



Climate Change: Could State Sovereignty Over Maritime Boundaries Also Change?

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Abstract

Background: Climate change has presented a serious challenge to traditional concepts of state sovereignty in international law, particularly in the context of establishing baseline as the basis for measuring maritime boundaries. Sea level rise that causes the sinking of small islands and the shift of coastline has the potential to change the delimitation of a country's maritime area, thereby creating uncertainty over the scope of maritime sovereignty. However, the 1982 United Nations Convention on the Law of the Sea (UNCLOS) does not explicitly regulate the mechanism for adjusting the baseline due to such permanent geographical changes. Based on these conditions. **Methodology:** This study uses normative juridical methods with a legislative, conceptual, and analytical approach to the practice and development of international law. **Objective:** This study aims to analyze whether and how state sovereignty over marine areas can be maintained when the geographical basis of determining the baseline changes due to climate change. **Findings:** The results of the analysis show that the application of the concept of fixed baseline or historical baseline can be a relevant legal instrument to maintain stability, legal certainty, and sustainability of maritime sovereignty of archipelagic countries. **Originality:** The uniqueness of this research lies in the effort to reconstruct the concept of state sovereignty in international law of the sea through a non-ambulatory approach to the baseline as a normative response to climate change, by placing the interests of archipelagic countries such as Indonesia as the focus of the analysis.

Keywords : state sovereignty ; baselines; unclos 1982 ; climate change;

Abstrak

Latar Belakang: Perubahan iklim telah menghadirkan tantangan serius terhadap konsep tradisional kedaulatan negara dalam hukum internasional, khususnya dalam konteks penetapan garis pangkal sebagai dasar pengukuran batas wilayah laut. Kenaikan permukaan laut yang menyebabkan tenggelamnya pulau-pulau kecil dan pergeseran garis pantai berpotensi mengubah delimitasi wilayah laut suatu negara, sehingga menimbulkan ketidakpastian terhadap cakupan kedaulatan maritim. Namun demikian, Konvensi Hukum Laut Perserikatan Bangsa-Bangsa 1982 (UNCLOS) tidak secara eksplisit mengatur mekanisme penyesuaian garis pangkal akibat perubahan geografis permanen tersebut. Berdasarkan kondisi tersebut. **Metode:** Penelitian ini menggunakan metode yuridis normatif dengan pendekatan peraturan perundang-undangan, konseptual, dan analisis terhadap praktik serta perkembangan hukum internasional. **Tujuan:** Penelitian ini bertujuan untuk menganalisis apakah dan bagaimana kedaulatan negara



atas wilayah laut dapat dipertahankan ketika dasar geografis penetapan garis pangkal mengalami perubahan akibat perubahan iklim. **Temuan:** Hasil analisis menunjukkan bahwa penerapan konsep *fixed baseline* atau *historical baseline* dapat menjadi instrumen hukum yang relevan untuk menjaga stabilitas, kepastian hukum, dan keberlanjutan kedaulatan maritim negara kepulauan. **Orisinalitas:** Keunikan penelitian ini terletak pada upaya merekonstruksi konsep kedaulatan negara dalam hukum laut internasional melalui pendekatan non-ambulatori terhadap garis pangkal sebagai respons normatif terhadap perubahan iklim, dengan menempatkan kepentingan negara kepulauan seperti Indonesia sebagai fokus analisis.

Kata Kunci: kedaulatan negara; garis pangkal; unclos 1982; perubahan iklim;

A. Introduction

Climate change is one of the issues that has raised concern among societies at both the national and international levels, given its increasingly evident impacts, such as rising global and ocean temperatures and the melting of ice layers in various regions of the world.¹ Global climate change has become an international issue that not only affects the environment but also the international legal and political order. The phenomenon of sea-level rise resulting from polar ice melt and global warming poses new challenges to the traditional concept of state territorial boundaries. Rising sea levels have significant implications for the regulation of territorial sovereignty, particularly for coastal states. Coastal states, including those in Southeast Asia such as Indonesia, are among the regions most severely affected by sea-level rise.²

The rise in sea level will have adverse impacts and pose serious threats to countries with archipelagic territories, such as the Maldives and the Marshall Islands.³ In the context of an archipelagic state such as Indonesia, these changes have direct implications for state sovereignty, as some of the base points used to determine baselines for measuring maritime boundaries are potentially at risk of submergence. One of the impacts arising from the expansion and reduction of territory is the shifting of baselines. Baselines, or the coastline as regulated under Article 5 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS 1982), constitute the outer limit of a State's territorial domain and serve as the reference points for measuring the territorial sea and other maritime zones.⁴ In this case, rising sea level will have legal implications related to the possibility of a shift in the baseline due to the inundation of the coastline area used as a place to draw the base line so that the loss of juridical claims in certain maritime zones can occur.⁵ In line with this, the findings of the National Research and Innovation Agency (BRIN) estimate that around 115 small islands in Indonesia are in danger of disappearing or sinking.⁶

¹ Anny Cazenave, "Global Sea-Level Budget 1993–Present," *Earth System Science Data* 10 (2018): 1551–90, <https://doi.org/10.5194/essd-10-1551-2018>.

² Simon N. Gosling et al., "A Review of Recent Developments in Climate Change Science. Part II: The Global-Scale Impacts of Climate Change," *Progress in Physical Geography* 35, no. 4 (2011): 443–64.

³ Agence-France Presse, "Sea Level Rise from Ocean Warming Underestimated, Scientists Say," *The Guardian* 26 (2016).

⁴ R. R. Churchill and A. V. Lowe, *The Law of the Sea*, 3rd ed. (Manchester University Press, 1999).

