



Climate Change Impact on Archipelagic State: The Beginning of Indonesia's Territorial Maritime Extinction?

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Abstract. Climate change is a global challenge that is becoming more urgent for countries around the world to anticipate its negative impacts. Especially for archipelagic countries, including Indonesia, the impact of climate change such as rising sea levels cannot be underestimated because it leads to sovereignty issues. In the context of sovereignty, this research tries to analyze the impact of climate change on Indonesia's national sovereignty in relation to international law by focusing on three main topics, namely the perspective of international law on a country's maritime territory, the impact of climate change on Indonesia's sovereignty, and actions that can be taken to avoid the negative effects of climate change. The conclusion of this research shows that Indonesia is facing complex legal challenges in dealing with the impacts of climate change where international law has not provided arrangements related to the sovereignty of archipelagic states if climate change causes the islands that are part of the country to sink. However, advocating for the application of the principle of baseline permanence can help Indonesia protect its maritime interests in the midst of global climate change.

Keywords: Law, International Oceans, Island Countries, Climate Change.

1. INTRODUCTION

Climate change is one of the most outrageous ongoing global issues that has transcendently affected every country. Climate change is often known as the shifts to the environmental or ecosystem conditions that will have a long-term impact (Malhi Yadvinder, 2020). With the disruptive development of human and industrial activities, there is no doubt that the effects of climate change will be felt earlier. The fast-forward impact of climate change was a result of the amount of carbon emissions released into the air. These gases will then trap the UV heat from the sun in the earth's atmosphere, increasing the average earth's 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 (Malhi Yadvinder, 2020).

The impact of climate change poses states with significant challenges, either for the wealthy or the developing countries. It is even more complex since these impacts come without considering national borders. The rising of high sea level volume, extreme change in weather, environmental deterioration by the altering habitats, and the disruption in life cycles are the situations if it eventuates in one state, accordingly will happen in the other. Apart from the ecological damage, the issue will eventually become ingrained in the economics, politics, and social sectors.

From the many negative impacts of climate change, the subject of high rising sea levels will be the issue in this paper. Global warnings and the heatwave that ensue the liquefying of glaciers and polar ice are the main factors of the rising sea level (Richard Meissner, 2009). The issue raised by this rising sea level is the erosion that occurs in the seashore. It is a condition when the high sea level is increasing, the wave and the ocean flow are progressing, and the land will gradually erode, followed by the disappearance, threatening the existence of infrastructure and habitants that reside above the waveland.

Not instantaneously, yet with most land becoming eroded, it will not be a sudden phenomenon if there is an immersion (Jane McAdam, 2012). Subsequently, the state can lose its territory by virtue of the inundated land surface. Inspecting by the extreme result of the eroded land, juxtaposition with other states' territory, thus, states in the Pacific Island will alter with the higher risk. In this case, the geographical peculiarity of its location, which is only a few metres above water, is the primary cause. For instance, in Maldives, its highest point is only to reach at 2,4 metres (Central Intelligence Agency, 2013), Tuvalu with only 5 metres (JC Pernetta, 1992), and 81 metres in Kiribati (JC Pernetta, 1992). The average high point of these states is approximately mere 2-3 metres (National Adaptation Program of Action: Republic of Maldives, 2007). Located under this situation will leave the slightest reaction of high rising-sea level with excessive damage for the habitants. The immersing effects of climate change are not exclusive to the three states mentioned since the majority of Pacific Island States share the exact nature. In a few decades, it is predicted by the "UN Intergovernmental Panel on Climate Change" these states will challenge with the worst, as the sea level keeps increasing, raising in the rain precipitation as well as the downturn of water quality (Vincent Gitz et al., 2016). The threats of sea-level rise has also haunted Indonesia as an archipelagic state. As reported by Indonesia's National Research and Innovation Agency, at least 115 out of 17,000 islands of Indonesia will be affected by submerged underwater, with 92 of them being the outermost islands (Dita Liliansa, 2023).

