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EIA in the transboundary context of the Arctic Ocean

A critical approach on marine petroleum development

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Foreword

Gradual depletion of worldwide petroleum deposits has made the pristine and rich in oil and gas Arctic Marine Region particularly attractive. Petroleum companies have been launching extensive exploration into seabed resources. The Thesis expounds the extent of the duty of States to conduct a transboundary environmental impact assessment (TEIA) prior to offshore hydrocarbon activity in the Arctic Ocean as part of the customary law principle of no harm with particular emphasis on the relevant provisions of the Espoo Convention. The paper outlines the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) and its application in the Arctic marine region, examining its effectiveness and weaknesses in the comparative light of alternative frameworks, such as the guidelines of the Arctic Council,¹ the Convention on the Law of the Sea, and the Nordic Environmental Protection Convention. Finally, the author make a preliminary analysis of the consequences of a TEIA procedure.

¹ Guidelines for Environmental Impact Assessment (EIA) in the Arctic, Arctic Environment Protection Strategy, Sustainable Development and Utilization, Finnish Ministry of the Environment, Finland 1997.

Abbreviations

| | |
|--------|---|
| EIA | ENVIRONMENTAL IMPACT ASSESSMENT |
| ILC | INTERNATIONAL LAW COMMISSION |
| NEPC | NORDIC ENVIRONMENTAL PROTECTION CONVENTION |
| UNCLOS | UNITED STATES CONVENTION ON THE LAW OF THE SEAS |
| SEIA | STRATEGIC ENVIRONMENTAL IMPACT ASSESSMENT |
| TEIA T | TRANSBOUNDARY ENVIRONMENTAL IMPACT ASSESSMENT |

CHAPTER 1. INTRODUCTION

1.1. Background

The Exxon Valdez oil spill accident in Alaska in 1989, where more than 41 million litres of crude oil were discharged into the freezing Arctic waters, inflicted harmful impacts on the territories of several Arctic States; it, thus, demonstrated how crucial is the need to undertake an environmental assessment of impacts (EIA), prior to oil and gas operations, especially in the pristine and extremely sensitive Arctic Ocean.² Even today, 32 years later, across the neighboring Arctic countries, hundreds of miles away from the U.S. Arctic waters where the accident originally occurred, lingering oil clumps may be traced on rocks near peninsulas and coasts.³

National boundaries do not halt detrimental effects of an extractive development project; on the contrary, released pollutants travel beyond state frontiers, destroy infrastructure, harm people's health and well-being, in addition to degrading biodiversity. In particular, as offshore petroleum drilling in an Arctic State entails a high risk of hazardous accidents at any phase of its extraction, storage, or transportation, cross-border ecosystems, even in the adjacent Arctic States, run the danger of being contaminated. Since the Arctic Ocean presents physical characteristics that substantially differ from those in the adjacent North Atlantic and Pacific Oceans and make the arctic marine area more vulnerable to adverse anthropogenic interventions, the need for an assessment of impacts of the whole petroleum project before it starts, not only in the territory of the State where it actually takes place but in the territories of the other arctic States where probable impacts may ensue, becomes more intense.

As States are obliged not to harm the environment of other states in the light of their international legal obligations, the Thesis discusses how the Transboundary Environmental Impact Assessment (TEIA) procedure of an Arctic offshore petroleum project with likely

² On March 23, 1989, the 300-meter-long oil tanker Exxon Valdez, loaded with more than one million barrels of crude oil, departed from Alaska. After changing sea route in order not to collide with icebergs, the tanker got stuck onshore at Bligh Reef. As a result, more than 41 million litres of crude oil were released into the sea. For more info, see at WWF, Lessons not learned, 20 years after the Exxon Valdez disaster, 2009.

³ See at <https://oceanconservancy.org/blog/2018/03/22/exxon-valdez-29-years-later/#:~:text=The%20oil%20killed%20and%20injured,Alaska's%20remote%20and%20rugged%20coastline>

adverse extraterritorial impacts to the other Arctic States constitutes an effective management tool for operationalizing no-harm rule. In particular, the Thesis attempts to describe and explore the extent to which the different obligations related to TEIAs respond to the current challenges of the unique and vulnerable Arctic ecosystems. It concludes with recommendations for better, more viable, practices and suggests a more active role for the Arctic Council and the indigenous communities. Transboundary Environmental Impact Assessment (TEIA), nowadays, is regarded as one of the most valuable instruments to apply principles and rules of international environmental law.⁴ Lying under any TEIA process is the no-harm rule that requires states to “ensure that activities within their jurisdiction or control do not cause damage to the environment of other States”⁵ as well as to collaborate for regulating successfully any likely adverse impacts emanating from their operations.⁶

In order to discuss the above topics, the unique features of the Arctic marine environment that render it extremely vulnerable to anthropogenic disturbances will be examined as well as an outline of the general, international and regional, legal framework governing Arctic offshore oil and gas development. Notably, the real meaning of no harm rule refers to the due diligence standard that states should exercise before authorizing such large-scale projects, specifically not to perform or allow activities within their sovereignty affecting negatively other States.

In case of a planned project, the above are translated into the obligation for industry and stakeholders as well as the State of origin to notify, consult, and discuss with all parties concerned (national, regional, and local authorities, non-Governmental Organizations) and, of course, local communities how to execute the project without deteriorating the marine environment. Especially, in the fragile and unspoiled Arctic marine ecosystems where concerns about climate change effects and the overall sustainability of ecosystems are expressed, the TEIA mechanism may face further challenges (as will be further discussed in the Thesis) that need to be addressed in order to ensure compliance with international and regional legislation and other related customary principles.

⁴ Sands, Phillippe - Peel, Jacqueline, *Principles of International Environmental Law* 619 (2012).

⁵ United Nations Conference on the Human Environment, Stockholm Declaration, June 16, 1972, UN Doc.

A/conf.48/14, reprinted in (1972) 11 I.L.M. 1416, Principle 21; See also *Pulp Mills on River Uruguay* (Arg. v. Uru.), 2010 I.C.J. 18 (April 20).

⁶ Birnie, Patricia - Boyle Alan – Redgewell, Catherine, *International Law & The Environment* 167–70 (2009).

The Arctic is one of the last unexplored areas in Earth, with vast petroleum deposits whose exploitation has escalated in recent years and has become one of the largest profitable sources in the region.⁷ Apart from its rich natural resources, the Arctic also hosts a rich biodiversity with unique habitats for flora and fauna, including permafrost peatlands, frozen tundra with strong winds and harsh climate, thermokarst ponds and lakes,⁸ and perennial sea ice.⁹ A severe threat to these unique ecosystems is global warming, which causes permafrost to melt and could completely alter which species can stay alive there.¹⁰ Hence, due to sea ice melting, Arctic waters are now easily accessible for longer periods of the year: shipping vessels navigate more often to deliver goods and equipment for petroleum exploration and production, and to export supplies. A 2016 study predicted that ships would be able to sail through open water to the North Pole by 2040.¹¹

On the other hand, the activities of finding and extracting oil and gas disturb terrestrial and marine wildlife in variant ways, depending on their scale, intensity, and duration. Large-scale petroleum projects entail that heavy extractive equipment is launched on the ocean seabed; therefore, more environmental stress is added to the already vulnerable fauna and flora.¹² Crude oil and natural gas are extracted via giant drilling machines that crack beforehand the Arctic sea floor and resources are then pumped ashore through pipelines or transported by petroleum tankers to refineries. Helicopters carrying hundreds of workers at an oil rig as well as oil vessels disrupt marine wildlife; noise disturbs whales or fish species, and artificial light may disorientate seabirds, which migrate to new waters in order to sustain their livelihoods.

⁷ See at <https://www.aa.com.tr/en/energy/analysis/are-Arctic-s-vast-hydrocarbon-reserves-able-to-attract-investors-/18818>

⁸ A thermokarst lake, also called a thaw lake, tundra lake, thaw depression, or tundra pond, refers to a body of freshwater, usually shallow, that is formed in a depression formed by thawing ice-rich permafrost. See at <https://www.britannica.com/science/thermokarst>

⁹ Young, Steven B, *To the Arctic: An Introduction to the Far Northern World*, New York: Wiley, 1989.

¹⁰ AMAP, 2017. *Snow, Water, Ice and Permafrost in the Arctic (SWIPA)*. Arctic Monitoring and Assessment Programme (AMAP), Oslo, Norway. xiv + 269 pp. Available at: <https://www.amap.no/documents/download/2987>

¹¹ See at <https://www.nationalgeographic.com/environment/article/Arctic-ocean>

¹² Zhang, Z. - Huisingh, D. - Song, M.J. *Clean. Prod.*, 212 (2019), pp. 960-973.

Moreover, as Arctic Ocean is a semi-enclosed sea,¹³ industrial debris and waste are easily trapped both in the surface and on the bottom of the sea.¹⁴ Additionally, onshore, roads must be constructed for storage facilities and for highway trucks supporting the production process. What is more, strong winds, tough currents and freezing temperatures complicate attempts to effectively tackle with accidents.

1.2. Research Questions and Delimitation

As the Arctic Ocean becomes accessible for petroleum exploitation, environmental concerns about the region's integrity increase; there arises the need for an efficient collaboration among States and private stakeholders through a viable and effective TEIA procedure. For this reason, the present Thesis aims at examining the adequacy of EIA obligations regarding petroleum activities in Arctic waters in the light of their no harm principle and due diligence obligation to avoid pollution.

The Thesis is written within the field of legal science only, in the field of International Environmental Law, although natural sciences and public policy are an integral part for the assessment of a TEIA; no interdisciplinary topics will be presented. The core of this study is the application of TEIA as an expression of the no harm principle in the context of a precautionary approach for the protection of the Arctic Ocean. Due diligence is broad, and Arctic marine ecosystems are so sensitive that even if activities are within national boundaries, there are still international obligations of due diligence because of their transnational consequences.

The main research question is: To what extent does TEIA and its requirements, in terms of an Arctic offshore petroleum project, respond to the international legal obligation of the Arctic states not to harm the environment of other States?

¹³ The question of whether the Arctic Ocean qualifies as a semi-enclosed sea within the meaning of Article 122 of the United Nations Convention on the Law of the Sea (LOSC) has been described as something of a “vexed question” in itself, not least because of the obligation for bordering states to cooperate under Article 123 of the same Treaty. See R. Rayfuse, “Melting Moments: The future of polar oceans governance in a warming world”, *Review of European Community and International Environmental Law (RECIEL)* (2007) 16 (2): 196–216, at 210.

¹⁴ Lusher, A. - Tirelli, Valentina I. - O'Connor, R. Officer, Microplastics in Arctic polar waters: the first reported values of particles in surface and sub-surface samples, *Sci. Rep.*, 5 (2015), Article 14947

The sub-questions are:

1. To what extent do the requirements of a TEIA process between the state of origin and the state(s) likely to be affected comply with the no harm rule?
2. To what extent are there gaps? Are there recommendations for better practices?

In order to answer the above questions, the unique features of the Arctic marine environment that challenge a TEIA procedure will be examined as well as the legal framework governing Arctic offshore oil and gas development rendering the TEIA process mandatory.

The classification as “transboundary” is used instead of “international” in order to signal the distinction from “international EIA” that is employed for comparing different national EIA practices.¹⁵ The author uses the term “EIA” by referring to the broader process of EIA, including specified ways of determining the applicability of the process, the assessment itself, its dissemination, the participatory processes that occur through the process and any post-project monitoring directly related to the EIA process. The term “EIA,” as used here, also describes “strategic environmental assessment” (SEA), which is the application of various assessment approaches to policies, plans and programs.

The Thesis explores the regional transboundary harm from the petroleum development of the arctic states in their EEZ and continental shelves. For the purposes of the Thesis, the terms “activities” (used under the ESPOO Convention) and “projects” (used under the EIA Directive) are employed interchangeably.

Other forms of environmental assessments like health impact assessments, social and economic impact analysis, sustainability assessment is excluded from the scope of the Thesis.¹⁶ Human rights of indigenous communities are out of the scope of the present Thesis. Also, accidental oil pollution liability and compensation in the Arctic are not discussed.

¹⁵ Bastmeijer, K., - Koivurova, T., Conclusions: globalisation of transboundary environmental impact assessment. In *Theory and Practise of Transboundary Environmental Impact Assessment*, eds. Bastmeijer, M. and Koivurova, Timo, 2008, pp. 347–389. Leiden: Martinus Nijhoff.

¹⁶ The most well-known transboundary SEA systems are the EC Directive on SEA (Art. 7) and the Protocol on Strategic Environmental Assessment to the ESPOO Convention, Kiev, Ukraine, 21 May 2003, Art. 10. Directive 2001/42/EC of the European Parliament and of the Council on the Assessment of the Effects of Certain Plans and Programmes on the Environment, Luxemburg, 27 June 2001.

It must be highlighted that the Thesis attempts to explore theoretically the extent to which a TEIA procedure as a due diligence duty addresses the no harm principle. While a State can usually insist on more stringent environmental protection standards under domestic law than are mandatory under international law, the reverse is not true: a State cannot hide behind its domestic legal order.¹⁷ Therefore, the analysis that follows sets out the minimum floor for lawful offshore hydrocarbon development; States can regulate more strictly but they may not regulate less strictly.

National provisions of the Member States are excluded from the scope of this project. There is no attempt to make a comparative analysis of the various national environmental laws and policies of the Arctic States. Impacts due to distant source pollution is out of the scope of this study. As the Arctic Ocean drains many rivers in Eastern Europe, Central Asia and North America, pollution stemming from radionuclides and other substances travelling in the atmosphere, persistent organic pollutants (POPs) and heavy metals entering the food chain or health risks to marine mammals and inhabitants with a heavy dietary dependence on hunted animals is out of the scope of the present Thesis. EIA for activities in international and shared areas as well as EIA required by international financial institutions are out of the scope of the Thesis. Provisions on fisheries, shipping, and ship-borne tourism in order to explore their relation to EIAs are not covered in the Thesis.

The research will focus on reviewing the extent of UNCLOS and other international treaties as well as principles of international law (no-harm, non-discrimination, sustainable development and cooperation-participation in good faith) that oblige the Arctic States to perform transboundary environmental assessments in their marine regions.

