



Padjadjaran Journal of International Law
International Law Departement Universitas Padjadjaran

ISSN: 2549-2152, EISSN: 2549-1296

Volume 5, Number 2, June 2021

DOI: 10.23920/pjil.v5i2.766

The Legality of Denmark's Artificial Island (Lynetteholm) in International Law of the Sea

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Abstract

The Danish parliament approved the construction of an artificial island called Lynetteholm, which aims to house 35,000 residents and protect the Port of Copenhagen from rising sea levels. Construction of Lynetteholm will take approximately 50 years, and the island will be 2.6 km² in size. Since the regulation regarding Artificial Island can only be found in the United Nations Convention on Law of the Sea 1982 (UNCLOS 1982) which is not complete regulatory support along with no other regulations that can provide specifications regarding the implementation rules for the construction of an artificial island, both provisions and prohibitions in the process of making Artificial Island. This long-term development could cause a damage towards the marine life and cause air pollution in the construction area due to heavy trucks, change in the ocean currents in the Danish and Swedish oceans due to the size of the island, and cause potential changes to the territorial sea boundaries of Denmark's EEZ. As long as the legal regulations regarding Artificial Island have not been made specifically and in detail, large-scale and long-term construction of artificial islands that cause legal problems will continue to occur in the future. Therefore, the making of special rules regarding Artificial Island has become a real urgency at this time. Denmark has an obligation to conduct a re-assess regarding problems that may arise as well as those that are contrary to UNCLOS.

Keywords: Artificial Island; Environmental Impact Assessment; International Law of the Sea; Legality; Lynetteholm

Legalitas Pulau Buatan Denmark (Lynetteholm) dalam Hukum Laut Internasional

Abstrak

Parlemen Denmark menyetujui pembangunan pulau buatan bernama Lynetteholm yang bertujuan untuk menjadi rumah dari 35.000 penduduk dan melindungi Pelabuhan Copenhagen dari kenaikan permukaan laut. Pembangunan dari Lynetteholm akan memakan waktu kurang lebih 50 tahun dan pulau tersebut akan berukuran sebesar 2,6 km². Pengaturan mengenai Artificial Island hanya dapat ditemukan dalam the United Nations Convention on the Law of the Sea 1982 (UNCLOS 1982) tanpa adanya

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dukungan regulasi yang lengkap beserta regulasi lainnya yang dapat memberikan spesifikasi mengenai aturan pelaksanaan pembangunan suatu pulau buatan, ketentuan serta larangan-larangan dalam proses pembuatan pulau buatan. Pembangunan jangka panjang tersebut akan merusak biota laut serta menimbulkan polusi udara di wilayah pembangunan akibat truk-truk besar, perubahan arus laut di lautan Denmark dan Swedia karena besarnya pulau tersebut, serta menyebabkan potensi perubahan batas laut teritorial-ZEE dari Denmark. Selama pengaturan hukum tentang pulau buatan masih belum dibuat secara khusus dan mendetail, pembangunan pulau buatan berskala luas dan waktu yang panjang akan menimbulkan problematika hukum yang terus terjadi di masa mendatang. Maka dari itu, pembuatan aturan khusus tentang pulau buatan menjadi suatu urgensi yang nyata saat ini. Denmark juga memiliki kewajiban untuk melakukan penilaian ulang terhadap beberapa permasalahan yang akan timbul serta yang bertentangan dengan UNCLOS.

Kata Kunci: Pulau Buatan; AMDAL; Hukum Laut Internasional; Legalitas; Lynetteholm

A. INTRODUCTION

With the development of technology that is growing rapidly, the creation of artificial islands which was previously impossible to be realized, becomes possible and can be happened. This was successfully proven in the 1970s when several countries that were desperate and planning to expand their lands began to make efforts to create artificial islands in their respective countries. One of these countries is the Bahamas, an archipelagic country located in Central America.³ This artificial island is made of basic materials dredged from the seabed itself. Due to its success, the developer of the artificial island plans to expand its size to 200 hectares with an agreement with the Government of the Bahamas to build eleven more artificial islands in the Bahamas.⁴

In addition to expanding the mainland, the construction of artificial islands is also believed to be one of the solutions to deal with climate change which has been a major threat to small island nations that can cause their countries to sink and to maintain the survival of their country's

civilization.⁵ This has been successfully proven by the number of artificial islands that have been successfully inhabited, such as Lau Lagoon and Solomon Island.⁶ The United Arab Emirates (UAE), through the city of Dubai, has also managed to become home to some of the largest artificial island complexes in the world, including three projects such as Palm Islands, The World, and Dubai Waterfront, which will become the largest artificial island in scale.⁷ The success of Palm Island development since 2001 has become one of the points where it is possible to make massive artificial islands.

The construction of artificial islands that happens nowadays is not only based on technological advances, but also due to human overpopulation. Overpopulation is an undesirable condition where the existing human population exceeds the actual carrying capacity of the earth.⁸ With these problems, constructing an artificial

³ Central Intelligence Agency, "Bahamas, The", *The World Factbook*, 25 Jan. 2022, <https://www.cia.gov/the-world-factbook/countries/bahamas-the/>. Accessed 2 February 2022.

⁴ Walker, Craig W, "Jurisdictional Problems Created by Artificial Island", *San Diego Law Review*, Vol. 10 No. 3, May 1973, pp. 638-663, at 639

⁵ Lister, Natasha and Muk-Pavic, Ema, "Sustainable Artificial Island Concept for the Republic of Kiribati", *Ocean Engineering*, Vol. 98, 23 March 2015, pp. 78-87, at 79.

⁶ Saunders, Imogen, "Artificial Island and Territory in International Law", *Vanderbilt Journal of Transnational Law*, Vol. 52, 2019, pp. 643-684, at 645

⁷ R. Renuka, M. Chetana, A.M Rekha and R. Soumyashri, "Artificial Islands", *International Journal of Engineering Science and Computing*, Volume 9 Issue No. 3, 2019, pp. 20282-20287, at 20282.

⁸ Conserve Energy Future, "What is Overpopulation?", *Conserve Energy Future*, <https://www.conserve-energy-future.com/causes-effects-solutions-of-overpopulation.php> Accessed 9 September 2021.

island is one of the answers to overcome the problem of overpopulation. Especially with it has been proven that it is indeed possible to build an artificial island, what are the other things that are considered for not to make an artificial island?