The submerging of low-lying coastal state territory is a notorious condition as the concept of 'state extinction' that will periodically threaten its existence (Milla Vaha, 2015). However, for now, the idea of 'extinction' itself has never been considered as it has only been discussed as a matter of theoretical interest. Such written by Oppenheim: 'Theoretically such extinction of International Persons is possible through emigration or the perishing of the whole population of a State (Lassa Oppenheim, 1928). According to the Montevideo Convention, what forms a state as a subject of international law that differentiates it from the rest of other entities should consist of a defined territory. It is even common in International law to assume

that state in the concept of “statehood” means territory will always exist (Wallace-Bruce & Nii Lante, 2000). And each state will hold the national sovereign power over its territory. However, the possibility of states becoming inundated by the unpredictable impact of climate change leads to the concern of whether states could still pertain their ‘statehood’ and ‘sovereignty’ when their territory is half or completely disappeared. Notably, challenges to international legal order posed as a consequent of sea level rise will particularly impact the maritime territories of archipelagic states. *Prima facie*, there will be a sovereignty issue above a deserted territory (Andrea Caligiuri, 2022). The subsequent extreme phase is when a territory will entirely sink under the rising sea level.

This paper will commence with three discussions, starting with the perspective of international law in the maritime territory of states. Secondly, it will discuss the complex legal questions that potentially impact Indonesia when sea levels rise and threaten the very forms of maritime territory claims. Lastly, it will examine the possible actions that can be taken.

2. RESEARCH METHOD

This research uses the normative juridical method, which is a method that uses a legalistic approach to legislation, principles, principles, and legal doctrine. More specifically, the use of normative juridical methods is used in conducting a study of the provisions in international law regarding the law of the sea. From the use of the normative juridical method, this research will present the results and discussion in a descriptive analysis by seeing that there are still no international legal rules that further regulate the issue of sovereignty of island countries that could sink due to climate change. Therefore, steps are needed to be able to provide guarantees for the sovereignty of island states in the midst of current climate change.

3. RESULT AND DISCUSSION

International Law Perspective in State’s Maritime Territory and Islands

Provided under the *Montevideo Convention, Article 1*, as the most widely accepted formulation of a State (Malcolm Shaw, 2017), stipulated that states should possess the minimum requirement of the following qualifications: (a) permanent population; (b) defined territory; (c) government; and (d) capacity to enter into relations with other States.

A state’s defined territory plays a fundamental role in international law as it upholds the modern state system as a recognized principle of territorial sovereignty (Stephen A. Kocs, 1994). This is followed by the integrity of states that should be respected by other states, with the right to exercise authority exclusively over their territory without interference from the

outside. On its physical basis, a state was always associated with a particular territory, as it is not an abstract entity. Several statements support it as Philip Jessup explains, “*one cannot contemplate a State as a kind of disembodied spirit,*” (UN SCOR, 2 December 1948) and indeed that “*everything which happens must happen somewhere*” (Leonidas Pitamic, 1933) as quoted from Leonidas Pitamic. While a state can exist without a government that loses control of its territory, it is undeniable that territory plays a primary core in what constitutes a state. It is presumably difficult for one government to maintain its jurisdiction and sovereignty power when no nucleus arena effectively exercises its control.

The physical basis of a state is not only a land territory but also the sovereign rights of a maritime territory, which the state often refers to as the ‘coastal state.’ Determination of maritime boundaries has been regulated based on the ‘United Nations Convention On the Law of The Sea 1982’ (“UNCLOS 1982”), a codification of customary international laws, which became the primary legal instrument that governs all conduct within a water territory starting from the determination of maritime boundaries, shipping or navigation, explorations, exploitation of natural resources, etc. The important discussion that will be described in this paper includes several relevant rules and also the method used under UNCLOS 1982 to determine the maritime boundaries on the use of ‘baselines’ as this would be used to determine the other maritime zones such as territorial sea (Part II Section 2) that establishes the breadth of the territorial sea up to 12 nautical miles, contiguous zone under Part II Section 4 that stipulated under Article 33 “Contiguous zone up to 24 nautical miles”, exclusive territory economic zone under Part V of UNCLOS where in Article 57 regulates that “the EEZ up to 200 nautical miles”, and the regulation for delineation of the continental shelf in Article 76 of Part VI of the UNCLOS. Additionally, due to the present discussion that will focus on Indonesia, we will also dissect some of the rules provided in Articles 46 to Article 54 of UNCLOS that regulate specific provisions for archipelagic states.