⁵ Ratu Gita Narnina W and Arie Afriansyah, "Rising Sea Level: Legal Consequences on the Shifting of Coastal State Baseline," *Padjadjaran Journal of International Law* 3, no. 2 (2019): 143, <https://doi.org/10.23920/pjil.v3i2.321>.

⁶ Muhammad Radityo Priyasmoro, "115 Pulau Di Indonesia Terancam Tenggelam Akibat Perubahan Iklim, Antisipasinya?," *Liputan6.Com*, September 19, 2021, <https://www.liputan6.com/news/read/4661260/headline-115-pulau-di-indonesia-terancam-tenggelam-akibat-perubahan-iklim-antisipasinya>.

Baselines constitute a fundamental element in international law of the sea, as they serve as the starting point for the establishment of various maritime zones, including the territorial sea, the exclusive economic zone, and the continental shelf. The function of maritime baselines is essential for determining from which segments of the coastline the outer limits of these zones are to be measured.⁷ Pursuant to Article 47 of the 1982 United Nations Convention on the Law of the Sea (UNCLOS), archipelagic states such as Indonesia have the right to draw straight archipelagic baselines connecting the outermost points of their outermost islands. However, UNCLOS does not clearly regulate how baselines should be adjusted in the event of permanent geographical changes, such as the submergence of islands or coastal erosion resulting from climate change.

Baselines have critical significance as they constitute a fundamental component for a State in determining its maritime jurisdiction. Without baselines, a State cannot measure the limits of its sovereignty and sovereign rights. Baselines serve as the reference points for calculating the breadth of the territorial sea, the contiguous zone, the exclusive economic zone, and the continental shelf, and also function as the basis for delimiting maritime boundaries with neighboring States whose maritime areas are adjacent or overlapping.⁸ This regulatory gap has given rise to profound juridical and political debates. On the one hand, the principle of ambulatory baselines holds that baselines should adjust to current geographical conditions. On the other hand, the application of this principle may threaten the stability and certainty of state boundaries, which are directly linked to the concept of sovereignty. Several archipelagic states, such as the Maldives, Tuvalu, and Fiji, have proposed the concept of fixed baselines, namely baselines that remain unchanged despite sea-level rise. In the context of Indonesia, this issue is of strategic urgency. As the largest archipelagic state in the world, with more than 17,000 islands and a coastline exceeding 80,000 kilometers, Indonesia is highly dependent on legal clarity in the law of the sea to maintain its territorial integrity. Changes to baselines resulting from sea-level rise not only give rise to consequences under international law but also affect political, economic, and national security aspects. Therefore, an examination of the relationship between state sovereignty and the establishment of baselines in the context of climate change is essential, both from normative and policy perspectives.⁹

For Indonesia, the issue of changing the baseline due to sea level rise is not just a technical issue of maritime law, but touches the core of the sustainability of the country's sovereignty and territorial integrity. The loss or shift of the baseline base points has the potential to change the scope of Indonesia's maritime jurisdiction, which has been the foundation for natural resource management, border area security, and Indonesia's bargaining position in international relations. In this context, the lack of clarity in international legal arrangements regarding the determination of the baseline in the midst of climate change puts Indonesia in a legally and

⁷ R. R. Churchill and A. V. Lowe, *The Law of the Sea*, 3rd ed. (Manchester University Press, 1999), 15.

⁸ Donald R. Rothwell, *The Oxford Handbook of the Law of the Sea* (Oxford University Press, 2015), 69, <https://doi.org/10.1093/law/9780198715481.001.0001>.

⁹ Akbar Kurnia Putra et al., "Agreement on Agriculture WTO: Discourse on Indonesia's Food Security in a Global Context," *Lex Scientia Law Review* 8, no. 1 (2024), <https://doi.org/10.15294/lslr.v8i1.14066>.

strategically vulnerable position. This study seeks to critically examine how the international law of the sea regime, especially UNCLOS 1982, can respond to the challenges of climate change to baseline determination, as well as its implications for legal certainty and the protection of Indonesia's sovereignty as an archipelagic country. By examining conceptual debates and the development of state practices, this paper seeks to offer a relevant framework of thought for Indonesia in the face of climate change dynamics that are increasingly blurring traditional maritime boundaries. The purpose of this study is to analyze the implications of climate change, especially sea level rise, on the determination of the baseline in the framework of international maritime law based on UNCLOS 1982. In addition, this study also aims to identify the gaps and limitations of international legal arrangements related to baseline adjustments due to permanent geographical changes, as well as examine its relevance to the protection of the sovereignty of archipelagic countries, especially Indonesia. Based on this background, the formulation of the problems that can be given in this study is: What is the model of determining the baseline that is most able to ensure the stability of maritime boundaries and state sovereignty in the midst of sea level rise, and how relevant is it to Indonesia's legal interests as an archipelagic country?

B. Discussion

1. Theoretical and International Law Framework

1.1. State Sovereignty Principle in International Law

The historical origin of the term sovereignty, which in English is known as *sovereignty*, in French as *souveraineté*, and in Italian as *sovranus*, can be traced back to the Latin term *superanus*, meaning 'the highest' or 'the supreme'.¹⁰ The concept of sovereignty constitutes a fundamental principle underpinning the modern international legal order. Since the establishment of the Peace of Westphalia in 1648, sovereignty has been understood as the supreme authority of a state to regulate its own affairs without interference from other states. One of the most influential philosophical doctrines of sovereignty asserts that sovereignty represents absolute authority over a defined territory. Such absolute territorial authority forms the foundation for the establishment of the state.¹¹ In contemporary international law, sovereignty does not only signify internal authority over a state's population and territory, but also encompasses the external capacity to act freely within the international forum.