However, the main issue nowadays is no longer the question of the possibility of constructing the artificial island but whether the creation of the artificial island is legal based on the provisions of international law and what impact it can have on the international sea. This question is constantly being asked by the international community. Even though it is a fact that this artificial island is based on human needs, countries still cannot take policies without paying attention to the rules of international law that have been agreed upon by other countries around the world.

On June 5th 2021, the Danish Parliament approved the construction of a large Artificial Island, which is planned to be home to 35,000 citizens of Copenhagen in Denmark and it is also aimed at protecting the Port of Copenhagen from the threat of sea level rise. The artificial island is called Lynetteholm and it is planned to be connected to Copenhagen's main road via a ring road, tunnel, and metro line. The area of Lynetteholm will roughly cover about 3 square kilometers, of which construction if proceeds according to the master plan, most of the foundations of the island in the Danish capital will be installed by 2035, and a target for full completion by 2070.⁹ This project will be carried out by a public-private company named *By og Havn*, which is jointly owned by the City Government of Copenhagen and the Ministry of National Transport of Denmark which will reshape Copenhagen's coastline in its narrow

Øresund straits and its transit network.¹⁰ Lynetteholm will not only ease the housing crisis in the Danish capital, but also serve as a springboard for an ambitious rethinking of the city's infrastructure.

The creation of this artificial island is still within the territorial sea belonging to Denmark's Sovereignty, and if we take a look at Article 2 of the United Nations Convention on the Law of the Sea 1982 (UNCLOS 1982), the sovereignty of the coastal state will extend beyond its land area and inland waters.¹¹ Sovereignty over the territorial sea will be exercised in accordance with the UNCLOS 1982 and other rules based on international law. This fact raises another new question about whether the construction of Lynetteholm will not interfere with the ship routes and whether Denmark's territorial sea will expand after the construction of the artificial island of Lynetteholm.

If this island is completed, the Danish Government predicts that the construction of the artificial island will result in the availability of approximately 20,000 new job fields that will be created. It also becomes a residence for 35,000 citizens, using transportation that will be made under the sea for the metro line and a new ring road and a barrier will be formed that will protect and defend the artificial island from the threat of storm waves.¹² However, the citizen of Copenhagen is actually worried on the environmental impact that the construction of the artificial island may cause. They also argue that the Danish Parliament in making this major decision did not take into account the material to

⁹ BBC News, "Denmark Parliament Approves Giant Artificial Island Off Copenhagen", *BBC News*, 4 Jun. 2021, <https://www.bbc.com/news/world-europe-57348415>. Accessed 10 June 2021.

¹⁰ O'Sullivan, Feargus, "Copenhagen's New Artificial Island Hits Rough Seas", *Bloomberg City Lab*, 10 March 2021, <https://www.bloomberg.com/news/articles/2021-03-10/copenhagen-s-island-building-plan-faces-new-test>. Accessed 11 June 2021.

¹¹ Article 2 United Nations Convention on the Law of the Sea 1982

¹² Danish Design Review, "The if or when and the how much and why of New Islands and Tunnels Under the Sea", *Danish Design Review*, 2 Sep. 2020 <http://danishdesignreview.com/townscape/tag/Lynetteholm> Accessed 10 June 2021.

be used in advance and the environmental problems that may arise due to the distribution process of the materials by road, which can cause environmental pollution due to carbon emissions resulting from the transportation vehicle. In addition, about 80 million tons of land will be needed to be sent to the area in order to make the peninsula itself, the implementation of the plan is feared to cause damage to marine life, especially coral reefs, ecosystems and the sea water quality in the area.¹³

Given the negative impact of the Lynetteholm construction on severe environmental damage, this has led to protests from Danish environmental groups who have criticized the construction of an artificial island as large as Lynetteholm. This protest also came from Swedish authorities, considering that Sweden is a neighboring country of Denmark. They opposed the Lynetteholm project because of the risk of changing ocean currents. It is also feared that there is a risk of contamination and reduced water flow to the strait. They also said that the Baltic Sea is not in the best condition right now, and it could be worsened by this construction.¹⁴

Based on Article 192 of UNCLOS 1982 states that the state parties of the convention are obliged to protect and preserve the marine environment,¹⁵ and according to the whole Article 123 of UNCLOS 1982, it requires states bordering the closed sea to coordinate the implementation of their rights and obligations in relation to the protection and preservation of the marine environment.¹⁶ It comes to a question of

whether the Danish Parliament has really thought about the impact and conducted research first on the damage that the construction of this artificial island might cause, especially near the residential areas and above its territorial sea.

Based on the background that the author has compiled, there are several identification problems formulas that will be the main discussion in this journal, which include whether Denmark has legality to the right to build an Artificial Island Lynetteholm based on UNCLOS 1982, what problems might arise based on UNCLOS 1982 If this Artificial Island is made, what are the possible environmental impacts of the artificial island and what are the obligations of Denmark to the marine environment based on UNCLOS 1982, and is there an urgency for the international community to make a special agreement regarding Artificial Islands.

In this article, the author will firstly describe the general explanation of Artificial Islands that regulated under the International Law followed by a discussion of the legality of making Lynetteholm Artificial Island based on UNCLOS 1982. In addition, the author will describe several problems that will arise from the manufacture of Lynetteholm with several articles in UNCLOS which can have an effect on the marine environment. The discussion will end with what Denmark must do first or on its way to carrying out the construction of this Lynetteholm Artificial Island. The author will also explain the importance of making new international regulations that specifically discuss Artificial Islands, in this case starting from the definition, manufacturing procedures, prohibitions, and other provisions needed to be carried out by the International before making an Artificial Island and as much as whatever form.

¹³ BBC News, *Supra*, note 10.

¹⁴ Feargus O'Sullivan, *Supra*, note 11.

¹⁵ Article 192 of United Nations Convention on the Law of the Sea 1982 stated that: "States have the obligation to protect and preserve the marine environment"

¹⁶ Article 193 of United Nations Convention on the Law of the Sea 1982 stated that: "States have the sovereign right to exploit their natural resources pursuant to their environmental policies and in accordance with

their duty to protect and preserve the marine environment"

B. ARTIFICIAL ISLAND UNDER INTERNATIONAL LAW

Talking about artificial islands, then we must first understand the definition of the word “artificial island” itself. An island is a naturally formed land area, surrounded by water and above the water at high tide.¹⁷ The definition of Artificial is an object, material or artificial process that does not occur naturally and is created by humans, for example by using science or technology.¹⁸ An artificial island is built from soil and rock dredged from the seabed or from steel, such as an offshore oil rig. An artificial island is an object that does not form naturally, is permanently attached to the seabed and is surrounded by water with its surface above the water at all times.¹⁹ The interest of each country to create an artificial island is increasing along with technological developments and is based on human needs because of the limited land area due to the population growth.