The intention here is not to be exhaustive in presenting all the different national legal regimes of the Arctic States or all, international and regional, environmental treaties that apply in the Arctic, but rather the aim is to provide a sense of the broad range of approached that may be used as a legal basis for undertaking a TEIA.

¹⁷ Articles on Responsibility of States for Internationally Wrongful Acts 2001 in Report of the International Law Commission on the Work of its Fifty-third Session, UN GAOR, 56th Sess., Supp. No. 10, UN DOC A/56/10 (2001), article 3. In certain cases, a State may not insist on more stringent environmental standards under domestic law where such would be tantamount to protectionism in contravention of international trade law: see generally Patricia Birnie, Alan Boyle and Catherine Redgwell, *International Law, and the Environment* (3rd edn, Oxford University Press 2009) Chapter 14.

1.3. Methodology and sources

The method followed in the Thesis is that of legal doctrinal analysis, meaning that the author focuses on basic legal sources that are international treaties, customary international law, general principles of civilised nations¹⁸ as well as judicial decisions and scholars' articles.¹⁹

In other words, the author adopts a classical approach, relying on conventional and customary international law, and supplementing by reference to scholar literature about current research. The thesis approaches soft law exclusively from a legal perspective instead of an economic or political one.²⁰

The relevant law is public international law, international environmental law and, particularly, the principle of sovereignty that stands at the core of resource extraction law. ESPOO Convention has a special significance in the Arctic and thus it is the main convention for regulating TEIA among its contracting States, Sweden, Norway, Finland, Denmark, and Iceland. Canada and Russia, along with the aforementioned States, are members to the UNCLOS. However, the recent treaties of the eight Arctic States (on search and rescue; and emergency preparedness and response) do not govern hydrocarbon extraction.²¹

Jurisprudence by the International Court of Justice is also explored. ICJ referred to an obligation to undertake EIA concerning transboundary hazardous activities as part of general or customary international law in several cases: namely, Pulp Mills on the River Uruguay (2010); the Case Concerning Certain Activities carried out by Nicaragua in the Border Area (2015); and the Case Concerning Construction of a Road in Costa Rica along the San Juan River (2015). Some example cases include New Zealand's application to the ICJ concerning the resumption by France of underground nuclear testing (1995), the case concerning the Gabčíkovo–Nagymaros project (1997), the dispute between Ireland and the United Kingdom concerning the MOX plant

¹⁸ They were embodied in the Statute of the Permanent Court of International Justice ["PCIJ"], article 38 (I)(3), and in the Statute of the International Court of Justice ["ICJ"], article 38 (1)(c), under the terms "general principles of law recognized by civilized nations".

¹⁹ Article 38, Statute of The International Court Of Justice.

²⁰ "Hard law" is a binding source of law (e.g. the human rights treaties), while the term "soft law" is used for voluntary or guiding standards.

²¹ Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic 2011, available at http://www.Arctic-council.org/article/2011/5/Arctic_council_ministers_sign_agreement; Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic 2013, available at <http://www.Arctic-council.org/eppr/agreement-on-cooperation-on-marine-oil-pollution-preparedness-and-response-in-the-Arctic/>

(2001), the Pulp Mills case (2010), the ITLOS Advisory Opinion on Responsibilities and Obligations in the Area (2011), and the recent South China Sea arbitration (2016).

1.4. Structure

The thesis will be divided into six (6) chapters.

Chapter 1 is an introductory chapter presenting TEIAs in the unique marine Arctic environment as a procedural mechanism of the harm prevention principle that must guarantee the compatibility of oil and gas development with environmental protection and sustainability, and in general terms, as due diligence duty of the States concerned. The Thesis begins by considering briefly Arctic experience on accidents and its impact on the Region.

Chapter 2 continues by presenting the key features of this unspoiled environment with its vast hydrocarbon reserves, exploring its current opening for oil and gas commercial exploitation, and highlighting the challenges that the natural ecosystems experience due to this unprecedented development as an extra environmental stress along with the ongoing climate change. The special features of the Arctic weather and climate are then emphasized as to how they determine security regulations and the high production expenses of the offshore Arctic oil.

Chapter 3 assesses the legal framework governing petroleum exploitation in the Arctic Region both at international and regional level by applying hard and soft law instruments.

Chapter 4 identifies the concept of a TEIA and its requirements for the State of origin as well as for the affected State(s).

Chapter 5 argues about the challenges and opportunities for achieving environmental protection and sustainable development by exploring the effectiveness of applying a TEIA procedure in the Arctic area and makes suggestions for the role of the Arctic Council and indigenous communities.

Chapter 6 enlists the references used for the Thesis.

CHAPTER 2: The Arctic Marine Environment

2.1. Unique Arctic Characteristics

The Arctic Ocean is the northernmost water body of the Earth and is located at the centre of North Pole, about 450 miles (725 km) north of Greenland. It occupies a circular basin covering an area of about 14,056,000 square km; the coastline is 45,390 km long.²² The southernmost frontier of the Arctic is not clearly defined; therefore quite a few standards are introduced in theory concerning its border line.²³ For example, the northernmost boundary where trees grow or the southernmost location where the medium temperature of the hottest month of the year is below 10°C have been indicated as criteria.²⁴ Regarding definitions, the Arctic Seas are characterized by a permanent sea ice cap all the year whereas in the Sub Arctic Seas, sea ice is recurring.

The Arctic Ocean is a semi-enclosed sea²⁵ that along with adjacent seas, and parts of its five coastal states - Canada, Denmark (Greenland), Norway (Svalbard), Russia, and the United States - compose the Arctic.²⁶ It is linked to the Pacific Ocean by the Bering Strait and to the Atlantic Ocean through the Greenland Sea and Labrador Sea.²⁷ Land (Arctic region) covers only one-third of the Arctic; the offshore continental shelf covers another third, with waters less than 500 meters deep, and the rest is covered by ocean waters, deeper than 500 meters; much (if not most) of the Arctic waters are ice-covered for most time of the year. The region is

²² Wright, John W., ed. (2006). The New York Times Almanac (2007 ed.). New York: Penguin Books. p. 455

²³ AMAP – Arctic Pollution Issues, 1997

²⁴ The great challenge of the Arctic, national Roadmap for the Arctic, Design & production: Press and Communication Directorate, Republic of France, June 2016.

²⁵ The question of whether the Arctic Ocean is a semi-enclosed sea, within the meaning of Article 122 of the United Nations Convention on the Law of the Sea, has been identified as a “vexed question” as bordering states are obliged to collaborate according to Article 123. See Rayfuse, R. “Melting Moments: The future of polar oceans governance in a warming world”, Review of European Community and International Environmental Law (RECIEL) (2007) 16 (2): 196–216, at 210.

²⁶ Although the most common definition of the Arctic region as a whole is the area lying north of the Arctic Circle at 66°33' north, a variety of definitions for the Arctic region as a whole exist, dependent on the issue or context under discussion. A useful summary of definitional options is provided by Rayfuse, R., “Melting Moments: The future of polar oceans governance in a warming world”, Review of European Community and International Environmental Law (RECIEL) (2007) 16 (2): 196–216 at 197.

²⁷ Pidwirny, Michael (2006). "Introduction to the Oceans" published at www.physicalgeography.net.

characterized by a harsh climate with extreme variations in light, temperature, and ice cover. The Arctic Ocean is unique in that nearly one-third of its total area is underlain by continental shelf whereas its center is covered by a drifting persistent icepack; higher temperatures in the summer months cause southern icepack to seasonally retreat.²⁸

Above the Arctic Circle the region experiences the extremities of solar radiation, six months of complete sunlight and six months of absolute darkness each year.²⁹ During the Northern Hemisphere's winter months, the Arctic is one of the coldest and darkest places on Earth; in winter, temperatures can drop below $-50\text{ }^{\circ}\text{C}$ while in summer temperatures vary from about -10 to $+10\text{ }^{\circ}\text{C}$.³⁰

Some parts of the Arctic are always covered by ice whereas others experience long periods with some forms of ice on the surface. Therefore, the climate of the Arctic is characterized by long, cold winters and short, cool summers. In the Arctic region the ground is at or below $0\text{ }^{\circ}\text{C}$ (permafrost).

Being the shallowest ocean in the world at a depth of nearly 13,400 feet (4,080 meters), the Arctic Ocean is also the smallest ocean in the world with considerably larger continental shelves than other oceans. The Arctic Ocean is also the least salty, due to low evaporation and the huge influxes of freshwater from rivers and glaciers. Arctic waters are driven by the wind and by density differences. The cover of sea ice suppresses wind stress and wind mixing, reflects a large proportion of incoming solar radiation, imposes an upper limit on the surface temperature, and impedes evaporation. Wind and water stresses keep the ice pack in almost continuous motion.

The Arctic bathypelagic zone (below $\sim 1,000\text{ m}$ and above $4,000\text{ m}$) has been regarded as the largest ecosystem on the planet³¹ and represents 75% of the volume of the ocean.³² Apart from deep water fish that are exploited commercially, this ecosystem hosts a diverse biodiversity playing a crucial role in carbon sequestration from the surface ocean to the deep-sea floor, thus

²⁸ <http://www.physicalgeography.net/fundamentals/8o.html>

²⁹ Kendeigh, S. Charles. "The Role of Environment in the Life of Birds." *Ecological Monographs*, vol. 4, no. 3, 1934, pp. 302–417. JSTOR, www.jstor.org/stable/1943010.

³⁰ <https://www.britannica.com/place/Arctic/Climate>

³¹ Robison, Bruce H. "Conservation of Deep Pelagic Biodiversity." *Conservation Biology*, vol. 23, no. 4, 2009, pp. 847–858. JSTOR, www.jstor.org/stable/29738819.

³² Ramirez-Llodra, Eva et al, *Man and the Last Great Wilderness: Human Impact on the Deep Sea*, Published: August 1, 2011. <https://doi.org/10.1371/journal.pone.0022588>

contributing to the global regulation of atmospheric carbon dioxide and therefore the Earth's climate.³³

Finally, it is interesting to mention rare phenomena that can be noticed at times in the Arctic areas due to the above unique conditions. The Aurora Polar phenomenon (distinguishing it in Boreal or Austral depending on the hemisphere in which it occurs, North or South) is made by solar particles, mainly made of electrons, which are pushed against the Earth's magnetic field at great speed.

The Arctic region is one of the last pristine areas in Earth with stunning landscapes, unique fauna and flora, extreme weather conditions and perennial sea ice cover.³⁴ It has a rich biodiversity as it hosts unique habitats and diverse natural ecosystems from sea ice to wetlands, mountains to the Arctic Ocean and the surrounding seas.³⁵ The Arctic also hosts several species of global significance.³⁶ 75 species of mammals live there, 16 of which live on or under the ice, like seals, walruses, the Arctic fox, white hares, reindeer, and musk oxen.³⁷ The most well-known resident of the Arctic is probably the polar bear which – together with the Kodiak bear – is the largest land-based predator on Earth.³⁸ These animals rely on 25 million square

³³ Parmesan, Camille - Hanley, Mick E., Plants and climate change: complexities and surprises, *Annals of Botany*, 2015 Nov; 116(6): 849–864. Published online 2015 Nov 6. doi: 10.1093/aob/mcv169

³⁴ See at The Arctic Explained, Environment, National Geographic at <https://www.nationalgeographic.com/environment/article/Arctic-ocean#:~:text=The%20Arctic%20Ocean%20is%20Earth's,a%20stunning%20array%20of%20life>.

³⁵ There are various definitions of the Arctic Ocean or the marine Arctic; it refers to marine spaces that cover the geographic boundary by the Arctic Council's Conservation of Arctic Flora and Fauna (CAFF) working group. See <https://www.caff.is/about-caff>. The term “marine Arctic” includes both marine spaces under and beyond national jurisdiction. For a definition of the marine Arctic, see also Johnstone, R.L., Offshore Oil and Gas Development in the Arctic under International Law: Risk and Responsibility (Nijhoff, Leiden, 2015) 7–9; Molenaar, E.J., ‘Arctic fisheries management’ in Molenaar, EJ, Oude, Elferink A.G., and Rothwell, D.R. (eds), *The Law of the Sea and the Polar Region: Interactions between Global and Regional Regimes* (Nijhoff, Leiden, 2013) 245.

³⁶ Arctic Council, Arctic Human Development Report’ (Stefansson Arctic Institute 2004) 17–19.

³⁷ See Arctic Facts, World Wildlife Fed’n, <https://www.worldwildlife.org/places/Arctic> [<https://perma.cc/CRD7-F447>]

³⁸ <https://www.Arcticscienceministerial.org/en/who-lives-in-the-Arctic-1731.html>

kilometers of sea ice for foraging, hunting, and birthing.³⁹ Many of these species are threatened, like bowhead whales, polar bears, and ringed seals.⁴⁰

Furthermore, the Arctic is a culturally diverse region with 40-50 distinct Indigenous Peoples; about four million people in total reside there and rely on the ocean to sustain their livelihoods by fishing, sealing, or whaling.⁴¹ These unique characteristics make the Arctic region highly sensitive to anthropogenic disturbances than the rest of the world. Human activities can have a great effect on the Arctic ecosystems and negatively affect the region's biological diversity. Conservation of this extraordinary diversity is a high environmental priority because it provides significant ecosystem benefits for all; benefits that must be safeguarded as they are both unique and non-restorable.⁴²

2.2. Opening boom for offshore oil and gas extraction

Former Secretary George Shultz stated that the opening of the Arctic is the greatest event in human history since the coming of the ice age as “the exploitation of the Arctic will open a whole new ocean for human activity and knowledge, with the region's vast energy, mineral and marine resources fueling technological innovations no less revolutionary than the impact of the discovery of the Pacific on the Old World”.⁴³

According to the United States Geological Survey (USGS) dated 2008, the Arctic region is “the largest unexplored prospective area for petroleum remaining on earth”⁴⁴ because 22 per cent of

³⁹ Sea Ice, World Wildlife Fed'n, http://www.wwf.ca/conservation/Arctic/sea_ice/ [https://perma.cc/EB22-EYPG]

⁴⁰ Nunez, Christina, What Happens When Oil Spills in the Arctic?, National GEOGRAPHIC (Apr. 24, 2014), <https://news.nationalgeographic.com/news/energy/2014/04/140423-national-research-council-on-oil-spills-in-Arctic/> [https://perma.cc/CK2M-QJPV].