Territorial sovereignty consists of three principal elements: (a) the existence of a defined territory; (b) an effective government; and (c) the capacity to enter into relations with other states. The territorial element is of particular importance because it delineates the spatial limits within which national law applies. Therefore, any changes to the form or changes to territorial boundaries directly affect the existence and sovereignty of the state itself. In this context, territory constitutes a highly significant attribute of a state's existence. Within its territory, a state possesses the rights to exercise sovereignty over persons, objects, as well as events or legal acts occurring therein.¹² The International Court of Justice (ICJ), in the *Island of Palmas Case* (1928), affirmed that sovereignty over territory is 'territorial' in nature and may only be exercised to the extent that a state's

¹⁰ Mochtar Kusumaatmaja, *Pengantar Hukum Internasional: Buku I – Bagian Umum* (Bina Cipta, 1981), 15.

¹¹ Jenik Radon, "Sovereignty: A Political Emotion, Not a Concept," *Stan. J. Int'l L.* 40 (2004): 195.

¹² Sefriani, *Hukum Internasional: Suatu Pengantar*, 5th ed. (Rajawali Pers, 2014), 203.

territorial boundaries are legally recognized. Accordingly, when physical territorial boundaries change due to natural factors such as sea-level rise, a legal question arises: does sovereignty shift accordingly, or does it remain attached to the original geographical configuration? This question lies at the core of the discourse between the concepts of ambulatory baselines and fixed baselines in international law of the sea.¹³

1.2. The Establishment of Baselines in International Law of the Sea

The function of the maritime baseline is essential to determine from which point along the coastline the outer boundary of the maritime zone will be measured,¹⁴ Therefore, the existence of the points from which the baseline is measured becomes indispensable for any coastal country. In addition to serving as a reference for measuring the territorial sea boundaries of coastal countries, the baseline also serves to determine the boundary between deep waters and other maritime zones,¹⁵ where coastal countries can exercise full sovereignty¹⁶ over their territorial seas. In the law of the sea, baselines constitute the starting points for measurement that determine the extent to which a state's sovereignty applies in maritime areas. The 1982 United Nations Convention on the Law of the Sea (UNCLOS) regulates three types of baselines: (1) the normal baseline (Article 5), namely the low-water line along the coast; (2) the straight baseline (Article 7), which is used for deeply indented coastlines or where there is a fringe of islands along the coast; and (3) the archipelagic baseline (Article 47), which applies specifically to archipelagic states such as Indonesia. Through the establishment of maritime baselines, a coastal state is able to determine the extent of its territorial sea, measured up to a limit not exceeding 12 nautical miles.¹⁷ However, UNCLOS does not provide an explicit mechanism for altering baselines in the event of permanent geographical changes, such as coastal erosion or the submergence of islands as a result of climate change. Implicitly, the UNCLOS system applies the principle of ambulatory baselines, whereby baselines dynamically follow physical changes to the coastline. This view is grounded in the assumption that the Earth's geographical features are relatively stable an assumption that is no longer valid in the context of global climate change. In response to this uncertainty, the concept of fixed baselines or historical baselines has emerged, which preserves the position of baselines as recorded at the time of their initial establishment. This approach aims to safeguard legal certainty and prevent the loss of maritime areas resulting from sea-level rise. In practice, a number of small island States in the Pacific have adopted this approach through national declarations.

¹³ Firman Freaddy Busroh et al., "Reevaluating 'First-to-File' vs the Legality Principle: Rethinking Justice for Original Rights Holders in Indonesia," *Jambe Law Journal* 8, no. 1 (2025): 421–42, <https://doi.org/10.22437/home.v8i1.596>.

¹⁴ Churchill and Lowe, *The Law of the Sea*, 15.

¹⁵ Churchill and Lowe, *The Law of the Sea*, 15.

¹⁶ Article 2 United Nations Convention on the Law of the Sea (1982).

¹⁷ Article 3 United Nations Convention on the Law of the Sea.

1.3. The Relationship between Sovereignty and Baselines: An International Law Perspective

In accordance with the concept of international law, sovereignty is understood as the right of every State to freely determine its relations with other States or groups, without constraint, pressure, or supervision by other States.¹⁸ Sovereignty and baselines have a reciprocal relationship: baselines determine the extent to which the scope of a State's sovereignty may be exercised at sea, while sovereignty provides the legal foundation for a State to establish and maintain its baselines. Consequently, changes to either of these elements will have direct implications for the existence of the other. According to the classical view, State sovereignty must be grounded in a definite and identifiable geographical basis.¹⁹ However, in the context of climate change, this condition becomes problematic, as geographical boundaries are no longer static. If baselines shift as a result of sea-level rise, maritime areas that were previously within the territorial sea or the exclusive economic zone may become part of the high seas. This would result in a reduction of a State's sovereign territory in both factual and legal terms.

Therefore, a number of international law scholars argue that the principle of *preservation of sovereignty* should be applied in the context of climate change. This principle affirms that external natural changes should not diminish a State's sovereign rights that have been lawfully established under international law. This approach is consistent with the spirit of UNCLOS, which seeks to ensure the stability of the international law of the sea and the certainty of maritime boundaries. In the context of Indonesia, the application of this principle becomes particularly relevant due to its geographical position, which is highly vulnerable to sea-level rise. As an archipelagic State whose sovereignty is grounded in the concept of the archipelagic State, changes to base points resulting from the submergence of small islands may have serious implications for Indonesia's territorial integrity and maritime jurisdiction.