The practice of artificial islands has been done since centuries. The Netherlands has been carrying out reclamation activities since the 17th century.²⁰ In that century, Dutch engineers were also involved in assisting French engineers in the process of making the artificial island of Ile Saint-Louis on the Seine River.²¹ In the 19th century, an artificial island was built by the Japanese called the Tokyo Bay Fortress, where the island has the function of guarding the entrance to Tokyo Bay and guarding Tokyo against sea attacks, as the name implies

“Fortress”.²² In the late 19th century, three additional artificial islands were built near the entrance to Tokyo Bay, which has water depths of 30m to 40m. Since then, the construction of artificial islands has become increasingly popular. And the artificial island development area is not only within the scope of the territorial sea, but it also appears in open waters. These developments since the 17th century have provided clear evidence that humans actually have the capability to build an island with the help of human hands and technology.

The UNCLOS 1982 already gives a distinction between islands and artificial islands, but the meaning of the term artificial island is not defined with certainty in the Convention, and there is not even an official meaning that is agreed upon by states and the experts. An island is defined as “a naturally formed land area, surrounded by water, which is above the water at high tide.”²³ In Chapter VIII of UNCLOS 1982, it does not provide an explanation of the specific meaning of Artificial Island. In fact, the chapter regulates all matters relating to the regime of the islands.²⁴ This is one of the weaknesses of the UNCLOS 1982 by not defining exactly what artificial islands are, even though the issue of the construction of artificial islands existed before UNCLOS 1982 was formed and finalized.²⁵

An artificial island is basically divided into two types, which include single-purpose islands and multipurpose islands. Single purpose islands are artificial islands that only have one function, for example, artificial islands that facilitate oil

¹⁷ Article 121 United Nations Convention on the Law of the Sea 1982 stated that: “An Island is a naturally formed area of land, surrounded by water which is above water at high tide”

¹⁸ Collins Dictionary, “Artificial Islands”, *Collins*, <https://www.collinsdictionary.com/dictionary/english/artificial-island> Accessed 9 September 2021.

¹⁹ Article 10 of the Convention on the Territorial Sea and the Contiguous Zone

²⁰ Patrick J.F. Hannon & J. Wayne LeBlanc, “Artificial Offshore Islands”, A Paper Presented the Mining Society of Nova Scotia Fall Meeting, Sydney, 1987, p.7

²¹ Ibid.

²² Ibid.

²³ Article 121 United Nations Convention on the Law of the Sea 1982

²⁴ Chapter VIII United Nations Convention on the Law of the Sea 1982

²⁵ Chen, Yi-Hsuan, “South China Sea Tension on Fire: China’s Recent Moves on Building Artificial Islands in Troubled Waters and Their Implications on Maritime Law”, *Maritime Safety and Security Law Journal*, Vol. 1, Issue 1, 26 August 2015, pp. 1-15, at 3.

exploration in the sea.²⁶ And for multipurpose islands, it is an islands that build for several varied functions, for example, artificial islands created as urban expansion areas that not only include housing but can also contain recreational facilities or energy-generating resources. For its size, single-purpose islands will be smaller than multipurpose islands. Artificial islands are also frequently used as bases for industrial operations, including metallurgical works, airport runway expansion, desalinization plants, oil exploration and production platforms for coal mine ventilation structures.²⁷

In building an artificial island, there are several aspects that need to be considered geographically and legally, which including: water depth wave height range, climate (50 years maximum storm), ice condition, tidal range, sea currents, foundation conditions, earthquake risk, shipping lanes, the existence of pipelines and cables, fisheries consideration, environmental consideration and most importantly the legal aspects, which currently, the only specific regulation that regulates the artificial island is only Article 60 of UNCLOS 1982, and it is very limited and not complete.²⁸ Every aspect that we have mentioned are interconnected with each other and can be identified as a stage that needs to be considered by states who plan to build an artificial island. For example, environmental damage will not occur if the condition of the foundation of the artificial island is in accordance with the depth of the sea and is strong in resisting the existing sea currents. The choice of the location for constructing the artificial island will also significantly affect the passage of ships and the migration of marine fish. The location also plays an important role in ensuring the legality of the construction of

an artificial island. If the location that has been determined does not block the pipelines and cables under the sea, then it will not trigger the problems that have been regulated by UNCLOS 1982, because basically every country has the right to build pipelines and cables under the sea even outside its territory territorial sea, as long as it complies with the rules contained in UNCLOS 1982.

C. THE LEGALITY OF LYNETTEHOLM'S ARTIFICIAL ISLAND BASED ON UNCLOS 1982

Every state has the right to determine the area of its territorial sea to a limit that does not exceed 12 nautical miles measured from the baseline that has been determined by UNCLOS 1982.²⁹ In the territorial sea, a country has its sovereign rights, which means the use of natural resources in the sea area, its territory, including building something within the territorial sea of a country, is an absolute right of the state that has sovereignty over its territorial area. UNCLOS 1982 regulates a binding regime on the law of the sea, including maritime zones and island status as well as substantive provisions reflected in customary international law. UNCLOS 1982 classifies two differences in terms of artificial islands, first between islands and artificial islands and second between artificial islands and installations.³⁰ Adding the information, the regulation regarding Artificial Island or the official Convention specifically for Artificial Island still does not exist until now. In fact, artificial islands have become one of the options for countries as a way out of the problem of Climate Change. Therefore, there should be special arrangements regarding artificial islands.

Phillipe Sands in his argument presented at the hearing before the

²⁶ Charlier, R.H. and De Meyer, C.P., "An Environmental Purpose Artificial Island off Belgium" *International Journal of Environmental Studies*, Vol. 40, Issue 4, 1992, pp. 249-265, at 263.

²⁷ Patrick J.F. Hannon, *Supra*, note 21, at 8.

²⁸ *Ibid*, at 16

²⁹ Article 3 United Nations Convention on the Law of the Sea 1982

³⁰ Saunders, Imogen, *Supra*, note 7, at 647.

