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**Sea-level rise in international law
and the impacts on determining
the baseline of coastal states**

**A subida do nível do mar no
direito internacional e os
impactos na determinação
da linha de base dos Estados
costeiros**

Ngan Thi Kim Nguyen

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DOSSIÊ ESPECIAL/SPECIAL ISSUE: OIL SPILL PREVENTION AND
RESPONSE: INTRODUCTORY NATIONAL, INTERNATIONAL, AND
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Sea-level rise in international law and the impacts on determining the baseline of coastal states*

A subida do nível do mar no direito internacional e os impactos na determinação da linha de base dos Estados costeiros

Ngan Thi Kim Nguyen**

Abstract

This article studies the impact of sea level rise on determining the baseline of coastal states through legal and practical perspectives. First, it analyzes the provisions of the 1982 UN Convention on the Law of the Sea on how to determine baselines. Next, referring to the practices of some countries, the article analyzes states' viewpoints on the impact of sea level rise on the baselines: maintaining the status quo of the baselines and changing the baselines subject to the impact of sea level rise. Finally, the article makes specific suggestions on this issue. The article mainly uses qualitative research methods on two main theoretical grounds: (i) The phenomenon of sea level rise creates new factual changes of circumstances; and (ii) The 1982 Convention on the Law of the Sea does not enshrine provisions for regulating sea level rise, thus leading to different interpretations and applications of the Convention. The article concludes that sea level rise inevitably leads to a change of circumstances and conditions that have been and are being used to determine the baselines of States. Supplementing provisions of the 1982 Convention on the Law of the Sea is a pressing need but far from achievable in a short period of time. In the short term, countries based on their sovereignty and interests can develop appropriate solutions when applying the provisions of the Convention but must not infringe on the sovereignty of other countries and must respect the principles of international law. For now, based on the principles of sovereignty and legitimate interests States should adopt appropriate measures for applying the Convention's provisions but shall not impair other States' sovereignty and fundamental principles of international law.

Keywords: the 1982 UN Convention on the Law of the Sea. Baseline. Sea Level Rise.

Resumo

Este artigo estuda o impacto da subida do nível do mar na determinação da linha de base dos Estados costeiros através de perspectivas jurídicas e práticas. Em primeiro lugar, analisa as disposições da Convenção das Nações

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Unidas sobre o Direito do Mar de 1982 sobre forma de determinar as linhas de base. Em seguida, referindo-se às práticas de alguns países, o artigo analisa os pontos de vista dos Estados sobre o impacto da subida do nível do mar nas linhas de base: manter o status quo das linhas de base e alterar as linhas de base sujeitas ao impacto da subida do nível do mar. Por último, o artigo apresenta sugestões específicas sobre esta questão. O artigo utiliza principalmente métodos de pesquisa qualitativa com base em dois fundamentos teóricos principais: (i) O fenómeno da subida do nível do mar cria novas alterações factuais das circunstâncias; e (ii) A Convenção de 1982 sobre o Direito do Mar não consagra disposições para regular a subida do nível do mar, o que leva a diferentes interpretações e aplicações da Convenção. O artigo conclui que a subida do nível do mar conduz inevitavelmente a uma alteração das circunstâncias e condições que foram e estão a ser utilizadas para determinar as linhas de base dos Estados. Completar as disposições da Convenção de 1982 sobre o Direito do Mar é uma necessidade urgente, mas está longe de ser exequível num curto período de tempo. A curto prazo, os países, com base na sua soberania e nos seus interesses, podem desenvolver soluções adequadas aquando da aplicação das disposições da Convenção, mas não devem infringir a soberania de outros países e devem respeitar os princípios da integridade e da proteção do ambiente.

Palavras-chave: Convenção das Nações Unidas sobre o Direito do Mar de 1982, linha de base, subida do nível do mar.

1 Introduction

Climate change is changing the temperature of oceans around the world and leading to the phenomenon of sea level rise. Sea level rise has become a global issue affecting many countries and regions worldwide. Coastal countries are suffering the undesirable effects of sea level rise. Rising sea levels risk flooding low-lying coastal areas and land erosion and salinization. At the same time, the phenomenon of sea level rise increases the intensity and frequency of storm surges, endangering the lives and properties of people living in coastal areas. Under international law, sea level rise also raises many legal conundrums. The United Nations Convention on the Law of the Sea of 1982 (hereinafter UNCLOS 1982) was negotiated and signed at the

third Conference on the Law of the Sea (1973 - 1982). At that point, States could not predict the complicated developments of sea level rise. The UNCLOS 1982 also does not contain relevant provisions on this matter. Currently, sea level rise is subjecting many provisions of the UNCLOS 1982 to countless debates and arguments. In addition, due to sea level rise, coastal States have witnessed unwanted effects on the national baseline system. Sea level rise changes the coastal topography, which becomes unstable; some islands and coastal lands are submerged; thus, a State's base points and baseline system are also affected. One of the daunting challenges facing coastal States is to balance the protection of national sovereignty and interests with the interpretation and application of the UNCLOS 1982.