2. Climate Change and Juridical Challenges to Baselines

2.1. Sea-Level Rise as a Threat to Territorial Stability

Global climate change has generated wide-ranging geophysical consequences, one of which is sea-level rise that has the potential to submerge small islands and alter coastal configurations. According to the Intergovernmental Panel on Climate Change (IPCC), global mean sea level has risen at an average rate of 3.7 mm per year over the past two decades, and this trend is projected to increase to more than one meter by the end of the twenty-first century. One of the IPCC projections further indicates that sea-level rise by 2100 is expected to reach an increase ranging from 15 to 95 centimeters.²⁰ This rise is not merely an ecological phenomenon, but also has direct implications for the legal aspects of State sovereignty and territorial boundaries.

In general, if the baseline and outer boundaries of various maritime zones shift to land, this implies that the legal status and legal regime of the maritime zone also change: for

¹⁸ Saru Arifin, *Hukum Perbatasan Darat Antar Negara* (Sinar Grafika, 2022), 30.

¹⁹ Ian Brownlie, *Principles of Public International Law*, 7th ed. (Oxford University Press, 2008), 105–7.

²⁰ William CG Burns, "The Impact of Climate Change on Pacific Island Developing Countries in the 21st Century," in *Climate Change in the South Pacific: Impacts and Responses in Australia, New Zealand, and Small Island States* (Springer, 2000).

example, part of the deep waters can become the territorial sea, part of the territorial sea can be an adjacent zone and/or an exclusive economic zone, and part of the exclusive economic zone can be the open sea, with implications for the special rights of coastal States and third States, as well as for their citizens, including the right of innocent passage, freedom of navigation and fishing rights.²¹ In the context of international law of the sea, sea-level rise may result in the shifting of baselines that serve as the foundation for the delimitation of maritime zones. For instance, if an island becomes submerged, the base point serving as a reference for the baseline is automatically lost. Consequently, the limits of the territorial sea, the exclusive economic zone (EEZ), and the continental shelf drawn from that point also shift landward. This situation creates the potential loss of maritime areas both *de jure* and *de facto*, which may ultimately threaten a State's territorial integrity. Several studies affirm that small island States such as Tuvalu, Kiribati, and the Maldives are among the most vulnerable. In extreme cases, the submergence of an entire State's physical territory may raise questions concerning the continuity of statehood under international law. Accordingly, climate change is no longer merely an environmental issue, but also a challenge to the international legal order concerning sovereignty and the existence of States.

2.2. The Regulatory Gap in UNCLOS Concerning Permanent Geographical Changes

The 1982 United Nations Convention on the Law of the Sea (UNCLOS) constitutes the principal legal instrument governing the delimitation of maritime areas and the sovereign rights of coastal States. However, UNCLOS was drafted on the static assumption that the Earth's geographical conditions are relatively stable. As a result, the Convention does not provide explicit provisions regarding changes to baselines caused by climate change or sea-level rise. Article 5 of UNCLOS provides that the normal baseline is the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State. This formulation is ambulatory in nature, meaning that the position of the baseline changes in accordance with natural fluctuations in sea level. In traditional practice, this system did not give rise to significant problems, as natural changes were relatively minor and short-term. However, in the context of climate change where geographical shifts are permanent and extensive the application of the ambulatory baseline principle may instead generate legal uncertainty. Nevertheless, some scholars maintain that the establishment of baselines under UNCLOS is inherently ambulatory, implying that the position of baselines may evolve in response to changes in land conditions.²²

Therefore, the principle of ambulatory baselines is no longer considered adequate, as it may lead to the loss of maritime areas that have long been under a State's jurisdiction. For instance, if the coastline retreats as a result of sea-level rise, maritime areas that were previously part of the territorial sea would "move" landward, resulting in the contraction of the coastal State's maritime zones. This condition has the potential to generate new boundary disputes between States and to undermine the principle of stability in the international law of the sea, which constitutes one of the primary objectives of UNCLOS. In response to this legal vacuum, a debate has emerged regarding the need for revision or reinterpretation of UNCLOS. One of the evolving ideas is the concept of fixed baselines,

²¹ International Law Commission, *Sea-Level Rise in Relation to International Law* (UN Doc. A/73/10) (United Nations, 2018), 5.

²² Clive Schofield, *Against a Rising Tide: Ambulatory Baselines and Shifting Maritime Limits in the Face of Sea Level Rise*, 2008, 74.

namely baselines that remain unchanged despite coastal shifts. This concept emphasizes the importance of mempertahankan status hukum wilayah maintaining the legal status of maritime areas that have been lawfully recognized, irrespective of changes in the physical conditions of the coastline.

2.3. Fixed Baselines and Historical Baselines as Legal Solutions

The concept of fixed baselines first emerged in academic and international policy forums after a number of small island States in the Pacific faced the threat of losing territory due to sea-level rise. Fixed baselines are understood as baselines established permanently through national legislation and recognized internationally, without relying on current geographical conditions. In this approach, baselines are established based on geographical coordinates documented at a specific point in time (for example, official maps or nautical charts registered with the United Nations). Accordingly, even if sea levels rise and the coastline changes, these baselines remain legally valid. This approach has two main advantages: (1) it provides legal certainty regarding the limits of maritime jurisdiction; and (2) it preserves the continuity of State sovereignty amid climate change. In addition to fixed baselines, the concept of historical baselines has also emerged, emphasizing the historical value and legal continuity of previously established baselines. Historical baselines can serve as a legal basis for maintaining claims to maritime areas that have been internationally recognized, on the argument that natural changes should not extinguish sovereign rights that have been lawfully acquired. This approach aligns with the principle of *preservation of sovereignty*, which affirms that geographical changes should not alter the legal status of territorial areas. Nevertheless, the implementation of fixed or historical baselines still faces challenges in international practice, as there is no global consensus or formal amendment to UNCLOS. Some developed States remain cautious, fearing that such an approach could lead to excessive maritime claims. However, from the perspective of island and developing States such as Indonesia, the fixed baseline approach represents a rational measure to maintain legal stability and the integrity of national territory.

