

Heritage Sea Level Rise in Indonesia and Legal Certainty of Sea Territory: Implications of the ICJ Advisory Opinion of 23 July 2025 Under UNCLOS 1982 on Baselines and Delimitation

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ABSTRACT

Sea level rise due to climate change challenges the legal certainty of Indonesia's maritime space as changes to the coastline have the potential to affect delimitation. This article aims to analyse the implications of the International Court of Justice (ICJ) Advisory Opinion 23 July 2025 on the legal certainty of the base line, outer limits of the maritime zone, and delimitation, by placing Indonesia as an archipelagic country vulnerable to abrasion, tidal dynamics, and the risk of jurisdictional disputes. The research method used is juridical-normative through document study and textual and systematic interpretation of UNCLOS provisions on the base line, publicity and deposit of maps/list of geographical coordinates, and delimitation provisions along with legal principles of maritime boundary agreements. The analysis shows that physical coastal changes do not necessarily give rise to an obligation to update maps or coordinate lists automatically and recurrently once a maritime zone is duly established. This finding confirms that the published and deposited coordinate list serves as a verifiable jurisdictional instrument, subject to compliance with UNCLOS and the principle of lawful maintenance. In the realm of delimitation, the stability of treaty-based boundaries is maintained in principle, while the greatest vulnerability lies in segments that are not yet finalised or effective. This article recommends a two-track strategy for Indonesia: maintaining legal boundary certainty through strengthening coordinate and deposit governance, while updating hydrographic information for navigation safety without changing the legal position of boundaries, and prioritising the completion and effectiveness of boundary agreements in potentially overlapping areas.

Keyword: Sea Level Rise, UNCLOS 1982, Baselines, Maritime Delimitation

INTRODUCTION

Sea level rise due to climate change has already shifted from a purely environmental issue to an issue of maritime law and jurisdictional security for an archipelagic country like Indonesia. Satellite observation data referenced by BMKG shows that the trend of sea level rise in Indonesia since the early 1990s has been in the average range of about 4.0 ± 0.4 mm/year, with consequences in the form of increased coastal flooding, coastline retreat, and the risk of loss of small islands. According to the IPCC, sea level rise will continue and in the long term due to ocean warming and ice melt, so that the impact does not stop at a 5-10 year policy, but on the legal order of ocean space across generations (Vinata, et al. 2023).

The 1982 UNCLOS Framework established the right to the territorial sea from a technical concept, based on a list of coordinates deposited with the UN (Nilufer, 2023).

UNCLOS asserts that the normal baseline is the low-water line along the coast from which the area of the territorial sea and other maritime zones is measured. However, UNCLOS also recognises unstable coastal conditions such as deltas by allowing the use of certain straight baselines that remain effective as long as the requirements of the convention are met (Snjólaug, 2021). These provisions show that from the outset there were internal tensions and some of the UNCLOS regime is ambulatory, but others provide room for prescription for the regularity of navigation and certainty of jurisdiction.

The problem for Indonesia is multi-layered because its status as an archipelagic state implies the use of an archipelagic baseline to draw a line between the outer points of islands and dry reefs, and fulfils certain ratios and requirements. From this archipelagic baseline, archipelagic waters, territorial sea, auxiliary zone, EEZ and continental shelf are calculated. UNCLOS also emphasises the publicity aspect of coastal states providing publicity and depositing maps/coordinate lists so that the lines drawn are not simply unilateral claims, but part of diplomacy that can be examined, debated and (ideally) stabilised in international practice (Vinata, 2024).

A review of the data shows that sea level rise in Indonesia is no longer a hypothesis, but a measurable trend. BMKG's satellite altimetry-based summary shows that Indonesia's sea level is rising over a long period (e.g. from the early 1990s to the 2020s) at an average rate of around 4.0 ± 0.4 mm/year, which correlates with increased incidence of tidal waves, abrasion, and pressure on coastal settlements and infrastructure. These empirical findings are relevant because physical coastal changes (retreat of coastlines, erosion/inundation of small island features, changes in the shape of deltas/estuaries) affect the 'geographic raw material' that the law of the sea uses to measure state jurisdiction (Asiatoday, 2024).