2 Determining the Baseline under the 1982 UN Convention on the Law of the Sea and The Impact of Sea Level Rise

According to the provisions of UNCLOS 1982, the baseline is an important basis for determining the boundaries of the maritime zones subject to state sovereignty and sovereign rights. For continental States, the UNCLOS 1982 provides two methods for determining normal and straight baselines in Articles 5–14. For archipelagic States, Article 47 of the UNCLOS 1982 is applicable as the method for determining archipelagic baselines. Dependent on their circumstances, States may draw their baselines by the normal baseline method, the straight baseline method, or the combination of both methods.

2.1. Normal Baseline

Under Article 5 of the UNCLOS 1982, “*the normal baseline for measuring the breadth of the territorial sea is the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State.*” The normal baseline primarily applies to the State with a relatively flat coastline, without being indented, and the low-tide line is relatively obvious.

The low-tide line is the line at the intersection of the coastline with the lowest point of sea level. UNCLOS 1982 does not specify the means or method for deter-

mining the low-tide line, but leaves it open for States to determine for themselves based on the results of astronomical research. In fact, two commonly used methods by States for determining the lowest tide include Lowest Astronomical Tide (LAT) and Mean Low Water Springs (MLWS). LAT is the lowest tidal level that can be expected to take place under average meteorological conditions and under any combination of astronomical conditions. LAT is determined by inspecting predicted sea levels over several years. MLWS is the average height of two successive high waters during a 24-hour period when the range of the tide is at its greatest throughout the year (when the moon's maximum inclination is 23.5°).¹

The only ground for determining the normal baseline is the lowest tide line. In fact, the phenomenon of sea level rise directly affects the low-tide line and the normal baselines tend to "move" land-wards. However, legally speaking, is the coastal state obligated to re-draw its normal baselines? Apart from Article 5, which stipulates that normal baselines must be marked on large-scale charts and officially claimed by the coastal state, the UNCLOS 1982 does not address the issues after the coastal state has made the statement on its normal baseline, including potential revisions of or updates to the new baseline. Therefore, despite the actual effects of sea level rise, the coastal state is not obliged to adjust its normal baselines. This completely depends on the will and wishes of the State. In the case of a baseline change by a State, the change takes effect only when the State officially issues a new declaration on such change accompanied by the chart with the corresponding corrections.

The advantage of normal baselines is reflecting relatively accurately the topography of the coast and helping to limit the excessive expansion of the coastal state's maritime zones. However, this method also suffers certain limitations such as low flexibility due to sea level changes and difficulties applying to coastlines that are deeply indented and cut into, or a fringe of islands along the coastline. Hence, States tend to employ straight baselines or a combination of normal and straight baselines.

¹ National Tidal and Sea Level Facility. Definitions of Tidal Levels and Other Parameters. Available in: <https://ntslf.org/tgi/definitions>. Accessed on: 30 June 2022.

2.2 Straight Baseline

Straight baseline, in essence, overcome some of the limitations of normal baseline. This method can be easily applied to States with coastlines which are deeply indented and cut into. It is also a method that simplifies but does not modify or distort the coastal topography. However, coastal states can also abuse the straight baseline method by selecting base points to excessively extend their maritime zones. To remedy, the UNCLOS 1982 provides conditions for determining straight baselines.

According to Article 7 of UNCLOS 1982, there are three circumstances under which straight baselines are applied: 1) those are deeply indented and cut into; 2) a fringe of islands along the coast in its immediate vicinity; 3) the presence of a delta and other natural conditions the coastline is highly unstable. To determine a straight baseline, the coastal state chooses base points and connects them to form a straight baseline. The base points can be the the outermost point of the coast (for the indented and cut-into coastline) or the outermost point of the islands (for the coastline with a fringe of islands along the coast); or the point that was once the furthest point from the coast (for an unstable coastline). In determining a straight baseline, the coastal state must observe the conditions provided under Article 7(3)(4)(5)(6) of the UNCLOS 1982:

- The straight baselines must not depart to any appreciable extent from the general direction of the coast, and the sea areas lying within the lines must be sufficiently closely linked to the land domain to be subject to the regime of internal waters.