3. Reconstructing the Concept of State Sovereignty in the Era of Climate Change

3.1. The Shift of the Sovereignty Paradigm in the Global Context

State sovereignty in international law has traditionally been understood as a static, territory-based concept. However, climate change challenges this classical view by creating conditions in which the physical elements of territory, as a fundamental component of sovereignty, are no longer stable. In this situation, there arises a need to reinterpret sovereignty so that it can be maintained even when its geographical basis changes. Climate change is one of the most pressing global issues and has significantly affected every country. It is often understood as a shift in environmental or ecosystem conditions that will have long-term impacts.²³ With the expansion of disruptive human and industrial activities, there is no doubt that the impacts of climate change will be felt more rapidly. This accelerated impact results from the volume of carbon emissions released into the atmosphere. These gases then trap ultraviolet heat from the sun in the

²³ Amanda Christie, "Climate Change Impact on Archipelagic State: The Beginning of Indonesia's Territorial Maritime Extinction?," *Aliansi: Jurnal Hukum, Pendidikan Dan Sosial Humaniora* 2, no. 2 (2025): 1, <https://doi.org/10.62383/aliansi.v2i2.803>.

Earth's atmosphere, raising the planet's average temperature. This phenomenon also leads to what is known as global warming, the greenhouse effect, and various other impacts on the environment, ecosystems, and human societies.²⁴ Climate change drives a transformation from "spatial" sovereignty to "functional" sovereignty. This means that sovereignty is not solely based on physical presence within a territory, but also on a state's capacity to continue exercising governmental functions and fulfilling its international legal obligations, even if parts of its physical territory undergo changes. This paradigm aligns with the concept of the preservation of statehood as developed in contemporary international law literature, which seeks to ensure the continuity of state existence amidst global environmental crises. In this context, international law needs to accommodate forms of non-territorial sovereignty, particularly for small island states that risk losing their physical territory. Accordingly, the concept of sovereignty should be understood dynamically, not solely dependent on geographical aspects, but also on legal legitimacy and the continuity of governance recognized by the international community.

3.2. The Principle of Preservation of Sovereignty and Continuity of Statehood

One theoretical perspective relevant to the meaning of state sovereignty in the international system is relational sovereignty theory. This theory posits that sovereignty in contemporary international society has evolved into a relational and open concept, rather than an insular, narrow, and closed one. From this theoretical viewpoint, sovereignty as an open concept emphasizes a state's capacity to engage with external actors, rather than merely its right to resist external influence.²⁵ The principle of preservation of sovereignty asserts that natural external changes must not nullify a state's sovereignty rights that have been lawfully recognized under international law. This principle develops from the *uti possidetis juris* doctrine, which emphasizes the importance of territorial stability and state boundaries, even in the face of political or environmental changes. In the context of climate change, this principle is interpreted as the protection of a state's territorial integrity from geographical impacts beyond human control. Some experts argue that this principle should be applied to prevent a legal vacuum that may arise when islands submerge and baselines shift. If a state loses its geographical foundation without legal recognition of continued sovereignty, a "deterritorialized state" a state without physical territory may emerge. This situation lacks clear precedent in international law, thus requiring a progressive approach to safeguard state legitimacy. The application of the principle of preservation of sovereignty can be carried out through international recognition of fixed baselines and historical baselines, so that geographical changes do not nullify legitimate maritime jurisdiction claims. Furthermore, strengthening recognition of state continuity is also important to ensure that a state entity remains acknowledged even if it loses part of its territory. In this way, international law can maintain a balance between ecological justice and global political stability.

²⁴ Yadvinder Malhi et al., "Climate Change and Ecosystems: Threats, Opportunities and Solutions," *Philosophical Transactions of the Royal Society B: Biological Sciences* 375, no. 1794 (2020): 20190104, <https://doi.org/10.1098/rstb.2019.0104>.

²⁵ James J. Sheehan, "The Problem of Sovereignty," *American Historical Review* 111, no. 1 (2006): 1–15, <https://doi.org/10.1086/ahr.111.1.1>.

3.3. State Without Territory: Towards the Concept of a Deterritorialized State

The phenomenon of small states such as Tuvalu or Kiribati sinking has sparked a new debate about the existence of states without physical territory, known as deterritorialized states. In theory, Article 1 of the 1933 Montevideo Convention requires four elements for state formation: a permanent population, a defined territory, a government, and the capacity to enter into relations with other states. If physical territory is lost due to climate change, the second element appears no longer to be satisfied. However, several scholars argue that the physical loss of territory does not automatically erase a state's international legal personality, as long as the elements of government and population continue to function. The deterritorialized state approach seems to be exactly what is currently being considered by the governments of Tuvalu and the Maldives. According to press reports, the Prime Minister of Tuvalu held secret talks with Australian officials in October 2008 aimed at obtaining Australia's agreement to accept the entire population of Tuvalu in the event that they are forced to be evacuated.²⁶