The most sensitive issues arise when changes in baselines interact with the outer limits of the maritime zone and especially delimitation with neighbouring states. UNCLOS affirms that delimitation of EEZs and continental shelves between neighbouring states should be done by treaty under international law to arrive at an equitable solution, and where there is a treaty in force, delimitation issues are determined in accordance with that treaty (Vinata, 2025). This framework suggests two points that are often disputed: first, the treaty/decision boundary should ideally be final to prevent recurring conflicts; second, physical changes to the coast can trigger new disputes if one party considers the changed baseline to 'change the basis of calculation' of delimitation. It is this gap that makes sea level rise a potential litigation catalyst, not just in the environmental sphere, but in the sphere of sovereignty and resource jurisdiction.

The International Law Commission (ILC) 2025 emphasises that the preservation of legal stability, certainty and predictability relates to the interpretation of UNCLOS and other rules of international law that allow the delimitation of baselines, outer limits of maritime zones and related rights even if the coastline changes due to sea level rise. The ILC even stated that there is no obligation to update the base line/coordinates/outer boundaries of the maritime zone to adjust for changes due to sea-level rise, and there is no provision requiring the updating of maps related to the base line/coordinates/outer boundaries of the maritime zone. In the realm of regional practice, the Pacific Islands Forum also encourages approaches to maritime zone defence so as not to be eroded by climate change enhanced geographical change processes (Yee, 2025).

Within this landscape, the ICJ's Advisory Opinion on state obligations in relation to climate change (23 July 2025) is a relevant interpretative catalyst to be read through the lens of the law of the sea. Advisory opinions are not the same as judgements on disputes between parties, they are not as 'binding' as contested judgements, but the ICJ's authoritative weight in interpreting international law is often referenced by states, other tribunals and the formation of custom (Cheong, 2025). The ICJ alluded to the related of climate issues with broader legal

regimes and, in line with the direction of the ILC, affirmed the idea that states are not automatically obliged to update maps/coordinates solely because of sea-level rise. For writing about Indonesia, the added value of the ICJ is not in replacing UNCLOS, but in strengthening the legal justification for maintaining maritime space can be positioned as part of certainty and justice, not just a unilateral interest (Tigre, 2024).

In this article, we analyse the ICJ's influence on the legal position of maritime boundary certainty when coastlines change and the need to connect three layers of often disparate norms are the UNCLOS technical regimes of baselines, chart and coordinate publicity, and delimitation and the principle of boundary finality in treaty law, including the doctrine of fundamental change of circumstances that cannot be used to terminate a boundary setting treaty and the post 2020s normative push to contain vulnerable states jurisdictional disadvantages as a just response to climate change.

METHODOLOGY

This research uses the juridical-normative method by placing the text of UNCLOS 1982, the practice of coordinate publication and deposit, as well as the development of reasoning in the ICJ Advisory Opinion 23 July 2025 and ILC 2025 documents as the main legal materials (Bhat, 2020). The analysis is conducted through textual and systematic interpretation, which analyses the provisions on baselines, map or coordinate publication, and delimitation in a unified legal regime of the sea, then assesses how the reasoning of these international institutions affects the meaning of jurisdictional stability amidst configuration changes.

Primary legal sources analysed include: (i) UNCLOS 1982 as the main legal framework of the sea, particularly the provisions on normal and archipelagic baselines and the obligation to publish/deposit maps or lists of coordinates and the provisions on delimitation of EEZs and continental shelves; and (ii) ICJ Advisory Opinion 23 July 2025 on state obligations related to climate change, particularly the relevant parts for the certainty or stability of maritime space and the absence of the obligation to update maps and coordinates after the maritime zone is duly established.

To complement the normative foundation, this research also uses supporting instruments that influence the reading of boundary stability, namely the 1969 Vienna Convention on the Law of Treaties, particularly the fundamental change of circumstances clause and its important exceptions to boundary agreements. It also analyses the ILC Final Report 2025 on Sea-level rise in relation to international law and the Pacific Islands Forum Declaration 2021 on maritime zone preservation.

The legal material collection technique was conducted through document-based research with the following procedures: (1) inventory of UNCLOS articles that become nodes of the baseline publicity of coordinates delimitation; (2) extraction of key propositions from the ICJ Advisory Opinion 2025 that intersect with the law of the sea regime (e.g. affirmation of the absence of an obligation to update maps/coordinate lists); (3) mapping the position of the ILC and state practice to assess whether the preservation approach is merely a policy argument or has moved towards more hardened rules (Hamzani, 2023).

