tribunal, neither the prospect of climate change nor its possible effects can jeopardize the large number of settled maritime boundaries throughout the world. This applies equally to maritime

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[254] "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."

[255] *Yearbook of the International Law Commission*, 1982, vol. II (Part Two), para. 63.

[256] Final report of the Committee on International Law and Sea Level Rise (see footnote 119 above), pp. 889–890.

[257] *Aegean Sea Continental Shelf, Judgment, I.C.J. Reports 1978*, p. 3, at pp. 36–37, para. 85.

[258] The 2018 final report of the Committee on International Law and Sea Level Rise (see footnote 119 above), pp. 891–892, also invokes as an argument in favour of the stability of maritime boundaries articles 11 and 12 of the Vienna Convention on Succession of States in respect of Treaties (Vienna, 23 August 1978, United Nations, *Treaty Series*, vol. 1946, No. 33356, p. 3).

boundaries agreed between States and to those established through international adjudication".[259]

121. But beyond legal interpretation of various treaties and jurisprudence, it is highly relevant to discuss the positions expressed by the Member States in the submissions to the Commission in response to the request for such practice, as included in chapter III of the 2019 annual report of the Commission, and in their statements before the Sixth Committee. They converge, to a large extent, as far as the need for preserving legal stability, security, certainty and predictability of maritime delimitations in connection with the present topic. They also represent a form of State practice regarding maritime delimitations in relation to sea-level rise.

122. For example, Maldives is very clear in its submission to the Commission. It mentions that it "considers that sea-level rise does not have any effect on maritime boundaries between two States when they have been fixed by a treaty. Maritime boundary treaties, such as those that Maldives has negotiated, are binding under the rule of *pacta sunt servanda*, and sea-level rise does not constitute a fundamental change of circumstances that would allow termination or suspension of such treaties".[260] At the same time, it stresses that

> it should be recognized that international law more generally also emphasizes the importance of certainty and stability in relation to the delineation of international borders and boundaries. For example, the 1978 Vienna Convention on Succession of States in Respect of Treaties recognises a special regime for boundaries. It provides in Article 11 that succession of a State does not affect a boundary established by a treaty, or obligations and rights established by a treaty and relating to the regime of a boundary.[261]
>
> At the very least, those maritime boundary treaties that define the boundary by precise geographic coordinates, like those the Maldives entered into, should remain stable. As opposed to the use of more vague expressions like "the median line," which could shift over time due to coastal erosion, geographic coordinates remain the same regardless of changes in coastal geography that could be induced by sea-level rise. Under the rule of *pacta sunt servanda*, a performance of those treaties in good faith would require maintaining the maritime boundary as defined by the precise coordinates in the treaty, regardless of sea-level rise.[262]
>
> When elaborating the draft articles that served as the basis for the adoption of the [Vienna Convention on the Law of Treaties], the International Law Commission … never provided a clear definition of the term "boundary," but according to the [Commission]'s report to the General Assembly, the clause "embrace[s] treaties of cession as well as delimitation treaties," without any qualifier."[263]
>
> Moreover, maritime boundary treaties typically do not contain termination provisions, demonstrating that States view such delimitation treaties as permanent.

[259] *Bay of Bengal Maritime Boundary Arbitration (Bangladesh v. India)* (see footnote 56 above), p. 63, paras. 216–217.

[260] Submission of Maldives (see footnote 164 above), p. 9.

[261] *Ibid.*, p. 12.

[262] *Ibid.*, p. 19.

[263] *Ibid*., pp. 20–21, quoting *Yearbook of the International Law Commission 1966*, vol. II, p. 259, para. (11).

> Some treaties make this purpose explicit … In sum, maritime boundary treaties are widely considered as requiring the same level of stability as land boundaries.[264]

It adds that the *rebus sic stantibus* principle

> must be exercised within a reasonable time after the date of the occurrence or completion of the alleged essential change of circumstances". Failure to comply with this condition would *estop* the State from invoking the doctrine. The phenomenon of the sea-level rise has been publicly known since at least the late 1980s.[265]

Such reasoning includes valid arguments supporting the preservation of maritime delimitations in the face of sea-level rise.

123. The Pacific Islands Forum, in its submission to the Commission on behalf of its member States, which is relevant for evidencing the regional State practice, emphasizes that:

> Members have undertaken a sustained effort to conclude, where necessary, maritime boundary agreements in the region. Maritime boundaries play an important role in promoting stability in the face of sea level rise, recognising the unique status of boundary treaties under the Vienna Convention on the Law of Treaties. Recent practice in maritime boundary agreements negotiated by [Pacific Islands Forum] Members include the description of boundary lines by reference to geographic coordinates, which also promotes stability and certainty.[266]

124. Singapore, in its submission to the Commission, listed a number of delimitation treaties.[267] It is useful to observe that one of these treaties, the 1995 Agreement between Malaysia and Singapore to delimit precisely the territorial waters boundary in accordance with the Straits Settlement and Johore Territorial Waters Agreement 1927,[268] provides in its article 2, entitled "Finality of boundary", that "[t]here shall be no alteration to the territorial waters boundary as defined in Article 1", meaning that the respective boundary is permanent.

125. The United Kingdom emphasized in its submission to the Commission "the legislation establishing the [United Kingdom]'s Exclusive Economic Zone which is defined by fixed coordinates as agreed in bilateral Maritime Boundary Delimitation Treaties with neighbouring countries".[269] In its submission, the United States expressed its position that it "generally considers maritime boundaries established by treaty to be final. A maritime boundary established by treaty would not be affected by any subsequent changes to the baseline points that may have contributed to the construction of a maritime boundary, unless the treaty establishing the boundary provides otherwise."[270]

126. Romania, in its submission, informs the Commission of a provision of the Treaty between Romania and Ukraine on the Romanian-Ukrainian State Border Regime,

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[264] *Ibid.*, p. 23, quoting the Agreement on the Extension of the 1974 Continental Shelf Boundary between the two Countries in the Andaman Sea and the Indian Ocean (New Delhi, 14 January 1977, United Nations, *Treaty Series*, vol. 1208, No. 19475, p. 161), between India and Indonesia.

[265] *Ibid.*, p. 25.

[266] Submission of the Pacific Islands Forum (see footnote 169 above), p. 3.

[267] Submission of Singapore (see footnote 176 above).

[268] Agreement between Malaysia and Singapore to delimit precisely the territorial waters boundary in accordance with the Straits Settlement and Johore Territorial Waters Agreement 1927 (Singapore, 7 August 1995), *International Maritime Boundaries*, Jonathan I. Charney and Lewis M. Alexander (eds.) (The Hague, Martinus Nijhoff, 2004), vol. III, p. 2351.

[269] Submission of the United Kingdom (see footnote 177 above), p. 2.

[270] Submission of the United States (see footnote 182 above), p. 2.

Collaboration and Mutual Assistance on Border Matters, of 2003,[271] which reads as follows: "If objective modifications due to natural phenomena which are not related to human activities and that make it necessary for these coordinates to be changed are noticed, the Joint Commission shall conclude new protocols."[272] As mentioned above, the Black Sea is a semi-enclosed sea, less exposed to sea-level rise, so it is highly improbable that the aforementioned provision is connected with this phenomenon.

127. The statements of Member States in the Sixth Committee on the present topic are also indicative of State practice. (The present paper has already presented the statements emphasizing the support of Member States for legal stability and security in relation to the topic.) All statements tackling the issue of maritime delimitations have advocated for maintaining them as such, while no statement was made in favour of their modification because of sea-level rise.

128. In its statement before the Sixth Committee in 2018, Greece[273] underlined that the outcome of the Commission's work should safeguard "the stability of maritime boundaries and the stability of relevant treaties". In its 2019 statement,[274] it emphasized the "importance of preserving … the principle of stability of maritime boundaries which cannot be affected by climate change and its effects, as clearly affirmed in the Permanent Court of Arbitration in the *Bay of Bengal Maritime Boundary* Arbitration Award (*Bangladesh v. India, Award July 7, 2014, par. 217*)".

129. In its 2018 statement in the Sixth Committee, Indonesia[275] recommended that the issue be "approached with caution because of its sensitivity, particularly in relation to the issues of borders and delimitation". In its 2019 statement, Thailand[276] stressed that "a fundamental change of circumstances should not be invoked in relation to maritime boundaries" in order for a State to terminate or withdraw from such an agreement.

130. New Zealand,[277] in its 2018 statement recalled a statement of its Prime Minister which said that New Zealand firmly believed that "coastal States' maritime boundaries should not have to change because of human-induced sea level rise". Papua New Guinea,[278] in its 2018 statement, recalled, *inter alia*, the Pacific Islands Forum leaders' priority of securing maritime boundaries. In its 2019 statement,[279] it stressed that the ability "to maintain existing maritime entitlements" should also apply to "maritime boundaries as delimited by agreement between States or by decisions of international courts or arbitral tribunals". Tonga,[280] in its 2018 statement, indicated that it was also crucial, when undertaking the study of the topic, "to respect the existing rights and entitlements of States, in particular with regard to maritime boundary delimitation pursuant to the United Nations Convention on the Law of the Sea".

131. In its 2019 statement, Israel[281] stressed that the work of the Commission and the Study Group on this matter should not "upset or undermine the delicate balance achieved by existing maritime border agreements, which meaningfully and

[271] Treaty between Romania and Ukraine on the Romanian-Ukrainian State Border Regime, Collaboration and Mutual Assistance on Border Matters (Cernauti, 17 June 2003), United Nations, *Treaty Series*, vol. 2277, No. 40547, p. 3.
[272] Submission of Romania (see footnote 181 above), p. 3.
[273] Greece (A/C.6/73/SR.21, para. 68).
[274] Greece (A/C.6/74/SR.28, paras. 56–57).
[275] Indonesia (A/C.6/73/SR.24, para. 64).
[276] Thailand (A/C.6/74/SR.29, para. 100).
[277] New Zealand (A/C.6/73/SR.22, para. 5).
[278] Papua New Guinea (A/C.6/73/SR.23, para. 34).
[279] Papua New Guinea (A/C.6/74/SR.30, para. 19).
[280] Tonga (A/C.6/73/SR.22, para. 63).
[281] Israel (A/C.6/74/SR.24, para. 27).

significantly contributed to increased regional and international stability and positive cooperation".

132. Cuba[282] mentioned in its 2019 statement that "modifying … maritime boundaries" would have a negative impact "on small island developing States" not to mention the respective legal insecurity. Jamaica[283] recalled in its 2019 statement the findings of arbitral tribunal in the *Bay of Bengal* case according to which "maritime delimitation is not dependent on what may likely occur in the future".

133. Last, but not least, the research on treaty practice kindly undertaken by the Secretariat of the Commission[284] was very helpful also on the issue of maritime delimitations in relation to sea-level rise. That research, based on a review of treaties and international agreements registered or filed and recorded with the Secretariat of the United Nations and published in the United Nations Treaty Series database, included: a search of approximately 250 treaties relating to maritime delimitation, based on the keywords in their title ("bay delimitation", "exclusive economic zone", "continental shelf", "maritime border/boundary/delimitation zone", "outer limit", "sea level" or "territorial sea/territorial waters"); a full-text search of treaties containing the words "base line", "sea level" and "adjustment", which involved over 3,000 treaties; and a search of treaties listed in the database of the Division for Ocean Affairs and the Law of the Sea of the United Nations Office of Legal Affairs.

134. The above-mentioned search in the database of the approximately 250 treaties relating to maritime delimitation, based on the keywords in their title, revealed that most of them, with a few exceptions, do not include provisions on amendments. Although this would not prevent the parties from amending the agreements concluded, the practice of States as reflected in the instruments considered tends to demonstrate that they have not anticipated amending maritime delimitation treaties. On the contrary, a number of these treaties expressly include provisions on the permanent character of the respective maritime delimitation.

135. Among the few exceptions, the following agreements can be noted. The Treaty between Argentina and Uruguay concerning the Río de la Plata and the Corresponding Maritime Boundary provides in article 46 that, "[i]f Martin Garcia Island becomes joined to another island in the future, the corresponding boundary shall be drawn following the outline of Martin Garcia Island yielded by chart H-118 referred to in article 41".[285] The Agreement between Australia and Indonesia concerning Certain Boundaries between Papua New Guinea and Indonesia provides in article 1: "The boundary between Papua New Guinea and Indonesia on the island of New Guinea (Irian) shall be more precisely demarcated as follows: …(b) From the point of the most northerly intersection of the meridian of Longitude 141° East with the waterway ("thalweg") of the Fly River (at present located at Latitude 6° 19' 24" South) the boundary lies along that waterway to the point of its most southerly intersection".[286] The Agreement on Maritime Delimitation between France and New Zealand (on behalf of the Cook Islands) provides in article 3 that "If new surveys or resulting charts and maps should indicate that changes in the base points co-ordinates are sufficiently significant to require adjustments of the maritime boundary, the Parties agree that an adjustment will be carried out on the basis of the same principles as those used in determining the maritime boundary, and such adjustments shall be

[282] Cuba (A/C.6/74/SR.25, para. 23).
[283] Jamaica (A/C.6/74/SR.27, paras. 2–3).
[284] On file with the Codification Division.
[285] Treaty concerning the Río de la Plata and the corresponding maritime boundary (Montevideo, 19 November 1973), United Nations, *Treaty Series*, vol. 1295, No. 21424, p. 293.
[286] Agreement concerning certain boundaries between Papua New Guinea and Indonesia (Jakarta, 12 February 1973), *ibid.*, vol. 975, No. 14124, p. 3.

provided for in a Protocol to this Agreement".[287] The Exchange of Notes between France and Tuvalu constituting an Agreement concerning a Provisional Maritime Delimitation between the Two Countries provides that: "The Ministry of Foreign Affairs has the further honour to agree to the Embassy's proposal that, as an interim measure pending the availability of charts definitively fixing maritime boundaries, both countries will acknowledge the principle of the equidistant line as a reference limit".[288] The Convention on the Delimitation of Economic Zones between France and Tonga provides that: "Article 1. The delimitation line between the economic zone of the French Republic off the coast of Wallis and Futuna and the exclusive economic zone of Tonga shall be the median line or line of equidistance. … Article 3. … (C) The necessary technical corrections to bring these data up to date may be made subsequently by exchange of letters".[289] The Treaty between the Solomon Islands and Vanuatu concerning their Maritime Boundaries provides in article 5 that, "[i]n the event that new surveys reveal significant adjustments to the location of base point coordinates that require adjustments of the maritime boundary, the Parties shall consult with the view to agreeing upon any necessary adjustment to the line described in Article 1, applying the same principles as those used in determining the maritime boundary, and such adjustments shall be provided for in a Protocol to this Agreement."[290]

136. Among the treaties that expressly include provisions on the permanent character of the respective maritime delimitation, the following agreements can be noted. The Treaty between Australia and Papua New Guinea concerning Sovereignty and Maritime Boundaries in the Area between the Two Countries, including the Area Known as Torres Strait, and Related Matters provides in article 3, paragraph 2, that "The territorial seas of the islands specified in sub-paragraph 1 (a) of Article 2 of this Treaty shall not extend beyond three miles from the baselines from which the breadth of the territorial sea around each island is measured. Those territorial seas shall not be enlarged or reduced, even if there were to be any change in the configuration of a coastline or a different result from any further survey".[291] The Agreement between Australia and Indonesia Establishing Certain Seabed Boundaries in the Area of the Timor and Arafura Seas, supplementary to the Agreement of 18 May 1971, provides in its preamble: "Resolving, as good neighbours and in a spirit of co-operation and friendship, to settle permanently the limits of the areas referred to in the preceding paragraph within which the respective Governments shall exercise sovereign rights with respect to the exploration of the seabed and the exploitation of its natural resources".[292] The Treaty on the State Border between Croatia and Bosnia and Herzegovina provides in article 4, paragraph 1, that, "[t]he Parties have agreed that the State border remains within the mutually defined coordinates, regardless of the

[287] Agreement on Maritime Delimitation (Rarotonga, 3 August 1990), *ibid.*, vol. 1596, No. 27949, p. 391.