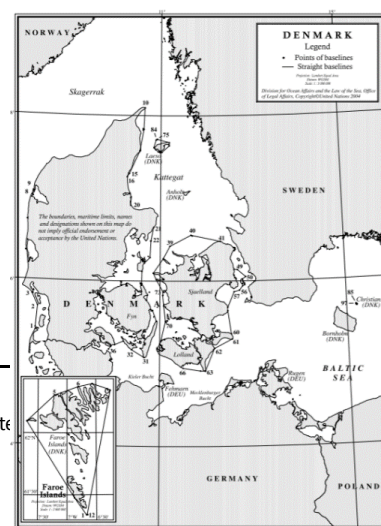
arbitral tribunal at the South China Arbitration stated that: “Elevated tides cannot make ‘rocks’ or ‘islands’ simply because they have been subject to some degree of human manipulation. It’s the same where a ‘rock’ cannot be upgraded to an ‘island’ with human intervention. However, human manipulation around these features can turn them into an artificial island”.³¹ Oude Elferink also stated that an artificial island is an area of land that is above water at high tide that does not form naturally.³² In other words, the creation of the island in an unnatural way has so far been interpreted as being deliberately man-made. It is not uncommon for countries to make artificial islands at the demands of an increasingly dense community, because there is no longer a place for them, but they still have an extensive territorial sea and a fairly wide Exclusive Economic Zone (EEZ), therefore when a country feels able to create an artificial island, then this is one way out to increase the area and overcome the problem of rising sea levels due to the impact of climate change.

The construction of artificial islands is not specifically regulated in UNCLOS 1982. In contrast to installations and structures built at sea, which have been regulated in Articles 60(1)(b) and (c) UNCLOS 1982.³³ The author considers that the need for additional regulations regarding the provisions for the construction of artificial islands is critical, especially what materials may be used to build artificial islands, is quite crucial. The components used in the development process can damage the source of marine life or even damage the quality of the sea water itself. At the same time, although the coastal state has the right to build artificial islands, the coastal

state also has an obligation to give warnings to other state parties in the vicinity of the country about the planned existence of such artificial islands and must ensure the safety of navigation and take into account any applicable international standards. generally accepted by a competent international organization, namely the International Maritime Organization (IMO).³⁴ The absence of precise specifications creates confusion as what are the boundaries of countries to be said to be legal to build an Artificial Island without violating other articles in UNCLOS 1982, especially those related to environmental conservation.

Regarding the installation of artificial islands, there is a very clear and visible delineation between, on the one hand, the types of structures made of non-natural materials which are not attached to the seabed or installed through artificial means, and on the other hand the features created by the process. Reclamation around pre-existing features, such as on submerged reefs or low-tide elevation (LTE). The first category can be described as “permanent base installations” and is best understood as artificial installations. In contrast, the second category as “seabed heights that form artificial islands that have an important island character” is the last category of artificial islands. Article 11 of UNCLOS 1982 explains that offshore installations and artificial islands are not considered permanent port work.³⁵

Regarding the question of whether artificial islands will change



³¹ Saunders, Imogen, *Supra*, note 21, at 648.

³² Alex G. Oude Elferink, “Artificial Islands, Installations and Structures”, *Max Planck Encyclopedia of Public International Law*, 2013

³³ Tanaka, Yoshifumi, *The International Law of the Sea*, Third Edition, Cambridge: Cambridge University Press, 2019, at 155.

³⁴ *Ibid*, at 156.

³⁵ Article 11 United Nations Convention on the Law of the Sea 1982.

the maritime zone belonging to a country, especially the area of its territorial sea, the author will try to answer it. It is necessary to know in advance how to calculate Denmark's actual sea baseline, whether they are using a Normal Baseline or Straight Baselines approach. Based on the data from Limit in the Seas No. 19 in 1978, Denmark used Straight Baselines approach in order to determine the delimitation of its territorial sea and maritime zones.³⁶ This fact is reinforced by the fact that on August 15, 2003, the accredited Head of Mission for Denmark was informed that Executive Order No. 680, which was established on July 18, 2003, has come into effect effectively by amending Executive Order No. 242 which has been in force since 21 April 1999. This Executive Order indicates the coordinates of the baselines and the boundaries of the Danish territorial sea. These new coordinates will represent a technical improvement that reflects the precise positioning of the relevant geographical points of Denmark's maritime boundary.³⁷

Based on Article 60(8) of UNCLOS 1982, the artificial islands do not have their own territorial sea and their presence does not affect the delimitation of the territorial sea, exclusive economic zone or continental shelf.³⁸ This means that UNCLOS 1982 does not provide the capacity for an artificial island to produce its own maritime zone. The restrictions imposed on artificial islands in UNCLOS 1982 were not because the islands could not become a territory but because countries were concerned

about the rights of maritime zones that could flow from the area. Because, if an artificial island can produce its own maritime zone, then the distinction from a 'naturally formed' restrictive clause is unnecessary. UNCLOS 1982 does not limit the capacity of the artificial island to become a land area but only cancels the capacity of the artificial island to become an island as regulated in Article 121 of UNCLOS 1982 which can produce maritime zones.³⁹

In this article, the author would like to take an example based on the Singaporean practice. Singapore is one of the countries that has several times made an artificial island by reclamation method, including Sentosa, Seringat, and Lazarus. The creation of this artificial island was carried out for the reason to expand the land area where the Singaporeans live, tourism area, and also as one of the considerations for sustainability interests in dealing with future problems related to the sea level rise.⁴⁰

The legality status of the reclamation that carried out by the Singapore will be considered legal according to the law if it is based on Article 60 paragraph (1) of UNCLOS which "in the exclusive economic zone, every coastal state has an exclusive right to build and endorse and set the operation and utilization of artificial islands, installations and buildings for their needs as mentioned in Article 56, as well as other economic purposes such as installations and buildings which may disturb the rights of coastal state in that zone".⁴¹ This article proves that it is legal for a country to build an artificial island. However, the status of the reclamation made by Singapore will be considered illegal if the purpose of making the reclamation is to shift the boundaries of the territorial sea. It is because, according to the Article 11 of UNCLOS 1982,

³⁶ US Department of State Bureau of Intelligence and Research, "Limits in the Seas, Straight Baselines: Denmark", *US Department of State*, No. 19 Revised, 21 Dec 1978, <https://www.state.gov/wp-content/uploads/2019/10/LIS-19.pdf>, Accessed 3 February 2022

³⁷ United Nations, "Bulletin No. 53 Law of the Sea, National Legislation, Denmark" Division for Ocean Affairs and the Law of the Sea Office of Legal Affairs, United Nations, 2004, available at: https://www.marinerregions.org/documents/bulletin53_e.pdf

³⁸ Article 60 Paragraph 8 United Nations Convention on the Law of the 1982.

³⁹ Saunders, Imogen, *Supra*, note 21, at 651.