⁴¹ “4 million people are believed to be living in the Arctic today, but only very few live in the iciest regions... About 12.5 percent of the Arctic population of four million is indigenous peoples: Aleuts, Athabascans, Gwich'in, Inuit, Sami, and the many indigenous peoples of the Russian Arctic. They inhabit three different continents, usually in coastal regions”. See at <https://www.Arcticscienceministerial.org/en/who-lives-in-the-Arctic-1731.html>

⁴² Le, J. T., Levin, L. A., and Carson, R. T. (2017). Incorporating ecosystem services into environmental management of deep-seabed mining. *Deep-Sea Res II*. 137, 486–803. doi: 10.1016/j.dsr2.2016.08.007

⁴³ Shultz, George P., Secretary, Remarks before the Hoover Institution Arctic Symposium, Stanford University, Palo Alto, California, November 16, 2012.

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https://www.inquirer.com/philly/business/20080725_Survey_sees_rich_oil_reserves_in_the_Arctic.html

the world's unexplored oil and gas resources are situated in the Arctic, with about 85 per cent lying offshore.⁴⁵ This is about 30% of the world's unexplored natural gas resources,⁴⁶ around 13% of the world's undiscovered oil resources⁴⁷ and approximately 20% of the world Natural Gas Liquids.⁴⁸ As temperatures increase and sea ice “melts away”,⁴⁹ oil and gas resources have been made easily accessible, thus ample opportunities are presented for exploitation and utilization of the Arctic's oil and gas resources.⁵⁰

The above reality has already triggered the interest of the states Arctic, which have developed their own offshore extraction strategies.⁵¹ Petroleum activities are highly intensive due to advanced exploration plans, oil and gas shipping, pipelines, and offshore platforms.⁵²

State governments have gone further to negotiate exploration agreements or even sign leases with multinational oil companies for exploration key areas.⁵³ For example, Imperial Oil Ltd., British Petroleum, Chevron, and Exxon Mobil purchased offshore exploration leases in the

⁴⁵ On resource estimations see Peter Stauffer, US Geological Survey (USGS) Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle,' <<http://library.Arcticportal.org/1554/>>.

⁴⁶ Mackenzie, C.W. - F. Robertson, Future of the Arctic, A new Dawn for exploration, U S Geological Survey

⁴⁷ Abdalla, B. - Jukes, P. - Eltaher, A., The Technical Challenges of designing oil and gas pipelines in Arctic, J P Kenny Inc: Houston, Texas.

⁴⁸ Robertson J., P.B., 90 Billion Barrels of Oil and 1,670 Trillion Cubic Feet of Natural Gas Assessed in the Arctic. USGS Newsroom, Released: 7/23/2008 1:00:00PM, 2008.

⁴⁹ Koivurova, Timo - Hossain, Kamrul, Arctic: Can it be Done Sustainably?, Oil, Gas & Energy L. Intelligence, Feb. 2012, at 1, 4.

⁵⁰ Melia, N. - Haines K. - Hawkins, E., Sea ice decline and 21st century trans-Arctic shipping routes, Geophysical Research letters, 43, 9720–9728

⁵¹ Center of Biological Diversity, Offshore Oil Development, at https://www.biologicaldiversity.org/programs/public_lands/energy/dirty_energy_development/oil_and_gas/Arctic/index.html. See also See United Kingdom Parliament Environmental Audit Committee, Protecting the Arctic, Second Report of Session 2012–2013: Volume 1: Report, together with formal minutes, oral and written evidence, September 2012, paras 96–102.

⁵² Assessment of undiscovered oil and gas in the Arctic. Gautier D.L. - Bird K.J. - Charpentier R.R. - Grantz A. - Houseknecht D.W. - Klett T.R. - Moore T.E. - Pitman J.K. - Schenk C.J. - Schuenemeyer J.H. - Sørensen K. - Tennyson M.E. - Valin Z.C. - Wandrey C., Science. 2009 May 29; 324(5931):1175-9.

⁵³ United States Department of the Interior, 'Review of Shell's 2012 Alaska Offshore Oil and Gas Exploration Program' Report of the Secretary of the Interior, 8 March 2013 <http://www.doi.gov/news/pressreleases/upload/Shell-report-3-8-13-Final.pdf> 7–16.

Canadian Beaufort Sea, and the US federal government sold offshore exploration permits for Arctic energy exploration.⁵⁴ Shell also possesses hundreds of leases.⁵⁵

In Alaska, many oil companies drill and export millions of barrels of oil every year in close cooperation with indigenous communities known as “native corporations”.⁵⁶ More than 400 fields have been discovered so far, holding about 10 percent of the world's conventional petroleum resources; it is expected that in the next years the daily traffic of oil tankers along the coastal States will be around 30 million tons.⁵⁷ This means that every day there will be a continuous stream of several tankers along the coasts.⁵⁸

However, oil and gas transportation/extraction pose serious challenges because of probable environmental damage. In order to take advantage of the opening of the Arctic Ocean, it is essential that all parties concerned can handle the challenges effectively.

2.3. Current Offshore Challenges

The above unique characteristics of the Arctic region increase the probability of accidents because such intensive operations in extreme climate circumstances need specialized technology, compliance with security standards, readiness to mitigate effects of accidents and design of emergency response strategies for the successful implementation of which well-trained and well-equipped personnel is needed. The same environmental conditions that contribute to oil spill risks – lack of natural light, extreme cold, moving ice floes, high winds and low visibility – can also make spill response operations extremely difficult or totally ineffective.

⁵⁴ Noble, Bram - Ketilson, Skye - Aitken, Alec, Poelzer, Greg, Strategic Environmental Assessment opportunities and risks for Arctic Offshore Energy Planning and Development, Marine Policy, Volume 39, 2013, pages 296-302.

⁵⁵ United States Department of the Interior, ‘Review of Shell’s 2012 Alaska Offshore Oil and Gas Exploration Program’ Report of the Secretary of the Interior, 8 March 2013 <<http://www.doi.gov/news/pressreleases/upload/Shell-report-3-8-13-Final.pdf>>

⁵⁶ Tysiachniouk, S. Maria, Disentangling Benefit-Sharing Complexities of Oil Extraction on the North Slope of Alaska, Sustainability 2020, 12, 5432; doi:10.3390/su12135432.

⁵⁷ Borch, Odd – Andreassen, Jarl - Marchenko, Natalia - Ingimundarson, Valur Nataly - Gunnarsdóttir, Halla - Iudin, Iurii - Petrov, Sergey – Jacobsen, Uffe - Dali í Birita, Maritime activity in the high north – current and estimated level up to 2025 Marpart Project Report 1.

⁵⁸ Orheim, O., Protecting the environment of the Arctic Ecosystem, in protecting vulnerable marine ecosystems. 2003, Norwegian Polar Institute, Tromsø, Norway.

2.3.1. Economic challenges

The Arctic remains the most expensive region on Earth for resource exploration and development due to its harsh environment and extreme weather conditions characterized by extreme cold, ice on board, icepack and icebergs on the sea, high winds, and darkness; harsh winters require specially designed installations, equipment, and vessels to tolerate rigid temperatures as well as managing any decline in the effectiveness of the relevant equipment.⁵⁹ In Arctic seas, the icepack can damage offshore facilities, while also impeding the shipment of personnel, materials, and oil for long time periods.

Limited transportation access reduces transportation options and increase transportation costs. Higher wages and salaries are required to induce highly qualified personnel to work in the isolated and inhospitable Arctic. The year round opening of the Arctic Sea routes is expected to make Arctic oil and gas resources much more accessible and to significantly reduce their transportation costs. One area of concern is the damage that can be done by navigating oil tankers, especially in ice-filled waters. Sea ice damages a ship's hull or propeller and makes clean-up procedures harder to complete.

Anti-icing and anti-freezing measures are required for exposed areas, systems and equipment. Where ice-free water is available, oil can be produced from a well, placed on a ship and transported to refineries. It can also be transported by pipeline; however, construction of pipelines in the Arctic are projects of enormous difficulty and scale. Natural gas is much more difficult to transport to market. It has a much lower energy density and must be supercooled to a liquid for movement by sea. This requires a large, complex, and expensive facility that takes several years to design, permit, and build. Pipeline construction for natural gas encounters the same expenses and problems as those required to transport oil. Because of these difficulties and expenses, bringing wells into production in the Arctic requires an exceptionally large oil or gas field. The large field is necessary to support the infrastructure required to drill the wells and transport products to market. However, once an initial infrastructure is in place, smaller fields can be developed if the existing infrastructure has the capacity to support them.

⁵⁹ Dmitrievskiy, A.N.; Eremin, N.A.; Shabalin, N.A.; Kondratyuk, A.T.; Eremin, A.N. State and prospects for the development of hydrocarbon resources of the Arctic shelf of Russia. *Neftegaz.RU* 2017, 1, 32–41

If negative impacts are not mitigated, the positive aspects will vanish. Therefore, all Arctic States search ways to enhance their cooperation by securing critical minerals, exploiting natural gas reserves, and new transport lanes along the Arctic coast.

2.3.2. Environmental challenges

Petroleum development all around the globe has animated worries about environmental resilience; especially, the Arctic is highly vulnerable due to its extremely harsh circumstances (climate, remoteness, geology, etc., as discussed thoroughly above) resulting in long recovery periods after an industrial accident. That is why three major threats are identified: disturbance of natural habitats; black carbon emissions obstructing hard work to reach the international climate change goals; and pollution via chemical releases and oil discharges.

Several accidents, such as oil well blowouts, platform capsizes, rig explosions spewing dangerous chemicals even at long distances, also threaten the land, water, or air of the neighboring states. Although the climate varies tremendously, it is fair to say that it challenges equipment and installations developed for warmer latitudes. Severe difficulties are natural hazards of unforeseen intensity, high winds and rough seas for floating platforms, stormy weather resulting in numerous incidents during transfer operations. Risk factors such as corrosion, wearing and aging are amplified in harsh environment.

Deep sea ecosystems are facing increasing pressure from anthropogenic activities, including climate change and future seabed mining.⁶⁰ The deep sea, defined as the ocean and seafloor below 200 m, represents the largest habitat on our planet, covering ~65% of Earth's surface.⁶¹ The deep ocean is a significant regulator of carbon sequestration and nutrient regeneration and provides habitat and trophic support to a multitude of organisms.⁶² Protecting the integrity of deep ocean ecosystems is important, given their role in maintaining Earth's systems.

⁶⁰ Halpern, B. S., Frazier, M., Potapenko, J., Casey, K. S., Koenig, K., Longo, C., et al. (2015). Spatial and temporal changes in cumulative human impacts on the world's ocean. *Nat. Commun.* 6:7615.

⁶¹ Sweetman, A. K., Thurber, A. R., Smith, C. R., Levin, L. A., Mora, C., Wei, C.-L., et al. (2017). Major impacts of climate change on deep-sea benthic ecosystems. *Elementa* 5:4.

⁶² Le, J. T., Levin, L. A., and Carson, R. T. (2017). Incorporating ecosystem services into environmental management of deep-seabed mining. *Deep Sea Res. Part II Top. Stud. Oceanogr.* 137, 486–503

Oilfield wastewater produced during oil and gas extraction causes huge pollution problems. Air pollution is another possible source of harm caused by the release of harmful substances in fumes from the refineries and oil plants.

Apart from the anthropogenic activities, the Arctic region is also extremely vulnerable to disturbances arising from climate change. In 2019, IPCC released the “Special Report on Oceans and Cryosphere in a Changing Climate” where the disastrous impacts of climate change on Arctic communities and wildlife were illustrated. The temperature rise is twice that of the rest of the world, and the Arctic Climate Impact Assessment estimates that by 2100, the increase in temperature will vary between two and nine degrees Celsius.⁶³ Studies have shown that the thickness and extent of summer sea ice in the Arctic declined dramatically over the past thirty years.⁶⁴ The above alterations affect biodiversity and ecosystems, as well as human living conditions with worldwide implications.⁶⁵

Along with ice melting and sea-level rise, hunting grounds also decrease, so animals which normally populate in southerly regions are now migrating and compete with other species for habitat and food.⁶⁶ Obviously, vulnerable species or cubs run the danger of extinction.⁶⁷ Without sea ice, polar bears cannot catch enough seals to survive their annual winter fast. Marine species that survive are less likely to produce healthy offspring, reducing the population on the long term. Scarcer food sources also drive them into more contact with human populations, often relying on trash heaps for nutrition. These food sources impact their health and increase conflicts with human communities in the Arctic.

⁶³ Hossol, Joy Susan, Arctic Climate Impact Assessment, impacts of a warming Arctic (2004); See Intergovernmental Panel on Climate Change, Working Group I Contribution, Climate Change 2007: Impacts, Adaptation and Vulnerability (Martin Parry et al. eds., 2007).

⁶⁴ See supra note 35

⁶⁵ Climate Change in the Arctic, Nat'l Snow & Ice Data Center, https://nsidc.org/cryosphere/Arctic-meteorology/climate_change.html [<https://perma.cc/44Z8-HWVM>]

⁶⁶ “Polar bears will be wiped out by the end of the century unless more is done to tackle climate change, a study predicts. Scientists say some populations have already reached their survival limits as the Arctic sea ice shrinks.

The carnivores rely on the sea ice of the Arctic Ocean to hunt for seals. As the ice breaks up, the animals are forced to roam for long distances or on to shore, where they struggle to find food and feed their cubs”. <https://www.bbc.com/news/science-environment-53474445>

⁶⁷ Technology, T.P.O.o.S.a., Arctic Changes. Post note, 2009. 334(1-4)

Fragmentation of the marine landscape, across several States, follows the construction of heavy infrastructure to receive and distribute oil and gas; for example, the installation of port, storage and ancillary facilities, refineries and processing plants, the building of pipelines, generally located on the seabed, for the transportation of oil and gas through oil tankers and the accelerated ship traffic. Associated threats could include noise pollution, water dispersal in the drilling phase and the actual drilling process which can release oil and chemicals into the water. Both oil spills and gas leaks are toxic, but their impacts remain much longer because while the gas dissipates into the air, oil floats and spreads on the ocean surface. Besides, the burning of these fuels contributes to atmospheric carbon emissions, but the dispersion of leaked natural gas contributes to climate change by virtue of its high methane content apart from causing chronic air pollution.