[288] Exchange of Notes constituting an Agreement concerning a Provisional Maritime Delimitation between the Two Countries [France and Tuvalu] (Suva, Fiji, 6 August 1985, and Funafuti, Tuvalu, 5 November 1985), *ibid.*, vol. 1506, No. 25964, p. 35, at p. 37.

[289] Convention on the Delimitation of Economic Zones (Nuku'Alofa, 11 January 1980), *ibid.*, vol. 1183, No. 18960, p. 347.

[290] Treaty between the Solomon Islands and the Republic of Vanuatu concerning their Maritime Boundaries (Motalava, 7 October 2016), available at www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/slb_vut_wsm_2016.pdf. This treaty is interesting since it was concluded quite recently between States in the Pacific likely to be affected by sea-level rise.

[291] Treaty concerning Sovereignty and Maritime Boundaries in the Area between the Two Countries [Australia and Papua New Guinea], including the Area Known as Torres Strait, and Related Matters (Sydney, 18 December 1978), United Nations, *Treaty Series*, vol. 1429, No. 24238, p. 207.

[292] Agreement between Australia and Indonesia establishing certain seabed boundaries in the area of the Timor and Arafura Seas, supplementary to the Agreement of 18 May 1971 (1972), *ibid.*, vol. 974, No. 14123, p. 319.

man-made or natural changes in the terrain".[293] The Agreement between India and Indonesia on the Extension of the 1974 Continental Shelf Boundary between the Two Countries in the Andaman Sea and the Indian Ocean provides that: "And resolving, as good neighbours and in a spirit of cooperation and friendship, to settle permanently the limits of the areas referred to in the preceding paragraph within which the respective Governments shall exercise sovereign rights"[294] (similar preamble provisions related to the will of the parties to settle permanently their delimitation can be found also in the Agreement on the Delimitation of Seabed Boundary between India and Thailand in the Andaman Sea,[295] the Agreement between Indonesia and Papua New Guinea concerning the Maritime Boundary between the Republic of Indonesia and Papua New Guinea and Cooperation on Related Matters,[296] the Agreement on the Delimitation of the Maritime Boundary between Burma and Thailand in the Andaman Sea,[297] the Treaty between Papua New Guinea and Solomon Islands concerning Sovereignty, Maritime and Seabed Boundaries between the Two Countries, and Co-operation on Related Matters,[298] the Muscat Agreement on the Delimitation of the Maritime Boundary between Pakistan and Oman,[299] the Treaty on the Delimitation of Marine and Submarine Areas, between the Bolivarian Republic of Venezuela and Trinidad and Tobago[300]). The Agreement between Mauritius and Seychelles on the Delimitation of the Exclusive Economic Zone between the Two States provides in article 5 that, "[t]he two States shall cooperate with each other whenever necessary in order to maintain the existing basepoints between the two States".[301] The Treaty to Resolve Pending Boundary Differences and Maintain the Rio Grande and Colorado River as the International Boundary between Mexico and the United States of America provides in article V that, "[t]he Contracting States agree to establish and recognize their maritime boundaries in the Gulf of Mexico and in the Pacific Ocean in accordance with the following provisions: … These maritime boundaries … shall be recognized as of the date on which this Treaty enters into force. They shall permanently represent the maritime boundaries between the two Contracting States".[302] The International Boundary Treaty between Yemen and Saudi Arabia provides in article 2 that "The definitive and permanent boundary line between the Republic of Yemen and the Kingdom of Saudi Arabia shall be established as

[293] Treaty on the State Border between Croatia and Bosnia and Herzegovina (Sarajevo, 30 July 1999), available at www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/HRV-BIH1999SB.PDF.

[294] See footnote 264 above.

[295] Agreement on the Delimitation of Seabed Boundary between the Two Countries [India and Thailand] in the Andaman Sea (New Delhi, 22 June 1978), *ibid.*, vol. 1122, No. 17433, p. 3.

[296] Agreement between Indonesia and Papua New Guinea concerning the Maritime Boundary between the Republic of Indonesia and Papua New Guinea and Cooperation on Related Matters (Jakarta, 13 December 1980), *International Maritime Boundaries*, Jonathan I. Charney and Lewis M. Alexander (eds.) (Dordrecht, Martinus Nijhoff, 1993), vol. I, p. 1045.

[297] Agreement on the Delimitation of the Maritime Boundary between the Two Countries [Burma and Thailand] in the Andaman Sea (Rangoon, 25 July 1980), United Nations, *Treaty Series*, vol. 1276, No. 21069, p. 447.

[298] Treaty between Papua New Guinea and Solomon Islands concerning Sovereignty, Maritime and Seabed Boundaries between the Two Countries, and Co-operation on Related Matters (Port Moresby, 25 January 1989), *International Maritime Boundaries*, vol. I (see footnote 296 above), p. 1162.

[299] Muscat Agreement on the Delimitation of the Maritime Boundary between Pakistan and Oman (Muscat, 12 June 2000), United Nations, *Treaty Series*, vol. 2183, No. 38455, p. 3.

[300] Treaty on the Delimitation of Marine and Submarine Areas (Caracas, 18 April 1990), United Nations, *Treaty Series*, vol. 1654, No. 28463, p. 293.

[301] Agreement between Mauritius and Seychelles on the Delimitation of the Exclusive Economic Zone between the Two States (Port Louis, 29 July 2008), *ibid.*, vol. 2595, No. 46169, p. 225.

[302] 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 (Mexico City, 23 November 1970), *ibid.*, vol. 830, No. 11873, p. 56.

follows ...";[303] the International Boundary Agreement between Yemen and Oman provides in article 3 that, "[t]his demarcation of the land and maritime boundary line separating the two countries shall be considered final and definitive".[304] The Agreement on the Delimitation of the Maritime Boundary between Oman and Yemen provides in article 1, paragraph 3, that, "[t]his demarcation shall be considered final and definitive".[305] This list is not exhaustive. The number of treaties providing for the permanent delimitation of maritime boundaries is much higher than the number of those containing provisions allowing for adjustments.

137. At the same time, the above-mentioned broader full-text search in the United Nations Treaty Series database did not reveal any treaty providing for the explicit adjustment of a maritime delimitation as a consequence of sea-level rise.

138. This overview of conventional practice reinforces the general conclusion, which can be drawn after studying the submissions to the Commission and the statements by Member States before the Sixth Committee, that there is a large body of State practice favouring legal stability, security, certainty and predictability of the maritime delimitations effected by agreement or by adjudication.

139. As to the existing claims to the entitlement to maritime spaces in the case of future maritime delimitations, the situation is less clear as to the relevant State practice: there are no specific references in the submissions to the Commission or in the statements by Member States before the Sixth Committee, with the exception of general remarks regarding the need to preserve the entitlements. As mentioned already, it is difficult to imagine how a State can be obliged to renounce to or diminish such claims; ultimately, the maritime delimitation will be effected either by negotiations in the form of a treaty (so, it will be the result of a compromise between the parties), or by adjudication (so it will be the result of the application by the respective jurisdiction of the delimitation method).

140. As to how an international court or tribunal might take into account such claims when resolving a dispute pertaining to a maritime delimitation, International Law Association resolution 5/2018, adopted by the Sydney Conference, can be recalled, wherein the Conference

> CONFIRMS that the Committee's recommendations regarding the maintenance of existing maritime entitlements are conditional upon the coastal State's existing maritime claims having been made in compliance with the requirements of the 1982 Law of the Sea Convention and duly published or notified to the Secretary-General of the United Nations as required by the relevant provisions of the Convention, prior to physical coastline changes brought about by sea level rise.

This might infer that an international court or tribunal should take into account such claims made in accordance with the United Nations Convention on the Law of the Sea before the coastal conditions had been affected by sea-level rise (meaning that it is supposed to effect the delimitation using the base points upon which the claim was based before sea-level rise effects). Nevertheless, courts and tribunals are not bound by the claims of the parties when solving the dispute between them. At the same time, it should also be recalled that the Tribunal in the *Bay of Bengal Maritime Boundary*

[303] International Boundary Treaty between Yemen and Saudi Arabia (Jeddah, 12 June 2000), *ibid.*, vol. 2389, No. 43167, p. 203.

[304] International Boundary Agreement between Yemen and Oman (Sana'a, 1 October 1992), available at www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/OMN-YEM1992IB.PDF.

[305] Agreement on the Delimitation of the Maritime Boundary between Oman and Yemen (Muscat, 14 December 2003), *ibid.*, vol. 2309, No. 41170, p. 249.

Arbitration (Bangladesh v. India) stated that the "issue is not whether the coastlines of the Parties will be affected by climate change in the years or centuries to come. It is 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*."[306] This statement might infer that what can be taken into account in an adjudication on a maritime delimitation dispute is the reality on the ground at the moment of effecting the delimitation by the court or tribunal, that is after the sea-level rise affected the coast and its base points used in delimitation, and not the claims based on the former reality of the coast before sea-level rise produced its effects. This matter still needs attention within the Study Group.

141. In concluding the present chapter, the following observation of a preliminary character can be made:

(a) Bringing into question effected maritime delimitations would create legal uncertainty, insecurity, and would lead to disputes prompted by the frequent renegotiation of the maritime boundaries;

(b) Consequently, in order to preserve legal stability, security, certainty and predictability, it is necessary to preserve existing maritime delimitations, either effected by agreement or by adjudication, notwithstanding the coastal changes produced by sea-level rise;

(c) Sea-level rise cannot be invoked in accordance with article 62, paragraph 2, of the 1969 Vienna Convention on the Law of Treaties, as a fundamental change of circumstances for terminating or withdrawing from a treaty which established a maritime boundary, since maritime boundaries enjoy the same regime of stability as any other boundaries. The international jurisprudence is clear in this respect;

(d) The submissions by Member States to the Commission in response to its request for State practice, and their statements before the Sixth Committee represent a form of State practice supporting the preservation of existing maritime delimitations, irrespective of the effects of sea-level rise;

(e) These conclusions are reinforced by the results of the research on the maritime delimitation treaties in the United Nations Treaty Series and Division for Ocean Affairs and the Law of the Sea databases,[307] which show that most of them, with a few exceptions, do not include provisions on amendments, so the parties have not anticipated amending these treaties; on the contrary, a number of these treaties expressly include provisions on the permanent character of the respective maritime delimitation. Nevertheless, the survey showed that no treaty registered or filed and recorded with the Secretariat of the United Nations provides for an explicit adjustment of a maritime delimitation as a consequence of sea-level rise;

(f) From the above, it is clear that the State practice generally supports the preservation of existing maritime delimitations, either effected by agreement or by adjudication, notwithstanding the coastal changes produced subsequently by sea-level rise. As to the issue of existing claims to the entitlement to maritime spaces in the case of future maritime delimitations, further reflection is needed within the Study Group;

(g) A similar conclusion can be drawn for maritime delimitations as in the case of the discussion contained in paragraph 104 above on the emergence of a customary rule of international law regarding the preservation of baselines and outer

[306] *Bay of Bengal Maritime Boundary Arbitration (Bangladesh v. India)* (see footnote 56 above), p. 62, para. 214 (emphasis added).

[307] See footnote 284 above.

limits of maritime zones measured therefrom. There is a clear State practice regarding the preservation of effected maritime delimitations and of maritime boundaries, which generally meets the requirements under conclusions 4 to 8 (and 16) of the Commission's conclusions on identification of customary international law of 2018 for the material element of the custom. Such State practice is supported by practice of international organizations;[308] includes both physical and verbal acts,[309] as well as inaction;[310] has the form of, *inter alia*, conduct in connection with treaties;[311] and is widespread and representative among States, as well as consistent.[312] It is more and more frequent.[313] Nevertheless, the existence of the *opinio juris* is not yet that evident, although the general reliance of the conduct[314] of the respective States in their practice (as mentioned) on the grounds of legal stability and security is an indication in that sense. In order for a definitive conclusion to be possible, more submissions by Member States to the Commission in response to the request included in chapter III of its 2019 annual report are needed.

III. Possible legal effects of sea-level rise on islands insofar as their role in the construction of baselines and in maritime delimitations is concerned

142. The present chapter complements, and should be read together with, the previous two chapters; its existence results from the structure suggested by the 2018 syllabus in its paragraph 15,[315] which presents the issues related to the legal implications sea-level rise to be analysed. The conclusions of the previous two chapters are equally valid for the present one.

143. The partial or full inundation of islands because of sea-level rise also has consequences on baselines and/or on maritime delimitations.

144. When an island is located in proximity to the coast and forms part of the coastal configuration of the respective State, it may be used as a base point or it may generate more base points for the baseline or for effecting the maritime delimitations.

145. If an island was used to contribute to the drawing of the baseline, the latter may also be affected (for example, when the island was an anchor point of a straight baseline).[316] In cases where the respective island disappears entirely, then its territorial sea can be lost as well, which will be discussed in Part Three below.[317]

146. At the same time, islands situated on atolls or that have fringing reefs can use the low-water marks of reefs as baselines (art. 6 of the United Nations Convention on

[308] Conclusion 4, para. 2. See above in the present paper the practice of international organizations under the form of declarations/statements.