- Straight baselines shall be a clearly physical reality. Low-tide elevations shall not be chosen for determining a base point, unless lighthouses or similar installations which are permanently above sea level have been built on them or except in instances where the drawing of baselines to and from such elevations has received general international recognition.

- The straight baselines shall not be applicable by a State in such a manner as to cut off the territorial sea of another State from the high seas or an exclusive economic zone.

Although it provides for conditions on straight baselines, the UNCLOS 1982 also stipulates that, in deter-

mining certain straight baselines, the coastal state may take into consideration of particular economic interests distinct to that area, whose fact and importance have been clearly demonstrated by a long history of use.

For straight baselines, sea level rise can impact directly on selected base points as follows:

- Island as a base point: Article 121(1) of the UNCLOS 1982 stipulates that an island is a natural land area surrounded by water, which is still above water at high tide. Thus, “above water at high tide” is one of the important threshold to identify a geographical feature at sea as an island. This is also the criterion to differentiate an islands from low-tide elevations.

In fact, sea level rise can “submerge” some islands and “transform” some others into low-tide elevations. Thus, the base points chosen as these islands may no longer satisfy the condition of “clearly physical reality”. Even in the case that it is not “submerged” or “transformed” into a low-tide elevation, sea level rise will also extend the distance between the island and the coastline, and as a result, the baseline runs across the island may be “pushed” away from the general trend of the coastline, and the maritime zones within the baseline are not sufficiently connected to the mainland to be characterized as internal waters.

- Low-tide elevation as a base point: Article 13 of the UNCLOS 1982 stipulates that a low-tide elevation is a naturally formed area of land which is surrounded by and above water at low tide and below water at high tide. A low-tide elevation may be selected as a base point where that elevation is situated wholly or partly at a distance not exceeding the breadth of the territorial sea from the mainland or an island and where lighthouses or similar installations which are permanently above sea level have been built on them or except in instances where the drawing of baselines to and from such elevations has received general international recognition.

Similar to islands, sea level rise could either completely submerge the elevations, or push the elevations far away from the breadth of the territorial sea, and thus the base point becomes unqualified under the UNCLOS 1982, unless the determination of the baseline has been generally accepted internationally.

- Other base points: In addition to islands and low-tide elevations, sea level rise will also have an impact on the existing baselines in the baseline system of the

coastal state such as the outermost points of the coastline, the area of an indentation of bays, the points on the low-water line of the river banks. This impact is landward because according to Articles 7, 9 and 10 of the UNCLOS 1982, the determination of these points is associated with the lowest tide level.

Article 16 of the 1982 UNCLOS stipulates that the coastal state is obliged to publicize and deposit to the Secretary-General of the United Nations the charts showing the straight baselines and the list of geographical coordinates of the base points. Similar to the normal baselines, the UNCLOS 1982 does not address the obligation of the coastal state to update or amend the straight baselines in the event of a factual change in the coastal topography or other natural conditions, including changes caused by sea level rise, except for enigmatic Article 7(2) of the UNCLOS 1982. Accordingly, where the coast is highly unstable, the appropriate points selected along the low-water line moving landward, the established baselines will remain in effect until the coastal States amend them in accordance with the Convention. The phrase “remain effective until changed by the coastal State” presupposes the coastal State’s ability to modify its established straight baselines, but does not explicitly establish the obligation to modify the coastal State’s baseline in the situation stipulated under Article 7(2).

2.3 Archipelagic baselines

With the peculiarity of the geographical structure as “constituted wholly by one or more archipelagos and may include other islands” (Article 46 of UNCLOS 1982), archipelagic baselines are unilaterally established by archipelagic States based on the straight baseline method by connecting the outermost points of the outermost islands and drying reefs of the archipelago. According to Article 47 of UNCLOS 1982, archipelagic baselines must comply with the following conditions:

- Within such baselines are included the main islands and an area in which the ratio of the area of the water to the area of the land, including atolls, is between 1 to 1 and 9 to 1.

- The length of such baselines shall not exceed 100 nautical miles, except that up to 3 per cent of the total number of baselines enclosing any archipelago may ex-

ceed that length, up to a maximum length of 125 nautical miles.

- The system of such baselines shall not depart to any appreciable extent from the general configuration of the archipelago.

- Such baselines shall not be drawn to and from low-tide elevations, unless lighthouses or similar installations which are permanently above sea level have been built on them or where a low-tide elevation is situated wholly or partly at a distance not exceeding the breadth of the territorial sea from the nearest island.

- The system of such baselines shall not cut off from the high seas or the exclusive economic zone the territorial sea of another State.