RESULTS AND DISCUSSION

1. Baseline Shifts to Geographic Coordinate List Certainty

Shoreline change is a geographical fact of maritime delimitation that is increasingly discussed in the context of climate change, but its legal consequences only become a serious problem when the law of the sea links maritime rights to geographical boundary points. Under UNCLOS 1982, many coastal state entitlements are calculated from the baseline (García, 2022). For a normal baseline, the benchmark is the low water line along the coast as marked on the coastal state's recognised charts. As the low water line is a physical phenomenon,

when the coast is abraded, eroded, accreted or changed by sea level rise, the measuring point could theoretically shift. This has led to disagreements that if the measuring point shifts, states (and other parties) may discuss the width of the maritime zone measured from that point shifting as well (Wendebourg, 2023).

The certainty of rights to marine areas is an issue because the sea is not only an ecological space, but also an economic and law enforcement space. If the change in coastline is understood as an automatic change in the base line and then shifts the outer boundary of the maritime zone, then the administrative consequences will be severe because the state must continue to change maps and coordinates, while the other party must continue to adjust (Trialfhianty, 2025). This situation has the potential to give rise to new disputes as aggrieved parties will be encouraged to challenge the latest claims, especially in border areas or overlapping areas (Yolanda, 2025).

However, UNCLOS does not completely leave the design of law to the dynamics of nature. The Convention does depart from geography, but it also builds in tools for order and certainty. For example, UNCLOS provides for certain coastal conditions that allow for approaches other than the normal baseline, including deltaic situations where the shoreline is highly unstable. Provisions such as these demonstrate an explicit recognition that coasts can change, and that the law needs to provide a way for maritime zone measurements to be carried out without generating extreme uncertainty.

In the UNCLOS framework, this can be seen in the obligations of due publicity and deposit. UNCLOS orders coastal states to give publicity and deposit maps or lists of geographic coordinates (the so-called geodetic datum) for certain lines such as baselines established in a certain way and the outer limits of certain maritime zones. At a fundamental level, these deposits are a mechanism to ensure that claims are verifiable, known to others, and referenced together. The DOALOS deposit guidelines emphasise that the deposit communication should clearly state the state's intention to deposit the map and coordinate list and contain information that allows for proper identification.

This publicity or deposit mechanism is important in the context of shoreline change, as it creates an administrative-legal barrier that helps to separate two things are (i) the physical changes that occur on the ground, and (ii) the jurisdictional certainty needed for governance so that natural changes result in jurisdictional changes that can trigger conflict. This is where maps and coordinate lists provide a stable reference point for interstate relations and certainty of the exercise of authority. UNCLOS still requires that baselines and published boundaries must be established in accordance with convention rules. If a claim is not made in accordance with the requirements, the other party can file a protest, and the claim can still be disputed even if there is a map and coordinates (Beckman, 2013). Therefore, legal certainty is not simply a matter of depositing a list of coordinates, but rather a matter of the legitimacy of a valid determination claim according to UNCLOS, and the documentation meeting the publicity or deposit standard.

In the case of climate change assessment, the most vulnerable states (island and small island states) may experience a gradual shrinkage of maritime entitlements simply because of physical changes that they did not proportionally cause. This risks structural injustice and incentivises opportunistic claims by others who capitalise on physical changes to undermine the legal position of affected states. So, the issue of certainty of maritime rights is ultimately a matter of balancing geophysical realities with the need for legal order.

Shoreline changes create conceptual pressures on the baseline regime, but the key issue for states is not simply that shorelines change, but ensuring jurisdiction remains predictably exercisable, reducing disputes and maintaining stable neighbourly relations. At this point, the certainty of a list of geographic coordinates as a result of legitimate publicity/deposit becomes the most realistic bridge. This foundation has been reinforced by recent doctrinal

developments through the ICJ's Advisory Opinion of 23 July 2025 and the findings of the ILC 2025.

Normatively, the separation between jurisdictional certainty and hydrographic updating needs to be explicitly anchored in the UNCLOS regime. First, in relation to publicity and deposit, UNCLOS requires coastal states to provide adequate publicity of maps/coordinate lists and deposit them with the UN Secretary-General, so that the published and deposited coordinates serve as internationally verifiable instruments of jurisdiction. Secondly, for continental shelf claims, UNCLOS Article 76 defines the continental shelf and confirms that the outer limits established based on CLCS recommendations are final and binding and must be deposited; this framework explains why physical changes to the coastline do not automatically shift the "duly established" outer limits. Thirdly, in the realm of delimitation, UNCLOS directs the resolution of overlaps through treaties to reach an equitable solution, while requiring provisional arrangements and prohibiting impeding final agreements; hence, Indonesia's practice needs to be demonstrated through concrete examples of EEZ (Article 74) and continental shelf (Article 83) treaties.