⁴⁰ *Ibid*

⁴¹ Article 60 Paragraph 1 United Nations Convention on the Law of the Sea 1982.

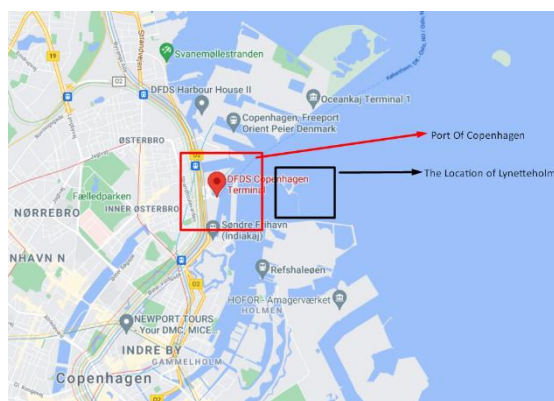
it is stated that *“for the purpose of defining the borders of maritime territory, the installation of the outermost permanent ports as the integral part of port system is seen as a part of a coast. Thus, the installation of offshore and artificial islands will not be seen as the installation of permanent ports”*.⁴² This is also reaffirmed in the Article 60 paragraph (8) that Artificial Islands do not have a status like an Island which has its own maritime territory, and the existence of an Artificial Island will not affect the maritime boundaries of a country.⁴³

Singapore also makes a Concept Plan which is reviewed every 10 years, the plan consists of strategic land use and transportation plans to guide their development in 40-50 years ahead. In addition, Singapore also has a Master Plan which is reviewed every 5 years which consists of a land use plan that will guide Singapore’s development in the medium term for the next 10-15 years. What has been done by the Government of Singapore includes implementing the provisions stipulated in Article 60 Paragraph 3 of UNCLOS.⁴⁴ Singapore gives notice every time it wants to build an artificial island, at least through the international mass media. And with the making of the concept plan includes the maintenance of the artificial island itself.

Thus, based on Article 3 of UNCLOS 1982, Denmark has the right to create artificial islands within its territory.⁴⁵ However, even though there is a general right under international law for a country to build an artificial island, and given that this artificial island is not recognized as an ‘island’, the construction of an artificial island will not increase the area of the

maritime zone of Denmark. Denmark will be the same as before the artificial island. And because Denmark is a party to UNCLOS 1982, the construction of artificial islands must pay attention to the provisions contained in Article 60 of UNCLOS 1982 concerning Artificial Islands, Installations and Structures in the exclusive economic zone.⁴⁶

D. PROBLEMS THAT MAY ARISE FROM THE DEVELOPMENT OF LYNETTEHOLM’S ARTIFICIAL ISLAND BASED ON UNCLOS 1982



Lynetteholm will be built within Denmark’s territorial sea, which means Denmark has sovereign rights to build the artificial island. However, this does not mean that the Government of Denmark has the freedom to directly build the island without considering about the possible consequences of long-term development because there are several rules that Denmark needs to respect, especially those relating to international law. There are limitations regulated in international law against coastal countries, namely: the right of innocent passage by foreign ships through the territorial sea.⁴⁷ The coastal State shall not impede the fulfilment of this right to vessels flagged by other States parties, including in the construction of artificial islands or in the installation of installations carried out in the water. This is because navigational issues must be

⁴² Article 11 United Nations Convention on the Law of the Sea 1982.

⁴³ Article 60 Paragraph 8 United Nations Convention on the Law of the Sea 1982.

⁴⁴ See the Provision Article 60 Paragraph 3 United Nations Convention on the Law of the Sea 1982.

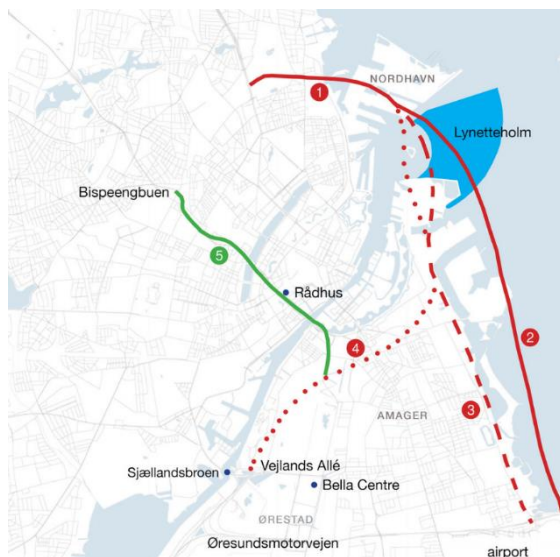
⁴⁵ See the Provision Article 3 United Nations Convention on the Law of the Sea 1982.

⁴⁶ See the Provision Article 60 United Nations Convention on the Law of the Sea 1982.

⁴⁷ Article 17 United Nations Convention on the Law of the Sea 1982.

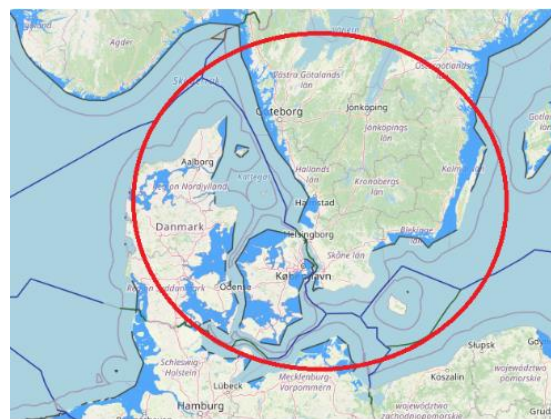
taken seriously. The construction of an artificial island is prohibited if it disturbs the right of innocent passage because it will have consequences that disrupt the navigation of the ship. As seen in the image below, Lynetteholm will be built right on the red square or given the blue colour as illustrated. If we look closely, we can clearly see that the Port of Copenhagen will be blocked due to the construction of the artificial island of Lynetteholm.

With the construction of Lynetteholm, it is feared that the passage of ships to pass or ships that want to stop into the Harbour will be blocked. It is need to consider that according to Article 18 of UNCLOS 1982, the passage referred to in the right of innocent passage includes stopping and anchoring related to ordinary navigation or



force majeure.⁴⁸ Even if the construction of Lynetteholm turns out to be blocking the passage of ships, especially access to enter and dock at the Port of Copenhagen, it is prohibited by international law.⁴⁹ This is because the route will be used as an entry and exit route for ships not only belonging to Denmark but also ships with foreign flags. Article 60 (7) of UNCLOS 1982

explains that coastal states may not establish artificial islands and safety zones around them if 'where there may be interference with the use of sea lanes recognized as essential to international navigation'.⁵⁰ Therefore, it is important to research and study further whether the development of Lynetteholm in that position in the future can block the ship's path to its journey to the Port of Copenhagen and hinder international navigation routes or not.