- The baselines shall be shown on charts of an adequate scale or scales and publicized by the archipelagic State in due course.

In light of the above regulations, if the conditions for determining the straight baselines of the mainland State are not clear, the quantification of the conditions for determining the archipelagic baselines (ratio of water area to land area, length of each baseline) has relatively high accuracy, limits the excessive expansion of the maritime zones of archipelagic States, and balances the interests of archipelagic States and that of the international community. This quantitative regulation also facilitates the mechanism to check and monitor the legality of the archipelagic State's baseline system – a difference from the qualitative regulations when determining baselines of mainland States.

In addition to the above difference, the conditions for archipelagic baselines are similar to the straight baselines of a mainland State. Therefore, the impact of sea level rise on these two baselines also is similar. However, for archipelagic State, sea level rise may also increase the sea area surrounding the islands while the land area shrinks, leading to a ratio exceeding the 9/1 ratio and the gap between the islands may also be pushed beyond the limits as provided under the UNCLOS 1982.

Thus, in practice, sea level rise can affect the baselines of coastal States in the following ways: 1) the normal baselines “move” land-ward; 2) the straight baselines that “moves” land-ward or is “shifted” from the overall trend of the coastline depending on the baseline selected by the States; 3) the straight baselines no

longer conform to the provisions of UNCLOS 1982 because some of the baselines have completely “disappeared” or do not meet the criteria of the UNCLOS 1982. However, legally speaking, the UNCLOS 1982 does not obligate the coastal States to adjust its publicized baselines to accommodate the changing coastal topography due to sea level rise. The coastal States have the right to decide on this matter on the basis of their will and wishes.

3 The Practice of Determining the Baselines and the Views of States on the Impact of Sea Level Rise on the Baselines

Currently, there exist two groups of countries with completely different views and practices on determining baselines subject to the impact of sea level rise: one of the view on the baseline stability and the other supports modification of baselines.

3.1 States of the View of Maintaining the Baselines

Based on the argument that UNCLOS 1982 only requires States to declare and mark normal baselines on large scale charts (Article 5 of UNCLOS 1982); publicize and deposit with the Secretary-General of the United Nations charts showing the straight baselines and lists of geographical coordinates of the base points (Article 16(2) and Article 47(9) of UNCLOS 1982), it is argued that such charts publicized or deposited by the State, together with the list of geographical coordinates to the Secretary-General of the United Nations, are important legal grounds for making clear the baselines of the coastal State. The baselines will be independent of changes in coastal topography or other natural conditions, including sea level rise.²

This view also holds that the baselines are important for determining maritime zones, including those subject to national territory such as internal waters and territorial sea. Steadfastly maintaining the declared baselines is

² SOONS Alfred H.A. The Effects of Sea Level Rise on Baselines and Outer Limits of Maritime Zones. In: HEIDAR Tomas (Editor): New knowledge and changing circumstances in the law of the sea. Brill Nijhoff, 2020. p. 358 – 381.

to maintain the stability of the maritime zones subject to State sovereignty and sovereign rights and help prevent disputes from arising.³ Besides, the issue of having to change the baselines to accommodate changes in the coastline and other natural conditions will lead to the coastal state having to protect the baselines by using technical measures, installation of artificial works.⁴

The first states strongly supporting baseline stability are the small island states, including the Small Island Developing States (SIDS) in the Pacific Ocean. Due to the characteristics of the territorial structure of the land, which is mainly made up of small, low-sized islands and scattered over a wide sea surface, these countries will suffer numerous adverse impacts of sea level rise. Many States in this group such as Kiribati, Tuvalu, Solomon Islands, Timor Lester, Vanuatu, are underdeveloped economies and heavily dependent on marine resources. Many scientific data show that the trend of sea level rise is relatively salient in some States such as Samoa (+6.3 mm/year), Tonga (+8.4 mm/year), Tuvalu (+4.0 mm/year), and Tuvalu (+4.0 mm/year). /year), Solomon Islands (+7.1 mm/year), Papua New Guinea (+7.7 mm/year).⁵ With such trend of sea level rise, States in this group will face a series of threats by 2100 such as changing baselines and maritime boundaries; even if the islands in the territorial structure of the States are to be completely submerged, the statehood would be threatened.⁶ The serious threats mentioned above have compelled the countries in this group to take prompt political and legal actions to solve the climate-change-inducing sea level rise. States also resolutely affirm that they will take various measures, including the development of international law, to ensure that the baselines and boundaries of their maritime zones established in accordance with UNCLOS 1982 will not be impaired by sea level rise and climate change.⁷ Some States have also

taken steps for publicizing and depositing with the Secretary-General of the United Nations, charts showing straight baselines and lists of geographical coordinates of base points.