2.3.3. Social challenges

Social challenges concern loss of livelihoods because of marine pollution leading to poverty, along with conflicts between local and temporary workers at the oil fields. Indigenous groups deal with disappearing food sources and struggle to keep their homes from slipping into the ocean because of coastal erosion. An illustrative example is the Arctic village of Meshick that vanished under the Arctic waters in 2008 and its inhabitants moved about 5 km away from shore and made their new homes at Port Heiden; however this new village loses 18 metres of shoreline every year as the effects of climate change become harsher.⁶⁸ Long-lasting consequences often persist through industrial waste, tailings, and environmental contaminations.⁶⁹ Concerns such as drift ice, lack of infrastructure and environmental risks nevertheless still remain.⁷⁰ Oil and Gas projects have a specific time span. Most projects have a lifespan of between 20-50 years. This fact is well known in advance and should help draw attention to what should happen after a project is ended. As a result, they also constitute the stable population of the region, prior to, during and after periods of resource extraction. As this is their homeland, Indigenous Peoples are more likely to stay on also after a major industrial project.

⁶⁸ See at <https://Arcticwwf.org/newsroom/stories/port-heiden-alaska/>

⁶⁹ Corell, H., Common Concern for the Arctic. 2008, the Nordic Council of Ministers: Greenland.

⁷⁰ The European Union and the Arctic Region. 2008, Communication from the Commission to the European Parliament and the Council: Brussels.

Indigenous communities have usually not benefited economically or socially from the project, neither collectively nor as individuals, and they are left to deal with the environmental and social harm stemming from it. Extractive industries take over lands and territories and make them dependent on one big industrial actor. Final decisions are seldom made at local or regional level, by local or regional governments. This constitutes a huge challenge for indigenous peoples and local communities, often small in population.

CHAPTER 3: Arctic Legal Framework for environmental protection from offshore petroleum pollution

3.1. Principles of International Law

Renowned scholars have outlined Principles of International Law as “a core of legal ideas which are common to all civilized legal systems”⁷¹ or as “principles that constitute that unformulated reservoir of basic legal concepts universal in application, which exist independently of the institutions of any particular country and form the irreducible essence of all legal systems”.⁷² As TEIA relates to “the process of identifying, predicting, interpreting and communicating the potential impacts that a proposed project or plan may have on the environment”,⁷³ such principles like the no harm rule, non-discrimination, sustainable development, and the duty to cooperate and participate in good faith, play a central role in implementing specific rules for the identification, evaluation, and application of a TEIA on an offshore petroleum project. The Thesis does not aim at presenting thoroughly how principles of international law apply in the arctic marine region as the author chose to focus on the said principles in order to highlight their functional uses in the context of a TEIA in arctic marine petroleum development.

⁷¹ Schlesinger, Research on the General Principles of Law Recognized by Civilized Nations, 51 AM. Journal Of International Law 734, 739 (1957).

⁷² See Jalet, The Quest for the General Principles of Law Recognized by Civilized Nations, 10 U.C.L.A. Law Review 1041, 1044 (1963).

⁷³ E&P Forum, and UNEP. (1997). Environmental management in oil and gas exploration and production: An overview of issues and management approaches. Joint E&P Forum/UNEP Technical Publication.

3.1.1. No-harm principle.

According to no harm rule, states must not allow, within their territory, any activities that cause harm to the interests of other States.⁷⁴ That is why States are required to take measures to prevent such activities.⁷⁵ The customary character of no harm was indicated for the first time in the Corfu Channel case where ICJ held that a state has a duty to prohibit the use of its territory for activities against the rights of other states.⁷⁶ The Trail Smelter case accepted that no State is entitled to use or permit the use of its territory in order to harm the territory or the properties or persons within another State, when the situation is of serious consequence and harm is documented by clear and undoubted proof.⁷⁷

No harm principle is not absolute as it applies only in order to prevent “significant” transboundary environmental damage; “significant” is the threshold of severity that likely impacts entail for the forbidden activity,” a considerable progress since Trail Smelter’s “serious consequence” criterion; the degree of significance is determined by objective standards, and as such, states have no discretion to decide for themselves which impacts are significant or not.⁷⁸

Principle 21 of Stockholm Declaration⁷⁹ and Principle 2 of Rio Declaration⁸⁰ implemented the duty to prevent transboundary harm that is widely regarded now as a due diligence standard and is included in the corpus of international environmental law.⁸¹

⁷⁴ Island of Palmas case (Netherlands v United States of America) April 4, 1928, Permanent Court of Arbitration, Arbitrator: Huber, 2 R.I.A.A. 829; Trail Smelter arbitration (United States v Canada) March 11, 1941, 3 R.I.A.A. 1905, 1965; Corfu Channel case (United Kingdom v Albania) (Merits), April 9, 1949 I.C.J. 4, 22.

⁷⁵ Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries, UN 2001, Commentary to Art 3, 154, para (7). In addition, the Convention on the Law of the Non-Navigational Uses of International Watercourses adopted by the General Assembly of the United Nations on 21 May 1997, Article 7—Obligation Not to Cause Significant Harm, and the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention), adopted in Helsinki on 17 March 1992, the United Nations Economic Commission for Europe, Article 3 Prevention, Control and Reduction.

⁷⁶ Corfu Channel Case (UK v Albania) (Merits) [1949] ICJ Rep. 4

⁷⁷ Reports on International Arbitral Awards, Trail Smelter case (United States, Canada), 16 April 1938 and 11 March 1941, vol. III, pp. 1905–82.

⁷⁸ ILC, “Commentaries to Draft Articles on Prevention of Transboundary Harm,” Art. 2, Commentary 4.

⁷⁹ Declaration of the United Nations Conference on the Human Environment, Stockholm, 16 June 1972

⁸⁰ Rio Declaration on Environment and Development, Rio de Janeiro, 14 June 1992. Principle 2.

⁸¹ Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, (1996) ICJ Rep 15 at para. 29.

Furthermore, the Draft Articles on the Prevention of Transboundary Harm from Hazardous Activities (ILC) mention that states are obliged to prevent significant transboundary damage;⁸² ILC has clarified that due diligence is attained when a State tries in a reasonable way to get informed about the project and its probable impacts as well as to take appropriate measures in order to address them duly.⁸³ In order to prove that it did its best, the state of origin must prevent significant damage, or at least decrease the jeopardy of such damage.⁸⁴ If a state fails to take “all reasonable or necessary measures to prevent” harm, then the state is liable for its conduct, not the end result of harm.⁸⁵ In case the State exercises due diligence but some degree of harm is inflicted on other States, the State of origin is not liable;⁸⁶ the State of origin when exercising due diligence “does not assure that the harm will not ensue by all means”.⁸⁷ This is because the State is liable only for what its own authorities do; it is not responsible for the activities of private stakeholders.⁸⁸ However, in respect of its due diligence standard, the State bears the

⁸² Draft articles on Prevention of Transboundary Harm from Hazardous Activities, *supra* note 94, articles 3 and 7.

⁸³ ILC, “Commentaries to Draft Articles on Prevention of Transboundary Harm,” Art. 3 Commentary 10.

⁸⁴ International Law Association Study Group on Due Diligence in International Law, First Report, March 7, 2014, p. 2

⁸⁵ Buchan, Russell. 2016. Cyberspace, non-state actors and the obligation to prevent transboundary harm. *Journal of Conflict and Security Law* 21: 429–53.

⁸⁶ International Law Commission, Draft Articles on Prevention of Transboundary Harm from Hazardous Activities 2001 *in* Report of the International Law Commission on the Work of its Fifty-third Session, U.N. G.A.O.R. 56th Sess., Supp. No. 10, U.N. Doc. A/56/10 (2001) [hereinafter ILC Draft Articles on Transboundary Harm 2001] commentary to article 3, para. 7; see also International Law Commission, Articles on Responsibility of States for Internationally Wrongful Acts 2001 *in* Report of the International Law Commission on the Work of its Fifty-third Session, U.N. G.A.O.R. 56th Sess., Supp. No. 10, U.N. Doc. A/56/10 (2001) [hereinafter ILC Articles on State Responsibility 2001] articles 1–12.

⁸⁷ See Caron, David. “The Basis of Responsibility: Attribution and Other Trans-Substantive Rules.” In *the Iran-United States Claims Tribunal: Its Contribution to the Law of State Responsibility*, edited by Richard B. Lillich, and Daniel B. Magraw 109–184. New York: Transnational Publishers Inc., 1998, 127; see also Engle, Karen. “After the Collapse of the Public/Private Distinction: Strategizing Women’s Rights.” In *Reconceiving Reality: Women and International Law*, edited by Dallmeyer, Dorinda G., 143–155. Washington D.C.: American Society of International Law, 1993, 148–9 (for policy reasons to restrict the responsibility of States to the conduct of its own entities).

⁸⁸ See Ago, Roberto. “Second Report on State Responsibility: The Origins of International Responsibility.” *Yearbook of the International Law Commission* (Volume 2), 177 (1970). U.N. Doc. A/CN.4/SER.A/1970/Add.1, 177, p. 188, para. 35.

positive obligation to prevent private actors from causing transboundary damage.⁸⁹ TEIA falls under this category.

In the cases where there are reasonable indications of likely impacts to the environment of other States, the obligation of due diligence incorporates a TEIA of the related petroleum project.⁹⁰ As an ongoing obligation, due diligence is not fully covered by a TEIA being undertaken only once before the project starts; TEIA continues to be conducted by monitoring as the project proceeds.⁹¹

On the whole, since the duty to conduct a TEIA before authorising a potentially harmful project is binding on all States under customary law, this means that a State permitting a potentially hazardous activity to take place without having conducted a TEIA has committed an internationally unlawful action: “an act of that State is not in conformity with what is required of it by that obligation, regardless of its origin or character”.⁹²

3.1.2. Non-discrimination

No harm interplays with non-discrimination to the extent that the latter one requires that states, in the context of an offshore petroleum project taking place in their territorial waters, do not distinguish domestic environmental harm from environmental harm inflicted to areas under the sovereignty of a third state;⁹³ indeed, in the light of the above principle, the state of origin

⁸⁹ *Pulp Mills*, *supra* note 4, at para. 197; see also International Tribunal for the Law of the Sea: Seabed Disputes Chamber Case No. 17: Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area (Advisory Opinion) February 1, 2011 <http://www.itlos.org/index.php?id=109> (accessed February 21, 2012) [hereinafter ISBA Case 17] para. 115.

⁹⁰ ISBA Case 17, at para. 117; *Pulp Mills* at para. 204.

⁹¹ *Pulp Mills*, at para. 205.

⁹² ILC Articles on State Responsibility 2001, *supra* note 14, at article 12; see also *Gabčíkov-Nagymaros Project (Hungary v Slovakia)* September 25, 1997 I.C.J. 7, para. 47; and *Pulp Mills*, *supra* note 4, at para. 204: “Due diligence, and the duty of vigilance and prevention which it implies, would not be considered to have been exercised, if a party panning works liable to affect the regime of the river or the quality of its water did not undertake an environmental impact assessment on the potential effects of such works.”

⁹³ *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Judgment, 20 Apr. 2010, ICJ Reports (2010), p. 14, at 101 (*Pulp Mills*); Responsibilities and Obligations of States Sponsoring Persons and Entities with respect to Activities in the Area, Advisory Opinion, 1 Feb. 2011, ITLOS Reports (2011), pp. 110–3 (Advisory Opinion on Seabed Activities); Draft Articles on Prevention, n. 8 above, Arts 1–3. See also Boyle, A. et al., ‘International Law and the Liability for Catastrophic

assesses harmful impacts on third countries in the same way as the impacts on its own territory.⁹⁴ Non-discrimination entails that comparable situations must not be treated differently and that different situations must not be treated in the same way except such regulation is objectively justified.

The Nordic Environmental Protection Convention articulated at first the principle of non-discrimination in environmental issues in 1974;⁹⁵ in case that a state decides to allow an activity with adverse environmental impacts to be conducted within its sovereign territory, and this activity is likely to produce a “nuisance of significance” to another state party, the state of origin must notify the latter party about the activity and let its public express opinion on the likely impacts.⁹⁶

The complementary principle of equal access entails that states grant access to all persons likely to be affected in order to participate to decision-making procedures irrespective of whether they are inhabitants of the state of origin or not. In other words, nationals of the affected state enjoy in the territory of the state of origin the same procedural rights as its citizens; therefore, the likely to be affected states do not need to endorse new environmental regulations. According to non-discrimination as applied in the EIA procedure, persons who are influenced by a petroleum development project possess the rights of notification and participation during the process as the citizens of the state of origin. The non-reciprocal character of non-discrimination implies that there are no minimum requirements for transboundary EIA. The state of origin has the competence to decide whether an EIA will be undertaken for an activity with likely transboundary effects.

However, although the affected state and its public have the right to be informed and formulate their opinion on the harmful effects, they do not enjoy any advantages from the petroleum development project; for example, they do not benefit from economic growth, higher revenue, or even more job opportunities.

Environmental Damage’, American Society of International Law: Proceedings of the Annual Meeting, 2011, pp. 423–438

⁹⁴ *Supra* Note 92, Art. 2.

⁹⁵ Stockholm, February 19, 1974, 13 ILM 591. The Nordic Environmental Protection Convention was signed by Norway, Denmark, Finland, and Sweden in 1974. The objective of the Convention is similar to the ESPOO Convention, but it was developed before the introduction of EIA requirements in the national legislations, and it gives little concrete guidance related to activities and procedures.

⁹⁶ Nordic Environmental Protection Convention, *ibid.* Arts. 2--5.

3.1.3. Sustainable development

Sustainable development entails that all human activities are interdependent and interrelated as the environment is considered to be a vital part of all policies and, especially, those envisioned to promote economic and social development. Bruntland Commission in 1987 defined sustainable development as “the development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.