Considering the projected sea-level rise of up to 0.8 meters by 2100, such an evacuation may be necessary before the end of this century. The key aspect of Tuvalu's position is its desire to preserve its sovereignty, culture, and traditions, including sovereignty over its maritime zones. Similar sentiments have also been expressed by the President of the Maldives. It is clear that a strategy involving an international agreement on the freezing of baselines would be a crucial element in enabling a threatened state to maintain its rights. The concept of a deterritorialized state represents an adaptation to the new realities of the modern world, characterized by extreme ecological changes. A deterritorialized state as a future alternative for threatened countries is not a new concept. Other parties have also considered such successor entities.²⁷ Some policy proposals even suggest that states at risk of submersion could maintain their sovereignty virtually or administratively, for example through a government in exile or the management of maritime resources via international agreements. Such an approach opens new possibilities for international law to recognize forms of sovereignty that are not entirely territorially based. For Indonesia, although the risk of losing its entire territory is relatively small, the concept of a deterritorialized state remains relevant as a conceptual framework for understanding how international law can ensure the continuity of sovereignty when parts of islands or coastal areas undergo permanent changes due to sea-level rise. Thus, this approach provides an argumentative basis for Indonesia to advocate for international recognition of fixed baselines as a form of protection for its sovereignty.

²⁶ Brad Couch, "Sinking Tuvalu Want Our Help as Ocean Level Rise," *The Daily Telegraph*, Oktober 2008, <http://www.news.com.au/dailytelegraph/story/0,22049,24448958-5005941,00.html>.

²⁷ Rosemary Rayfuse, "International Law and Disappearing States: Utilising Maritime Entitlements to Overcome the Statehood Dilemma," *University of New South Wales Law Journal* 34, no. 1 (2011) (Introducing the concept of a "deterritorialised state" and proposing its application as a basis for the continued recognition of the sovereignty of states that have lost their territory over maritime zones and resources that were previously under their jurisdiction.).

3.4. Reconstructing Sovereignty: From Territorial to the Sovereignty of Stability

In the rapidly changing global context, sovereignty can no longer be understood solely as authority over geographical space, but also as the power that ensures a state's legal and political stability amid physical changes. This reconstruction leads to what is called the sovereignty of stability, a form of sovereignty that emphasizes certainty, continuity, and the protection of previously recognized territorial rights. The concept of the sovereignty of stability reflects the spirit of international maritime law, which seeks to balance natural dynamics with the need for legal certainty. Within this framework, a state has the right to maintain its claims over maritime territories based on baselines that have been lawfully established, even if geographical conditions change. This approach also aligns with UNCLOS's primary objective of preventing disputes and maintaining peace at sea. Thus, the reconstruction of sovereignty in the context of climate change is not a violation of existing international law, but rather an evolutionary interpretation of recognized fundamental principles, ensuring their continued relevance in addressing unprecedented global environmental challenges.

4. Indonesia's Perspective and Strategy in Addressing Changes in Baselines

4.1. Legal Basis and Indonesia's Position as an Archipelagic State

As an archipelagic state, Indonesia's position holds strategic significance in international maritime law. This status is explicitly recognized in the 1982 United Nations Convention on the Law of the Sea (UNCLOS) through Articles 46 to 53, which grant archipelagic states the right to draw straight baselines connecting the outermost points of their islands and reefs. Indonesia's Law Number 6 of 1996 on Indonesian Waters subsequently adopts this principle as the national legal basis for defining Indonesia's territorial waters.²⁸ In the context of sovereignty, Indonesia's status as an archipelagic state reinforces the concept of archipelagic sovereignty, namely sovereignty that encompasses all waters between and connecting the islands as a single geographical, political, and legal entity. This principle was affirmed in the 1957 Djuanda Declaration, which marked a historic milestone in the international recognition of the Archipelagic State concept. Therefore, changes to baseline points due to sea-level rise have direct implications for the integrity of the state's territory, both legally and geopolitically. In this regard, Indonesia adheres to the view that sovereignty over maritime areas established under UNCLOS cannot be affected by external natural changes, such as sea-level rise. This view reflects a commitment to maintaining the stability of maritime boundaries as governed by the principle of the stability of boundaries, which is also recognized in international legal practice.

4.2. Implication of Climate Change on Sovereignty and territorial integrity

The relationship between national regulations and international maritime law in the context of climate change and the determination of territorial sealines shows the existence of a reciprocal dynamic between international obligations and the need to protect national interests. On the one hand, the state is bound by the provisions of the United Nations Convention on the Law of the Sea 1982 (UNCLOS) as an international legal regime that regulates the determination of

²⁸ Undang-Undang Republik Indonesia Nomor 6 Tahun 1996 Tentang Perairan Indonesia (1996).

baselines, in particular through Article 5, Article 7, and Article 47. But on the other hand, UNCLOS does not explicitly regulate the mechanism for adjusting the baseline due to permanent geographical changes caused by sea level rise. This normative vacuum opens up space for states to develop national arrangements as a form of implementation as well as progressive interpretation of the provisions of UNCLOS, as long as they do not conflict with the principles and objectives of the convention. Thus, national regulations serve as concrete instruments to bridge the limitations of international law in responding to the impact of climate change on the stability of maritime areas.

Recently, the issue of climate change has become an increasingly prominent topic of discussion, along with the rising occurrence of extreme weather events in various parts of the world. According to data from the National Oceanic and Atmospheric Administration's National Centers for Environmental Information, 2019 was recorded as one of the hottest years in global temperatures since record-keeping began more than 140 years ago.²⁹ Sea-level rise that threatens the submergence of small islands poses a serious threat to Indonesia's maritime sovereignty. According to data from the Intergovernmental Panel on Climate Change (IPCC), global sea levels are projected to rise between 0.44 and 0.77 meters by the end of the 21st century. For Indonesia, these impacts may result in the loss of baseline points used to delineate the boundaries of the territorial sea, the Exclusive Economic Zone (EEZ), and the continental shelf.