In the East Vietnam Sea (South China Sea), Thailand is also a supporter of keeping stable baselines and maritime boundaries established on the basis of the UNCLOS 1982 to maintain peace, stability and friendly relations among nations⁸. The Philippines and Indonesia share similar views.⁹ In Central America, Antigua and Barbuda (archipelagic States) have made a stronger claim in asserting that the interpretation of fixed baselines and maritime boundaries is consistent with the principles of stability and transparency in international law. A shifting baseline would violate this principle and the principle of a State's perpetual sovereignty over its natural resources. Antigua and Barbuda have publicized and submitted charts showing archipelagic baselines to the United Nations for nearly 40 years, and argued that States have no obligation to modify the baselines and can preserve its maritime zones.¹⁰

3.2 States of the View of Modifying the Baselines

For straight baselines, the advocates of modifying the baselines hold that Article 7(2) of the UNCLOS only deals with baseline stability at highly unstable coastal areas due to the presence of a delta and other natural conditions. Accordingly, the appropriate points can be selected along the low-water line, and even if the tidal line is shifted land-ward, the established baselines will remain in effect until the coastal States amended in ac-

³ CARON, David. When Law Make Climate Change Worse: Rethinking the Law of Baselines of Baseline in Light of a Rising Sea Level. *Ecology Law Quarterly*, 17(4), p. 621-637. 1990.

⁴ BUSCH, Signe Veierud. Sea Level Rise and Shifting Maritime Limits: Stable Baselines as a Response. *Arctic Review on Law and Politics*, 9, p.179. 2018.

⁵ Australian Government Bureau of Meteorology. South Pacific Sea Level and Climate Monitoring Project: Consolidated Data Reports. Available in: http://www.bom.gov.au/oceanography/projects/spslcmp/reports_6mths.shtml. Accessed on 16 Sept. 2021.

⁶ NGUYEN Hong Thao. Sea-Level Rise and the Law of the Sea in the Western Pacific Region. *Journal of East Asia and International Law*. Vol.13, No.1, p. 121 – 142, 2020.

⁷ Kainaki II Declaration for Urgent Climate Action Now. 50th Pacific Islands Forum Communique. Available in: <https://www.tuvaluclimatechange.gov.tv/document/50th-pacific-islands-forum-communique-kainaki-ii-declaration>. Accessed on: 16 Sept. 2021.

⁸ Summary record of the 24th meeting: 6th Committee, held at Headquarters, New York, on Tuesday, 29 October 2019, A/C.6/74/SR.24, para 99-100. Available in: <https://digitallibrary.un.org/record/3841582?ln=en>. Accessed on: 16 Sept. 2021.

⁹ First issues paper by Bogdan Aurescu and Nilüfer Oral, Co-Chairs of the Study Group on sea-level rise in relation to international law, International Law Commission 72nd session Geneva, 27 April–5 June and 6 July–7 August 2020, A/CN.4/740. Available in: <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N20/053/91/PDF/N2005391.pdf?OpenElement>. Accessed on: 16 Sept. 2021.

¹⁰ International Law Commission. Sea-level rise in relation to International Law, Comments by Governments - Antigua and Barbuda. Available in: https://legal.un.org/ilc/sessions/72/pdfs/english/slr_antigua_barbuda.pdf. Accessed on: 16 Sept. 2021.

cordance with the Convention. In other cases, when the topography changes, the baseline must shift.¹¹

With respect to normal baselines, the International Law Association (ILA) took a position in explaining Article 5 of the UNCLOS 1982 in its 2012 Report on Baselines in the International Law of the Sea. This view makes clear, in the case of an unstable coastline due to sea level rise, the baselines can be flexibly changed according to the geographical conditions of the coast.¹² This means that it will create a baseline system that reflects actual geographic conditions by flexible modification.¹³ However, recently, in Resolution 5/2018, the ILA adjusted its position when it said: “For maintaining stability and legal certainty, and for that the baselines and outer boundaries of maritime zones of the coastal States or archipelagic States have been determined in accordance with the UNCLOS 1982, such baselines and boundaries should not be subject to reconsideration when sea level rise alters the actual topography of the coastline.”¹⁴

Some countries support the view of shifting the baselines according to the change of coastal topography such as the UK, the Netherlands, Finland, Romania, the United States. Countries have clearly expressed their views in the reports submitted to the International Law Commission (ILC) within the framework of the ILC’s studies on “Sea level rise in relation to international law”.¹⁵