The significance of sustainable development in the Arctic has been highlighted in recent years because of the unparalleled acceleration in offshore hydrocarbon projects. As industrial activity surpasses national borders, TEIA may be the most effective management tool for maintaining sustainability of the unique arctic biodiversity. The goal of the TEIA procedure is not to stop the project from taking place but to make it happen with the goal to achieve sustainable development in a way that effectively reconciles industrial progress and environmental protection.

Sustainable development implements environmental, financial, and social aspects during the TEIA process of a marine petroleum projects; thus, under the light of the precautionary principle, sustainable development paves the way towards a comprehensive evaluation of petroleum operations’ impacts not only in terms of the project itself but also via a Strategic Environmental Assessment (SEA).⁹⁷

In Principle 4 of Rio Declaration, it is stated that in order to accomplish sustainable development, environmental protection forms an essential component of the development procedure and cannot be explored without it.⁹⁸ The Rio Declaration held that states are engaged to undertake an EIA in the context of Principle 17, and EIAs are stated frequently in Agenda 21.⁹⁹ The link between EIA and sustainable development has been underlined in several international policy tools, for instance, it is identified as the overarching aim of the UNEP Goals and Principles of EIA,¹⁰⁰ in addition to the ESPOO Convention. Prior assessment of proposed operations was further established as an emerging principle of international law by the World

⁹⁷ Abaza, Bisset - Sadler, *Towards an Integrated Approach*, ch. 5.

⁹⁸ Rio Declaration, Principle 4.

⁹⁹ Report of the United Nations Conference on Environment and Development, Annex II (“Agenda 21”), UN Doc. A/Conf.151/26 (vol. 1), paras. 9.12(b), 11.23(b), 13.7(a), 15.5(k), 17.6(d) and 22.4(c).

¹⁰⁰ UNEP Res. GC14/25, 14th Sess. (1987), endorsed by GA Res. 42/184, UN GAOR, 42nd Sess., UN Doc. A/Res/42/184 (1987).

Commission on Environment and Development (WCED) Experts Group on Environmental Law.¹⁰¹

The ICJ's *Gabcikovo-Nagymaros Case* illustrated sustainable development as the rationale behind the duty of the States to discuss the solution to a conflict concerning the use of a shared watercourse in terms of their rights and the overarching principles of international environmental law; the Court held that states could discuss freely, but they were obliged to draw the conclusion in the light of the said principles.¹⁰²

Public participation and access to information are declared in Principle 10 of Rio Declaration.¹⁰³ The right of the public concerned as well as relevant indigenous communities to be informed about the environmental impacts of the petroleum operation, the right to be consulted and to participate in decision-making in an oil and gas project with likely significant environmental effects, their right to legal remedies and redress in case their health has been or may be seriously influenced constitute the cornerstone of an EIA procedure.¹⁰⁴ Principle 19 also provides for an obligation to notify and consult in case of such activities.¹⁰⁵ In combination with Principle 17, it is easy to conclude that EIA is the tool via which notification, information exchange and consultation are substantiated. EIA requirements provide that affected parties, including members of the public, are afforded opportunities to comment and that these comments must be considered and answered. Therefore, in the context of the transparent and participatory nature of domestic EIA processes, EIAs as mentioned in principle 17 should be regarded as one

¹⁰¹ Experts Group on Environmental Law of the WCED, *Environmental Protection and Sustainable Development: Legal Principles and Recommendations* (London: Graham & Trotman/Martinus Nijhoff Publishers, 1987) at 62.

¹⁰² Case Concerning the Gabcikovo-Nagymaros Project (Hungary/Slovakia) (1997) ICJ Rep 6, para.140.

¹⁰³ Principle 10 was adopted in 1992 as a part of the Rio Declaration, stating that: "Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided. "See at <https://www.unep.org/> .

¹⁰⁴ WCED, *Our Common Future* at 330.

¹⁰⁵ Rio Declaration, Principle 19: "States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith".

of the main instruments through which Principle 10 can be attained.¹⁰⁶ It must be illustrated here that TEIA harmonizes different domestic EIA processes.

3.1.4. The duty to cooperate and participate in good faith.

The duty of cooperation is formulated in UNCLOS,¹⁰⁷ the US-Canada Air Quality Agreement,¹⁰⁸ and the UNECE Convention on Long Range Transboundary Air Pollution.¹⁰⁹ Good faith is further traced in the UN Charter,¹¹⁰ concerning the implementation of legal requirements, and in the Vienna Convention on the Law of Treaties,¹¹¹ regarding the interpretation of treaties. As a principle of international law, good faith is at the core of cooperation as, on the contrary, the rights of affected states run the danger of being infringed, especially in case where no prior consent took place. In order for the duties of notification and consultation to be implemented duly in an EIA, the state of origin must inform the likely to be affected country about the project and its probable impacts. In addition, according to good faith both states consult each other authentically and honestly.

By providing detailed regulations concerning notification, disclosure of information and requiring parties to reply to objections, EIA obligations confirm that the duty of cooperation is an enforceable obligation, the breach of which would entail state responsibility.¹¹² As a consequence, in the cases where no harm rule requires that a state acting under due diligence to inform about the likely environmental impacts of a petroleum operation, the duty of cooperation provides that the state of origin must inform other states about its plans that may affect them. In any case it is advisable that the States concerned must cooperate in order to set

¹⁰⁶ Principle 17 as a part of the Rio Declaration, states that “environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority”. See at <https://www.unep.org/>

¹⁰⁷ UNCLOS, Art. 194.

¹⁰⁸ Agreement between United States and Canada on Air Quality, Ottawa, March 13, 1991, Can TS 1991 No. 3; 30 ILM 676, Arts. V--VII.

¹⁰⁹ November 13, 1979, 18 ILM 1442, entered into force March 16, 1983, Arts. 2--5.

¹¹⁰ Charter of the United Nations, June 26, 1945, Can TS 1945 No. 7, Art. 2(2).

¹¹¹ Vienna Convention on the Law of Treaties, Vienna, May 23, 1969, 1155 UNTS 331, Arts. 26 and 31(1).

¹¹² Stephen McCaffrey, *the Law of International Watercourses: Non-Navigational Uses* (New York: Oxford University Press, 2001) at 403.

minimum TEIA requirements about the threshold of predictability regarding the situations under which an EIA is initiated and how this assessment will be performed.

As a petroleum development project may have extraterritorial significant impacts beyond the state where its oil plant is located, effectively assessing likely impacts beforehand requires expert knowledge about the ecosystems to be affected and wide-ranging cross-border cooperation. Applying the principle of good faith, the Country of Origin encourages the developers of the project to identify potential transboundary environmental impacts as early as possible in order to allow for their proper consideration during the planning of the respective project and the EIA process. TEIA is a national procedure in the state of origin, before licensing a project, but it is performed through cooperation with likely affected states and occasionally non-state parties, like indigenous communities or NGOs.¹¹³

3.2. International Conventions

International treaties legally bind only those States that have agreed to be bound by their provisions. That is why they are an authoritative instrument for the regulation of Arctic petroleum development.¹¹⁴ The Arctic legal regime incorporates legally binding customary principles along with treaty rules that determine or forbid a misconduct with adverse environmental effects;¹¹⁵ there are further regional agreements as well as soft law mechanisms of non-binding nature.¹¹⁶

The arctic does not have a coherent and clear legal regime to tackle with the dangers of oil and gas pollution from accelerated petroleum development.¹¹⁷ No-harm rule according to which

¹¹³ Craik, N. *The International Law of Environmental Impact Assessment: Process, Substance and Integration* (Cambridge Studies in International and Comparative Law). (2008). Cambridge: Cambridge University Press.48-51.

¹¹⁴ Johnstone, R. L. (2016). Offshore oil and gas development in the Arctic under international Law: Risk and responsibility. (Book note), *George Washington International Law Review*, 48, 501-503

¹¹⁵ Canuel, E. T. (2015). The four Arctic law pillars: A legal framework. *Georgetown Journal of International Law*, 46, 5-764.

¹¹⁶ Sahu, M. K. (2016). Arctic legal system: A new sustainable development model. *Russian Law Journal*, Vol.4 (2), 83-95.

¹¹⁷ Weidemann, Lilly, *International Governance of the Arctic Marine Environment* 115 (Hamburg Studies of Maritime Affairs, Volume 27, 2014): “[R]egulation of this sector is patchy. None of the international conventions on protection of the marine environment is solely concerned with the regulation of offshore oil and gas development”.

hydrocarbon projects in the territorial waters of one State must not cause transboundary environmental damage to other states, has been acknowledged as a customary international law requirement for the coastal state concerned.¹¹⁸ Such operations are regulated by general international law,¹¹⁹ mainly by UNCLOS.

United Nations Convention on the Law of the Seas (UNCLOS)¹²⁰ and other international treaties, such as the Convention on Biological Biodiversity (CBD),¹²¹ Persistent Organic Pollutants (POP), and the Climate Change agreements, relate to Arctic environmental protection by setting relevant regulations. In particular, as hydrocarbons are encompassed in the definition of “resources” in Article 133(a) of UNCLOS,¹²² offshore petroleum development must align with the respective rules of the convention as far as the project takes place in the respective marine zone.¹²³ The European Community (EU) is party to all the above treaties. Denmark, Finland, and Sweden are Member States of the EU¹²⁴ in addition to Iceland and Norway being parties to the EEA Agreement.¹²⁵

3.2.1. United Nations Convention on the Law of the Sea

UNCLOS provides a comprehensive framework for the management of most oceans in the world and is often referred to as the “constitution for the seas” because its prevailing goal is to apply “a universally accepted, just and equitable legal order for the oceans”.¹²⁶ It identifies

¹¹⁸ Bosma, S., (2012). The regulation of marine pollution arising from offshore oil and gas activities – An evaluation of the adequacy of the current regulatory regimes and the responsibility of states to implement a new liability regime. *Australian & New Zealand Maritime Law Journal*, 26, 89-117.

¹¹⁹ Cinelli, C. (2014). Protection and preservation of the Arctic marine environment. *Italian Yearbook of International Law*, 24, 159-189.

¹²⁰ United Nations Convention on the Law of the Sea, Montego Bay, 10 December 1982. In force 16 November 1994, 1833 United Nations Treaty Series 396.

¹²¹ Convention on Biological Diversity (adopted 5 June 1992, in force 29 December 1993) 1760 UNTS 79.

¹²² Although platforms fall within the scope of the London Convention and its 1996 Protocol, Professors Koivurova & Molenaar do not consider this as regulation of hydrocarbon activities. See at *International Governance and Regulation of the Marine Arctic*, page 25.

¹²³ Those contained in Part XI as well as in Part XII (e.g. Arts 209 and 215). See also Annex III to the LOS Convention, entitled ‘Basic Conditions of Prospecting, Exploration and Exploitation’.

¹²⁴ Although EU membership of Denmark does not include Greenland.

¹²⁵ Agreement on the European Economic Area, Brussels, 17 March 1993, in force since 1 January 1994. Note that the EEA Agreement does not apply to Svalbard Islands.

¹²⁶ Fowler, D. (2012). Offshore oil: A frontier for international law-making. *Chicago-Kent Journal of International and Comparative Law*, 12 (1), 179-192.

rights of states, determines the limits of maritime zones, from the territorial sea to the Exclusive Economic Zones (EEZ) and the continental shelf, and sets rules for marine scientific research in the Arctic, combined with the rights and duties of the States concerned for marine environmental protection.¹²⁷

3.2.1.1. Marine environmental protection

Part XII of UNCLOS on the protection and preservation of the marine environment marked the first comprehensive regime for the protection and preservation of the marine environment; all other global ocean-associated instruments and national laws must be in alignment with UNCLOS and serve its goals.¹²⁸ The Convention provides that all states are obliged to protect and preserve the marine environment.¹²⁹ Coastal states must use all feasible means to prevent pollution when exploiting resources within their jurisdiction and take all necessary measures to prevent contamination from activities within their jurisdiction on the marine environment of another state.¹³⁰ Moreover, coastal states enjoy the right to enforce provisions for environmental protection within their EEZ.¹³¹

Mostly, part XII refers to marine pollution from ships and dumping, as well as the protection of fragile ecosystems and endangered species, which were the main threats in the 1970s when the Convention was negotiated. For these reasons UNCLOS should be “interpreted and applied within the framework of the entire legal system prevailing at the time of the interpretation” in light of the most recent developments.¹³²

Articles 192 and 194 establish a strong principal general obligation for all Parties. States must protect and preserve the environment of all types of marine areas, as well as territorial seas, exclusive economic zones (EEZ), continental shelves and areas beyond national jurisdiction (ABNJ).¹³³

¹²⁷ Joyner, C. C. (2012). The legal regime for the Arctic Ocean. *Journal of Transnational Law and Policy*, 18 (2), 195-245.

¹²⁸ McConnell ML, Gold E (1991), The modern law of the sea: framework for the protection and preservation of the marine environment? *Case West Reserv J Int Law* 23:83–104

¹²⁹ UNCLOS art. 192.

¹³⁰ UNCLOS art. 194.

¹³¹ UNCLOS art. 61.

¹³² *Namibia Advisory Opinion* (1971) ICJ Reports 16, at p. 31.

¹³³ *United Nations Convention on the Law of the Sea*, adopted 10 December 1982, entered into force 16 November 1994, 1833 UNTS 396: Article 192.

In particular, Article 192 stipulates that all states have the obligation to protect and preserve the marine environment, and as stated by the authoritative Virginia Commentaries,¹³⁴ this “is an essential component of the comprehensive approach in Part XII to the protection and preservation of the marine environment”. This broad provision applies to State activities in all areas of the ocean, including the high seas or areas beyond national jurisdiction, subject to specific rights and duties under the Convention.¹³⁵ Additionally, it applies to all States and not only to State Parties.¹³⁶

In the South China Sea Arbitral Award, the Tribunal interpreted thoroughly Article 192. It clarified that the duty to "protect" the marine environment refers to protection from future damage and to "preserve" refers to maintaining or improving its current state. These two features encompass the duty to adopt measures and prevent the degradation of the environment.¹³⁷

Besides, the sovereign right of states to exploit their natural resources, as affirmed in Article 193, is limited by the duty to protect and preserve the marine environment. As characteristically ICJ illustrated: “the general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment”.¹³⁸

Article 194 is thoroughly laying down that all States bear the responsibility to take all measures to prevent, reduce and control the pollution of the marine environment from any source consistent with the Convention, subject to the best means at their disposal and according to their capabilities; and that States must also prevent transboundary pollution from activities under their control or from polluting events occurring within their jurisdiction. Article 194 paragraph 2 of UNCLOS states: “States shall take all measures necessary to ensure that activities under

¹³⁴ These Commentaries are based almost entirely on the formal and informal documentation of the Third United Nations Conference on the Law of the Sea (UNCLOS III, 1973-1982), coupled, where necessary, with the personal knowledge of editors, contributors, or reviewers, many of whom were principal negotiators or UN personnel who participated in the Conference. The scope and duration of the “Virginia Commentary” project is without precedent as an academic undertaking in the field of international law.