2. Implications of the ICJ's Advisory Opinion of 23 July 2025 on the Certainty of the Coordinate List

The ICJ's Advisory Opinion of 23 July 2025 on Obligations of States in respect of Climate Change is often read as a climate judgment, but for the topic of baselines and maritime rights, its strategic value lies in the way it links the climate crisis with the need for legal certainty in existing regimes, including UNCLOS. In the process, the ICJ responded to arguments raised by various states regarding the implications of sea level rise for baselines and maritime zones (International Court of Justice, 2025). Most relevant for this section is the ICJ's assertion that UNCLOS does not contain an obligation for states parties to update maps or lists of geographic coordinates related to the baselines and outer limits of maritime zones after they have been duly established in accordance with the provisions of the convention.

Conceptually, there are two things about the ICJ's statement. First, the ICJ affirmed that changes in coastline due to sea level rise do not necessarily give rise to an automatic and recurring obligation to update maps or lists of coordinates within the framework of UNCLOS, once a maritime zone is duly established, there is no obligation to continuously update the coordinates of the base line or outer limits of the maritime zone simply because of physical changes in the coast. Second, the ICJ reinforced the view that the certainty of a list of geographic coordinates having real legal weight is not just an administrative appendix, but part of UNCLOS' design for predictability. In doing so, the ICJ provided a foothold for the certainty argument without necessarily stating that geography stops changing (Ruppel, 2025).

In the ICJ's view, certainty of coordinates can be maintained if the initial designation was made according to the requirements of UNCLOS, including publicity/deposit obligations when required. This is where the ICJ implicitly 'reinforces' the standard of compliance that a state wishing to utilise the certainty argument must be prepared to show that its baseline/outer limits were properly established, not simply unilaterally declared without foundation. In other words, the ICJ provides strong support for certainty, but at the same time demands legal-technical discipline (Smajić, 2025).

The ICJ's position is all the more solid because it is in line with the ILC 2025 Final Report on sea-level rise in relation to international law. The ILC expressly concluded that there is no provision of UNCLOS requiring states to update baselines, geographical coordinates or outer limits of maritime zones after they have been properly deposited and no provision of UNCLOS (or any other rule of international law) requiring the updating of charts in relation to baselines, coordinates and outer limits so that states are under no obligation to update charts to adjust for changes due to sea-level rise without prejudice to safety of navigation issues.

The ILC also added that there is no provision preventing states from maintaining existing and lawful baselines, coordinates and outer boundaries (Hunter, 2025).

The ICJ-ILC combination has very operational implications for the issue of maritime rights certainty in that the absence of an automatic renewal obligation means that states are not forced into an endless administrative cycle simply because of a change in coastline. This is important for reducing the risk of new disputes, particularly in sensitive areas (Center for International Environmental Law, 2024). At the same time, this implication also makes it clear that ensuring a list of geographic coordinates is a legally justifiable strategy, not just a political preference. The non mandatory updating provision cannot be read as a free space to arbitrarily maintain lines.

The ICJ and ILC place a clear boundary that coordinate certainty only applies if the establishment of the baselines and outer limits of the maritime zone are duly established and lawfully preserved in accordance with UNCLOS. Therefore, this position still contains a filtering mechanism that demands procedural and substantial legality, and opens up room for objections from other states if a claim does not meet convention standards (Aurescu, 2025). In addition, state practice still plays a role if a claim is deemed to violate UNCLOS requirements, other states can object. Here, deposit and due publicity actually serve as transparency and the other party is aware of the claimed coordinates and can respond legally. Thus, the certainty of coordinates facilitates the assessment of the legality of the claim (De Spiegeleir, 2025).

The ILC emphasised that the absence of the obligation to update charts in relation to baseline or outer limits does not remove the issue of safety of navigation. This opens up the important strategy that states can maintain legal boundary certainty (for jurisdiction), while still updating the hydrography/nautics necessary for navigational safety. This separation makes the policy more credible. Finally, the ICJ-ILC position also seems to be gaining acceptance as a broader normative direction. For example, Indonesia's statement at the UN in 2025 expressed support for the ILC's view that UNCLOS does not require revision of baselines and does not prohibit preservation, indicating a trend towards *opinio juris* to read UNCLOS as compatible with sea-level rise certainty.