From the perspective of international law, this situation has the potential to cause shifts in the delimitation of maritime areas if the ambulatory baseline principle is applied strictly. In such circumstances, Indonesia risks losing portions of its maritime jurisdiction, including areas rich in natural resources. Therefore, the protection of historical basepoints becomes critically important as a form of legal adaptation to climate change. In addition to legal aspects, there are also political and security implications. Outermost small islands such as Nipah, Marore, Miangas, and Rondo possess not only ecological value but also strategic functions as symbols of sovereignty and as key elements of the state's geostrategic defense position. The loss of these islands could create geopolitical gaps that may be exploited by other states in maritime boundary disputes. Therefore, climate change is not merely an environmental issue, but also a matter of sovereignty and territorial integrity.

4.3. Indonesia's Legal and Maritime Diplomacy Strategies

Global climate change and sea-level rise have created unprecedented legal challenges for Indonesia, and this should prompt the country to take proactive measures to protect its maritime interests amid the threat of physical changes to its territory. One fundamental approach that Indonesia can undertake is to advocate the principle of the permanence of archipelagic baselines. This argument is grounded in the need for stability and security of maritime boundaries.³⁰ Indonesia has adopted several strategic measures to anticipate the impacts of climate change on its baselines and maritime sovereignty. First, by affirming the legal status of basepoints as stipulated in Government Regulation No. 38 of 2002 on the List of Geographical Coordinates of the Archipelagic Baseline Points of

²⁹ Tara Law, "Record-Breaking Temperatures Around the World Are 'Almost Entirely' Due to Climate Change," *Time.Com*, August 20, 2019, <https://time.com/5652972/july-2019-hottest-month/>.

³⁰ Amanda Christie, "Climate Change Impact on Archipelagic State," 8.

Indonesia.³¹ This document serves as an important legal instrument for maintaining the geographical position of basepoints, while also functioning as an official reference for national maritime charts.

In the Indonesian context, this linkage is reflected in national regulations such as Law Number 6 of 1996 concerning Indonesian Waters and Government Regulation Number 38 of 2002 concerning the list of geographical coordinates of archipelago base points. This national regulation is not only the implementation of Indonesia's international obligations as a party to UNCLOS, but also serves as an affirmative effort to maintain legal certainty and the integrity of maritime sovereignty amid the threat of climate change. The determination of baseline coordinates through national legal instruments provides a more stable juridical basis than the ambulatory baseline approach which is entirely dependent on physical changes in the coastline. Thus, the relationship between national law and international maritime law is complementary, where national law acts as a means of normative adaptation to global environmental developments, as well as a contribution of the state in encouraging the evolution of international maritime law interpretation that is more responsive to climate change.

Strengthening international maritime diplomacy. Indonesia is actively engaged in various international law of the sea forums, such as the Meeting of States Parties to UNCLOS (SPLOS) and the International Law Commission (ILC), to promote recognition of the concept of fixed baselines as a form of legal protection for archipelagic states affected by climate change. This strategy is consistent with approaches advanced by Pacific states such as Fiji and Tuvalu, which have proposed that maritime boundaries should remain unchanged despite physical alterations to coastlines. Normatively, this approach is rooted in the recognition of the principles of legal stability, security, certainty, and predictability that underpin the United Nations Convention on the Law of the Sea (UNCLOS), as well as the relevance of these principles in the interpretation and application of the Convention in the context of sea-level rise and climate change. Accordingly, the non-alteration of maritime boundaries is positioned not as a deviation from UNCLOS, but rather as an effort to preserve the consistency and sustainability of the international law of the sea regime amid the dynamics of physical environmental change.³² Indonesia also integrates climate change issues into national policy through the National Action Plan for Climate Change Adaptation (RAN-API) and Law No. 32 of 2009 on Environmental Protection and Management. This approach strengthens domestic legal legitimacy in safeguarding maritime sovereignty on the basis of environmental protection and sustainable development. Through these measures, Indonesia demonstrates that the defense of baselines is not merely a political act, but also a legal effort grounded in the principles of ecological justice and the protection of sustainable sovereignty.

4.4. The Fixed Baselines Approach as a National and Regional Solution

In the context of adapting the law of the sea to climate change, the fixed baseline approach emerges as the most relevant option for Indonesia. This approach allows a state to

³¹ Article 10 Peraturan Pemerintah Nomor 38 Tahun 2002 Tentang Daftar Koordinat Geografis Titik-Titik Garis Pangkal Kepulauan Indonesia (2002).

³² Pacific Islands Forum, *Declaration on Preserving Maritime Zones in the Face of Climate Change-Related Sea-Level Rise* (Pacific Islands Forum Secretariat, 2021), <https://forumsec.org/sites/default/files/2024-05/2021%20Declaration-on-Preserving-Maritime-Zones.pdf>.

maintain previously established baselines regardless of changes in geographical conditions resulting from sea-level rise. Normatively, this concept is consistent with the spirit of UNCLOS in ensuring the stability and certainty of maritime boundaries. Indonesia can strengthen the implementation of the fixed baseline through two approaches. First, a national normative approach, by updating legislation to affirm the permanent status of basepoints based on approved coordinates. Second, a regional diplomatic approach, by building consensus among ASEAN member states within the framework of maritime cooperation in addressing climate change.³³