¹³⁵ Nordquist MH - Grandy N - Rosenne S - Yankov A (eds) (1991) United Nations Convention on the law of the sea 1982: a commentary vol. IV. Martinus Nijhoff Publishers, The Hague, p.43

¹³⁶ Ibid., p.40

¹³⁷ S. China Sea Arb. (Phil. v. China), PCA Case Repository 2013 19

¹³⁸ Supra note 36.

their jurisdiction or control are so conducted as not to cause damage by pollution to other States and their environment,...”.¹³⁹

Articles 194 and 195 tackle with oil pollution whereas other articles emphasize the importance of minimizing oil pollution.¹⁴⁰ Articles 78, 206, and 208 regulate the liberties of “other States.”¹⁴¹ Article 78 specifies that when a coastal State exercises its own rights on its continental shelf, it must not “infringe or result in any unjustifiable interference” with any rights and freedoms of other States.¹⁴²

Article 206 requires that States performing polluting activities must report any “significant and harmful changes to the marine environment.” Article 194 requires States to take “individually or jointly as appropriate” all measures “to reduce and control pollution of the marine environment.”¹⁴³ It additionally requires that member states take “all measures necessary” to ensure that any pollution from activities under their jurisdiction is curtailed and does not trigger transboundary harm to other States and their ecosystems.¹⁴⁴

According to Article 194, member states must “harmonize their policies” whereas article 195 requires that the measures taken in Article 194 do not “transform one type of pollution into another” and do not implicitly transmit the pollution to another area. Lastly, while Article 234 does relate to “ice-covered areas,” it covers only the rights of coastal states to adopt and enforce regulations for preventing and controlling marine pollution from vessels inside ice-covered areas within their exclusive economic zones.¹⁴⁵

According to Article 208, member states should determine regional regulations and regularly assess the efficacy of the applied rules. Article 234, grants to coastal States the authority to regulate ice covered areas within their national jurisdiction where they may adopt non-discriminatory regulations on the prevention, decrease, and regulation of marine pollution in areas of the EEZ covered by ice most of the year where the ice is an obstacle or a danger for

¹³⁹ United Nations Convention on the Law of the Sea, art.194.

¹⁴⁰ Ibid., art. 57, Dec. 10, 1982, 1833 U.N.T.S. 397

¹⁴¹ Ibid., at arts. 78, 206, 208.

¹⁴² Ibid., art.78.

¹⁴³ Ibid., art.194.

¹⁴⁴ Ibid.

¹⁴⁵ Ibid at art. 234.

shipping vessels; these regulations must be based on the best available science and must have “due regard for navigation.”¹⁴⁶

3.2.1.2. State sovereignty for natural resources

State sovereignty is a general principle of international law, including the concept of sovereign equality whereby all States are treated equally as legal persons in international law. States have the right to control the exploration, development and disposition of their natural resources, including biological resources. The Prior Informed Consent (PIC) procedure as laid down in the *Rotterdam Convention* for the transboundary movement of hazardous chemicals recognizes the States’ sovereignty to decide on potentially harmful activities within their territory. Permanent sovereignty over natural resources has emerged as a fundamental principle in international law, allowing states to assert full sovereignty over natural resources found within the limits of their jurisdiction. Governments would also be bound to utilise natural resources with a view towards benefiting the whole population.¹⁴⁷

As regards offshore energy resources, coastal states have 'sovereign rights' in the continental shelf and functional jurisdiction for purposes of exploring and exploiting, but not ownership rights. Notwithstanding, several states claim not only the right to regulate but also the ownership of offshore oil and gas in their continental shelves: for example Denmark, Norway. The allocation of states' rights and duties in the different maritime zones is regulated under the United Nations Convention on the Law of the Sea.¹⁴⁸ In order to ensure that states respect public goods, there are recognized limits imposed on the way sovereignty over natural resources is exercised, though, among other things, the allocation of property rights and the establishment

¹⁴⁶ Ibid Art 234: Coastal States have the right to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction, and control of marine pollution from vessels in ice-covered areas within the limits of the exclusive economic zone, where particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance. Such laws and regulations shall have due regard to navigation and the protection and preservation of the marine environment based on the best available scientific evidence.

¹⁴⁷ Pereira, Ricardo, 'The Exploration and Exploitation of Energy Resources in International Law' in Karen E Makuch and Ricardo Pereira (eds), *Environmental and Energy Law* (Blackwell, 2012) 199, 199. See also Yinka Omorogbe and Peter Oniemola, 'Property Rights in Oil and Gas under Domanial Regimes' in Aileen McHarg et al (eds), *Property and the Law in Energy and Natural Resources* (Oxford University Press, 2010) 115, 120-2, 124.

¹⁴⁸ Ibid p.200.

of procedures for communities to participate in the adoption of, or to challenge, decisions affecting these resources; thus directing sovereign states to use resources for “the well-being of their peoples”.¹⁴⁹

Today it is generally accepted that permanent sovereignty over natural resources is a prerequisite for economic development and is therefore a fundamental principle of contemporary international law.¹⁵⁰

According to article 193, the Arctic States enjoy their sovereign right to exploit the natural resources of their exclusive economic zone as well as their continental shelf;¹⁵¹ however, this right is not unlimited.¹⁵² The right of a State to make use of its natural resources must be harmonized with the requirement to respect the sovereignty of other States.¹⁵³ According to UNCLOS, coastal countries are entitled to exercise varying levels of authority over a series of adjacent offshore zones according to the criterion of distance from land (or baseline).¹⁵⁴ Nations may claim a 12-nautical-mile territorial sea, over which they may exercise rights similar to sovereignty. Nations may claim an area, the contiguous zone extending 24 nautical miles from the coast. Coastal nations may regulate their contiguous zones, as required, to protect their territorial seas and to implement their customs, immigration, fiscal, and sanitary laws. Additionally, in the contiguous zone and the exclusive economic zone (EEZ), coastal nations enjoy sovereign rights to explore, exploit, conserve, and manage marine resources and declare their jurisdiction over the establishment and use of artificial islands, installations, and structures; marine scientific research; and the protection and preservation of the marine environment.¹⁵⁵

¹⁴⁹ RPSNR, UN Doc A/RES/1803, para 1. See at Lila Barrera-Hernandez, 'Sovereignty over Natural Resources under Examination: The Inter-American System for Human Rights and Natural Resource Allocation' (2006) 12 Annual Survey of International and Comparative Law 43.

¹⁵⁰ Schrijver, Nico, *Sovereignty over Natural Resources: Balancing Rights and Duties* (Cambridge University Press, 1997) 3-4; Duruigbo, Emeka, 'Permanent Sovereignty and Peoples' Ownership of Natural Resources in International Law' (2006) 38 *George Washington International Law Review* 33, 39; Barrera-Hernandez, Lila, 'Sovereignty over Natural Resources under Examination: The Inter-American System for Human Rights and Natural Resource Allocation' (2006) 12 Annual Survey of International and Comparative Law 43.

¹⁵¹ United Nations Convention on the Law of the Sea, art, 193.

¹⁵² ILC Draft Articles on Prevention 2001, commentary on the preamble, para 1

¹⁵³ *Supra* Note 81.

¹⁵⁴ United Nations Convention on the Law of the Sea III (entered into force November 16, 1994)

¹⁵⁵ *Ibid* at Art. 56.1

The EEZ extends 200 nautical miles from the baseline from which a nation's territorial sea is measured (usually near the coastline).¹⁵⁶ This area overlaps largely with another offshore area designation, the continental shelf. International law defines a nation's continental shelf as the seabed and subsoil of the submarine areas that extend beyond either "the natural prolongation of [a coastal nation's] land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance."¹⁵⁷ As regards articles 55 and 57 of the UNCLOS they stipulate that the EEZ is an area beyond and adjacent to the territorial sea and shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.¹⁵⁸ Article 56(1) states that the coastal State has sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil in the EEZ.¹⁵⁹ This means that the coastal State obviously enjoys sovereign rights over natural resources of the area beyond and adjacent to the territorial sea and shall not extend beyond 200 nautical miles, and these sovereign rights are comprehensive but exclusive. In addition, the jurisdiction of the coastal State on the natural resources in the EEZ covers the exploration, conservation, and exploitation of living resources, in accordance with Article 56(3) of the UNCLOS where it is provided that the rights of the coastal State with respect to the seabed and subsoil shall be exercised in accordance with Part VI (Continental Shelf).¹⁶⁰

Normally, according to UNCLOS, a country's continental shelf cannot extend beyond 350 nautical miles from its established coastline irrespective of submarine geology.¹⁶¹ In this area, as in the EEZ, a coastal state may claim its sovereign rights in order to explore and take advantage of the natural resources of its continental shelf.¹⁶² As provided in Article 76 of the UNCLOS, "[t]he continental shelf of a coastal State comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its

¹⁵⁶ Ibid at Art. 55

¹⁵⁷ Ibid at Art. 76.1.

¹⁵⁸ Ibid art.55, 57.

¹⁵⁹ Ibid art.56.

¹⁶⁰ Jin Yongming, On the Exclusive Economic Zone and the Continental Shelf Systems, *Journal of Social Sciences*, No. 3, 2008, pp. 123-131.

¹⁶¹ Ibid at Art. 76.4-76.7.

¹⁶² Ibid at Art. 77.1.

land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance." That is to say, the term "continental shelf" defined in Article 76 of the UNCLOS is a legal concept for the external edge of the continental margin. The International Sea-Bed Authority manages the Arctic deep seabed, even though some Arctic states have submitted to the Commission on the Limits of Continental Shelf a petition to expand their continental shelf until the deep sea-bed ridges of the Arctic Ocean floor.¹⁶³

3.2.2. Other international treaties relating to the Arctic.

Apart from the United Nations Convention on the Law of the Seas (UNCLOS)¹⁶⁴ there are other international treaties, such as the Convention on Biological Biodiversity (CBD),¹⁶⁵ Persistent Organic Pollutants (POP), and the Climate Change agreements, that relate to Arctic environmental protection by expressing comprehensive regulations for environmental protection during the various stages of hydrocarbon projects. In particular, as hydrocarbons are encompassed in the definition of "resources" in Article 133(a) of UNCLOS,¹⁶⁶ offshore petroleum development must align with the respective rules of the convention.¹⁶⁷

MARPOL 73/78 in relation to limited global regulation determines "fixed or floating platforms" when defining the term "ship"¹⁶⁸ resulting in the application of discharge and emission standards to offshore structures. Regionally the Convention on the Protection of the

¹⁶³ See the submissions to the Commission on the Limits of Continental Shelf by the Russian Federation in 2001 and Norway in 2006, and reactions to these by other states, at the Commission's website <https://www.un.org/Depts/los/index.htm>

¹⁶⁴ United Nations Convention on the Law of the Sea, Montego Bay, 10 December 1982. In force 16 November 1994, 1833 United Nations Treaty Series 396.

¹⁶⁵ Convention on Biological Diversity (adopted 5 June 1992, in force 29 December 1993) 1760 UNTS 79.

¹⁶⁶ While platforms are covered by the London Convention and its 1996 Protocol, Koivurova & Molenaar do not regard this as regulation of hydrocarbon activities. See at International Governance and Regulation of the Marine Arctic, page 25.

¹⁶⁷ Those contained in Part XI as well as in Part XII (e.g. Arts 209 and 215). See also Annex III to the LOS Convention, entitled 'Basic Conditions of Prospecting, Exploration and Exploitation'.

¹⁶⁸ Art. 2(4). See also the definition of 'discharge' in Art. 2(3)(a), and the specific exception in Art. 2(3)(b)(ii).

Marine Environment of the North-East Atlantic (OSPAR Convention) and its related OSPAR Commission stipulate ad hoc regulations.¹⁶⁹ Moreover, the International Regulators' Forum, aims at maintaining health and safety standards in offshore petroleum operations.¹⁷⁰ The Arctic Environmental Protection Strategy (AEPS), a “soft law” regime for environmental cooperation, and its descendant, the Arctic Council, an intergovernmental forum founded in 1996, aspires to be the main forum for regional cooperation among the Arctic states.¹⁷¹ The Council's working groups and related documents demonstrate its goals that is environmental protection and sustainable development of Arctic natural resources.¹⁷² However, without legal personality, its regulations are plain proposals for better practices, even though they impact conduct of States; this may be because the Ottawa Declaration on the Establishment of the Arctic Council does not enforce legally binding duties on its members and furthermore the Arctic Council has no competence to pursue such an initiative.¹⁷³

There are numerous international agreements designed to protect marine environment under the framework of the International Maritime Organization. The most important for the Arctic are the International Convention on Civil Liability for Oil Pollution Damage (CLC) of 1992, the Fund Convention of 1992, and the 2003 Supplementary Fund, which may indicate feasible insight.

3.3. Regional Environmental Arctic Framework

As there is no convention regulating comprehensively the environmental protection of the Arctic Ocean, particularly in offshore oil and gas activities, a variety of regional hard and soft law provisions apply ad hoc. The most relevant agreement applying partially to sovereign

¹⁶⁹ The Convention for the Protection of the Marine Environment of the North-East Atlantic was open for signature at the Ministerial Meeting of the Oslo and Paris Commissions in Paris on 22 September 1992. It was adopted together with a Final Declaration and an Action Plan. See at <https://www.ospar.org/convention>

¹⁷⁰ IRF is a group of 11 countries' regulators of health and safety in the offshore upstream oil and gas industry with the goal to drive forward improvements in health and safety in the sector through collaboration on joint programmes and information sharing. See at <https://irfoffshoresafety.com/>

¹⁷¹ Nowlan, L. (2001). Arctic legal regime for environmental protection. See at: <https://www.peacepalacelibrary.nl/ebooks/files/EPLP44EN.pdf>

¹⁷² Supra note 77.