[309] Conclusion 6, para. 1. See above in the present paper State practice under the form of statements (submissions to the Commission and statements in the Sixth Committee).

[310] Conclusion 6, para. 1. Inaction to the sense that States are not willing to terminate or withdraw from maritime delimitation treaties establishing maritime boundaries, including on the ground of fundamental change of circumstances because of sea-level rise, or to modify such treaties/boundaries (by not providing modification clauses in the treaties).

[311] Conclusion 6, para. 2. Inclusion in the texts of treaties of provisions setting forth the permanent character of the maritime delimitation effected by means of that treaty.

[312] Conclusion 8, para. 1. The practice is uniform (it refers to the preservation of maritime delimitation treaties/maritime boundaries established by those treaties).

[313] Conclusion 8, para. 2 ("Provided that the practice is general, no particular duration is required.").

[314] Conclusion 10, para. 2.

[315] A/73/10, annex B.

[316] Caron, "When law makes climate change worse" (see footnote 141 above), p. 637.

[317] Rayfuse, "International law and disappearing States" (see footnote 152 above), p. 3.

the Law of the Sea). These insular features are particularly vulnerable to a rising sea level and can easily become permanently inundated, which results in the loss of the baseline.

147. Its permanent inundation may therefore also mean that it can no longer be used to generate base points for maritime delimitation. There is an exception where the inundation transforms it into a low-tide elevation located within the territorial sea, when it might still be used as a base point (in such a case, the issue of the legality of the possible measures taken by the respective State to preserve its status of island or its emergence above water at low tide appears, which will be examined in the next chapter).[318]

148. Furthermore, in maritime delimitations, islands may represent relevant or special circumstances that, in the framework of the method of maritime delimitation developed and consolidated by the international courts and tribunals, including by the International Court of Justice, may lead to an adjustment of the provisional equidistance line in order to produce an equitable result. The practice of international courts and tribunals, including the International Court of Justice, shows that they may decide not to take into account very small islands or not to give them full potential entitlement to maritime zones, such as enclaving islands (in case such an approach had a disproportionate effect upon the delimitation line).[319] The partial permanent inundation and/or its reclassification as a rock (as defined by article 121, paragraph 3, of the United Nations Convention on the Law of the Sea) or a low-tide elevation, or the full permanent inundation (disappearance) of an island may result in the decision to no longer consider that island as a relevant or special circumstance in this phase of the application of the maritime delimitation method mentioned above.

IV. Possible legal effects of sea-level rise on the exercise of sovereign rights and jurisdiction of the coastal State and its nationals, as well as on the rights of third States and their nationals, in maritime spaces in which boundaries or baselines have been established

149. Maritime zones under international law have evolved over time. During the period before the 1958 Geneva Conventions, customary international law recognized internal waters, territorial sea[320] and high seas. The first round of codification of the law of the sea resulted in the adoption of the four 1958 Geneva Conventions,[321] considered to reflect customary international law at the time. The Conventions, in addition, codified the sovereign rights of the coastal State to a continental shelf and contiguous zone. The most significant expansion of maritime zones was introduced by the 1982 United Nations Convention on the Law of the Sea, which created the new maritime zones of archipelagic waters, exclusive economic zone, extended continental shelf, and the Area.

[318] Sefrioui, “Adapting to sea-level rise” (see footnote 148 above), p. 12.

[319] See *Maritime Delimitation in the Black Sea* (footnote 239 above), p. 122, para. 185.

[320] During the 1930 Hague Codification Conference there was discussion on special zones beyond the territorial sea. *Conference for the Codification of International Law*, annex 10, Report of the Second Committee: Territorial Sea (1930).

[321] Convention on the Territorial Sea and the Contiguous Zone (Geneva, 29 April 1958), United Nations, *Treaty Series*, vol. 516, No. 7477, p. 205; Convention on the High Seas (Geneva, 29 April 1958), *ibid.*, vol. 450, No. 6465, p. 11; Convention on the Continental Shelf (Geneva, 29 April 1958), *ibid.*, vol. 499, No. 7302, p. 311; Convention on Fishing and Conservation of the Living Resources of the High Seas (Geneva, 29 April 1958), *ibid.*, vol. 559, No. 8164, p. 285.

150. Each of these zones confer upon the coastal State and its nationals a set of rights and obligations. In addition, in these zones, third party States and their nationals also enjoy certain rights. As each of these zones is measured from the baseline from which the territorial sea is determined, any change or loss of the baseline could result in changes and, in some cases, reductions or even, in extreme cases, complete loss of maritime entitlements. Such changes will necessarily impact the exercise of sovereign rights and jurisdiction of the coastal State in these maritime zones and affect the rights of third States and their nationals.

151. A total of 168 States have ratified the United Nations Convention on the Law of the Sea.[322] And while there remain a number of non-Parties, it would be fair to conclude that these maritime zones are part of customary international law.[323] However, the present chapter will not address the process, the manner, nor the criteria for establishing any maritime zone, especially in the case where there are overlapping boundaries. It will begin by explaining different aspects of the sovereign rights and jurisdiction of the coastal State and its nationals and the rights of third States and their nationals in relation to each maritime entitlement as provided for under the Convention, and the possible consequences to these entitlements in the case of shifting of baselines and outer limits of maritime zones owing to sea-level rise.

A. Maritime entitlements under international law

152. The coastal State exercises sovereignty over its internal waters and its territorial sea, including the seabed, subsoil and airspace above. Internal waters are described as the waters that lie in the landward side of the baseline of the territorial sea.[324] Here the coastal State exercises complete prescriptive and enforcement jurisdiction.

153. In the territorial sea, the coastal State exercises sovereignty that is limited by the right of innocent passage rights of foreign vessels that is customary international law. The right of innocent passage is codified in both the Convention on the Territorial Sea and the Contiguous Zone[325] and the United Nations Convention on the Law of the Sea (Part II, sect. 3, arts. 17–32). The right of innocent passage means that coastal State cannot hamper the passage of a foreign vessel[326] that is not "prejudicial to the peace, good order or security of the coastal State".[327] The coastal State cannot exercise

[322] Information obtained from the United Nations Treaty Collection Depositary, available at https://treaties.un.org/Pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXI-6&chapter=21&Temp=mtdsg3&clang=_en. Fourteen States have signed but not ratified the Convention (Afghanistan, Bhutan, Burundi, Cambodia, Central African Republic, Columbia, Democratic People's Republic of Korea, El Salvador, Ethiopia, Iran (Islamic Republic of), Libya, Liechtenstein, Rwanda and United Arab Emirates).

[323] This is without prejudice to positions taken by non-Parties regarding applicable provisions of the United Nations Convention on the Law of the Sea.

[324] Convention on the Territorial Sea and the Contiguous Zone (Geneva, 29 April 1958), United Nations, *Treaty Series*, vol. 516, No. 7477, p. 205, at art. 5, para. 1. Note that article 8, paragraph 1, of the United Nations Convention on the Law of the Sea provides for the exception of archipelago States as provided for in Part IV.

[325] States that are not parties to the United Nations Convention on the Law of the Sea but have either signed or ratified the Convention on the Territorial Sea and the Contiguous Zone are: Columbia (signed on 29 April 1958), Israel (ratified on 6 September 1961), the United States (ratified on 12 April 1961) and the Bolivarian Republic of Venezuela (ratified on 15 August 1961) (status as of 5 February 2020).

[326] Convention on the Territorial Sea and the Contiguous Zone, art. 15, and United Nations Convention on the Law of the Sea art. 24, para. 1. According to the latter Convention, the duties of the coastal State include imposing requirements that have the practical effect of denying or impeding passage.

[327] Convention on the Territorial Sea and the Contiguous Zone, art. 14, para. 4, and the United Nations Convention on the Law of the Sea, art. 19, para. 1.

criminal jurisdiction,[328] including any investigation or arrest of a person on board a foreign vessel,[329] or exercise civil jurisdiction[330] or impose any levy for passage.[331] In internal waters, the coastal State can exercise these rights over foreign ships and their nationals.

154. As codified for the first time under article 21 of the United Nations Convention on the Law of the Sea, the coastal State has jurisdiction to adopt laws that conform with the Convention and international law for: the safety of navigation and the regulation of maritime traffic; the protection of navigational aids and facilities and other facilities or installations; the protection of cables and pipelines; the conservation of the living resources of the sea; the prevention of infringement of fisheries laws and regulations of the coastal State; the preservation of the environment and the prevention, reduction and control of pollution; marine scientific research and hydrographic survey; and the prevention of infringement of customs, fiscal, sanitary or immigration laws of the coastal State (art. 21, para. 1). The coastal State may also establish traffic separation schemes in accordance with the conditions enumerated in article 22, paragraph 3. Foreign vessels are required to abide by these laws and regulations of the coastal State. Foreign submarines[332] and other underwater vehicles must navigate on the surface and show their flag.[333]

155. In the contiguous zone, which was first codified under the Convention on the Territorial Sea and the Contiguous Zone[334] and then under the United Nations Convention on the Law of the Sea (art. 33), the coastal State can exercise "control" to "prevent infringement of its customs, fiscal, immigration or sanitary laws and regulations within its territory or territorial sea" and to "punish infringement of the above laws and regulations committed within its territory or territorial sea".

156. Archipelagos have also been a long-standing subject matter of international law dating back to the 1930 Hague Conference and were addressed by the Commission but ultimately omitted from its final set of draft articles.[335] The 1958 Geneva Conventions did not include any provisions on archipelagos. It was the United Nations Convention on the Law of the Sea that for the first time recognized a separate regime for archipelagos, including the status of the archipelagic State (art. 46 (a)) and archipelagic straight baselines (art. 47). Accordingly, the breadth of the territorial sea, the contiguous zone, the exclusive economic zone and the continental shelf are all measured from the archipelagic straight baseline under article 48. The new zone of

[328] The Convention on the Territorial Sea and Contiguous Zone did not adopt the language suggested in the decision of the Permanent Court of International Justice in the *Lotus* case (*France v. Turkey*) against the exclusive penal jurisdiction of the flag State. *Case of the S.S. "Lotus", France v Turkey*, Judgment No. 9, 7 September 1927, *P.C.I.J. Reports 1928, Series A, No. 10*.

[329] Convention on the Territorial Sea and the Contiguous Zone, art. 19, and United Nations Convention on the Law of the Sea, art. 27. Both the Conventions provide exceptions as to when the coastal State may exercise criminal jurisdiction on board a foreign vessel in its territorial sea, *mutatis mutandis*.

[330] Convention on the Territorial Sea and the Contiguous Zone, art. 20; United Nations Convention on the Law of the Sea, art. 28.

[331] Convention on the Territorial Sea and the Contiguous Zone, art. 20 United Nations Convention on the Law of the Sea, art. 26.

[332] Convention on the Territorial Sea and the Contiguous Zone, art. 14, para. 6.

[333] United Nations Convention on the Law of the Sea, art. 20.

[334] Lloyd C. Fell, "Comment, Maritime contiguous zones", *Michigan Law Review*, vol. 62 (1964), pp. 848–864.

[335] Draft articles concerning the law of the sea and commentaries thereto, *Yearbook of the International Law Commission 1956*, vol. II, document A/3159, p. 256, at p. 270. For an overview of the pre-1982 United Nations Convention on the Law of the Sea developments, see also Sophia Kopela, *Dependent Archipelagos in the Law of the Sea* (Leiden, Martinus Nijhoff, 2013), pp. 11–24.

archipelagic waters lies within the waters enclosed by the archipelagic baselines.[336] The archipelagic State exercises sovereignty over the archipelagic waters, regardless of the depth or distance from the coast, the seabed, subsoil and airspace above (art. 49, paras. 1 and 2). This means that the archipelagic State exercises sovereignty over a very broad expanse of maritime space.

157. Archipelagic waters are governed by a special regime that has similarities and differences from the regime of the territorial sea.[337] Similar to the territorial sea, foreign ships are granted the right of innocent passage in archipelagic waters, which can only be suspended if necessary for security reasons (art. 25, para. 3 (territorial sea) and art. 52 (archipelagic waters)). However, there are also important differences between the two regimes, relevant especially for third States.

158. The right of overflight over archipelagic waters is recognized (it does not exist for innocent passage in the territorial sea). Moreover, the United Nations Convention on the Law of the Sea recognized a new passage regime of archipelagic sea lanes and air routes, which the archipelagic State may designate with the approval of International Maritime Organization (art. 53).[338] Such passage, akin to transit passage for straits used for international navigation in article 36 of the Convention, is defined as "the rights of navigation and overflight in the normal mode solely for the purpose of continuous, expeditious and unobstructed transit passage from one part of the high seas or exclusive economic zone to another part of the high seas or exclusive economic zone" (art. 53, para. 3). Foreign ships and aircraft are ensured the right of archipelagic sea lanes and air routes passage (art. 53, para. 2). Importantly, even if the archipelagic State does not designate archipelagic sea lane or air routes, foreign States and, under certain circumstances, third States may still exercise such passage rights in "routes normally used for international navigation" (art. 53, para. 12), presumably referring to waters that were previously subject to the high seas passage. Notably missing is any reference to overflight.[339] Indonesia is the first and only archipelagic State that has established a system of partial archipelagic sea lanes under the International Maritime Organization.[340]

159. Third States also have certain non-navigational rights in the archipelagic waters under paragraph 1 of article 51. The archipelagic State must respect existing agreements and also respect traditional fishing rights and other legitimate activities of the immediately adjacent neighbouring States.

160. The legal regime of the continental shelf was first codified in the Convention on the Continental Shelf[341] and then subsequently in the United Nations Convention

[336] Article 50 provides that the archipelagic State may draw closing lines to delimit its internal waters as provided in articles 9, 10 and 11 of the Convention.

[337] For a detailed overview see Mohamed Munavvar, *Ocean States: Archipelagic Regimes in the Law of the Sea* (Dordrecht, Martinus Nijhoff, 1995).

[338] Article 53, paragraph 9, refers to the "competent international organization" which is understood to mean the International Maritime Organization. See Tullio Treves, "The law of the sea "system" of institutions", *Max Planck Institute Year Book of International Law Online* (1994), p. 325, at pp. 328–329.

[339] Munavvar, *Ocean States …* (see footnote 337 above), p. 171.

[340] According to International Maritime Organization resolution MSC.71(69), adopted on 19 May 1998, a partial archipelagic sea lane is one "which does not meet the requirement to include all normal passage routes and navigational channels as required by UNCLOS". International Maritime Organization resolution MSC.71(69) of 19 May 1998, "Adoption of amendments to the general provisions on ships' routeing (resolution A.572(14) as amended)", annex, para. 2.2.2.