Shoreline changes do not automatically trigger the obligation to update maps or coordinate lists of baselines and outer limits of maritime zones under UNCLOS, once the zones are determined to be appropriate, consequently, the certainty of geographic coordinate lists is a strong legal foundation for maintaining jurisdictional predictability in the face of climate change. However, the strength of this argument depends on adherence to UNCLOS requirements at the time of initial designation and on a careful separation between jurisdictional certainty and navigational safety needs (Anggadi, 2023).

In an attempt to substantiate the claim that coordinate based certainty has strong support in international law, this section presents a comparative synthesis between the 1982 UNCLOS regime, the reasoning in the ICJ Advisory Opinion 23 July 2025 and the normative direction at the ILC in 2025. This comparison maps out the points of convergence and their limits on the issues of baseline stability, coordinate updating obligations, finality of delimitation agreements, as well as the relevance of the fundamental change of circumstances doctrine, so that the reader can assess the legal certainty argument in a transparent and measured manoeuvre.

Table 1. Comparison between UNCLOS 1982, ICJ (Advisory Opinion 23 July 2025), and ILC (2025) on Sea Level Rise

Topic	UNCLOS 1982	ICJ Advisory Opinion 2025	ILC 2025
Garis Pangkal	UNCLOS recognises several types of	Emphasise the certainty and stability of maritime	Promote a stability approach to

Topic	UNCLOS 1982	ICJ Advisory Opinion 2025	ILC 2025
	baselines (normal, straight and archipelagic) and provides for the mandatory publication of maps/coordinate lists for certain maritime boundaries as well as a deposit mechanism with the UN Secretary General.	jurisdiction once it has been legally established and publicly communicated, and avoid systemic instability due to physical coastal change alone.	maintain legal certainty and prevent recurring disputes, especially for vulnerable states, while at the same time adhering to the framework of UNCLOS 1982.
The obligation to update coordinates	UNCLOS mandates the publication of maps/coordinates and deposits for specific contexts, but does not explicitly stipulate the obligation of periodic updates due to changes in natural configurations.	There is no general obligation for states to continually update baselines/coordinates due to sea level rise, especially if such updates are related to certainty and trigger maritime boundary disputes.	Consistently rejecting the notion of 'automatic renewal' and giving weight to coordinate-based certainty, with an emphasis on transparency and stability of interstate relations
Finality of the delimitation agreement	UNCLOS encourages delimitation by agreement; once agreement is reached, it is subject to the principle of pacta sunt servanda in international treaty law.	Principle of stability of boundary settlement by treaty; changes in the environment do not result in the finalisation of delimitations	In line with maintaining the finality of boundary agreements for the sake of legal order and prevention of re-occurrences of disputes
Relevance of fundamental change of circumstances	It is not a special regime of UNCLOS, but part of international treaty law (VCLT).	Acknowledge sea level rise as a serious factual change, but not as a blanket trigger for cancelling efforts to settle maritime boundaries.	Tend to view climate change as a reason for strengthening stability and cooperative responses, not as a basis for maritime boundary demarcation

Source: author's analysis of UNCLOS 1982, ICJ (Advisory Opinion 23 July 2025), and ILC (2025) on Sea Level Rise

This comparative table demonstrates the development of international law to maintain the stability of maritime jurisdiction amidst changing coastal configurations, particularly through the emphasis on certainty, the finality of boundary settlements, and the rejection of the assumption of automatic renewal. Such stability, however, is not intended to justify base lines that are not aligned with UNCLOS in the first place, nor does it negate the need to update technical data for safety of navigation. Starting from this balanced reading, the subsequent analysis maps the consequences for Indonesia and formulates the most relevant policy measures to reduce vulnerability in the outstanding delimitation segments.

In Indonesian practice, the publicity and deposit functions are carried out by communication to the UN Secretary-General, including the deposit of a list of coordinates of the Indonesian archipelagic base line (M.Z.N.67.2009.LOS, 25 March 2009) referring to Government Regulation No. 38 of 2002 as amended by Government Regulation No. 37 of 2008. This practice is an implementation within the framework of UNCLOS namely the obligation of publication and deposit for the base line (Article 16) and specifically the archipelagic base line (Article 47 paragraph (9)) by making Indonesia's reference points and coordinates publicly traceable and internationally accessible. However, deposit is not automatically synonymous with acceptance by other states but its legal value remains dependent on substantive conformity with UNCLOS provisions and remains open to protest, thus maintaining doctrinal rigour while supporting jurisdictional predictability.