¹⁷³ Koivurova, T., & Molenaar, E. J. (2009, January). International governance and regulation of the Marine Arctic: Overview and gap analysis. A report prepared for the WWF International Arctic Programme.

See http://re.indiaenvironmentportal.org.in/files/gap_analysis_marine_resources_130109.pdf

territories of some Arctic states is the OSPAR Convention that sets up a broad regulatory regime and an institutional mechanism, the OSPAR Commission, for regional cooperation.¹⁷⁴

The general goal of OSPAR Convention is “to prevent and eliminate marine pollution and to achieve sustainable management in the region, that is, the management of human activities in such a manner that the marine ecosystem will continue to sustain the legitimate uses of the sea and will continue to meet the needs of present and future generations”.¹⁷⁵ The OSPAR Convention tackles with pollution from offshore activities and the removal of abandoned offshore platforms.¹⁷⁶ The regulation of all human activities with an adverse effect on the ecosystems and the biodiversity in the North East Atlantic lie within the scope of the above convention; however, fisheries management and specific delimitations in shipping regulations are not covered.¹⁷⁷

The geographical scope of the OSPAR regime comprises Region I, Arctic waters, a region that is nearly 40% of the OSPAR maritime area. Supplementing the general obligation for the prevention of pollution from “offshore sources” in Article 5, Annex III of the above convention relates to offshore structures. By contrast, the OSPAR Convention or its Annex III do not provide for technical duties and norms as this possibility lies within the discretion of the Commission through its agreements, decisions, and recommendations.

According to article 6 of the OSPAR Convention, the States concerned are under “the general obligation to collaborate in regular joint monitoring and assessment of the quality of the marine environment in the North East Atlantic”. This provision is further supported by certain conditions on cooperation in monitoring programs, joint quality assurance arrangements, the development of scientific assessment instruments, like modeling, remote sensing, and risk assessment schemes, as well as documenting assessments. These comprehensive conditions are intricately linked to the monitoring and assessment requirements for the marine operations that

¹⁷⁴ Dotinga, H. - Molenaar, E.J. ‘The Mid-Atlantic Ridge: A Case Study on the Conservation and Sustainable Use of Marine Biodiversity in Areas Beyond National Jurisdiction’, IUCN Marine Law and Policy Paper No. 3 (2008), available at www.cms.iucn.org

¹⁷⁵ OSPAR Convention, Preamble.

¹⁷⁶ Vinogradov, S. (2013). The impact of the Deepwater Horizon: The evolving international legal regime for offshore accidental pollution prevention, preparedness, and response. *Ocean Development and International Law*, 44 (4), 337-362.

¹⁷⁷ *Supra* Note 174, Annex V, Art. 4.

are mentioned in each of the other Annexes to the Convention and contain information on all human activities, as well as fisheries and shipping impacts.

The OSPAR Convention does not provide for a transboundary EIA or SEA procedure. In the Annexes to the OSPAR Convention there are several provisions for EIAs in terms of activities like dumping and offshore hydrocarbon operations. Likewise, the monitoring and assessment schemes of OSPAR examine whether current and new projects bear significant negative impacts on marine biodiversity in the North East Atlantic.

On the other hand, soft law instruments incorporate globally acknowledged technical standards, common policies, and established practices.¹⁷⁸ The Arctic Council has published guidelines such as the 2009 Arctic Offshore Oil and Gas Guidelines.¹⁷⁹ Their objective is for the Arctic nations to follow them during petroleum operations as well as to support decision-makers in planning standards, which are implemented consistently for offshore hydrocarbon development.¹⁸⁰ These guidelines are legally non-binding; however, they promote the adoption of the highest standards during oil and gas activities by informing all parties interested in petroleum activities, mainly local authorities, operators, and indigenous groups, and promote public participation.¹⁸¹ The Ramsar Convention on Wetlands, the World Heritage Convention and the Convention on International Trade in Endangered Species were all adopted in the 1970s.¹⁸² They address the preservation and use of particular natural resources. The United Nations Convention on Biological Diversity (CBD) is the overarching biodiversity agreement.¹⁸³ It has been adopted during the Rio Conference of 1992 and follows a more holistic approach with focus on sustainable development. The Cartagena Protocol on Biosafety of 2000, developed under the CBD, deals with Living Modified Organisms (LMOs) resulting from fair and equitable sharing of benefits arising from their application.¹⁸⁴ The 20 Aichi

¹⁷⁸ Koivurova, T., Kankaanpää, P., & Stepien, A. (2015). Innovative environmental protection: Lessons from the Arctic. *Journal of Environmental Law*, 27, 285- 311.

¹⁷⁹ Arctic Council, protection of the Arctic Marine Environment Working Group, Arctic Offshore Oil and Gas Guidelines 2009.

¹⁸⁰ *Ibid.*, 2009d.

¹⁸¹ See *supra* note 111.

¹⁸² Matthews, G. V. T., & International Union for Conservation of Nature and Natural Resources. (1993). *The Ramsar Convention on Wetlands: Its history and development*. Gland, Switzerland: Ramsar Convention Bureau.

¹⁸³ Convention on Biological Diversity of 5 June 1992 (1760 U.N.T.S. 69)

¹⁸⁴ Protocol on Biosafety to the Convention on Biological Diversity of 7 June 1992 (1760 U.N.T.S. 79)

Biodiversity Targets adopted at the 10th Conference of the Parties in 2010 (COP 10), and part of the Strategic Plan for Biodiversity 2011-2020, seek to widen the Parties' strategies and plans for more over-arching, cross-sectoral themes and so combine interconnecting agreements such as climate change, marine ecosystems, land desertification and endangered species.¹⁸⁵

In 2013 the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic was implemented.¹⁸⁶ Its goal is to become a legal database for effective engagement and collaboration in terms of an oil pollution accident.¹⁸⁷ In 2015, the "Framework Plan for Cooperation on Prevention of Oil Pollution from Petroleum and Maritime Activities in the Marine Areas of the Arctic" was agreed; its objective is to reinforce cooperation and exchange of information concerning prevention of marine oil pollution.

3.4. Evaluation of effectiveness of international and regional conventions

Usual criticisms of international environmental treaties, such as overlap, repetition, and lack of coordination are also relevant from the Arctic viewpoint. Recent increased efforts to improve international environmental governance mechanisms will support the Arctic that is excessively disturbed by industrial operations out of the regulatory competence of their national governments.

Because international treaties lay down divergent provisions regarding participation of various stakeholders, their harmonization would further promote the participation of more groups. It must be emphasized that the particular role afforded to indigenous communities is not detected anywhere else in the world. The Arctic Council could examine better practices to ameliorate indigenous participation and render it more effective.

UNCLOS could be further reviewed to tackle more effectively with oil and gas drilling challenges. Its provisions related to ice covered areas could also be used more in the Arctic. Of course, application of UNCLOS would require ratification by the United States as all the other Arctic states are parties. In any case, ratifying UNCLOS makes sense because the U.S. follows

¹⁸⁵ <https://www.cbd.int/aichi-targets/target/20>

¹⁸⁶ Arctic Council, 2013. AGREEMENT on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic. Arctic Council Secretariat, Tromsø: Norway.

¹⁸⁷ Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic, Presentation of the Agreement and Development of the Operational Guidelines. Trigatti, Larry - Bjerkemo, Ole-Kristian - Everett, Mark, International Oil Spill Conference Proceedings. (2014) 2014 (1): 1485–1496.

the convention as a matter of policy and customary law and is under the legal duty to follow UNCLOS provisions in terms of customary international law, which is legally binding for all countries.¹⁸⁸

It is worth mentioning that the Arctic coastal states may have formed domestic regulatory policies for offshore petroleum operations, but the broader Arctic regime does neither provide for compensation schemes to third coastal states and victims of pollution.

CHAPTER 4: The practice of TEIA in Arctic offshore petroleum development.

4.1. The obligation to perform a TEIA.

Assessing transboundary impacts beforehand is a requirement of general international law and not only a treaty-based obligation;¹⁸⁹ in particular, it has been acknowledged that “the obligation to protect and preserve the environment ... has to be interpreted in accordance with a practice ... that it may now be considered a requirement under general international law to undertake an environmental impact assessment where there is a risk that the proposed industrial activity may have a significant adverse impact in a transboundary context. Due diligence, and the duty of vigilance and prevention which it implies, would not be considered to have been exercised if a party planning works liable to affect the regime of the river or the quality of its waters did not undertake an environmental impact assessment on the potential effects of such works.”¹⁹⁰

The fact that an EIA must be conducted prior to the execution of a project that is likely to produce significant transboundary harm implies that transboundary EIA is considered to be an independent duty in international law.¹⁹¹ However, there is an alternative view that EIA is an essential component of the general obligation of due diligence in the prevention and control of transboundary harm, indicating that the content of the obligation may develop as time goes by, and will illustrate the competences of the party involved and the special features of the case.¹⁹²

¹⁸⁸ UNCLOS is based on the four Geneva Conventions on the Law of the Sea adopted in 1958. It draws together the four conventions and joins them in one single treaty. States that have not ratified UNCLOS are still bound by the provisions of the four 1958 Geneva Conventions and the norms of customary international law. For details on UNCLOS and its related institutions, see http://www.un.org/Depts/los/convention_agreements/convention_overview_convention.htm

¹⁸⁹ Pulp Mills at para.205

¹⁹⁰ Ibid., at para. 204

¹⁹¹ Supra Note 156.

¹⁹² Pulp Mills at para.206.

The Court also ruled that “once operations have started and, where necessary, throughout the life of the project, continuous monitoring of its effects on the environment shall be undertaken.”¹⁹³

As commented in the previous chapter, Principle 17 of the Rio Declaration stipulates that an EIA should be performed in case of “proposed activities that are likely to have a significant adverse impact on the environment”.¹⁹⁴ In Article 7 of the ILC’s Articles on Prevention of Transboundary Harm “possible transboundary harm” is only mentioned.¹⁹⁵ Article 206 of UNCLOS provides that “reasonable grounds for believing that planned activities ... may cause substantial pollution of or significant harmful changes to the marine environment...”¹⁹⁶

With regard to MOX Plant and Pulp Mills cases, the obligation to conduct an EIA does not require a significant risk of harm, even a small one is enough.¹⁹⁷ In two other cases the ITLOS ruled that the danger of harming the marine environment “could not be excluded”: in particular, in Land Reclamation ITLOS ruled that the parties should assess the hazards and impacts of the operations, whereas in Southern Bluefin Tuna ITLOS ruled that additional examination of the condition of the stock should be conducted in order to increase the allowed catch quotas.¹⁹⁸ In all the above cases it is concluded that an EIA must be performed when there is a proven probability of significant harm to the human or natural environment, even if the danger is ambiguous and the likely damage may be reversed.

An EIA procedure occurs prior to the development consent, but it may take place in numerous phases, for instance in projects demanding an “*initial environmental examination*” supported by a comprehensive EIA in case a probability of significant harm is detected.¹⁹⁹ In multi-layered operations, where preliminary authorisation and subsequent operation are chronically distant, a number of EIAs may be performed - or the opening EIA may need to be reviewed and revised

¹⁹³ Ibid.

¹⁹⁴ 1987 UNEP Goals and Principles of Environmental Impact Assessment , Principle 1

¹⁹⁵ ILC, 2001 Articles on Transboundary Harm, Arts. 1, 2(a), 7; 1982 UNCLOS, Art. 206; 1991 Convention on Transboundary EIA, Art. 2(3); 1992 Convention on Biological Diversity, Art. 14.

¹⁹⁶ 1982 UNCLOS, Art. 206

¹⁹⁷ MOX Plant Case (Provisional Measures) ITLOS No. 10 (2001); Pulp Mills Case (Provisional Measures) (Argentina v. Uruguay) ICJ Reports 2006.

¹⁹⁸ Southern Bluefin Tuna (Provisional Measures), (1999) ITLOS Nos. 3&4, para. 79; Land Reclamation (Provisional Measures), (2003) ITLOS No. 12, para. 96.

¹⁹⁹ See e.g. 1991 Protocol on Environmental Protection to the Antarctic Treaty, Article 8 and Annex I ; UNEP

EIA Goals and Principles, Principle 1.

- before an oil plant is authorised to begin functioning. In several countries, the developer has the initiative to carry out an EIA.

4.2. The content of a TEIA

EIA has been defined as “...the process of identifying, predicting, evaluating, and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made.”²⁰⁰ According to the ESPOO Convention EIA is “a procedure for evaluating the likely impact of a proposed activity on the environment” whereas its goal is to inform the competent decision-making authorities about likely significant environmental impacts prior to the licensing of the petroleum development operation and not to decide whether a project should be implemented or how.

Impact is defined in Espoo as: any effect caused by a proposed activity on the environment including human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments or other physical structures or the interaction among these factors; it also includes effects on cultural heritage or socio-economic conditions resulting from alterations to those factors.²⁰¹

It has been ruled that each State has the discretion to decide in its national legislation or in the permit procedure of the respective activity the content of the required EIA, taking into account the character and the scale of the said activity and its likely harmful impacts on the environment along with the duty to comply with no harm rule and exercise due diligence when conducting such an assessment.²⁰² The Court also considers that an environmental impact assessment must be conducted prior to the implementation of a project.

The Court declares above that the content of an EIA is not in the exclusive and absolute discretion of the State concerned to be put forward; this means that the State cannot stipulate whatever content it considers as appropriate for an EIA. On the contrary, an EIA must be

²⁰⁰ Everard M. (2018) Environmental Impact Assessments. In: Finlayson C. et al. (eds) The Wetland Book. Springer, Dordrecht. https://doi.org/10.1007/978-90-481-9659-3_183

²⁰¹ Espoo Convention, supra note 5, article 1(vii).

²⁰² Pulp Mills, par.205

undertaken with regard to the character and extent of the oil and gas activity and its probable harmful effects on the environment”.²⁰³

With regard to the term “specific content of each EIA is for the state to determine”, the ILC 2001 Commentary clarifies that the specific content of assessment lies within the law-making discretion of the State performing it but, on the other hand, it should contain an evaluation of the possible transboundary harmful impact of the activity.