[341] States that are not parties to the United Nations Convention on the Law of the Sea but have either signed or ratified the Convention on the Continental Shelf are: Columbia (ratified on 8 January 1962), Israel (ratified on 6 September 1961), Peru (signed on 31 October 1958), the United States (ratified on 12 April 1961) and Venezuela (Bolivarian Republic of) (ratified on 15 August 1961) (status as of 5 February 2020).

on the Law of the Sea. The coastal State exercises sovereign rights for the purpose of exploring it and exploiting its natural resources, as codified in article 2 of the Convention on the Continental Shelf, which is to be found *mutatis mutandis* in article 77 of the United Nations Convention on the Law of the Sea.[342] The International Court of Justice recognized these rights as an inherent rights of the coastal State: "the most fundamental of all the rules of law relating to the continental shelf", "namely that the rights of the coastal State in respect of the area of continental shelf … exist *ipso facto* and *ab initio*, by virtue of its sovereignty over the land, and as an extension of it in an exercise of sovereign rights for the purpose of exploring the seabed and exploiting its natural resources".[343] The coastal State enjoys sovereignty rights to explore and exploit its natural resources that includes mineral and other non-living resources of the seabed and subsoil, as well as living resources belonging to sedentary species (art. 73).[344]

161. The exercise of sovereign rights over the continental shelf by the coastal State is limited, however, by the exercise of rights of other States in the superjacent waters and airspace above.[345] The Convention on the Continental Shelf recognizes the right of the coastal State to construct and maintain or operate on the continental shelf installations and other devices and establish safety zones together with certain obligations (art. 5, paras. 2–8). The United Nations Convention on the Law of the Sea goes further and, in article 80, applies *mutatis mutandis* the rights of artificial islands, installations and structures on the continental shelf regarding the exclusive economic zone to the continental shelf. In addition, the United Nations Convention on the Law of the Sea gives the coastal State the exclusive right to authorize and regulate drilling on the continental shelf for all purposes (art. 81). It also preserves the rights of the coastal State to exploit the subsoil by means of tunnelling, irrespective of the depth of water above the subsoil.[346] Certain rights of third States are also protected such as the freedom to lay submarine cables and pipelines.[347]

162. The United Nations Convention on the Law of the Sea introduced the possibility for coastal States to extend their continental shelf beyond 200 nautical miles, if certain conditions are met, including the requirement to make a submission to the Commission on the Limits of the Continental Shelf (art. 76, para. 8). An important difference between the continental shelf within the 200 nautical mile limit and that of the extended continental shelf is the obligation of the coastal State to make payments or contributions in kind to the authority of the Area in accordance with the conditions outlined in article 82. However, developing States that are net importers of mineral resources produced from the continental shelf are exempted from such obligation (art. 82, para. 3).

163. The Area, defined as the seabed and ocean floor and subsoil that lies beyond the limits of national jurisdiction (art. 1, para. 1 (1)), which in practice would mean the maritime space that lies beyond the outer limits of the continental shelf of the coastal State, is one of the significant innovations of the United Nations Convention on the Law of the Sea. The Area and its resources are exclusively subject to the regime of

[342] See footnote 146 above.

[343] *North Sea Continental Shelf, Judgment*, *I.C.J. Reports 1969*, p. 3, at p. 22, para. 19.

[344] Article 77, paragraph 4, defines sedentary species as "organisms which, at the harvestable stage, either are immobile on or under the sea-bed or are unable to move except in constant physical contact with the sea-bed or the subsoil".

[345] Convention on the Continental Shelf, art. 3; United Nations Convention on the Law of the Sea, art. 78, para. 1.

[346] Art. 85: "This Part does not prejudice the right of the coastal State to exploit the subsoil by means of tunnelling, irrespective of the depth of water above the subsoil."

[347] Convention on the Continental Shelf, art. 4, which provides that the coastal State "may not impede the laying or maintenance of submarine cables or pipelines on the continental shelf".

the common heritage of mankind (art. 136). While the concept of the common heritage of mankind was not new at the time it was adopted, the detailed regime under Part XI (art. 137, para. 2) and the Agreement relating to the Implementation of Part XI[348] were new to international law. The Area is a maritime zone over which no State can claim sovereignty over any part nor appropriate any of its resources (art. 137, para. 1). The meaning of "resources" is limited to "solid, liquid or gaseous mineral resources *in situ* in the Area at or beneath the sea-bed, including polymetallic nodules" (art. 133). However, unlike the high seas, the common heritage of mankind regime provides a detailed legal framework for decision-making, management and the sharing of monetary benefits from activities in the Area.

164. A key aspect of the new regime was to take management and decision-making authority from individual States, transferring all authority to the International Seabed Authority, which is composed *ipso facto* of all State Parties to the United Nations Convention on the Law of the Sea (art. 156, para. 2). Only the Authority, which is composed of State Parties, can act on behalf of humankind (art. 137, para. 2). Part XI further established the creation of the Enterprise – the organ of the International Seabed Authority responsible for carrying out the activities in the Area (art. 170). The common heritage of mankind regime in the Area includes a benefit-sharing system implemented through a mechanism for the sharing of the net proceeds of mining activities undertaken in the Area.[349] Subsequently, the common heritage of mankind regime under Part XI was modified by the Agreement relating to the Implementation of Part XI adopted in 1994. In particular, changes were made to the provisions of Part XI on revenue-sharing and technology transfer between developed and developing States.[350]

165. Marine scientific research in the Area is also to be carried out exclusively for peaceful purposes and for the benefit of humankind as a whole, in accordance with Part XIII of the United Nations Convention on the Law of the Sea on marine scientific research (art. 143).

166. The exclusive economic zone is one of the new maritime zones created by the United Nations Convention on the Law of the Sea. The concept of the exclusive economic zone is closely related to the emergence of New International Economic Order and the desire of developing countries in the then-emerging post-colonial period to safeguard their rights over their natural resources, including marine resources necessary for food security and development.[351] The principle of permanent

[348] Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 (New York, 28 July 1994), United Nations, *Treaty Series*, vol. 1836, No. 31364), p. 3.

[349] Art. 13 of annex III.

[350] Robin Churchill and Vaughan Lowe, *The Law of the Sea*, 3rd ed. (Manchester, Manchester University Press, 1999), p. 244. Other changes made included the system of financing of the activities of the enterprise. Under the implementing agreement, States are no longer required to finance mine sites or any activities of the enterprise (Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, annex, sect. 2, para. 3).

[351] Rama Puri, "Evolution of the concept of exclusive economic zone in UNCLOS III: India's contribution", *Journal of the Indian Law Institute*, vol. 22 (1980), pp. 497–525. The author discusses the historical background of the exclusive economic zone. See also Jenny Grote Stoutenburg, *Disappearing Island States in International Law* (2015), pp. 122–125. The genesis of the exclusive economic zone came from Kenya during a meeting of the Asian-African Legal Consultative Organization in 1971 (*Asian-African Legal Consultative Organization, Report of the 12th Session held in Colombo from 18th to 27th January, 1971*, p. 244), and was also taken up by the Organization of African Unity (OAU Declaration on the issues of the law of the sea, Council of Ministers resolution 289 (XIX), May 1973). See R.R. Churchill and A.V. Lowe, *The Law of the Sea*, 2nd ed. (Manchester, Manchester University Press, 1988), p. 133; David Attard, *The Exclusive Economic Zone in International Law* (Oxford, Clarendon Press, 1987), pp. 20–26; Maria Gavouneli, *Functional Jurisdiction in the Law of the Sea* (Leiden, Martinus Nijhoff, 2007), p. 61.

sovereignty over natural resources was also part of the New International Economic Order, which included the natural resources in the seabed and subsoil under the national jurisdiction of States and in the superjacent waters as recognized by the General Assembly.[352]

167. In the exclusive economic zone, the coastal State has sovereign rights to explore, exploit, conserve and manage the natural resources, both living and non-living, of the waters superjacent to the seabed, the seabed and subsoil, establish and use artificial islands, installations and structures, protect and preserve the marine environment, conduct marine scientific research and exercise other rights and duties provided under the Convention (art. 56).

168. The coastal State also has the exclusive competence to determine the total allowable catch of the living resources in its exclusive economic zone in accordance with the conditions specified under the Convention (art. 61), as well as the obligation to ensure that living resources in the exclusive economic zone are not endangered through the taking of proper conservation and management measures based on the best scientific evidence (art. 61, para. 2).

169. The Convention recognizes certain rights of third States and their nationals in the exclusive economic zone of another State, in particular access to the surplus living resources that the coastal State lacks the capacity to harvest (art. 62, para. 2). Third States and their nationals, in addition, have the right of high seas navigation and overflight, the right to lay submarine cables and pipelines, and the right to engage in other internationally recognized lawful uses of the sea related to these freedoms as provided under article 87 and other provisions of the Convention (art. 58, para. 1). However, States must have due regard to the rights and duties of the coastal State and are under a duty to comply with the laws and regulations thereof (art. 58, para. 3). The obligations of flag States in relation to illegal, unreported and unregulated fishing activities in the exclusive economic zone of another State was examined in detail by the International Tribunal for the Law of the Sea in its advisory opinion in case No. 21.[353]

170. While foreign flagged vessels are entitled to exercise freedom of navigation rights in the exclusive economic zone of another State under article 58 of the United Nations Convention on the Law of the Sea, the coastal State is also given some limited prescriptive and enforcement rights that would not apply to the high seas. Under paragraph 5 of article 211 of the Convention, the coastal State may adopt laws and regulations for the prevention, reduction and control of pollution from vessels conforming with and giving effect to generally accepted international rules and standards established under the competent international organization (the International Maritime Organization) or a general diplomatic conference. Moreover, the coastal State is also given enforcement competence against foreign vessels for the violation of such laws and regulations committed in its exclusive economic zone when it is voluntarily in its port (art. 20, para. 1). In addition, in the case of clear grounds for believing that a foreign vessel has violated the applicable international rules and standards for the prevention, reduction and control of vessel sources of pollution or the laws of the coastal State giving effect to such international rules and standards, the coastal State may demand information from the vessel (art. 220, para. 3). Where such violation results in or threatens substantial pollution of the marine environment and the foreign vessel refused to provide the requested information or the information provided is manifestly inconsistent with the evidence, the coastal State can undertake

[352] General Assembly resolution 3016 (XXVII) of 18 December 1972 on permanent sovereignty over natural resources of developing countries, para. 1.

[353] *Request for Advisory Opinion submitted by the Sub-Regional Fisheries Commission, Advisory Opinion, 2 April 2015, ITLOS Reports 2015*, p. 4.

physical inspection of the vessel (board it) (art. 220, para. 5). Furthermore, the coastal State can actually detain a foreign flagged vessel where there is clear objective evidence that such violation is resulting in a discharge causing major damage or threat of major damage to the coastline or other interests of the coastal State (art. 220, para. 6). None of these rights would be available to the coastal State against foreign flagged vessels in the high seas.

171. The principle of the freedom of the seas is embedded in the history of modern international law and the famous treatise of Hugo Grotius *Mare Liberum*.[354] It has been codified in both the Convention on the High Seas[355] and the United Nations Convention on the Law of the Sea. The scope of freedom of navigation has evolved over time.[356] Both the Convention on the High Seas (art. 2) and the United Nations Convention on the Law of the Sea (art. 87, para. 1) provide for the freedom of navigation, overflight, fishing and the laying of submarine cables and pipelines. In addition, the latter expressly lists the freedom to construct artificial islands and other installations (art. 87, para. 1 (d)), as well as the freedom to conduct scientific research subject to Parts VI and XIII of the Convention (art. 87, para. 1 (f)). The exercise by States of the right of freedom of the high seas is subject to limitations under both the 1958 Conventions and 1982 Convention. Such freedoms must be exercised with "reasonable regard" or "due regard" for the interests of other States and for the rights under this Convention with respect to activities in the Area.[357]

B. Sea-level rise and sovereign rights and jurisdiction of the coastal State and its nationals, and the rights and obligations of third States and their nationals in maritime zones

172. There are different situations in which sea-level rise can affect maritime entitlements. One is in the ambulatory baseline scenario, as discussed in Part Two, where the baseline shifts landward due to the inundation of base points. In that case, the maritime zones will also shift landward. Another situation is when a maritime feature, in particular a fully entitled island under article 121 disappears in part or entirely.[358] In that case, maritime entitlements may be reduced or completely disappear. The extent of change or loss of maritime entitlements will vary, but in some cases could be significant, especially in the case of baselines drawn from small island features susceptible to disappearing due to rising sea levels. For example, in the case of the loss of an island that is located 24 nautical miles from a baseline, the territorial sea could decrease by 1500 km^2.[359]

173. As outlined above in Part Two, any shifting landward of established maritime zones would mean that part of the territorial sea would become part of the coastal

[354] Hugo Grotius (de Groot), *Mare Liberum* (1609).

[355] States that are not parties to the United Nations Convention on the Law of the Sea, but have either signed or ratified the Convention on the Territorial Sea and the Contiguous Zone are: Columbia (signed on 29 April 1958), Israel (ratified on 6 September 1961), the United States (ratified 12 April 1961) and the Bolivarian Republic of Venezuela (ratified on 15 August 1961) (status as of 5 February 2020).

[356] For an overview of the evolution of the regime of high seas freedoms, see Nilüfer Oral, "Freedom of the high seas or protection of the marine environment? A false dichotomy", in Harry N. Scheiber, Nilüfer Oral and Moon-Sang Kwon (eds.), *The 50-Year Legacy and Emerging Issues for the Years Ahead* (Leiden, Brill, 2018), pp. 331–353.

[357] Convention on the High Seas, art. 2; United Nations Convention on the Law of the Sea, art. 87, para. 2.

[358] Sefrioui, "Adapting to sea-level rise" (see footnote 148 above).

[359] A.H.A. Soons, "An ocean under stress: Climate change and the law of the sea": Addendum to "Climate Change: Options and duties under international law", *Mededellingen van de Koninklijke Nederlandse Verenigling voor International Recht*, vol. 145 (2018), pp. 71–120, at p. 101.

State's internal waters, part of the territorial sea would become part of the exclusive economic zone and part of the exclusive economic zone would become part of the high seas. The status of the continental shelf and the extended continental shelf would be preserved if the conditions of paragraph 9 of article 76 have been fulfilled.

174. The shifting of the legal classification of a maritime zone would directly impact the associated sovereignty and jurisdiction rights of the coastal State and those of third States in these zones as outlined below.