The baselines of the Netherlands are determined under the Law on Territorial Seas enacted in 1985, consisting of normal baselines and straight baselines. The normal baselines are determined by the low-tide line, which is the line showing the depth of 0m publicized on large scale charts, issued under the guidance of the Dutch Ministry of Defense. In some maritime zones of the Netherlands (the waters in the south of the North Sea), the seafloor is mutable, leading to frequent changes in the low-water line and affecting the normal baselines determined in the zones. there. In the event of a change with an error of 0.1 nautical miles, the Netherlands will take steps to adjust its normal baselines.¹⁶

For Romania, Article 2 of Law No. 17/1990 on the legal status of internal waters, territorial seas and contiguous zones of 1990 stipulates that the baselines of Romania are determined according to the low-tide line along the coast, or the straight baselines connecting the outermost points of the coastline. The geographical coordinates of the base points are listed in the appendix attached to Law No. 17/1990. In the event where the base points of the straight baselines are changed for objective reasons, the coordinates of the new baselines will be established through a decision of the Government. The position in favor of shifting maritime boundaries, including baselines, was also affirmed by Romania in the 2003 Treaty on the Regulation of Borders between Romania and Ukraine. The two countries have agreed as in the Treaty on how to determine the maritime boundary between the parties; determine the territorial sea of each side with the breadth of 12 nautical miles from the baselines. The Treaty also clearly states that if there are objective changes due to natural phenomena, not related to human activities, subjecting the coordinates of the maritime boundaries to change, the parties will establish a Joint Committee to negotiate and sign a new agreement.¹⁷

Although it must be a member of the 1982 UNCLOS, but has joined the 1958 Geneva Convention on the Territorial Sea and the Contiguous Zone, the United States of America draws its baselines based on the

¹¹ SEFRIOUI Sarra. Adapting to Sea Level Rise: A Law of the Sea Perspective. In ANDREONE Gemma (Editor). *The Future of the Law of the Sea*, Switzerland: Springer, 2017. P. 3-22. Available in: https://link.springer.com/chapter/10.1007/978-3-319-51274-7_1. Accessed on: 25 June 2022.

¹² International Law Association, Sofia Conference. *Baselines under the International Law of the Sea*. 2012, pp. 2-3. Available in: <https://ilareporter.org.au/wp-content/uploads/2015/07/Source-1-Baselines-Final-Report-Sofia-2012.pdf>. Accessed on: 27 June 2022.

¹³ SCHOFIELD Clive Schofield. *Against a Rising Tide: Ambulatory Baselines and Shifting Maritime Limits in the face of Sea Level Rise*. Faculty of Law, Humanities and the Arts. 2019. Available in: <https://ro.uow.edu.au/cgi/viewcontent.cgi?article=1321&context=lhpapers>. Accessed on: 27 June 2022.

¹⁴ International Law Association. *Resolution 5/2018*. Committee on International Law and Sea Level Rise. Available in: https://www.ila-hq.org/images/ILA/Resolutions/ILAResolution_5_2018_Sea-LevelRise.pdf. Accessed on: 7 July 2022.

¹⁵ International Law Commission. *Sea-level rise in relation to International Law, Comments by Governments*. Available in: https://legal.un.org/ilc/guide/8_9.shtml. Accessed on: 28 June 2022.

¹⁶ International Law Commission. *Sea-level rise in relation to International Law, Comments by Governments – Netherlands*. Available in: https://legal.un.org/ilc/sessions/72/pdfs/english/slr_netherlands.pdf. Accessed on: 28 June 2022.

¹⁷ International Law Commission. *Sea-level rise in relation to International Law, Comments by Governments – Romania*. Available in: https://legal.un.org/ilc/sessions/72/pdfs/english/slr_romania.pdf. Accessed on: 28 June 2022.

provisions of the 1958 Geneva Convention. The U.S. affirms the view that the baseline of the coastal state is flexible. If the low-tide line along the coast shifts (landward or seaward), this shift will also affect the outer boundary of the coastal State's maritime zones. The U.S. conducts periodic surveys of the coastline and assesses the possibility of a changing impact on the baselines. If the displacement margin is greater than 500m, the new baseline will be redetermined and approved by an interagency US committee. Outer boundaries beyond the maritime zones will also be changed corresponding to new baselines and publicized on large scale charts. The U.S. also believes that sea level rise can lead to flooding or erosion of coastal land, thereby changing the baselines and boundaries of the State's maritime zones. The U.S. supports the efforts of States to protect their own waters without prejudice to the rights and interests of others. Such measures include strengthening the coastline, building sea embankments, sea dykes; protect and restore coastal ecosystems.¹⁸

Thus, besides the group of States that support the view of maintaining stable baselines, many States advocate the stance that the baseline shift according to the change of coastal topography due to objective reasons, including sea level rise. That shows the disagreement in the views and practices of States in dealing with the impacts of sea level rise.