Under UNCLOS 1982, three baseline methods are recognized to set the maritime boundaries of a state. First is the Normal Baseline (Article 5 UNCLOS), which is defined as “*the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State.*” Second is the Straight Baseline (Article 7 UNCLOS) that can be drawn in certain circumstances, “*such as deeply indented coastlines or fringes of islands.*” Third, the Archipelagic Baselines that will be discussed the most in the paper are baselines that are measured specifically for archipelagic states like Indonesia, they allow States to “draw a straight baseline connecting the outermost points of their outermost islands, enclosing the waters between the islands as archipelagic waters”

Indonesia has been at the forefront of developing the archipelagic state concept dating back to 1957 which is known as the Djuanda Declaration (John G. Butcher & R. E. Elson, 2017). Primary national laws include 'Act No. 6 of 1996 concerning Indonesian Waters and Government Regulation No. 38 of 2002 on the Geographical Coordinates of the Indonesian Archipelagic Baselines'. As the world's largest archipelagic state, Indonesia benefited greatly in determining its maritime territory and claiming sovereignty as to draw the archipelagic baselines since waters and all sources inside those archipelagic baselines fall under Indonesia's baselines. Thus, the rise in sea level will cause an existential threat to the determined baselines of Indonesia, which reported that 92 of Indonesia's outermost islands are currently facing the threat of potential sinking. UNCLOS currently has not provided sufficient regulations on how states could maintain their baselines once they are established. The debate on whether baselines are 'ambulatory' or 'permanent' brought distraught to the discussions. The next section will discuss the potential scenarios for archipelagic states and their impact.

Potential Scenarios for Archipelagic State

The effect of rising sea levels will usually be transformed gradually. Archipelagic states face at least two potential circumstances due to high sea levels. The situation where a territory of a state will be lost completely is obviously possible, but only after the territory has gone through several other situations first. The potential circumstances are: 1) partial inundation and 2) complete submersion of several islands.

1) Partial Inundation of Islands

In the situation of rising sea levels, partial inundation is the earliest significant impact, in which the erosion is situated in the low-lying areas. However, certain land territories remain above water. Within the low-lying areas situations, the low-water line would change. It will affect the baseline measurements and extent of maritime zones. The majority of Indonesia's islands are low-lying. As an archipelagic state that depends on maritime baseline measurements, partial inundation challenged Indonesia to face changes in the low-water line, affecting baseline measurements and potentially causing the loss of basepoints for archipelagic baselines (Ria Tri Vinata et al., 2023).

The impact of partial sub-merged in the low water line that affects the baseline has the high potential to shift in baselines. As archipelagic states are measured by taking straight baselines for the distance requirements as mandated in Article 47 of UNCLOS, the loss of the baseline measurement basepoint will mean that possibly loss of measurement using the 'archipelagic' status as it could invalidate parts of Indonesia's

baseline system. Notwithstanding the loss of basepoint, the other challenges Indonesia faces also occur due to the habitability of certain islands, as stipulated under Article 121 UNCLOS, which distinguishes between islands and rocks, with different maritime entitlement. The sea level rise will create an uninhabitable territory and changes in their legal status.

2) Complete Submersion of Some Islands

Under the second potential situation, certain islands within an archipelagic state become completely submerged while others remain. This scenario raises questions about the validity of straight archipelagic baselines and the possible loss of maritime areas previously generated by the now-submerged islands. While complete submersion of large islands is unlikely in the near term, smaller islands are at risk. Under Article 53 of UNCLOS Indonesia has designated archipelagic sea lanes, and changes due to submerged islands could necessitate Indonesia to redefine these lanes.

Legal Implications for Maritime Territories

One of the main issues facing Indonesia is the potential shift in baselines due to sea level rise. The principle of "moving baselines" indicates that as the coastline recedes, the baselines from which maritime zones are measured must also shift (Snjolaug Arnadottir, 2021). However, UNCLOS does not explicitly address line changes due to the rise in sea level. Articles 5, 7, and 47 of UNCLOS define basic rules but do not take into account the climate change scenario we are currently facing.