175. The transition of part of the territorial sea to part of the internal waters would benefit the coastal State by according it complete prescriptive and enforcement jurisdiction over foreign flagged vessels, including rights to exercise criminal and civil jurisdiction. The rights of the coastal State in the seabed and subsoil in the territorial sea would not be altered. Due attention should be paid to the application of article 8, paragraph 2, of the United Nations Convention on the Law of the Sea, which is an indication that the Convention was drafted by taking into account the concern of preserving the regimes of maritime zones, and thus the stability of the law of the sea.

176. Foreign flagged vessels would lose their innocent passage rights. Overflight rights, however, would not be affected as there is no innocent passage right of overflight for foreign aircraft. By contrast, any change to the baseline that would transform part of the territorial sea to the exclusive economic zone could impact the regime of the seabed and subsoil, making them part of the continental shelf of the coastal State. In that case, the main beneficiary would be third States and their nationals, who would be entitled to lay underwater cables and pipelines subject to the conditions laid out in article 79 of the United Nations Convention on the Law of the Sea, which in the territorial sea required the consent of the coastal State.

177. There is also the possibility that part of the territorial sea could become part of the exclusive economic zone. In that case, the coastal State would have significantly restricted sovereignty rights and jurisdiction over navigation of third States and their nationals, losing the rights enumerated under article 21 of the United Nations Convention on the Law of the Sea, including the right to establish sea lanes and traffic separation schemes. By contrast, third States and their nationals would be entitled to exercise the rights of freedom of navigation, although subject to the limitations imposed under the United Nations Convention on the Law of the Sea in the exclusive economic zone and case law.

178. If the outer boundaries of the continental shelf were to shift landward as a result of a change in the baseline from which the breadth of the territorial sea is measured under the Convention, this could have consequences for the coastal State in the exercise of its rights to explore and exploit natural resources. However, that scenario seems unlikely in the light of paragraph 9 of article 76 of the Convention providing for permanency, as discussed in Part Two. Furthermore, an important reason for the insertion of paragraph 9 in article 76 was to ensure the certainty of the boundary of the Area[360] and protect the costly investments by States in their continental shelves.[361] However, the question is whether islands that disappear due to sea-level rise or become rocks under paragraph 3 of article 121 of the Convention, as discussed in Part Three above, could lose their entitlement to a continental shelf. If so, this would mean that large swathes of continental shelf would become part of the Area and subject to the common heritage of mankind regime.

179. The shifting of an area of continental shelf over which a coastal State exercised sovereign rights and jurisdiction to the regime of the Area under the Convention would have a significant impact for third States and their nationals. Offshore licensing

[360] *Ibid*., p. 100.
[361] *Ibid*.

jurisdiction for exploration and exploitation of natural resources, in particular non-living resources, in the continental shelf that exclusively belonged to the coastal State could be extinguished. This could call into question the continuation of existing agreements with third States and their nationals. In all cases, the situation would be one of legal and economic uncertainty. Moreover, all State parties to the Convention would be subject to the regime of the common heritage of mankind.

180. The shifting of part of the exclusive economic zone to the high seas would bring about significant changes to the sovereign rights and jurisdiction of the coastal State and its nationals. In particular, such change could have major consequences depending on the degree of reduction of maritime entitlements. According to scholars, the potential loss in area could be, at the extreme, as much as 431,000 km^2 in the case of the loss of an island located more than 400 nautical miles away, or 215,000 km^2 loss of marine space if the island was located 200 nautical miles from the remaining baseline.[362] Many small island developing States and other developing countries with low-lying coastal areas susceptible to sea-level rise could find themselves in that situation.

181. The change of the exclusive economic zone of a coastal State to the regime of the high seas would mean that the coastal State would lose an array of significant sovereign rights to explore, exploit, conserve and manage valuable natural resources. The impact to the coastal State is exemplified in relation to fisheries activities. For example, under article 62 of the United Nations Convention on the Law of the Sea, the coastal State is required to determine its capacity to harvest the living resources of the exclusive economic zone. In the case it cannot harvest the entire allowable catch, other States must be given access to the surplus of the allowable catch. Many developing States obtain important revenue from such fisheries access agreements. For example, it is estimated that the independent Pacific Island Countries total access fee payments in 2014 amounted to approximately US$ 340,285,572.[363] Overall, fisheries exports account for 94.7 per cent of total exports of the Federated States of Micronesia, 81.9 per cent for the Cook Islands, 73 per cent for Palau, 61.5 per cent for Samoa, 23.8 per cent for Tonga, and 20 per cent for Solomon Islands.[364] Likewise, other places, such as African coastal States, derive important economic benefits from fisheries access agreements, especially with the European Union. The European Union has concluded sustainable fisheries partnership agreements with 15 African States.[365]

182. In the exclusive economic zone, the coastal State also exercises important prescriptive and enforcement jurisdiction for the conservation of natural resources, and the protection and preservation of the marine environment, which would be lost if parts, or all, of the exclusive economic zone were to become high seas. For example, the International Tribunal for the Law of the Sea in the *Virginia G*. prompt release case found that the coastal State could regulate bunkering activities in its exclusive economic zone that would otherwise be part of the freedom of navigation under

[362] *Ibid*., p. 101.

[363] Robert Gillett and Mele Ikatonga Tauati, “Fisheries of the Pacific Islands: Regional and national information”, FAO Fisheries and Aquaculture Technical Paper No. 625 (Apia, 2018), pp. 36–37. Available at http://www.fao.org/3/I9297EN/i9297en.pdf.

[364] *Sustainability Impact Assessment (SIA) of the EU-ACP Economic Partnership Agreements – Pacific Region: Fisheries* (May 2007). Available at https://trade.ec.europa.eu/doclib/docs/2007/march/tradoc_133938.pdf, p. 146.

[365] Eric Pichon, “The African Union’s blue strategy”, European Parliamentary Research Service (March 2019). Available at www.europarl.europa.eu/RegData/etudes/ATAG/2019/635574/EPRS_ATA(2019)635574_EN.pdf.

article 56, paragraph 1, if the laws were related to the conservation and management of marine living resources under article 56 of the Convention.[366]

183. There is also a growing number of marine protected areas that have been established in exclusive economic zones. One example from the South Pacific, an area especially at risk from sea-level rise, is the Palau National Marine Sanctuary, designated by Palau in 2015, that took effect on 1 January 2020 and covers 80 per cent of its national waters. All extractive activities such as fishing and mining are prohibited.[367] In 2017, the Federated States of Micronesia placed approximately 10 per cent of its 200-mile exclusive economic zone, an area that covers more than 1.3 million square miles, under conservation measures.[368] In 2017 the Cook Islands established Marae Moana – one of the largest marine reserve areas in the world.[369] In 2006, Kiribati established the Phoenix Islands Protected Area, which constitutes 11.34 per cent of its exclusive economic zone. It was inscribed on the World Heritage List in 2010.[370] A shift of any part of these areas to the high seas would mean that the coastal State would not be able to maintain the integrity of these marine protected areas and the responsibility to protect and protect the marine environment would fall to the exclusive jurisdiction of the flag State.[371]

184. In the exclusive economic zone, the coastal State also has jurisdiction to establish and use artificial islands, installations and structures (arts. 56 and 60) that includes the exclusive right to construct, authorize and regulate the construction, operation and use of artificial islands, installations and structures, as well as with regard to customs, fiscal, health, safety and immigration laws and regulations. Moreover, according to the Convention, the coastal State is entitled to establish safety zones around such artificial islands, installations and structures, not to exceed a distance of 500 metres around them (art. 60, para. 5).

185. In addition, in those areas that become part of the high seas, the coastal State would lose certain regulatory and enforcement rights against foreign vessels that it enjoyed to prevent, reduce and control vessel sources of pollution in its exclusive economic zone as recognized under articles 211 and 220 of the Convention and outlined in paragraph 170 above.

186. The transformation of the exclusive economic zone of a coastal State to high seas would benefit third States and their nationals, who would be able to exercise freedoms of the high seas, including freedom to fish and exploit other natural

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[366] *M/V "Virginia G" (Panama/Guinea-Bissau), Judgment, ITLOS Reports 2014*, p. 4, at p. 69, para. 217. The Tribunal stated: "The Tribunal is of the view that the regulation by a coastal State of bunkering of foreign vessels fishing in its exclusive economic zone is among those measures which the coastal State may take in its exclusive economic zone to conserve and manage its living resources under article 56 of the Convention read together with article 62, paragraph 4, of the Convention. This view is also confirmed by State practice which has developed after the adoption of the Convention."

[367] Palau, Marine Sanctuary Act, RPPL No. 9-49 2015. Available at www.paclii.org/cgi-bin/sinodisp/pw/legis/num_act/msrn9492015252/msrn9492015252.html?stem=&synonyms=&query=sanctuary.

[368] Federated States of Micronesia, Congressional Act No. 19-167 to amend title 24 of the Code of the Federated States of Micronesia, 18 April 2017. Available at www.paclii.org/fm/indices/legis/public_laws_19.html. See also Atlas of Marine Protection at www.mpatlas.org/mpa/sites/68808202/.

[369] Cook Islands, Marae Moana Act 2017 (No. 10 of 2017). The exclusive economic zone measures 408,250 km^2 (157,630 square miles). See Atlas of Marine Protection at http://mpatlas.org/mpa/sites/7704395/.

[370] Decision 35 COM 8B.60 (2010) of the World Heritage Committee of the United Nations Educational, Scientific and Cultural Organization. See https://whc.unesco.org/en/list/1325/.

[371] Subject to the possibility that States will adopt an internationally legally binding instrument on the conservation and sustainable use of biological diversity in areas beyond national jurisdiction, currently under negotiation pursuant to General Assembly resolution 72/249 of 24 December 2017.

resources. Likewise, foreign vessels would no longer have to comply with the rules and regulations adopted by the coastal States under articles 211 and possible enforcement measures under article 220 of the Convention. However, such freedoms would be subject to other obligations under existing regional and international agreements, as well as obligations under international law.

187. Rising sea levels could affect existing archipelagic waters that have been drawn from archipelagic straight baselines and a complicated calculation of land-to-water ratio measured from the islands and drying reefs.[372] If an archipelagic State were to lose the right to use archipelagic straight baselines, this would mean the possible reduction or even loss of its archipelagic waters. The consequences would vary depending on the archipelago, but in general this could require the redrawing of baselines around individual islands using the normal low-water line under article 5 of the Convention, reefs under article 6 or a straight baseline under article 7 in the case of groups or fringes of islands.

188. Maldives has raised this concern in its submission to the Commission stating that having to redraw archipelagic baselines due to base points being submerged could result in a significant decrease in the size of its maritime zones.[373] Kiribati is another example of an archipelagic State at risk. It took some twenty years to construct the limited archipelagic baselines around its capital Tarawa, but sea-level rise could inundate drying reefs used in the archipelagic State's calculation.[374] There are some twenty-two States that have claimed such archipelagic status and use archipelagic straight baselines.[375]

189. With regard to the impact on third States and their nationals, traditional rights, those by prior agreement and other legitimate interests enjoyed by immediately adjacent neighbouring States would not be impacted, as these would have been preserved in accordance with paragraph 6 of article 47. However, in the case of archipelagic waters became areas of exclusive economic zones or high seas, an entirely different regime would apply for the navigational rights of foreign flagged ships and aircraft. Third States and their nationals would benefit from freedom of navigation and overflight rights in those areas that were once archipelagic waters.

190. In concluding the present Part, the following observations of a preliminary nature can be made:

(a) With the exception of the situation where part of the territorial sea becomes part of the internal waters, the landward movement of the baseline and the outer limits of maritime zones would result in the coastal State losing sovereignty and jurisdiction rights over regulating the navigation of third States and their nationals;

(b) If the territorial sea becomes part of the exclusive economic zone, the coastal State would have significantly restricted sovereignty rights and jurisdiction

[372] Final report of the Committee on International Law and Sea Level Rise (see footnote 119 above), p. 881.

[373] Submission of Maldives (see footnote 164 above), p, 14.

[374] Kaye, "The Law of the Sea Convention and sea level rise after the *South China Sea Arbitration*" (see footnote 149 above), p. 435 (citing Victor Prescott and Clive Schofield, *Maritime Political Boundaries of the World*, 2nd ed. (Leiden, Martinus Nijhoff, 2004), p. 176).

[375] For an analysis of some claims (United States State Department), see Kevin Baumert and Brian Melchoir, "The Practice of archipelagic States: a study of studies", *Ocean Development and International Law*, vol. 46 (2015), pp. 60–80. The States are Antigua and Barbuda, the Bahamas, Cabo Verde, the Comoros, the Dominican Republic, Fiji, Grenada, Indonesia, Jamaica, Kiribati, Maldives, the Marshall Islands, Mauritius, Papua New Guinea, the Philippines, Saint Vincent and the Grenadines, Sao Tome and Principe, Seychelles, Solomon Islands, Trinidad and Tobago, Tuvalu and Vanuatu. See final report of the Committee on Baselines under the International Law of the Sea (see footnote 116 above), pp. 188–191, appendix 3.

over navigation of third States and their nationals, including the right to establish sea lanes and traffic separation schemes. The practical consequences would mean that the coastal State would have to modify internal rules and regulations. The coastal State would essentially lose the ability to take measures to provide for safety of navigation in areas in which it was previously able to do so. However, third States and their nationals would be entitled to exercise the rights of freedom of navigation, but subject to the limitations imposed under the United Nations Convention on the Law of the Sea and resulting from the case law;

(c) The loss of maritime entitlements related to the continental shelf in either the case where the conditions of permanency have not been met or in the case of the complete inundation of a fully entitled island would result in significant consequences to the coastal State should the respective area become part of the Area and subject to the regime of the common heritage of mankind. This could mean the loss of valuable offshore revenue from natural resources that are being exploited, and call into question the continuation of contracts with private companies in relation to the exploration and/or exploitation of natural resources. Likewise, the existing interests and rights of third States and their nationals would be called into question;

(d) Without question, the greatest loss in terms of rights of the coastal State and its nationals comes from the loss of maritime entitlements related to the exclusive economic zone should it become part of the high seas. In particular, developing States that derive important revenue from the natural resources, in particular living resources, in their exclusive economic zones could lose at least parts of this. In some cases, even a relatively small loss could have important developmental consequences.[376] Moreover, questions arise as to the status of fisheries access agreements for surplus fishing capacity of developing States should such agreements cover areas that become part of the high seas;

(e) The process of technically and legislatively establishing maritime zones takes time and comes with costs. This means that any subsequent changes to baselines due to sea-level rise would require the coastal State to expend additional time and money for technically and legislatively redrawing zones. This process could be further complicated in the case of having to renegotiate boundary agreements with third States, which often take a lot of time to negotiate;[377]

(f) In addition, a question arises as to what would be the effect on other agreements, such as licences for other economic activities in the exclusive economic zone, such as offshore windfarms or for fisheries access agreements in the exclusive economic zone. Would such agreements continue? Would they be subject to renegotiation? Would third States automatically be entitled to exercise their rights in the transformed zone? The issue of *pacta sunt servanda* has been discussed in Part Two;

(g) Overall, third States stand to benefit from these changes, but at the expense of the coastal State. As stated throughout the present issues paper and expressed by many States, such changes in maritime entitlements do bring the risk of creating uncertainty, instability and the possibility of disputes. Consequently, in order respond

[376] Samantha D. Farqhar, "When overfishing leads to terrorism: the case of Somalia", *Journal of International Issues*, vol. 21 (2017), pp. 68–77. It should be borne in mind that the emergence of piracy off the coast of Somalia is in part attributed to the loss owing to illegal fishing of fishing resources for local fishermen, who then turned to piracy.