WORLD MARITIME BOUNDARIES ATLAS

maritime boundaries between Denmark and Sweden

The Denmark government also has an obligation to carry out further checks and studies on whether the development of the island could potentially pose a dangerous threat to the sovereignty of other countries, especially Sweden, considering that geographically, Denmark is bordered by Sweden which is bordered by waters along the Øresund and Kattegat straits. According to Article 123 of UNCLOS 1982, it obliges countries bordering with the closed sea to coordinate the implementation of their rights and obligations in relation to the environmental protection and preservation.⁵¹ Even though the development is carried out in Denmark's territorial waters, the coastal state still has

⁴⁸ Article 18 United Nations Convention on the Law of the Sea 1982.

⁴⁹ Soons, Alfred H. A., *Artificial Islands and Installations in International Law*, Kingston: University of Rhode Islands, 1974, at 5.

⁵⁰ Article 60 Paragraph 7 United Nations Convention on the Law of the Sea 1982.

⁵¹ Article 123 United Nations Convention on the Law of the Sea 1982.

the obligation to communicate and pay attention to the decisions of other countries before doing something that is likely to have an impact on other countries. And if the effect turns out to be unavoidable, then the coastal state has an obligation to negotiate with other countries that have been harmed by the effect regarding what losses have occurred and whether the country can accept the losses by resolving the problem of compensation incurred together with the other states.⁵² Since Denmark is geographically bordered by Sweden, Denmark must first examine the impact of the construction of artificial islands that will be carried out for approximately 40 years on the Baltic Sea and whether this impact can cause potential harm especially in the condition of the marine environment around the territorial area of another country, such as Sweden.

E. ENVIRONMENTAL IMPACT FROM THE DEVELOPMENT OF LYNETTEHOLM'S ARTIFICIAL ISLAND

Based on Article 192 UNCLOS 1982, states have an obligation to protect and preserve the marine environment.⁵³ Also, according to the Article 194 of UNCLOS 1982, each State shall take individually or collectively as appropriate to take all necessary measures to prevent, reduce and control pollution of the marine environment from any source, using the objectives and best practicable means at their disposal and according to their abilities.⁵⁴ States should also take all necessary measures to ensure that all activities under their jurisdiction or control are carried out in such a way as not to cause pollution damage arising from incidents or activities under their

jurisdiction or control and do not spread outside the territory of the country's sovereignty and territory. States parties must take action when pollution occurs as a result of: pollution from installations and equipment used in the exploration or exploitation of the natural resources of the seabed and subsoil as well as from installations and other equipment operating in the marine environment. It should also include all necessary measures to protect and conserve rare or fragile ecosystems, habitats of depleted, threatened, or endangered species, and other forms of marine life⁵⁵.

Therefore, Denmark must consider and calculate the possibility of whether the construction of the artificial island, especially in the procurement of materials used as foundations in the sea, could have a harmful impact on the preservation of the marine environment or not. The construction of the tunnel that will be made as a means of connecting transportation between Copenhagen and Lynetteholm must also be considered, including risk contamination, reduction of water flow, and potential effects of future harbor tunnel. And it is worth considering whether the construction of the artificial island is built on a coral reef or not.

In addition, the Baltic Sea is home to several marine animals that are almost extinct or protected, including: Greenland Shark, Maraene Whitefish, Porbeagle and others.⁵⁶ Where there is the potential that the construction of the artificial island can cause damage to the marine ecosystem. If the Danish government does not research and apply the precautionary principle when designing the development concept, both in terms of materials, how to install installations and others, these fears may occur. Therefore, it is crucial for the Danish

⁵² Article 235 Paragraph 2 and Paragraph 3 United Nations Convention on the Law of the Sea 1982.

⁵³ Article 192 United Nations Convention on the Law of the Sea 1982.

⁵⁴ Article 194 United Nations Convention on the Law of the Sea 1982.

⁵⁵ Ibid

⁵⁶ Endangered Species Search by Area Selection, available at <http://www.earthse ndangered.com/search-regions3.asp?mp=&search=1&sgroup=allgroups&ID=54>
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government not to take rash actions and make every effort so that living creatures in the sea are not polluted and potentially affected by the construction of the artificial island.

And since Denmark has become a State Party of the UNCLOS 1982, it is an obligation for Denmark to take strategic steps in the creation of Artificial Islands to prevent, reduce and control the pollution that may be caused and take some actions to protect and conserve rare or fragile ecosystems and habitats, threatened or endangered species.⁵⁷ However, Denmark's action in making this rash decision does not seem like the first time, especially in terms of its interest in protecting the marine environment, including endangered species. At the time of the 37th Helsinki Commission (HELCOM) which was a meeting for countries to agree on plans to protect and rebuild the most threatened species of the Baltic Sea and Kattegat, Denmark was the only cause that effectively blocked the protection of 69 endangered species in the area. Denmark is declared environmentally unknowable, and the result of one country not caring about the environment will cause lasting damage far beyond its own waters. Denmark refuses to participate in scientific assessments of threatened species and fails to support initial conservation. Based on The Red List, of the 1750 species and sub-species evaluated (covering all marine mammals, fish, birds, macrophytes/water plants, and benthic invertebrates), there are 69 species identified as threatened with extinction, as well as 3 that are already regionally extinct, namely: Sturgeon Atlantic America, Common Skate and Tern-billed Seagull. All three species became extinct due to human activities, and Denmark became one of the countries that allowed this to happen.⁵⁸ This is a

compelling reason why the development of Lynetteholm needs to be reviewed from an environmental impact perspective.

Although UNCLOS 1982 gave the coastal state the right to use its sea, especially in the territorial zone, EEZ, and continental shelf, the coastal state still has to pay attention to several things, including the interest in preserving and protect the marine environment. As stipulated in Article 208 of UNCLOS 1982, coastal states must establish laws and regulations to prevent, reduce and control pollution of the marine environment arising from or in connection with seabed activities subject to their jurisdiction and from artificial islands.⁵⁹ Installations and structures under the jurisdiction of the coastal State must also comply with the provisions of Articles 60 and 80 of UNCLOS 1982. Such laws and regulations shall not be less effective than the international rules, standards and practices, and procedures recommended under Article 208(3) of UNCLOS. 1982. And up to the time this journal was written, the authors have not found any laws that effectively accommodate the mandate of international law established by the Danish Government.