Applying the "moving baseline" concept could harm an archipelagic country like Indonesia. This raises arguments for maintaining a "fixed baseline" to protect Indonesia's maritime rights. However, this interpretation has not received explicit support in UNCLOS, creating a legal loophole that requires addressing. The crucial question is: Can Indonesia maintain its maritime zone based on historical baselines if its coastline recedes or disappears? Furthermore, the shrinking or loss of islands could reduce Indonesia's maritime area, which is currently set at 12 nautical miles. Article 3 of UNCLOS defines maritime territory, but UNCLOS based the land territory as a measurement reference. The legal implications of this change are far-reaching. Indonesia can potentially reduce the territory over which it has complete sovereignty. In addition, the Exclusive Economic Zone (EEZ) loss or reduction could have a significant impact on Indonesia. Article 57 of UNCLOS does define EEZ, but this definition also depends on the existence of land areas. Indonesia's extensive EEZ and continental shelf claims could play a role, raising legal questions: "Can Indonesia retain its

EEZ and continental shelf rights if its islands are wholly submerged?” The legal implications of these changes to the EEZ include the potential reduction of the area over which Indonesia has sovereign rights over resources, the impact on Indonesia's right to regulate activities such as fisheries and oil exploration, and the possibility of conflict with neighboring countries over overlapping claims.

Possible Legal Arguments and Steps for Indonesia

Global climate change and rising sea levels have created unprecedented legal challenges for Indonesia and it should encourage Indonesia to take proactive steps to protect its maritime interests amidst the threat of physical changes to its territory. One fundamental approach that Indonesia can take is to advocate for the principle of permanence of archipelagic baselines. This argument is based on the need for stability and security of maritime boundaries. Indonesia can refer to international legal precedents, such as the International Court's decision in the case of *Nicaragua v. Honduras*, which emphasizes the importance of the stability of maritime boundaries. In paragraph 253 of the judgment quoted “....*The establishment of a permanent maritime boundary is a matter of grave importance and agreement is not easily to be presumed.*” This can be interpreted as suggesting that a permanent baseline is indeed important even though it does not specifically talk about the baseline, but once it is established, even with further tacit agreement or some kind of it being meaningless. Although UNCLOS (United Nations Convention on the Law of the Sea) does not explicitly regulate changes in baselines due to sea level rise, Indonesia can argue that once archipelagic baselines are established, they should remain permanent regardless of the physical changes that occur.

In addition, Indonesia can play an active role in developing new international customary law responsive to climate change challenges. As a significant archipelagic nation, Indonesia's practices in defending its maritime claims may contribute to the evolution of new norms. This could include recognition of the special vulnerability of island states to climate change, acceptance of fixed baselines for climate-vulnerable states, and new norms to defend maritime rights in the face of rising sea levels.

The ‘statehood’ status of an inundated island of Indonesia

State as an entity is undeniably held an immortality status. This is due to the flexible requirements of statehood. Certainly, most of the present states have satisfied the criteria to have territory, people, and a government. However, there has been a time when a state entity has already lost one of its criteria, yet it continues to hold its statehood status. The state of

Ethiopia, for example, for over ten years has lost total control over its territory, yet it still continuously held the status of state (James Crawford, 2006). Although it is acceptable that these criteria are flexible, it leaves to a certain logic that if an entity must fulfill specific criteria, it shall be considered a state; indeed, it must also have specific requirements to maintain its continuity. If not, a state that has established to be categories of extinction would retain its statehood regardless of its ceasement. The prescription under the *Montevideo Convention* itself is often criticized as incomplete, as the consequences of a failure to satisfy and sustain the continuity of these requirements were never discussed (Derek Wong, 2013).

Furthermore, statehood is primarily based on political matters to gain recognition by other states or the international community. Under International law, which is the premise as a system to maintain global stability, it rests on power allocation above a territory (Stephen A. Kocs, 1994). This means that while territory plays a significant role in the questions of the ability to exercise power and control, regardless, it needs the central authority to regulate its right to the exclusion from other entities or what is known as the concept of sovereignty.

Sovereignty is a concept that is widely accepted as the right and duty. Right to internationally accepted to independently have control over their jurisdictions, and the duty to respect it among other states. This is made clear that sovereignty is not a precondition but an attribute of states. Thus, sovereignty would be lost when the state ceases to have an identified entity of governmental power to exercise sovereignty over a territory.