This regional approach offers two strategic advantages. First, it strengthens ASEAN's bargaining position in international forums concerning the adaptation of the law of the sea. Second, it helps prevent potential maritime boundary conflicts among neighboring states that are equally affected by geographical changes. Through this strategy, Indonesia can act as a norm entrepreneur in Southeast Asia by promoting the development of new norms on climate-resilient maritime boundaries. The concept of climate-resilient maritime boundaries has developed in response to the vulnerability of maritime boundaries to climate change, particularly sea-level rise that shifts coastlines and the basepoints used to draw baselines. This approach emphasizes the importance of legal resilience in maritime boundaries so that they are not easily affected by natural and ongoing geographical changes. Within this framework, the stability of maritime boundaries is regarded as a prerequisite for legal certainty, the sustainability of sovereignty, and the protection of the sovereign rights of coastal states over their maritime areas and natural resources. Accordingly, climate-resilient maritime boundaries constitute not only a technical concept within the law of the sea, but also an instrument of international legal adaptation to the impacts of climate change.

4.5. Integration of the Principles of Sovereignty and Sustainability

The legal approach adopted by Indonesia must consider a balance between sovereignty and sustainability. Maritime sovereignty should not be interpreted rigidly, but rather be situated within the context of global responsibility for the marine environment. In this regard, Indonesia can develop the paradigm of preservation sovereignty, namely sovereignty exercised with due regard to the principles of conservation and intergenerational equity.

Accordingly, strengthening baselines is not merely a matter of maintaining territorial boundaries, but also forms part of a legal and moral responsibility to protect marine ecosystems from degradation caused by climate change. Article 192 of the 1982 UNCLOS sets out the obligation to protect and preserve the marine environment.³⁴ States have a general obligation to protect and preserve the marine environment. This provision affirms a fundamental and universal obligation applicable to all states, regardless of whether they are coastal, archipelagic, or landlocked. The provisions of UNCLOS affirm that coastal states not only have the right to determine baselines as the basis for measuring their maritime zones, but are also entrusted with legal obligations to protect and preserve the marine environment from harm, including damage caused by climate change that affects marine ecosystems. This obligation constitutes a form of international responsibility that also encompasses ethical and moral elements in safeguarding the

³³ ASEAN Secretariat, *ASEAN Maritime Outlook* (ASEAN Secretariat, 2023).

³⁴ Article 192 United Nations Convention on the Law of the Sea.

sustainability of the oceans. The integration of these two principles will strengthen Indonesia's position as an archipelagic state that is not only sovereign, but also committed to a just and sustainable international law of the sea order. This research makes a significant theoretical contribution to the development of international law of the sea by offering a conceptual framework regarding the reconstruction of baseline determination in the midst of climate change. In particular, this study enriches the academic discourse on the relationship between state sovereignty and geographical dynamics by emphasizing that the ambulatory baseline concept as assumed in UNCLOS 1982 is no longer adequate to guarantee legal certainty in conditions of permanent environmental change. Through normative analysis and state practices, this research contributes to strengthening *the non-ambulatory approach* through the concept of fixed baseline and historical baseline as a form of evolutionary interpretation of international maritime law that is in line with the principles of territorial boundary stability and *preservation of sovereignty*.

In addition to theoretical contributions, this research also provides practical and policy contributions for archipelagic countries, especially Indonesia, in formulating legal strategies and maritime diplomacy to deal with the impacts of climate change. The findings of this study can be a reference for policymakers in improving national arrangements related to baseline determination and strengthening Indonesia's position in international forums to encourage the recognition of maritime boundaries that are adaptive to climate change. Thus, this research is not only relevant in an academic context, but also has an applicative value as a legal argument basis for efforts to protect maritime sovereignty, legal certainty, and the sustainability of the country's territory in the midst of climate change challenges. Thus, strengthening the base line is not only a matter of maintaining territorial boundaries, but also part of the legal and moral to protect marine ecosystems from degradation due to climate change. The integration of these two principles will strengthen Indonesia's position as an archipelagic country that is not only sovereign, but also committed to a just and sustainable international maritime law order.

C. Conclusion

Climate change marked by rising sea levels has presented a serious challenge to the traditional concept of baseline determination in international maritime law. The legal framework built by the United Nations Convention on the Law of the Sea 1982 (UNCLOS 1982) essentially assumes the geographical stability of the coastline, so it is not yet fully responsive to permanent geographical changes such as island sinking, coastal abrasion, and loss of baseline points. This condition creates legal uncertainty that has the potential to disrupt the stability of maritime boundaries and state sovereignty, especially for archipelagic countries. Analysis of the debate between *the ambulatory baseline* principle and the fixed baseline model shows that the application of *ambulatory baseline* in the midst of sea level rise tends to result in a sustained shift in maritime boundaries and potentially harms coastal states and island states. In contrast, the *fixed baseline* model offers legal certainty and stability of marine boundaries by maintaining a legally defined baseline, regardless of physical changes to coastlines due to climate change. In certain contexts, the *fixed historical baseline approach*, which bases the determination of the baseline on geographical configuration and historical data at a given time, also provides a strong legal legitimacy basis for maintaining the sustainability of a country's maritime jurisdiction. For Indonesia as an archipelagic country, the application of *the fixed baseline* and *fixed historical baseline* models has high strategic relevance. Both approaches are in line with Indonesia's interests in maintaining territorial integrity, maritime boundary certainty, and protecting state sovereignty amid the dynamics of climate change. By

maintaining a predetermined baseline based on certain geographical and historical conditions, Indonesia can minimize the risk of shrinkage of maritime jurisdiction and avoid legal instability caused by progressive and unpredictable natural changes.

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