There is some potential for environmental damage if the construction of Lynetteholm goes ahead as approved by the Danish parliament. Reported by BBC News, if construction proceeds according to the original plan, most of the foundations of the artificial island should be ready by 2035. The project will be fully completed by 2070⁶⁰. The project has been planned since 2018 by Prime Minister Lars Løkke Rasmussen and continued by Lord Mayor of Copenhagen, Frank Jensen is

the World's Oceans, 14 Mar. 2016, <https://oceana.org/press-center/press-releases/protection-69-threatened-species-baltic-sea-blocked-denmark>. Accessed 25 June 2021.

⁵⁷ Article 194 Paragraph 5 United Nations Convention on the Law of the Sea 1982.

⁵⁸ Baxter, Anna, "Protection of 69 threatened species in the Baltic Sea blocked by Denmark", *Oceana: Protecting*

⁵⁹ Article 208 United Nations Convention on the Law of the Sea 1982.

⁶⁰ BBC News, "Denmark Parliament Approves Giant Artificial Island Off Copenhagen," *BBC News*, 4 Jun. 2021, Accessed 10 June 2021.

scheduled to start at the end of 2021.⁶¹ If we could imagine it, this mega-project will last for approximately 50 years, which means there will be a lot of project transportation that will pass along the access road to the project site by transporting soil from one place to another, which means carbon dioxide produced from the project vehicles will increase drastically. It is not only the situation at sea that will be affected, but also the condition of oxygen for the community which is deteriorating due to the traffic of the project vehicles. However, the focus of this article is more on its impact on the ocean.

Based on the author's findings, the Lynetteholm artificial island development project is having a difficulty issues in environment subject by being sued to the European Court on the grounds that based on the Environmental Impact Assessment (EIA) or as it is well known in Indonesia as *Analisis Mengenai Dampak Lingkungan* (AMDAL). It has been found that there are impacts that can be caused by the construction of the artificial island, which was concluded to have negative impact towards the environment⁶². The construction of Lynetteholm has violated some EU legislation. Lynetteholm was found to have violated the Directive 2011/92/EU and Directive 2014/52/EU.⁶³

The Danish government has taken into account the potential environmental impacts, but unfortunately the Danish Government has only analysed some

projects such as demarcation and construction of the outer boundaries of the island. But meanwhile, the infrastructure work such as the construction of new port tunnels, bypasses, subway tracks for Lynetteholm and housing developments have not yet carried out an EIA that may occur. The EIA should conduct an examination and take an assessment of the overall environmental effects that are likely to be caused. On this basis, the action of the Danish Parliament which only takes into account the environmental impacts of a part of the project as a whole is considered contrary to Directive 2011/92/EU (New Directive 2014/52/EU), which requires that the assessment of the project and its cumulative effect be carried out in its entirety.

The European Court of Justice also stated that a full assessment of a project could not be avoided by dividing the project into smaller projects when reports were made knowingly that there were secondary or additional projects. The Danish government when conducting the assessment only referred to the project as a single entity, wherein a number of additional works were omitted from the Report they made to the EIA. The submitted EIA report contains only part of the overall project, including the island border development and not the work related to the East Ringvej and Metro Infrastructure Project for Lynetteholm.⁶⁴

In addition, the development of Lynetteholm may be hindered by several conventions and protocols, namely the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) and the Strategic Environmental Assessment (SEA) Protocol. Both deal with transboundary impacts on the environment in neighbouring countries. The Espoo Convention requires parties to carry out environmental assessments of installations that are suspected of causing

⁶¹ Bloomberg, By&Havn, The Daily Scandinavian, "Copenhagen's Lynetteholm Island Plan", *Graphic News*, 11 Mar. 2021, <https://www.graphicnews.com/en/pages/41121/dina-marca-projeto-de-ilha-artificial-de-lynetteholm>, Accessed 3 February 2022.

⁶² Amalie Emanuel Mork, "City of the Anthropocene. A Case Study of Lynetteholm, Copenhagen", Urban Studies Master's Thesis, Malmo University, September 2021, available at <https://www.diva-portal.org/smash/get/diva2:1567354/FULLTEXT02.pdf>

⁶³ European Parliament, "Notice to Members: Petition No. 0190/2021 and Petition No. 0511/2021", Committee on Petitions, September 21st 2021, available at https://www.europarl.europa.eu/doceo/document/PE-TI-CM-697810_EN.pdf

⁶⁴ Ibid

transboundary environmental impacts, therefore in this case Denmark must invite the countries in the Baltic Sea to consult on the construction of this massive artificial island. Because, until now there is still no certainty about what impact the Lynetteholm development will have, especially development that will not fully develop until 2070. The potential environmental damage that will be caused could damage the Baltic sea ecosystem and also change the direction of ocean currents, and other pollutants are not only water pollution, but also air pollution due to carbon dioxide generated from project work including transportation.

Several questions arise as to why it is deemed important to pay attention to the agreement from other countries regarding the construction of the artificial island of Lynetteholm, even though the manufacture of the artificial island is in the territorial zone belonging to Denmark. The answer according to the author is because the sea consists of water where if it is polluted then logically it will be easier to spread. And indeed every country must respect the use of the world's oceans. If there is a spread, then the seawater will not only harm Denmark's marine environment but will spread to countries around the Baltic Sea, one of which is Sweden. The sea is also a home for living creatures including fish, corals, and other marine biota resources. There are a lot of marine natural resources which, if damaged, cannot be renewed or referred to as non-renewable resources. Coral reefs are one of them, which if damaged will take millions of years to recover. If there is pollution that causes instability in the pH of seawater, this will threaten the natural resources on the seabed.