[377] For example, the Agreement between the Philippines and Indonesia concerning the Delimitation of the Exclusive Economic Zone Boundary (to delimit their overlapping exclusive economic zone boundaries), ratified in 2019, took twenty years of negotiation. The agreement was signed 23 May 2014 and ratified by both States on 1 August 2019. Philippines, Senate Resolution No. 1048, adopted on 3 June 2019.

adequately to the imperative need of preserving the stability and predictability, as well as maintaining the existing balance between the rights of the coastal State and the rights of third States, the best option would be the preservation of maritime entitlements.

Part Three: Possible legal effects of sea-level rise on the status of islands, including rocks, and on the maritime entitlements of a coastal State with fringing islands, and legal status of artificial islands, reclamation or island fortification activities as a response/adaptive measures to sea-level rise

I. Possible legal effects of sea-level rise on the status of islands, including rocks, and on the maritime entitlements of a coastal State with fringing islands

191. The role, status and entitlements of low-tide elevations, islands and other offshore features, including artificial islands, have been a long-standing subject of international law.[378] During the 1930 Hague Codification Conference, the subject matter of islands was discussed alongside the key issue of the breadth of the territorial sea.[379] While the Conference failed to agree upon the breadth of the territorial sea, it did adopt a definition of an island that would remain influential until present times. The definition entailed three elements: (a) naturally formed area of land; (b) surrounded by water; and (c) permanently above the high tide mark.[380] However, there was no agreement on any of the entitlements of an island to a territorial sea.[381] The 1956 draft articles of the Commission had qualified the third element of the definition with "*in normal circumstances* is permanently above high-tide mark".[382]

[378] Gilbert Gidel, *Le droit international public de la mer: le temps de paix* (Etablissements Mellottée, Châteauroux, 1932–1934); Clive R. Symmons, *The Maritime Zones of Islands in International Law* (The Hague, Martinus Nijhoff 1979; Janusz Symonides "The legal status of islands in the new law of the sea", Hugo Caminos (ed.), *Law of the Sea* (Taylor and Francis, 2001), pp. 115–134. For a legislative history of Part VIII of the United Nations Convention on the Law of the Sea, see *The Law of the Sea: Régime of Islands – Legislative History of Part VIII (Article 121) of the United Nations Convention on the Law of the Sea* (United Nations publication, Sales No. E.87.V.11). See also Barbara Kwiatkowski and Alfred H.A. Soons, "Entitlement to maritime areas of rocks which cannot sustain human habitation or economic life of their own", *Netherlands Yearbook of International Law*, vol. 21 (1990), pp. 139–181; Murphy, *International Law Relating to Islands* (footnote 239 above).

[379] See "Conference on the Codification of International Law, 13 March 1930, The Hague", *American Journal of International Law*, vol. 24 (1930), *Supplement: Official Documents*, pp. 34 *ff*., Point V (Territorial waters around islands) and Point VI (Definition of an island).

[380] *Ibid*.

[381] *Ibid*.

[382] Draft art. 11 of the draft articles concerning the law of the sea, *Yearbook of the International Law Commission 1956*, vol. II, document A/3159, p. 256, at p. 257 (emphasis added). For a comprehensive overview of islands under the law of the sea, see Murphy, *International Law Relating to Islands* (footnote 239 above).

However, this was not adopted by either the 1958 Convention or the 1982 Convention, both of which retained the definition of the 1930 Hague Codification conference.[383]

192. Under the Convention on the Territorial Sea and the Contiguous Zone, islands generated a territorial sea (art. 10, para. 2)[384] and, under the Convention on the Continental Shelf, a continental shelf (art. 1). During the Third United Nations Conference on the Law of the Sea, there were differences of views, however, as to whether islands should be entitled to the full slate of maritime entitlements.[385] Gidel, during the 1930 Hague Codification Conference, had rejected any blanket entitlement of an island to a territorial sea, expressing the view that any such entitlement should be based on some criterion of occupation by humans of the island. His view was ultimately reflected in paragraph 3 of article 121 of the United Nations Convention on the Law of the Sea which provides that "[r]ocks which cannot sustain human habitation or economic life of their own" are precluded from having an exclusive economic zone or continental shelf. That provision created a new category of islands referred to as "rocks", that did not exist previously under the 1958 Geneva Conventions.[386]

193. Article 121 of the Convention essentially creates two categories of islands: those fully entitled to all maritime entitlements (para. 2), and rocks that are not entitled to an exclusive economic zone or continental shelf, implicitly entitled solely to a territorial sea and possibly a contiguous zone (para. 3). The key distinguishing elements are whether the feature can "sustain human habitation or economic life of their own". These two elements have been the subject of much scholarly debate.[387]

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[383] Convention on the Territorial Sea and the Contiguous Zone art. 10, para. 1; United Nations Convention on the Law of the Sea, art. 121, para. 1. The reference to "under normal circumstances" was removed at the request of the delegation of the United States during the Third United Nations Conference on the Law of the Sea. See Symmons, *The Maritime Zones of Islands in International Law* (footnote 378 above), p. 43 (cited by Prescott and Schofield, *Maritime Political Boundaries of the World* (see footnote 374 above), p. 60).

[384] The 1956 draft articles concerning the law of the sea adopted by the Commission also recognized islands as having territorial seas. Draft art. 10, *Yearbook of the International Law Commission 1956*, vol. II, document A/3159, p. 256, at p. 257.

[385] Murphy, *International Law Relating to Islands* (footnote 239 above), pp. 56–61; Prescott and Schofield, *Maritime Political Boundaries of the World* (see footnote 374 above), pp. 61–81.

[386] Draft article 11 of the Commission's draft articles concerning the law of the sea refers to "drying rocks and drying shoals" for purposes of serving as base points only. *Yearbook of the Commission on International Law 1956*, vol. II, document A/3159, p. 256, at p. 257. See Murphy, *International Law Relating to Islands* (footnote 239 above), pp. 56–57, where the author explains that this text remained unchanged since its first appearance in the 1975 negotiating text. For a review of different positions of States during the Third United Nations Conference on the Law of the Sea, see Prescott and Schofield, *Maritime Political Boundaries of the World* (see footnote 374 above), pp. 62–75.

[387] For example, Jon M. Van Dyke and Robert A. Brooks, "Uninhabited islands: their impact on the ownership of the oceans' resources", *Ocean Development and International Law*, vol. 12 (1983), pp. 265–300, at p. 271; Jonathan I. Charney, "Rocks that cannot sustain human habitation", *American Journal of International Law*, vol. 93 (1999), pp. 863–878; Prescott and Schofield, *Maritime Political Boundaries of the World* (see footnote 374 above), pp. 61–63; Kwiatkowski and Soons, "Entitlement to maritime areas of rocks which cannot sustain human habitation or economic life of their own" (see footnote 378 above); Clive Schofield, "The trouble with islands: the definition and role of islands and rocks in maritime boundary delimitation", Seoung-Yong Hong and Jon M. Van Dyke (eds.), *Maritime Boundary Disputes, Settlement Processes, and the Law of the Sea* (Martinus Nijhoff, 2009), pp. 19–37; R. Kolb, "L'Interprétation de l'article 121, paragraphe 3, de la Convention de Montego Bay sur le Droit de la Mer : les "rochers qui ne prêtent pas à l'habitation humaine ou à une vie économique propre ...", *Annuaire Français de Droit International*, vol. 40 (1994), pp. 876–909; Yann-huei Song, "Okinotorishima: A 'rock' or an 'island'? Recent maritime boundary controversy between Japan and Taiwan/China", Hong and Van Dyke, *Maritime Boundary Disputes, Settlement Processes, and the Law of the Sea* (see above), pp. 145–175.

During the Third United Nations Conference on the Law of the Sea, States also held differing views with regard to the entitlements of islands and paragraph 3 of article 121.[388] Some States supported expansive entitlements and others were concerned about small insular features generating excessive maritime space.[389]

194. The diversity of State practice on the classification of features as either "rocks" or "islands" raises issues concerning the status of fully entitled islands that could become uninhabitable due to the consequences of sea-level rise. While the classification of these insular features is a matter of some sensitivity, nonetheless, this area of controversy needs to be identified for the purposes of the present issues paper. If there is no common understanding among States as to which features get full maritime entitlements and which do not, this state of practice raises questions as to whether a fully entitled island that has lost territory could be deemed to become a rock as defined under paragraph 3. The present paper does not intend to take any position concerning the status of any offshore feature, but only seeks to examine existing State practice for the purposes of the topic at hand, i.e. the legal effects of sea-level rise. The following are examples of small and uninhabited maritime features over which States' positions differ as to whether the feature is a rock with limited entitlements or an island entitled to all maritime zones.

195. There are several notable examples of State practice reflecting differing positions of States.[390] The use by Japan of Okinotorishima or Okinotori as a base point for its claim to an extended continental shelf also prompted reactions.[391] In the delimitation case between Malta and Libya, the latter claimed the feature Filfla was a rock[392] and Malta claimed it was an island.[393] In the *Maritime Delimitation in the Black Sea* case, Romania claimed Serpent's Island to be a rock under article 121,

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[388] For example, Australia, Brazil, Ecuador, France, Greece, the Islamic Republic of Iran, Japan, Portugal, the United Kingdom and the Bolivarian Republic of Venezuela supported the deletion of paragraph 3. Yann-huei Song, "The application of article 121 of the Law of the Sea Convention to the selected geographical features situated in the Pacific Ocean", *Chinese Journal of International Law*, vol. 9 (2010), pp. 663. See also Satya Nandan, C.B.E., and Shabtai Rosenne (eds.), *United Nations Convention on the Law of the Sea: A Commentary*, vol. III (1995), pp. 321-339.

[389] See Murphy, *International Law Relating to Islands* (footnote 239 above), pp 57–62. See also Charney, "Rocks that cannot sustain human habitation" (footnote 387 above), p. 866.

[390] Clive Schofield, "The Trouble with Islands: The Definition and Role of Islands and Rocks in Maritime Boundary Delimitation", Seoung-Yong Hong and Jon M. Van Dyke (eds), *Maritime Boundary Disputes, Settlement Processes, and the Law of the Sea* (Martinus Nijhoff, 2009), pp. 19–37.

[391] China in its two notes verbales to the Secretary-General, the first dated 6 February 2009 and the second 3 August 2011, expressed its position that Oki-No-Tori is a rock that cannot sustain human habitation or have an economic life of its own under article 121 (3) of the Convention. Note verbale, Permanent Mission of the People's Republic of China to the United Nations, notification regarding Japan's submission on the continental shelf beyond 200 nautical miles to the Commission on the Limits of the Continental Shelf, No. CML/2/2009, available at www.un.org/depts/los/clcs_new/submissions_files/jpn08/chn_6feb09_e.pdf; note verbale, Permanent Mission of the People's Republic of China to the United Nations, notification regarding Japan's submission on the continental shelf beyond 200 nautical miles to the Commission on the Limits of the Continental Shelf, No. CML/59/2011, available at www.un.org/Depts/los/clcs_new/submissions_files/jpn08/chn_3aug11_e.pdf.

[392] *Continental Shelf (Libyan Arab Jamahiriya/Malta), Application to Intervene, Judgment, I.C.J. Reports 1984*, p. 3, Memorial of the Libyan Arab Jamahiriya, 26 April 1983, available at https://www.icj-cij.org/files/case-related/68/9567.pdf; Memorial of Malta, 26 April 1983, available at https://www.icj-cij.org/files/case-related/68/9569.pdf.

[393] See also the declaration of Malta when ratifying the 1982 United Nations Convention on the Law of the Sea describing Filfla as an island for the purposes of drawing a baseline. Available at https://treaties.un.org/Pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXI-6&chapter=21&Temp=mtdsg3&clang=_en#21.

paragraph 3, whereas Ukraine claimed it was a full-fledged island.[394] For some thirty years, India and Bangladesh disputed the sovereignty over New Moore Island/South Talpatti, a tiny rock island in the Bay of Bengal, but in 2010 it disappeared as a result of sea-level rise.[395] Mexico strongly opposed the exclusive economic zone established by France around Clipperton Island, a small uninhabited island.[396]

196. Of further note is the interpretative declaration that the Islamic Republic of Iran made when signing the United Nations Convention on the Law of the Sea that

> Islets situated in enclosed and semi-enclosed seas which potentially can sustain human habitation or economic life of their own, but due to climatic conditions, resource restriction or other limitations, have not yet been put to development, fall within the provisions of paragraph 2 of article 121 concerning "Regime of Islands", and have, therefore, full effect in boundary delimitation of various maritime zones of the interested coastal States.[397]

197. While there have been a number of international cases addressing the role of islands, islets and low-tide features for purposes of determining sovereignty or for determining maritime boundaries, there has been a dearth of cases clarifying the meaning of article 121 and, in particular, paragraph 3 thereof. Article 121, paragraph 3, was first invoked in a case by Iceland against the attempt by Norway to declare an exclusive economic zone and continental shelf of the uninhabited Jan Mayen Island.[398] Iceland eventually withdrew its objection and the Conciliation Commission expressed its opinion that article 121 reflected the present status of international law.[399]

198. Other notable cases that have skirted the issue include the *Libyan Arab Jamahiriya/Malta* case where the International Court of Justice described the feature Filfla as an "uninhabited islet" and excluded its use for determining the baseline without indicating its status under article 121.[400] The *Qatar v. Bahrain* case concerned the status of Qit'at Jaradah, a very small maritime feature where the International Court of Justice found that it met the definition of article 121, paragraph 2, which the Court stated was customary international law, and was entitled to a territorial sea, but

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[394] *Maritime Delimitation in the Black Sea* (footnote 239 above), Counter-memorial submitted by Ukraine, 19 May 2006, pp. 180 ff.