Two opposing views, maintaining stability or shifting according to the change of coastal topography due to sea level rise, are also different views and approaches of States towards the boundary demarcation of maritime zones (territorial seas, contiguous zones, exclusive economic zones, continental shelves) and even the delimitation of overlapping maritime zones between States, because baselines, or in some cases coastline, which are important grounds for determining these boundaries. The baseline or coastline changes may or may not affect these boundaries depending on the tendency to accept the view of "maintaining" or "shifting" the baselines in particular and in general the maritime boundaries of States. For the delimitation of overlapping maritime boundaries through the signing of international treaties, in addition to the provisions of the UNCLOS 1982, it is also governed by the 1969 Vienna Convention on the

Law of Treaties. Article 62 of the 1969 Vienna Convention stipulates that a fundamental change of circumstances may not be invoked to terminate or suspend international border treaties. With this provision, the phenomenon of sea level rise will not affect the maritime boundary (delimitation of overlapping internal waters or territorial sea) which has been determined on the basis of international treaties between the States concerned; In other words, the national borders at sea, formed on the basis of international treaties, are always stable in the face of changes in circumstances, including the phenomenon of sea level rise leading to changes in maritime boundaries.

Contrasting views of States on the impact of sea level rise on baselines and maritime boundaries, which, in addition to national interest considerations, also stem from ambiguous and vague provisions of the UNCLOS 1982. At the time of negotiation and signing of the Convention (Third Law of the Sea Conference 1973-1982), the issue of environmental protection garnered concerns from States and codified into the UNCLOS 1982. However, States could not have predicted the serious impacts of climate-change-induced sea level rise on the way maritime zones are determined and regulated. In addition, the compromise of wills and interests among States, to a certain extent, also makes the provisions of UNCLOS 1982 lack "radical feature". Against the existing backdrop of various complex conundrums, theoretical, legal, and practical, posed by the phenomenon of sea level rise poses, the UNCLOS 1982 also needs to be revised and supplemented with more adequate and comprehensive provisions to address this issue.

Despite divergent views, it is clear that the view of maintaining stable baselines receives support from many States, especially those in the Asia Pacific region. In the current context, maintaining the stability of the baselines and thereby maintaining the stability of the maritime boundaries are considered a formula with various advantages so as to ensure the stability of the legal order at sea, which is established by the UNCLOS 1982 and prevent disputes from arising in the establishment and protection of maritime zones subject to State sovereignty and sovereign rights.

¹⁸ International Law Commission. Sea-level rise in relation to International Law, Comments by Governments – The United States of America. Available in: https://legal.un.org/ilc/sessions/72/pdfs/english/slr_us.pdf. Accessed on: 28 June 2022.

4 Legal and Practical Solutions to the Impact of Sea Level Rise on the Baselines of the Coastal State

As analyzed above, international law of the sea in general and the UNCLOS 1982 in particular do not foresee the phenomenon of sea level rise and its impacts. The provisions of the UNCLOS are currently being interpreted and applied differently in the practice of determining States' baselines. For an overarching understanding of the impact of sea level rise on legal rights of coastal States, including the determination of baselines, various methods have been introduced ranging from the amendment of the Law of the Sea Convention, drafting of a legal instrument for the implementation of the UNCLOS, to request the United Nations General Assembly to enact a resolution or refer to the International Court of Justice's advisory opinion on this issue. In theory, all of the above methods pave the way for a desired outcome of forming a coherent legal viewpoint on the impacts of sea level rise. However, some methods may not be feasible or troubled with uncertainties.

First of all, according to Article 312 of the UNCLOS 1982, 10 years after its entry into force, if an amendment to the UNCLOS 1982 proposed by a member State receives support of greater than 50 percent of the member States, the United Nations Secretary General will convene a conference for such purpose. If there is no objection within 12 months from the date of notification of the amendment proposal, pursuant to Article 313(3) of the UNCLOS, the proposal is considered to have been adopted by the member States under the simplified procedure. But so far, this provision has been largely dormant after nearly 30 years of the UNCLOS coming into force. This does not mean that States were completely satisfied with the provisions of UNCLOS, but this document is the result of a lengthy negotiation process, demonstrating the harmony of legal views and interests of various States. The overall integrity of UNCLOS has always been emphasized, thus a proposal to amend one or several provisions of the Convention is very likely to face oppositions from States. Reopening the negotiation process would be complicated and uncertain to bring about a desired outcome, as evidenced by the failure of the Second United Nations Conference on the Law of the Sea.