F. WHAT DENMARK NEEDS TO DO IN MAKING AN ARTIFICIAL ISLAND

The construction of artificial islands can help the community in dealing with climate

change problems, especially facing the sea level rise. Since it is undeniable that climate change is a very big problem and cannot be avoided. The ILA Committee on International Law and Sea Level Rise also explained that indeed losing the territorial land area would result in the loss of a lot of people's residences. Dubai made an artificial island on a large scale in 2001 with its Palm Island, therefore the production of Lynetteholm with technology in 2021 may be made even better and eco-friendly, and climate-friendly. And the construction of Lynetteholm was intended to protect the Port of Copenhagen from rising sea levels and storms from the Baltic Sea. Therefore, in order to build an artificial island, the Danish Government is required to:

1. Conducting further environmental assessments based on the Espoo Convention on installations that will be carried out at sea, so that people and other countries in the Baltic Sea know the impacts that will be caused by the construction of this artificial island;
2. Conducting further negotiations with countries in the Baltic Sea as well as requesting permission regarding the legality of this development;
3. Ensure that the construction of Lynetteholm will not interfere with ship navigation and access to the Port of Copenhagen;
4. Ensure that the materials used for the construction of artificial islands will not damage the marine biota environment;
5. Ensure that the location of the artificial island is not a protected coral reef and that the island will not disturb the ecosystem of marine life, including protected marine animals and plants;
6. Ensure that there will be no water contamination and make a water drainage system in such a way that it will not hinder the flow of

seawater into the strait or vice versa;

7. Using electric trucks and climate-friendly building tools as a mode of transportation that brings the materials and tools needed to build artificial islands. Electric trucks will eliminate CO₂ emissions and reduce noise;
8. Creating a National Law related to the prevention of marine pollution, especially about the construction of this artificial island, because this development will be long term, it is deemed important to have its own regulations;
9. Comply with the international law, especially UNCLOS 1982 and any other international law instruments;
10. Responsible for any possible damage that occurs, based on the International Law that governs it;
11. Ensure that when the artificial island has been completed, the artificial island remains under the control of the Danish Government and the Danish Government bears all responsibility because Lynetteholm will later become the controlling neighboring sea.

G. THE URGENCY FOR THE ESTABLISHMENT OF A SPECIAL INTERNATIONAL PROVISION REGARDING THE ARTIFICIAL ISLAND

To date, the author believes that the regulations regarding artificial islands are still lacking, and there are still many legal voids in them. This phenomenon happens due to international legal instruments that govern artificial islands, and those recognized by the international community are only contained in UNCLOS 1982 and there is no amendment until nowadays.

In fact, since 1977 Nikos Papadakis has suggested that the best way to solve the problem of Artificial Islands is through the

creation of a special Convention⁶⁵. Because in reality, international law does not see the territorial status of an artificial island as important, especially when it comes to the area of the island to be created. Often the artificial islands created will be much larger than the naturally formed islands owned by a country. Although in the end, the territorial area of a country will not change when an artificial island is created within its territorial sea zone, other problems will arise that cannot be answered by available international regulations.

Along with the development of technology, Malcolm Shaw explained that the current territorial concept would eventually evolve⁶⁶. This is in line with the manufacture of artificial islands, where the manufacture of artificial islands results from climate change or technological advances. It is time that we reach a reality that requires international law to follow developments that have occurred.

This will be in line with the formation of new territorial areas, so the international community must immediately think about what laws will apply to these new areas which are formed unnaturally, in line with Mochtar Kusumaatmadja's Theory of "*Hukum Pembangunan*" (Development Law), where the law should be a means of community renewal and is necessary for a development that is currently happening, namely the development of the times.⁶⁷ If not, then the legal function will not be fulfilled properly, and every country that wants to create an Artificial Island, including Denmark in the future, will always escape the regulations that should be regulated by international law.

⁶⁵ Nikos Papadakis, "Artificial Island in International Law", *Maritime Study*, 1975, p.33-39

⁶⁶ Malcolm Shaw, "International Law", Sixth Edition, Cambridge: University Press, 2008, p. 487-489

⁶⁷ Kusumaatmadja, Mochtar, *Konsep-Konsep Hukum dalam Pembangunan (Kumpulan Karya Tulis)*, Bandung: Alumnus, 2006, at 14.

From this research, the author would like to share suggestions to the National Entities, including United Nations, to create an additional regulation on Artificial Island, by initiating an amendment inside the UNCLOS 1982 itself based on Article 312 to Article 316 of the UNCLOS 1982 which regulate the amendments method of the convention or initiate a new convention which specifically regulating the development of the artificial island. And in order to give legal certainty to answer the issues on an artificial island, we would like to suggest what kind of provisions that has to contain inside the convention, which at least:

1. General Provision in which it can be found about the definition of an artificial island to provide limitation and legal certainty to the elements and the nature of the artificial island itself.
2. Emphasizing the Legal Status of Artificial Islands that are built on the territorial sea waters, contiguous zones, and EEZ.
3. The conditions that must be considered when building an Artificial Island, including to ensure several aspects other than the law, such as environmental and sustainability aspects.
4. The procedure for constructing an Artificial Island, including considering whether to carry out construction, requires permission from the United Nations, neighboring countries, or state parties to the international agreement that specifically regulates artificial islands.
5. The definitions that will appear related to the construction of an Artificial Island, including the materials used when building the Artificial Island.
6. Limitations for countries who would like to build Artificial Islands with particularly clear and concrete

provisions/objectives, for example, Artificial Island development is only allowed for countries that have an urgency to increase their territory due to population growth, but on the condition that they must pay attention to their environmental impacts and have sufficient funds so that the project will not stall in the middle of the project or create an Artificial Island to prevent sea level rise impact towards their territory.

7. The jurisdiction that will apply towards the Artificial Island.
8. Regulations on dispute resolution that may arise from the construction of artificial islands.
9. Regulations on sanction or fine if at any time the impact of the construction of the Artificial Island is detrimental to neighboring countries or international waters.
10. Reporting procedures if any states would like to create an Artificial Island, including the obligation to carry out an overall EIA and ensure ongoing maintenance.

H. CONCLUSION

In conclusion, Denmark has the legality under Article 3 of UNCLOS 1982 to build artificial islands within its territorial sea, and the development of the Lynetteholm will not affect the maritime border of Denmark. The problems that may arise from the construction of this artificial island are related to shipping navigation routes, and pollution of the marine environment that can impact countries in the Baltic Sea including threatening the ecosystem that appears under di Baltic sea and changes in ocean currents. Denmark is obliged to re-assess some of the environmental impacts that may result from the construction of this artificial island and comply with applicable international law. And since special arrangements regarding the construction

of artificial islands have not been specifically regulated, Denmark will refer to the 1982 UNCLOS and bilateral agreements or other protocols that regulate environmental conservation and the obligation to protect marine life. The Danish Government also has to re-analyze the EIA, and compulsory to do the analysis with its entirety. In the end, the questions that are always asked about Artificial Islands must be answered through a special codified International Agreement regarding Artificial Islands or through the amendment of the UNCLOS 1982 itself, since the phenomenon of development in technologies, the increasing number of people on the earth and the occurrence of climate change, has forcing us to immediately initiate an additional codified regulation completely.

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