[395] Associated Press, "Island claimed by India and Bangladesh sinks below waves", *The Guardian*, 24 March 2010, Available at www.theguardian.com/world/cif-green/2010/mar/24/india-bangladesh-sea-levels.

[396] Yann-huei Song, "The application of Article 121 of the Law of the Sea Convention to the selected geographical features situated in the Pacific Ocean", *Chinese Journal of International Law*, vol. 9 (2010), pp. 663 ff, at pp. 667–668.

[397] However, the Islamic Republic of Iran has not ratified the United Nations Convention on the Law of the Sea. See https://treaties.un.org/Pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXI-6&chapter=21&Temp=mtdsg3&clang=_en.

[398] Conciliation Commission on the Continental Shelf area between Iceland and Jan Mayen: Report and recommendations to the governments of Iceland and Norway, decision of 1 June 1981, United Nations, *Reports of International Arbitral Awards*, vol. XXVII, p. 1. The Commission based its view on the informal negotiation text as the Convention had not been adopted. See Robin R. Churchill, "Claims to maritime zones in the Arctic – Law of the sea normality or polar particularity", Alex G. Oude Elferink and Donald R. Rothwell (eds.), *The Law of the Sea and Polar Maritime Delimitation and Jurisdiction* (The Hague, Martinus Nijhoff, 2001), p. 120.

[399] Conciliation Commission on the Continental Shelf area between Iceland and Jan Mayen: Report and recommendations to the governments of Iceland and Norway, Decision of June 1981 (see previous footnote), p. 10. The Commission concluded that Jan Mayen was an island entitled to all maritime zones.

[400] *Continental Shelf (Libyan Arab Jamahiriya/Malta), Judgment, I.C.J. Reports 1985*, p. 13, at p. 48, para. 64. The Court did, however, take it into account as a special circumstance for purposes of adjusting the provisional equidistance line.

said nothing as to its status under paragraph 3.[401] The judgment of the International Court of Justice in the case of *Nicaragua v. Columbia* was the first time the Court directly addressed paragraph 3 of article 121 in some detail, but without directly identifying the features in question as rocks. The Court also stated that it considered the legal régime of islands set out in article 121 of the Convention to be an *indivisible* regime and was customary international law.[402] In the *Eritrea v. Yemen* case, the Arbitral Tribunal excluded the Jabal al-Tayr and Zubayr group of mid-sea islands from being taken into account in computing the boundary line between Yemen and Eritrea, simply noting their "barren and inhospitable nature and their position well out to sea", without going as far as to classify them as "rocks"; the Tribunal did accord them a full territorial sea.[403] In the case between Indonesia and Malaysia concerning sovereignty over two small islands, the International Court of Justice provided little guidance on the meaning of article 121 in relation to the status of Ligitan and Sipadan, two very small features not permanently inhabited.[404] In the *Maritime Delimitation in the Black Sea* case, the Court avoided deciding whether Serpent's Island was a rock as claimed by Romania or an island as claimed by Ukraine, finding that any possible entitlements it generated could not project further than the entitlements generated by the mainland coast of Ukraine and would be fully subsumed by them.[405]

199. The arbitral award issued by the Permanent Court of Arbitration on 12 July 2016 in *South China Sea Arbitration between the Republic of the Philippines and the People's Republic of China*[406] marks the first time an international tribunal undertook a detailed examination of article 121 and, in particular, of paragraph 3. However, China, which did not recognize the jurisdiction of the Court, has rejected the findings of the Tribunal.[407] Furthermore, as noted by scholars, one case is unlikely to settle conclusively the difference of views over the meaning of these elements and "[a] more definitive assessment will require additional cases that apply the arbitration's findings on these issues".[408]

200. The Tribunal had to determine the status of features which had been subject to significant human modification. Strictly in relation to the current inquiry on the possible impact of sea-level rise on the future status of fully entitled islands, the Tribunal made some interesting findings on the application of paragraph 3 of article 121.

201. First, in determining the capacity of the feature to sustain human habitation, the Tribunal stated that "the fact that a feature is currently not inhabited does not prove that it is uninhabitable. The fact that it has no economic life does not prove that it cannot sustain an economic life".[409] Second, the Tribunal pointed to the use of

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[401] *Maritime Delimitation and Territorial Questions between Qatar and Bahrain, Merits, Judgment, I.C.J. Reports 2001*, p. 40, at p. 99, para 195.

[402] *Territorial and Maritime Dispute (Nicaragua v. Colombia), Judgment, I.C.J. Reports 2012*, p. 624, at p. 674, para. 139.

[403] *Award of the Arbitral Tribunal in the second stage of proceedings between Eritrea and Yemen Arbitration, (Maritime Delimitation)*, decision of 17 December 1999, United Nations, *Reports of International Arbitral Awards*, vol. XXII (Sales No. E/F.00.V.7), p. 335, at p. 368, paras. 147–148.

[404] *Sovereignty over Pulau Ligitan and Pulau Sipadan (Indonesia/Malaysia), Judgment, I.C.J. Reports 2002*, p. 625.

[405] *Maritime Delimitation in the Black Sea* (footnote 239 above), p. 122, para. 187.

[406] South China Sea Arbitration between the Republic of the Philippines and the People's Republic of China, Award, Arbitral Tribunal, Permanent Court of Arbitration, 12 July 2016.

[407] China, Ministry of Foreign Affairs, statement on the Award of 12 July 2016 of the Arbitral Tribunal in the *South China Sea Arbitration* established at the request of the Republic of the Philippines, 12 July 2016. Available at www.fmprc.gov.cn/nanhai/eng/snhwtlcwj_1/t1379492.htm.

[408] Kaye, "The Law of the Sea Convention and sea level rise after the *South China Sea Arbitration*" (see footnote 149 above), p. 427.

[409] *South China Sea Arbitration, Award* (see footnote 406 above), para. 483.

historical evidence of human habitation and economic life as being relevant for establishing a feature's capacity stating "[i]f a known feature proximate to a populated land mass was never inhabited and never sustained an economic life, this may be consistent with an explanation that it is uninhabitable. Conversely, positive evidence that humans historically lived on a feature or that the feature was the site of economic activity could constitute relevant evidence of a feature's capacity."[410]

202. Of particular significance to the present inquiry is the Tribunal's statement in assessing historical evidence of past human habitation and economic activities. For example:

> the Tribunal should consider whether there is evidence that human habitation has been prevented or ended by forces that are separate from the intrinsic capacity of the feature. *War, pollution, and environmental harm could all lead to the depopulation, for a prolonged period, of a feature that, in its natural state, was capable of sustaining human habitation*. In the absence of such intervening forces, however, the Tribunal can reasonably conclude that a feature that has never historically sustained a human community lacks the capacity to sustain human habitation.[411]

203. As observed in the doctrine in examining this part of the case, "[t]his finding suggests that the original or natural condition – and not human intervention – will determine whether the feature is habitable or not. Arguably, human intervention could include a sea-level rise caused by anthropogenic climate change. Accordingly, this change would not alter the 'intrinsic capacity of the feature' and presumably would not affect the feature's status."[412]

204. In relation to delimitation of maritime boundaries, the International Court of Justice in the *Maritime Delimitation in the Black Sea* case[413] and the Tribunal in the *Bay of Bengal Maritime Boundary Arbitration (Bangladesh v. India)*[414] examined only the present-day set of facts stating that it is "the physical reality at the time of the delimitation" that matters. The Tribunal expressly discounted taking into account possible future events, such as sea-level rise that could alter base points, stressing the importance of the stability of boundaries.[415]

205. The partial inundation of a fully entitled island owing to sea-level rise could call into question its possible reclassification from the category of a fully entitled island to that of a rock, or even a low-tide elevation, if the capacity to sustain human habitation or economic life of its own is lost. The criterion of sustaining human habitation and economic life of their own can be especially important in the case of islands made inhabitable because of sea-level rise. This can be the result of increased flooding due to elevated tides, infiltration of salt water in freshwater supplies, loss of agricultural land and food production,[416] and other factors making the island uninhabitable for humans or unable to sustain economic activities.

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[410] *Ibid*., para. 484.

[411] *Ibid*., para. 549 (emphasis added).

[412] Kaye, "The Law of the Sea Convention and sea level rise after the *South China Sea Arbitration*" (see footnote 149 above), p. 431.

[413] *Maritime Delimitation in the Black Sea* (footnote 239 above), p. 106, para. 131.

[414] Bangladesh had expressly raised the possible future impacts of sea-level rise on base points selected by India, and even Bangladesh, as susceptible to change or disappear in the future sea because of rising sea levels. However, the Tribunal found that future events such as sea level rise were not relevant (*Bay of Bengal Maritime Boundary Arbitration (Bangladesh v. India)* (see footnote 56 above), p. 63, para. 215).

[415] *Ibid*., paras. 215–218.

[416] Fiji during a Sixth Committee meeting stated that Fijian communities "were experiencing a decline in food production due to saltwater intrusion" (A/C.6/73/SR.23, para. 61).

206. The potential consequences of being reclassified as a rock are significant. For example, according to scholars, a small island could generate up to 431,014 km^2 maritime area, whereas a "rock" limited to only a territorial sea would generate a much smaller area of 1,550 km^2.[417] According to authors, if the island of Kapingamarangi, the southernmost island in the Federated States of Micronesia, located some 300 kilometres south of the nearest island were to be reclassified as a rock, the Federated States of Micronesia would lose more than 30,000 square nautical miles of its exclusive economic zone.[418] The case of Rockall is a well-known example of a State reclassifying an island to a rock. In doing so, the United Kingdom lost some 60,000 square nautical miles of maritime space previously claimed as a fisheries zone.[419]

207. The result is that a strict reading of article 121, paragraph 3, would mean that an island that has become uninhabitable because sea-level rise has, for example, caused seawater infiltration contaminating its freshwater supplies, and not because of loss of territory, might lose its exclusive economic zone and continental shelf entitlements. This is a situation that is different from that of shifting baselines, which may only result in a reduction, but not total loss of maritime entitlements. Such consequences could be economically, socially and culturally catastrophic. The natural resources of the exclusive economic zone constitute a major livelihood source for many small island developing States, which was also a key factor that influenced the historic development of the exclusive economic zone.[420]

208. Low-tide elevations, similar to islands, are also defined under international law as naturally formed areas of land which are surrounded by water but submerged at high tide.[421] Low-tide elevations do not generate any maritime zone and, as stated by the International Court of Justice, cannot be appropriated by any State.[422] However, by the rule known as "leapfrogging", low-tide elevations situated partly or wholly within the territorial sea can be used for the delimitation of the territorial sea. A view accepted by States during the 1930 Hague Codification Conference. It was later adopted in draft article 11 of the 1956 draft articles of the Commission,[423] and subsequently codified in article 13, paragraph 1, of the United Nations Convention on the Law of the Sea. In addition, for purposes of drawing a straight baseline, low-tide elevations with a lighthouse or similar installations that are permanently above

[417] Clive Schofield, "The trouble with islands: the definition and role of islands and rocks in maritime boundary delimitation" (see footnote 387 above), p. 21.

[418] Rosemary Rayfuse, "Sea level rise and maritime zones: preserving the maritime entitlements of "disappearing" States", Gerrard and Wannier, *Threatened Island Nations: Legal Implications of Rising Seas and a Changing Climate* (see footnote 153 above), pp. 167–192, at pp. 174–175.

[419] Schofield and Freestone, "Options to protect coastlines and secure maritime jurisdictional claims in the face of global sea level rise" (see footnote 153 above), p. 147.

[420] Satya N. Nandan, "The exclusive economic zone: a historical perspective", *FAO Essays in memory of Jean Carroz, The Law and the Sea* (Food and Agricultural Organization, 1987).

[421] Convention on the Territorial Sea and the Contiguous Zone, art. 11, para. 1; United Nations Convention on the Law of the Sea, art. 13, para. 1.

[422] *Maritime Delimitation and Territorial Questions Between Qatar and Bahrain* (see footnote 401 above), p. 102, para. 207. This rule was confirmed by the Court again in *Territorial and Maritime Dispute (Nicaragua v. Columbia)* (see footnote 402 above) and later by the Tribunal in the case *South China Sea Arbitration between the Republic of the Philippines and the People's Republic Of China, Award* (see footnote 406 above). By contrast, Stefan Talmon contrasts this to the arbitral decision in *Eritrea v. Yemen* case (see footnote 403 above), where the Tribunal "had made no distinction with regard to the location of low-tide elevations when it found that 'the islands, islets, rocks and low-tide elevations' of certain island groups were 'subject to the territorial sovereignty' of Eritrea and Yemen, respectively". Stefan Talmon, "The South China Sea Arbitration and the finality of 'final' awards", *Journal of International Dispute Settlement*, vol. 8 (2017), pp. 388–401, at p. 397.

[423] *Yearbook of the Commission on International Law 1956*, vol. II, document A/3159, p. 256, at p. 257.

sea level can be used as a base point.[424] Low-tide elevations may also be used under the Convention to draw archipelagic baselines if found in the territorial sea of an archipelagic island (art. 47, para. 4).

209. A low-tide elevation used for "leapfrogging" purposes, off the coast of any coastal State, can extend the territorial sea significantly and, conversely, its loss could result in a significant decrease in maritime areas under the sovereignty of the coastal State, and also possibly transform the area into a different maritime zone, such as an exclusive economic zone, if established, or high seas, if not. Its inundation due to sea-level rise would mean a significant loss of territorial sea area to the coastal State.

210. The difficulty in practice with low-tide elevations concerns the different methodologies used to identify whether a feature is a low-tide elevation or a high-tide elevation.[425] This is beyond the scope of the present topic.

II. Legal status of artificial islands, reclamation or island fortification activities as a response/adaptive measures to sea-level rise

211. Land reclamation activities have been used for centuries as a means of expanding coastal areas and building defences against encroachment by the sea.[426] The Netherlands, for example, has a long history of doing extensive coastal fortification against such encroachments. Moreover, with increasing populations, many countries have turned to land reclamation as a way of creating more living space.[427] A global study reveals the extent and scope of coastal land reclamation activities, the most taking place in Asian countries,[428] which notably include some countries with low-lying coastal area most susceptible to rising sea levels, such as Bangladesh and Viet Nam.[429] The practice of land reclamation, coastal fortification through hard-engineering methods and other means to artificially or through natural means maintain coastal areas, base points, baselines and islands will increase as a response to sea-level rise.[430]

212. A number of examples from State submissions and statements were provided in Part Two of the present paper on practice relating to methods to preserve coastal areas through natural and artificial means. Many States, such as the United States, expressed the importance for States to protect their maritime entitlements through artificial means, such as coastal reinforcement, sea walls, coastal protection and restoration. Coastal and land reinforcement is an accepted practice under international

[424] Convention on the Territorial Sea and the Contiguous Zone art. 4, para. 3; United Nations Convention on the Law of the Sea, art. 7, para. 4.