3. Finality of Indonesia's Maritime Boundary Agreements with Other Countries due to Sea Level Rise

Under international law, UNCLOS frames delimitation as a treaty-based solution for states where EEZ overlaps are settled by agreement under Article 74, while continental shelf overlaps are settled by agreement under Article 83, with interim arrangements and an obligation not to impede the achievement of a final agreement. The delimitation of Indonesia's maritime boundaries with neighbouring countries shows that the certainty of maritime territory in practice is not only the ever changing coastline, but also by boundary agreements through coordinate lines. UNCLOS 1982 does direct the delimitation of EEZs and continental shelves to be achieved through treaties for equitable solutions, but once treaties are concluded and come into force, there is a stabilisation of neighbourly relations ranging from patrol authority, fisheries law enforcement, resource management, and investment certainty on clear lines. This principle is all the more important when sea level rise accelerates shoreline changes not because treaty boundaries shift, but because geographical changes can give rise to boundary disputes in areas that have not yet been finalised.

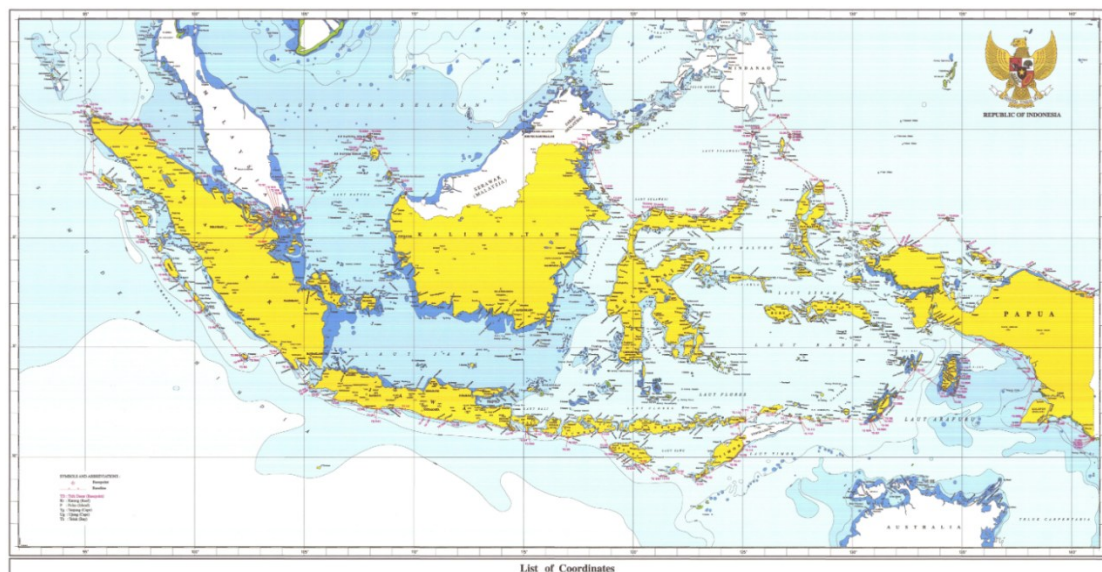


Figure 1. The Geographical Coordinates of Points of the Indonesia Archipelagic Baseline
Source : [M.Z.N.67.2009.LOS of 25 March 2009](#).

This map visualises the distinction between boundary segments that are relatively stable because they are agreed and operational, and those that are more vulnerable because they are pending, incomplete or disputed. Classification is based on the official status of

Indonesia's boundary agreements and publicly available delimitation records (cite sources). This visualisation supports the article's argument that legal vulnerability is primarily concentrated in unresolved segments, rather than in boundaries already established through treaties. One of the most visible examples is the Indonesia-Singapore series of treaties in the Singapore Strait. The maritime boundary between the two countries could not be finalised quickly, but rather gradually and on a segment basis are the 1973 Treaty (main segment), the 2009 Treaty (western segment) and the 2014 Treaty (eastern segment). For the eastern segment, the 2014 Agreement was registered with the UN Treaty Collection which delimits the territorial sea in the eastern part of the Singapore Strait. (UNTS No. I-54672, 2017) This gradual pattern is important because it shows that delimitation is a political-legal process that addresses practical needs and jurisdictional certainty through coordinate baselines.