The alternative of devising a legal document for the implementation of the UNCLOS is somewhat less demanding than revising the entire instrument. Since the signing of the UNCLOS until now, there have been two documents of this kind, namely the Agreement on the Implementation of Part XI of the UNCLOS dated November 16, 1994 and Agreement on the Implementation of the Provisions of the UNCLOS relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks dated August 4, 1995. The States parties to the UNCLOS are also in the process of developing a legal instrument on the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction as the third document on the implementation of the UNCLOS. However, a proposal for a document related to the effects of sea level rise has not yet been made. Although States are aware of the impacts of sea level rise, the process of negotiating and approving a multilateral treaty on this matter is not painless; nor is it an optimal alternative.

Although not as binding as an international treaty, the International Court of Justice's advisory opinion or the UN General Assembly's resolution is of great significance because it provides the interpretation of the UN bodies on the provisions of the UNCLOS. Pursuant to Article 96 of the UN Charter, the General Assembly, the Security Council and UN agencies as well as specialized organizations may request the ICJ to give opinion on legal issues within its competence. A Pacific island nation, Vanuatu, announced that it would join forces with other Pacific island nations to push the UN General Assembly to adopt a resolution requesting the ICJ to provide an advisory opinion on the right of present and future generations to be protected from climate change and sea level rise.¹⁹ Apart from requesting the ICJ to give an advisory opinion, the UN General Assembly may also adopt a Resolution as a basis for the development of a future multilateral treaty on sea level rise. This is also how the multilateral conventions on human rights (ICCPR and ICESCR) were negotiated and signed based on the 1948 Universal Declaration of Human Rights introduced in the form of a UN General Assembly resolution.²⁰ However, gaining the support of

¹⁹ CHLOÉ Farand. Vanuatu Publishes Draft Resolution Seeking Climate Justice at UN Court. Available in: <https://www.climatechangenews.com/2022/11/30/vanuatu-publishes-draft-resolution-seeking-climate-justice-at-un-court/>. Accessed on: 25 June 2022.

²⁰ The Universal Declaration of Human Rights was adopted by the

the majority of States for the adoption of a UN General Assembly resolution is far from easy considering a large gap in the views of the States on the impacts of sea level rise regarding “maintaining” or “shifting” the baselines.

Legal measures are considered long-term solutions. Before forming a coherent legal view on the impacts of sea level rise, on the basis of respect of international law, States can take the following measures to protect their national sovereignty against the undesirable effects of sea level rise on their baselines:

First, deposit the charts and the list of geographical coordinates of the national baselines to the UN Secretary General in accordance with Article 16(2) of the UNCLOS 1982. This action has special importance for coastal States that advocates the view of maintaining the stability of baselines for that they have fulfilled the procedural obligation to deposit charts and geographic coordinates to Secretary General of the United Nations. The fulfillment of this obligation also requires States to define a complete baseline system, thereby promoting maritime delimitation negotiations with neighbouring States to determine base points and to make specific claims on baselines in relation to overlapping zones.

Second, strengthening policies and laws on environmental protection, combating climate change and sea level rise; taking the content of combating climate change in socio-economic development strategies, master plans and plans; building mechanisms to facilitate the coordination among territories, sectors and economic components, strengthening and improving the operational efficiency of the organizational and management apparatus related to environmental protection, mitigating the impacts of climate change and sea level rise.

Thirdly, take measures to protect the coastline to prevent the risk of flooding and erosion caused by sea level rise such as planting mangroves, building and reinforcing dykes, sea embankments, etc., with adequate investments. These measures are completely legal under international law to protect the baseline system against the effects of sea level rise.

Fourth, continue to conduct scientific research, forecast potential sea level rise, assess legal impacts of sea level rise, develop alternative scenarios, take initiative in addressing and responding to sea level rise in the face

of its adverse impacts such as those on the base points and on the entire national baseline system.

Fifth, promote international cooperation in the field of environment to adopt measures in concert at the global level for the protection of the environment and prevention of climate change, thereby mitigating the phenomena of global warming and sea level rise.

5 Conclusion

Sea level rise is one of the top concerns of the international community and many States. It seriously affects the coastline and legal boundaries of the maritime zones subject to State sovereignty and sovereign rights, including the baseline. At the same time, it adversely impacts on the environment, socio-economic development and national security and defense of each State. In order to protect their sovereignty, sovereign rights and other legitimate rights and interests at sea, States need to join hands to take comprehensive measures, political, diplomatic, legal, economic, social, in accordance with the provisions of international law of the sea and relevant national laws.

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