[425] See Murphy, *International Law Relating to Islands* (footnote 239 above), pp. 46 *et seq*.

[426] Clive Schofield, "Shifting limits? Sea level rise and options to secure maritime jurisdictional claims", *Carbon and Climate Law Review*, vol. 4 (2009), pp. 405–416; and Schofield and Freestone, "Options to protect coastlines and secure maritime jurisdictional claims in the face of global sea level rise" (see footnote 153 above).

[427] Michael Gagain, "Climate change, sea level rise, and artificial islands: saving the Maldives' statehood and maritime claims through the 'Constitution of the Oceans'", *Colorado Journal of International Environmental Law and Policy*, vol. 23 (2012), pp. 77–120.

[428] Mario Martín-Antón *et al*., "Review of coastal land reclamation in the world", *Journal of Coastal Research*, vol. 75 (2016), pp. 667–671.

[429] Lilian Yamamoto and Miguel Esteban, "Adaptation strategies in deltas and their consequence on maritime baselines according to UNCLOS – the case of Bangladesh and Vietnam", *Ocean and Coastal Management*, vol. 111 (2015), pp. 25–33.

[430] A distinction is often made between "hard" engineering techniques, such as constructing seawalls and "soft" ones that use natural defences to protect the coastline, such as using mangroves. See Climate Institute at http://climate.org/soft-vs-hard-engineering-for-coastal-defense-adaptation/.

law. In relation to baselines specifically, "artificial conservation of the coastline, including that of islands, is fully permitted under international law".[431] The question is to what degree can the status of an island entitled to the entire panoply of maritime entitlements be conserved through artificial means and still maintain its character of being "naturally formed" as per paragraph 1 of article 121 of the Convention and international law.[432]

213. The status of artificial islands was discussed in relation to the territorial sea during the 1930 Hague Codification Conference.[433] The Commission's Special Rapporteur on the régime of the territorial sea, J.P.A. François, included a reference to artificial islands in the commentaries to his proposed definition of islands,[434] adopted *mutatis mutandis* from the work of the 1930 Hague Codification Conference. However, no mention to artificial islands was made in the final draft articles of the Commission as adopted in 1956.[435]

214. The United Nations Convention on the Law of the Sea does not explicitly define the term "artificial island"[436] but states clearly, at least in the context of the exclusive economic zone (art. 60) and continental shelf (art. 80), that "[a]rtificial islands, installations and structures do not possess the status of islands".[437] This means that artificial islands would not be entitled to any maritime zones other than a safety zone of up to 500 metres. The question is whether there are any accepted criteria in State practice that would define the meaning of "natural" versus "artificial". Or, stated otherwise, could a "naturally formed" island transform into a purely artificial one for purposes of article 121 and maritime entitlements? In that regard, it is interesting to note the view of the *South China Sea* Arbitral Tribunal that the determination of the

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[431] Soons, "An ocean under stress" (see footnote 359 above), p. 108.

[432] Stoutenburg, *Disappearing Island States in International Law* (see footnote 351 above), pp. 200–201; Jenny Bryant-Tokalau, "Artificial and recycled islands in the Pacific: myths and mythology of "Plastic Fantastic", *Journal of the Polynesian Society*, vol. 120 (2011), pp. 71–86; Gagain, "Climate change, sea level rise, and artificial islands" (see footnote 427 above); Nilüfer Oral, "International law as an adaptation measure to sea-level rise and its impacts on islands and offshore features" (see footnote 94 above); Amanda Kolson Hurley, "Floating cities aren't the answer to climate change: UN-Habitat is looking at high-tech urban islands as a potential survival fix for communities at risk from rising seas. This isn't what resilience looks like.", CITYLAB, 10 April 2019, available at www.citylab.com/perspective/2019/04/floating-cities-climate-change-united-nations-sea-level-rise/586612/.

[433] D.H.N. Johnson, "Artificial islands", *International Law Quarterly*, vol. 4 (1951), pp. 203–215. See also the 1924 report of the International Law Association where Mr. Alvarez of Chile raised the topic of the new development of artificial islands (*les îles flottantes*) in the high seas. A. Alvarez, "Projet d'une réglementation des voies de communications maritimes en temps de paix", *International Law Association Reports of Conferences*, vol. 33 (1924), pp. 266–284, at pp. 279–280.

[434] *International Yearbook of the International Law Commission 1952*, vol. II, p. 36. J.P.A. François citing the accompanying observations of the Hague Codification Conference to its definition of an island that: "La définition du terme île n'exclut pas les îles artificielles, pourvu qu'il s'agisse de véritables fractions de territoire, et non pas de travaux d'art flottants, de balises ancrées, etc. Le cas d'une île artificielle érigée près de la délimitation entre les zones territoriales de deux pays est réservé" [The definition of the term "island" does not exclude artificial islands, provided that they are true portions of territory, not artificial installations, anchored beacons, etc. The case of an artificial island built near to the boundary between the territorial zones of two countries is not included.]

[435] Draft articles concerning the law of the sea, *Yearbook of the International Law Commission 1956*, vol. II, document A/3159, p. 256.

[436] Alfred H.A. Soons, "Artificial islands and installations in international law" (Law of the Sea Institute, University of Rhode Island, 1974).

[437] Article 60, paragraph 8, further provides that artificial islands, installations and structures do not affect the delimitation of the territorial sea, the exclusive economic zone or the continental shelf.

status of a feature was to be based on its "earlier, natural condition, prior to the onset of significant human modification".[438]

215. The doctrine is divided on the question of whether a naturally formed island might be transformed into an artificial island. Okinotorishima (Okino-tori) is an example a very small maritime feature that has been significantly reinforced through artificial means.[439] Van Dyke was of the view that the extensive construction activities on Okinotorishima (Okino-tori) transformed a reef into an artificial island.[440] Yann-huei Song, despite his view that an island can lose its status after being submerged due to natural catastrophes, citing the example of Iceland and its work to preserve Kolbeinsey Island,[441] expressed the view that a naturally formed area of land can undergo reinforcing works against erosion and could not be an artificial island.[442] Alex Oude Elferink takes the view that an island that is reinforced with coastal defences in principle remains an island and, conversely, an artificial island does not become an island if there is an accretion of land even if natural in origin.[443] According to Soons, the artificial conservation of an island exclusively for the purpose of preventing it from degenerating as a result of sea-level rise should be permissible, as article 60, paragraph 8, of the Convention concerns "newly constructed artificial islands".[444] Soons further observes that artificial means to preserve the status of an island and its appurtenant maritime entitlements is a situation different from artificially creating entitlements where none would otherwise exist. This is a key difference. The question is one of "conserving" existing rights and not creating new ones. This also includes the construction of lighthouses in order to preserve baselines for archipelagic straight baselines.[445]

216. As highlighted in several State submissions, this raises considerations of equity and fairness especially in the light of the disproportionate geographical impact of sea-level rise:[446] as the land area of an island shrinks, so too would the size of the maritime entitlements, especially for archipelagic States.[447]

217. While artificial preservation of maritime features and coastal areas may seem to be a practical solution to prevent the loss of territory and maritime entitlements, there remains the challenge of the high cost of such artificial measures to preserve coastal areas, islands and baselines. Maldives, in response to sea-level rise, has constructed a multi-million-dollar artificial island Hulhumalé next to its capital Malé. As noted in the submission by Maldives, the costs are high and raise questions as to practicality for States looking to widespread use artificial construction and land reclamation to preserve baselines and the status of islands.[448] Singapore, in its submission to the

[438] See *South China Sea Award*, paras. 305–306.

[439] Prescott and Schofield, *Maritime Political Boundaries of the World* (see footnote 374 above), p. 59.

[440] Jon M. Van Dyke, "Legal issues related to sovereignty over Dokdo and its maritime boundary", *Ocean Development and International Law*, vol. 38 (2007), pp. 157–224.

[441] Yann-huei Song, "Okinotorishima: A 'rock' or an 'island'?" (see footnote 387 above), pp. 145–175.

[442] *Ibid*., p. 165.

[443] Alex G. Oude Elferink, "Artificial islands, installations and structures", *Max Planck Encyclopedia of Public International Law*, vol. 1 (2012), p. 662.

[444] Soons, "An ocean under stress" (see footnote 359 above), p. 108.

[445] *Ibid*.

[446] Di Leva and Sachiko from the World Bank provide examples: a 1-metre rise in the sea level could result in the loss of 75 per cent of certain low-lying islands of Vanuatu and 80 per cent of the Majuro atoll in the Marshall Islands. Charles Di Leva and Sachiko Morita, "Maritime rights of coastal States and climate change: should States adapt to submerged boundaries?", Law and Development Working Paper Series, No. 5 (2008), p. 8.

[447] See submission of the Pacific Islands Forum (see footnote 169 above); submission of Maldives (see footnote 164 above), pp. 13–14.

[448] "In 2016 costs of using hard engineering solutions to protect the inhabited Maldivian islands alone would cost up to an estimated $8.8 USD billion". Submission of Maldives (see footnote 164

Commission, expressed the high priority it gives to sea-level rise and indicated that "by 2100, Singapore could experience mean sea level rise of up to 1 metre. Singapore is a low-lying island, and about 30 per cent of our island is less than 5 metres above the mean sea level" and that the long-term strategies being developed to protect the coasts of Singapore from rising sea levels include "engineered solutions such as building sea walls and dykes", together with "nature-based solutions such as active mangrove restoration". However, the comprehensive approach of Singapore to fortifying its coastal defences island-wide "could cost S$100 billion or more over the next 50 to 100 years".[449] Many developing States vulnerable to sea-level rise may not be in the financial situation to allocate such sums to protection against sea-level rise. With regard to this issue, as far back as in 1989 the matter of cost was raised by the Commonwealth Group of Experts, which cautioned small island States against expensive major sea defence projects, recommending instead natural measures unless all other options have been exhausted; these measures have demonstrated socioeconomic benefits.[450]

218. In concluding this part, the following observations of a preliminary nature can be made:

(a) The reclassification of an island entitled to all maritime zones to a rock under paragraph 3 of article 121 of the United Nations Convention on the Law of the Sea could result in the loss of significant maritime space and associated entitlements. However, as discussed, State practice in relation to this issue is not uniform. Furthermore, with the exception of one arbitral award, international cases have not provided guidance to distinguish between rocks and islands for purposes of determining maritime zones. Moreover, the United Nations Convention on the Law of the Sea addresses the generation of maritime entitlements rights but does not address the possibility of the loss of maritime entitlements. There is also a lack of State practice or common doctrinal view concerning reclassification of islands that have undergone physical changes due to natural causes;[451]

(b) Recent international jurisprudence, which has taken into account the existing physical state of features at the time of delimiting maritime boundaries or the previous status of the offshore feature that once had the capacity to sustain human habitation but lost it due to factors such as environmental harm, lends support to the need to maintain stability of maritime entitlements;

(c) Low-tide elevations are also defined as being naturally formed. And while they cannot generate maritime entitlements, international law does recognize their use to generate a broader area of territorial sea if located within 12 nautical miles; they also can be used to draw straight baselines and archipelagic straight lines. A low-tide elevation that becomes a submerged feature, one that is below water at low tide, could cause significant loss of maritime space to the coastal State;

(d) The preservation of maritime entitlements for islands that lose their capacity to sustain human habitation or an economic life of their own due to sea-level rise does not entail creating new rights but only would maintain existing ones. This would preserve the existing balance of coastal and third State rights;

(e) While an island is defined as being "naturally formed", there is no definition under the United Nations Convention on the Law of the Sea or the 1958

above), p. 16; see also submission of the Pacific Islands Forum (see footnote 169 above).

[449] Submission of Singapore (see footnote 176 above), paras. 5 and 7.

[450] Martin W. Holdgate *et al.*, *Climate Change Meeting the Challenge* (Commonwealth Secretariat, London, 1989), pp. 94–95.

[451] The case of Rockall was an example of a legal reclassification as the feature itself had not undergone any physical changes.

Conventions or other codified sources of international law as to generally accepted criteria for what is an “artificial” island. This issue has not been addressed in international cases other than within the context of artificial expansion of low-tide elevations or rocks to generate maritime entitlements. There is general agreement that the use of artificial means to maintain base points, coastal areas and island features is acceptable under international law as evidenced by wide State practice. However, the practicality in terms of scope and expense raises questions as to the feasibility of this option for all States.

Part Four: Observations and future programme of work

I. Observations

219. Sea-level rise is a fact that is currently happening and recent scientific reports, in particular the 2019 Special Report on the Ocean and Cryosphere in a Changing Climate, justify the importance of the Commission undertaking study of the topic.

220. As has been highlighted by many Member States, there is an overarching concern for preserving legal stability, security, certainty and predictability at the very centre of this work. This would also be in line with the general purpose of the United Nations Convention on the Law of the Sea, as reflected *inter alia* in its preamble.

221. On the possible effects of sea-level rise on the baselines and the outer limits of the maritime spaces that are measured from the baselines (including as far as islands are concerned), the preliminary observations can be found in paragraph 104 above.

222. On the possible legal effects of sea-level rise on maritime delimitations (including as far as islands are concerned), the preliminary observations can be found in paragraph 141 above.

223. On the possible legal effects of sea-level rise on the exercise of sovereign rights and jurisdiction of the coastal State and its nationals, as well as on the rights of third State and their nationals, in maritime spaces in which boundaries or baselines have been established, the preliminary observations can be found in paragraph 190 above.

224. On the issue of legal status of artificial islands, reclamation or island fortification activities as a response/adaptive measures to sea-level rise, the preliminary observations can be found in paragraph 216 above.

II. Future programme of work

225. In 2021, as already agreed by the Commission, the Study Group will examine the issues related to statehood and those related to the protection of persons affected by sea-level rise, under the co-chairpersonship of Mr. Ruda Santolaria and Ms. Galvão Teles. Thus, the Study Group will complete the first overview of the topic. In the first two years of the next quinquennium, the plan is for the Study Group to finalize the work on the topic by consolidating the results of the work undertaken during the 2020 and 2021 sessions of the Commission.