Another agreement is the 2014 Indonesia-Philippines Agreement on the EEZ boundary. This agreement is also recorded in the UN Treaty Collection as Agreement concerning the delimitation of the exclusive economic zone boundary. (UNTS Reg. No. 55946, 2019) This document confirms the signing of the agreement during a state visit and places it as an important step for jurisdictional certainty in the Sulawesi Sea. In the Indonesian context, the practical impact on sea level rise of shoreline changes does not automatically shift the treaty line, which is already in the form of coordinates.

Indonesia also has old treaties that show delimitation uncertainty since the pre-climate change era, for example, Indonesia-Malaysia, namely the 1969 continental shelf boundary and the territorial sea boundary in the Malacca Strait (1970/1971). (U.S. Department of State, 1970) In terms of national law, Indonesia authorised the setting of the territorial sea boundary in the Malacca Strait through Law No. 2/1971 which explained the context of the change in the width of Indonesia's territorial sea to 12 nautical miles and the need for delimitation with Malaysia. Two things are clear: (i) the boundary was formulated as a line that could be designated through coordinates/segments, rather than simply following the coast; (ii) the boundary agreement was attached to the need for certainty in law enforcement and maritime administration, so the logic of stability was inherent from the start.

In the Andaman and northern Malacca Strait, a series of Indonesia-Thailand agreements and tripartite agreements (Indonesia-Malaysia-Thailand) demonstrate the same: the boundary line is defined as a straight line between coordinate points, for the continental shelf/seabed. (United Nations Treaty Series, 1973) The 1975 Seabed Treaty confirms the boundary line formula as a straight line from point A to the next point based on latitude and longitude coordinates. (U.S. Department of State, 1978) This confirms that the finalised delimitation of coordinate list points does not change simply because of a change in coastline.

For the southern region, Indonesia-Australia is an important and complex example. There were the 1971 and 1972 seabed treaties, and then the 1997 Treaty (often called the Perth Treaty) which established the EEZ boundary and certain seabed boundaries. The 1997 Treaty in the Delimitation Treaties Infobase of UN/DOALOS, and some analyses and official documents refer to this treaty as not yet in force because it has not been ratified and has not been exchanged. (Ramon, 2018) In the analysis of sea level rise as it shows the influence of non geographic factors are politico legal constraints (ratification, regional dynamics such as Timor Leste) can delay finality, so areas that are not yet final are more vulnerable to enforcement frictions and jurisdictional uncertainty than areas that already have a treaty in force. (Davenport, 2014) Vienna Convention on the Law of Treaties 1969 confirmed that the doctrine of fundamental change of circumstances cannot be used to withdraw from a treaty if the treaty establishes a boundary.

Sea level rise, even as a fundamental change of circumstances, does not automatically invalidate an existing maritime boundary agreement. Thus, where Indonesia already has an effective delimitation agreement (e.g. with Singapore on certain segments, or with the

Philippines for the EEZ boundary), the line remains in principle the authoritative reference for law enforcement and resource management, regardless of changes to the coastline. (Division for Ocean Affairs and the Law of the Sea, 1997) Sea level rise with respect to delimitation is most evident in areas that have not yet been finalised. A relevant contemporary example is the Indonesia-Vietnam EEZ boundary agreement signed in 2022, but the ratification process is still a determining factor in its effectiveness.

Table 2 illustrates that the most obvious vulnerabilities lie not in delimitation agreements that have become effective, but in segments that have not yet been agreed upon or have not gained full binding force. As such, the following discussion confirms that the stability of maritime space in the context of sea-level rise depends on a combination of the finality of delimitation agreements and the strengthening of coordinate publication and deposit mechanisms. Mapping the status of the treaty is important based on its legal status (in force vs. pending), using the UN/DOALOS State Files Indonesia because it connects the logic of agreement-based delimitation in UNCLOS (Article 74 and Article 83) with the thesis of the article: legal vulnerability is concentrated in segments that are not yet finalised or effective, whereas coordinate-based boundaries that are already in force remain the primary jurisdictional reference despite changing geographical conditions.