The concern regarding state extinction due to loss of territory is indeed the 'threat' that most states of the Pacific Island have faced due to the submergence of rising sea levels (Andrea Caligiuri, 2022). Their concern, regardless of the consequence of losing the power of sovereignty, was also acquired. Nevertheless, the loss of territory will not automatically negate their sovereignty. To recall, 'control' and 'governance' are closely tied to sovereignty. A crucial factor in determining sovereignty itself includes international recognition, which is also a requirement of state formation (Malcolm Shaw, 2017). As long as it still gains recognition by other states, sovereignty can be maintained despite its territorial loss. This concept was also recognized in the case of exile governments, in which they may maintain their function as a legitimate advocate of their population's interest, diplomatic relations, and other state representative roles. Although it will not erase the sovereign rights, it is still important to note that the circumstances in which a state loses a territory may impact a traditional concept of sovereignty to be exercised limited.

The Possible Measures

Under various literature, several solutions can be the answer to mitigate the possibility of state extinction drowned under the sea. First, under the recognized general obligation of states to environmental protection, to preserve and to ensure the sustainability of the environment, states are required to take relevant actions (Derek Wong, 2013). The creation of land reclamation and artificial island above the ocean are suitable examples of this principle. Admitting that the international has not yet regulated the specific rules for this framework, the potential may impose permits under the national jurisdiction when the project takes place under the state's jurisdiction. To exercise this project, states must comply with the relevant obligation under the subject of international environmental law principles. Considering the urgency of these projects to response the submergence of territory, and the project would typically interfere with those related rights and interests above the maritime zone, legal requirements and obligations to evaluate these projects are necessary since UNCLOS as the most relevant convention that provided provisions under maritime zones has stipulated that “*artificial islands, installations, and structures do not possess the status of islands.*” Indonesia also needs to consider physical adaptation strategies that have legal implications. Land reclamation, for example, can help maintain land areas, but raises questions about the status of artificial islands under UNCLOS. Likewise, coastal protection can potentially maintain existing baselines, although it may require large investments. Indonesia must ensure that every physical adaptation strategy implemented is in line with international legal principles and can be defended in international legal forums.

Indonesia can also support the proposed new protocol for UNCLOS that specifically addresses sea level rise and its impact on maritime zones. Given the complexity of this issue, Indonesia should also consider the possibility of formal amendments to UNCLOS. While this process is complex and requires broad international consensus, it may provide the clearest legal solution. Potential amendments could include provisions for establishing maritime baselines and boundaries, new rules for maintaining maritime zones in the case of sea level rise, and special provisions for countries vulnerable to climate change. The solution involved the notably international agreements, such as the United Nations Framework Convention on Climate Change, known as Paris Agreement (UNFCCC, 9 May 1992). Since its first enforcement, it has been widely adopted by 196 states to combat the impacts of climate change and its main effects on vulnerable states (Charlotte Streck et al., 2016). Generally, it aims to preserve their habitats, promote sustainable development, and protect the people. The Paris Agreement also involves various cooperation and assistance that can be applied to help states adapt and mitigate

the effect of climate change, since facing the challenge of rising sea levels is a complex issue that requires a comprehensive approach (UNFCCC, 9 May 1992).

Therefore, gaining international border cooperation and assistance is vital to face the submergence challenges. Meanwhile, Indonesia must continue to strengthen its legal position through domestic legislation. Establishing maritime boundaries through national laws can strengthen Indonesia's claims in international forums. Indonesia also needs to develop a comprehensive national adaptation plan that includes not only physical strategies but also legal and policy responses to the challenges of climate change.

4. CONCLUSION

The issue of sovereignty over a lost territory is a nuanced matter as it requires various perspectives on whether a state is still considered a state after losing a territory, however under the writer's perspective, it is safe to assume that the loss of territory will not automatically discharge the status of "state". Especially since the requirement of 'defined territory; has always been loosely applied since it did not need a minimum size or population required, nor did it need to be continuous (James Crawford, 2006). In conclusion, Indonesia faces complex legal challenges in dealing with the impact of rising sea levels on its maritime areas. However, with a proactive and strategic approach, Indonesia can strengthen its position in international law. The combination of advocacy for the principle of baseline permanence, contribution to the development of new customary international law, implementation of adaptation strategies in line with international law, and support for a new legal framework, can help Indonesia protect its maritime interests amidst global climate change. It is important for Indonesia to continue to be actively involved in international forums and collaborate with other countries facing similar challenges to shape the evolution of international maritime law in this era of climate change.

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