Table 2. Summary of Indonesia's Maritime Boundary Agreements (Final vs. Not Final)

Partners	Regime	Legal Status	Vulnerability Related Sea Level Rise
Singapore Singapore Strait	Territorial sea	entry force 29 Aug 1974	Coordinate based boundary agreements do not automatically shift due to shoreline changes; SLR issues are more relevant to navigation/hydrography, not legal boundaries
Filipina	Exclusive Economic Zone	entry force 1 Aug 2019	Treaty agreement is finality and coordinate-based; Sea level rise does not 'cancel' the treaty agreement.
Australia	Continental shelf	entry force 8 Nov 1973	Treaty agreement is finality and coordinate-based; Sea level rise does not 'cancel' the treaty agreement, but this agreement does not cover all segments (there is a section 'left for further discussion').
Viet Nam	Exclusive Economic Zone	Ratification process	non-finalised boundary uncertainty is more easily escalated by field factors (law enforcement, fisheries), rather than geography

Source: author's review of the UN Secretary General, accessible at
<https://www.un.org/Depts/los/LEGISLATIONANDTREATIES/STATEFILES/IDN.htm>

The objects of Indonesia's boundary agreements that are already enshrined in treaties and especially those that are already in force create certainty through coordinates and are protected by the principle of boundary finality in treaty law (VCLT). The effect of sea level rise on delimitation is limited to spaces that are not yet finalised (or not yet in force due to ratification), whereas for boundaries that are already effective, changes to the coastline do not automatically shift the treaty line. This is where the relevance of the ICJ/ILC analysis of coordinate certainty becomes complementary.

This analysis focuses on the legal certainty of marine areas, sea level rise does not stand alone as states respond through adaptation measures, such as shoreline strengthening,

coastal ecosystem rehabilitation and small island protection. These adaptation interventions have the potential to affect the factual conditions of coastlines and maritime features that are referenced in shoreline setting practices, making the relationship between adaptation policies and legal stability relevant. However, it is important to distinguish between adaptations that aim to maintain population safety and coastal ecological functions, and measures that are implicitly geared towards maintaining maritime claims. From a legal perspective, the coordinate-based certainty framework as read in the UNCLOS regime and reinforced by the interpretative direction of the ICJ and ILC, is more defensive when combined with adaptation that is transparent, protection-needs-based, and not intended to engineer new maritime rights. Thus, adaptation is positioned as a complement that reduces the risk of conflict, rather than as an instrument to expand claims. The integration of adaptation and coordinate deposit governance policies needs to be designed so as not to create tensions between state jurisdictions. It is paramount to separate technical data updates for navigation safety and disaster mitigation from claim changes and strengthen transparency and regional cooperation as a buffer for stable international relations between states.

CONCLUSION

Sea level rise due to climate change affects the legal certainty of Indonesia's maritime boundaries as shoreline changes have the potential to affect the determination of the base line. However, within the framework of UNCLOS 1982 regarding publicity and deposit provisions (including Article 16 as well as deposit provisions for archipelagic baselines), entitlement provisions and outer limits of the continental shelf (Article 76), and delimitation by agreement provisions for EEZs and continental shelves (Article 74 and Article 83), legal certainty can be maintained through agreements between states. Thus, changes in geographical conditions do not necessarily create a legal obligation to update maps or lists of coordinates after a maritime zone has been duly established in accordance with the substantive-procedural requirements of UNCLOS.

The ICJ Advisory Opinion of 23 July 2025, supported by the ILC's 2025 findings, reinforces that physical coastal change does not in itself generate a general obligation to automatically and recurrently update charts or coordinate lists once maritime zones have been duly established in accordance with UNCLOS. Accordingly, published and deposited coordinate lists may function as verifiable jurisdictional references, provided that they satisfy substantive procedural UNCLOS requirements and remain open to protest where non compliant. The most important implication for Indonesia is that the agreements between Indonesia and other countries that are final and effective (e.g. have come into force through coordinate-based agreements) with segments that are not final or not yet effective. and there needs to be a strategy that first ensures the certainty of maritime boundaries between countries with agreements and deposits based on compliance with duly established, consistent international publications and deposits.

As well as maintaining safety of navigation through hydrographic updates (surveys, map updates) that are firmly positioned as technical updates with the dividing principle that hydrographic updates do not change the legal position of the boundary except through legal procedures. At the same time, management of small outer islands, coastal adaptation and mitigation of non-climatic factors such as land subsidence need to be positioned to underpin the credibility and sustainability of legal certainty claims, so that jurisdictional stability goes hand in hand with ecosystem protection and long-term resilience of island states.

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