In order for the States likely to be affected to evaluate the risk to which they might be exposed, they need to know what possible harmful effects that activity might have on them. The assessment should include the effects of the activity not only on persons and property, but also on the environment of other States. The importance of the protection of the environment, independently of any harm to individual human beings or property is clearly recognized”.²⁰⁴

In other words, international law requires a minimum according to which an EIA will assess likely effects on people, and the natural ecosystems of third states likely to be affected; if domestic law does not guarantee that such an assessment is carried out, then there is a breach of the obligation to undertake a TEIA.

Moreover, in such a case where inquiry process comparable to the ESPOO Convention exists, provisional measures in front of international courts may be the most appropriate way for a likely to be affected State requesting the State of origin to enforce the obligation to perform a TEIA.²⁰⁵

In Land Reclamation the ITLOS ordered the parties to assess the risks and effects of the proposed works in cooperation,²⁰⁶ while in Southern Bluefin Tuna the outcome of its order was that only an agreement following assessment by the state of the stock could increase the respective catch quotas.²⁰⁷ These cases indicate that if an EIA has not been undertaken and there is documented risk of significant harm to the environment, even when the danger is not certain

²⁰³ Ibid, par.204

²⁰⁴ Article 7. Assessment of risk, para.7-8. Draft articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries 2001 by United Nations.

²⁰⁵ Southern Bluefin Tuna (Provisional Measures), para 79; Land Reclamation (Provisional Measures), para 96.

²⁰⁶ Case concerning Land Reclamation by Singapore in and around the Straits of Johor (Malaysia v. Singapore), Provisional Measures, ITLOS.

²⁰⁷ Southern Bluefin Tuna, New Zealand v Japan, Provisional Measures, ITLOS Case No 3, (1999) 38 ILM 1624, ICGJ 337.

and the likely damage not essentially irreversible, a Court Order demanding the parties to cooperate in prior assessment is expected to be issued after initiating provisional measures.

4.3. Legal Instruments relating to a TEIA of an arctic marine project

The main international convention applying in the Arctic region is the Convention on Environmental Impact Assessment in a Transboundary Context, widely known as ESPOO Convention, an international agreement that was prepared by the UN Economic Commission for Europe (ECE).²⁰⁸ It establishes certain procedures for performing an EIA of a project taking place at the territory of one State, and with a potential to harm the other State through significant adverse effects.²⁰⁹ The ESPOO Convention could be regarded as one of the most successful international instruments for enhancing transboundary cooperation in terms of prior information, consultation, or EIA, though its geographical scope of application is limited to the UNECE region for the moment.²¹⁰

ESPOO convention is considered to be the basis for Arctic TEIA.²¹¹ Sweden, Denmark, Finland, Iceland and Norway are among its parties. Denmark, Finland, and Sweden as Member States of the European Union; the EU has ratified the ESPOO Convention, meaning that the convention is an integral part of the EU's legal order.²¹² Therefore, EU legal provisions should be interpreted in accordance with the ESPOO Convention.²¹³ Iceland and Norway as parties to the European Economic Area (EEA) agreement are also legally bound under European law to undertake a TEIA. Even though the three federal states (Russia, Canada, and the USA) are not parties, their own domestic legislations as well as bilateral conventions set up EIA procedures in view of projects with probable significant transboundary effects.

²⁰⁸ 1991 UNECE Convention on Environmental Impact Assessment in a Transboundary Context, known as the ESPOO Convention.

²⁰⁹ Supra note 164, Article 2.

²¹⁰ Koyano, Mari, The significance of the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) in international environmental law: examining the implications of the Danube Delta case, *Impact Assessment and Project Appraisal*, (2008) 26:4, 299-314.

²¹¹ Koivurova, Timo (2008) *Transboundary environmental assessment in the Arctic*, *Impact Assessment and Project Appraisal*, 26:4, page 268.

²¹² 2011 *Europe's Environment: An Assessment of Assessments*. European Environment Agency EEAgency, Copenhagen.

²¹³ See the Report by the Aarhus Compliance Committee on the Compliance by the EC with its obligations under the Aarhus Convention, ECE/MP.PP/2008/5/Add.10, paragraph 23, 2/5/2008.

Particularly, the Russian Federation has signed the convention but has not yet ratified it; however, it has formally declared that it is willing to enforce the provisions of the convention to the extent allowed by its domestic legislation.²¹⁴ For instance, in the case of the Nord Stream project, Russia complied with the regulations of the ESPOO Convention although it was not under a legal duty for such a conduct. It may be safely concluded that the convention is steadily being recognized as an international standard on how to implement the obligations emanating from no harm principle that is legally binding for all states worldwide.²¹⁵

Additionally, there are several, bilateral and multilateral, treaties in force between the eight Arctic states that provide for a TEIA process. There are also international conventions that apply throughout most of the region and contain a general level TEIA procedure like UNCLOS in article 206 and the Convention on Biological Diversity in article 14.²¹⁶ Another UNECE treaty, the Convention on the Transboundary Effects of Industrial Accidents (1992) stipulates a TEIA procedure between Russia and its Nordic neighbours.²¹⁷ The primary function of all these treaties is to regulate those cases that are out of the scope of the ESPOO Convention but in any case, there are TEIA issues not covered by any treaty, like those between USA and Russia, or Russia and its Nordic neighbours.²¹⁸

In the context of the Arctic Environmental Protection Strategy (AEPS) for cooperation between the eight Arctic states, the Arctic Council has issued the EIA Guidelines; as discussed

²¹⁴ Good example of this is Finland's notification a few years ago to the Russian Federation on the basis of the ESPOO Convention of a planned mining project in Sokli - which is located above the Arctic Circle, 12 kilometers from the Russian border - even though Russia is not a party to the Convention. For more information see also: Koivurova, Timo and Pölonen, Ismo, *Transboundary Environmental Impact Assessment in the Case of the Baltic Sea Gas Pipeline* (September 5, 2013). *The International Journal of Marine and Coastal Law* 25 (2010) 151–181.

²¹⁵ Bastmeijer, K – Koivurova, T., 2008. *Conclusions: globalisation of transboundary environmental impact assessment*. In *Theory and Practise of Transboundary Environmental Impact Assessment*, eds. Bastmeijer, M. and Koivurova, Timo, pp. 347–389. Leiden: Martinus Nijhoff.

²¹⁶ All Arctic states apart from the USA are parties to both treaties.

²¹⁷ The applicability of the ESPOO Convention derives from its definition of 'hazardous activity' as 'any activity in which one or more hazardous substances are present or may be present in quantities at or in excess of the threshold quantities listed in Annex I to the Convention and which is capable of causing transboundary effects', which encompasses most large-scale industrial activities. However, there is large list of exclusions from the scope of the convention. Koivurova, Timo, (2008) *Transboundary environmental assessment in the Arctic, Impact Assessment and Project Appraisal*, 26:4, 265-275.

²¹⁸ *Supra* Note 166, page 269.

previously, these guidelines do not create legal obligations for Arctic states as they promote recommendations on how to apply EIA in their territories.²¹⁹

In the legal framework of the EU, Directive 2011/92/EU incorporates rules for projects taking place in one Member State with likely significant impacts on the natural environment of another Member State.²²⁰ Member States have the discretionary power to define the way of implementing Article 7 in case the project has an impact only within the EU territory, meaning that it applies only to intra-EU relations. In case of broader transboundary impacts outside the EU territory, compliance with the ESPOO Convention is mandatory along with Article 7 of the EIA Directive.

While the EIA Directive uses the term “project”,²²¹ ESPOO Convention uses the term “proposed activity”.²²² The latter encompasses new or proposed activities but in addition “any major change to an activity” not including what a major change entails. The competent national authorities decide on the application of the Convention. Regardless of the above disparity in wording, the TEIA procedure is substantially similar.

Projects with transboundary impacts challenge the usual EIA procedures (when applicable) and raise new issues that have to be addressed using the existing legal provisions and instruments above mentioned.²²³ Similar provisions may be observed in other bilateral and multilateral treaties and legal instruments.²²⁴ Although the Thesis addresses only the most relevant

²¹⁹ Guidelines for Environmental Impact Assessment (EIA) in the Arctic, Arctic Environment Protection Strategy, Sustainable Development and Utilization, Finnish Ministry of the Environment, Finland 1997.

²²⁰ Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment. OJ L 26, 28.1.2012, p. 1–21.

²²¹ Article 1(2) of the EIA Directive defines “projects” as “the execution of construction works or of other installations or schemes” or “other interventions in the natural surroundings and landscape including those involving the extraction of mineral resources”.

²²² Article 1(v) Definitions: “Proposed activity” means any activity or any major change to an activity subject to a decision of a competent authority in accordance with an applicable national procedure.

²²³ Other instruments may also be relevant to transboundary projects, but will not be addressed here: e.g. Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment, the Protocol on Strategic Environmental Assessment to the UNECE Convention on Environmental Impact Assessment in a Transboundary Context, Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, Directive 2000/60/EC establishing a framework for Community action in the field of water policy

²²⁴ For instance, the UNECE Aarhus Convention on access to information, public participation in decision-making and access to justice in environmental matters the United Nations Convention on the

transboundary EIA procedure, the Espoo Convention, in some cases another convention or directive (between the Nordic states) may require states to conduct such a procedure.

4.4. Structure of a TEIA procedure

In respect of EIA for arctic projects with transboundary likely significant impacts, the usual procedure is the one that is provided by the ESPOO Convention. The most common situation involves two countries - one where the project is situated and another on whose territory it may cause significant environmental effects. The countries responsible for authorizing such projects often have different legal systems and EIA procedures whereas some may not be contracting parties to the ESPOO Convention. In addition, the environmental and socio-economic impacts of transboundary projects go beyond local, regional and national borders. Multilateral cooperation is therefore usually required.

Hence, if a proposed oil and gas activity project is likely to cause transboundary impacts between Sweden, Finland, Norway, Denmark and Iceland, a transboundary EIA procedure must be organized according to the provisions of the Espoo Convention. Yet, if such an activity is likely to cause transboundary impacts to USA, Canada or Russia, these States are not legally obligated to organize such a procedure, but it is of course desirable to have such a procedure.

In case the petroleum project may entail likely significant environmental impacts across borders, then it must be subjected to a transboundary EIA according to the ESPOO Convention either the States concerned are parties or, as a global standard, according to the discretion of the respective countries to follow the relevant provisions. As the ESPOO process comprises several key steps, where no harm principle is substantiated, this section provides a summary of how that process is being implemented in terms of an oil and gas operation.

An EIA contains at first a screening process where the likelihood of an activity to significantly affect the environment is identified, concluding with a decision of whether an EIA is necessary or not. Then the scoping process follows where the content of the assessment is defined, mainly the selection of alternatives, impacts and methods to be considered. The Assessment of impacts and reporting follows where a description of the proposed activity and alternatives, baseline

Law of the Sea (UNCLOS), the Convention on Biological Diversity, and other regional international Conventions, such as the Convention for the Protection of the marine Environment of the North-East Atlantic (OSPAR).

description of the environment and the likely impacts upon it from the alternatives, mitigation measures, knowledge gaps and uncertainties and a non-technical summary are contained.

We must have in mind that EIA is a national procedure for evaluating the likely impact of a proposed activity on the environment And TEIA serves as a harmonizing tool of several different national legislations on EIAs.

4.4.1. Notification and exchange of information

At first the industry developer drafts the proposal about a petroleum development project with a description of its operation and its likely cross-border impacts and then applies for authorization to the competent authority of the State in the territorial waters of which the project will take place (State of origin).²²⁵ The State of origin is obliged to notify any Party that may be considered to run the risk of being affected from the execution of the project as well as its own public about the potential negative impacts of the project.²²⁶ This notification consists of any available information on the proposed project and its likely extraterritorial impacts,²²⁷ clarification of the character of the decision²²⁸ and a deadline within which a reply is anticipated for participation or not.²²⁹ After the participation to the EIA procedure is confirmed, the party of origin informs comprehensively all parties involved about the project and sets a deadline for receiving their comments.²³⁰ The goal is to safeguard dialogue among interested communities, stakeholders, and countries in order to cooperate effectively.

4.4.2. Presentation of EIA documentation

According to article 4 of the Espoo Convention, after the developer has submitted the documentation to the competent authority, the Party of origin forwards it to the likely to be affected State and its public; the latter present their comments either directly to the above authority of the Party of origin, or through the Party of origin before the concluding decision is issued on the proposed activity.²³¹

²²⁵ Crude oil refineries are enlisted in Appendix I of the Espoo Convention as activities that must undergo an EIA.

²²⁶ Espoo Convention, article 3, par.1.

²²⁷ Ibid., article 3, par.1 (a).

²²⁸ Ibid., article 3, par.1 (b).

²²⁹ Ibid., article 3, par.1 (c).

²³⁰ Ibid., article 5.

²³¹ Ibid., article 4, par.2.

4.4.3. Consultations based on EIA documentation.

According to article 4 of the Espoo Convention, the Party of origin and all the other concerned parties agree from the beginning of discussions for how long the consultation period will last.²³² Then the party of origin discusses with the likely to be affected State about the potential impacts of the proposed petroleum activity affecting the latter's territory from its execution as well as which practices could be used to decrease or remove completely these detrimental effects.²³³ They may discuss about potential alternatives, even the option of not doing anything, but also what may be done to mitigate likely adverse impacts and how they can help each other to tackle with these effects as well as they may agree to screen the effects at the cost of the State of origin.²³⁴

4.4.4. Final decision

According to article 6 of the Espoo Convention, in the final decision of the proposed petroleum activity the result of the EIA, containing the EIA documentation, all the comments, and the conclusion of the consultations should be duly considered.²³⁵ The Party of origin delivers the final reasoned decision on the proposed activity to the affected Party.²³⁶ If extra information, which was unavailable at the time of concluding the decision and may influence substantially the outcome of the said decision, becomes available to a concerned Party before the construction is launched, that Party must inform promptly the other concerned Party; any of the concerned Parties may request that consultations will be continued later in respect of assessing if the decision must be reviewed in light of new evidence.²³⁷

4.4.5. Post-project evaluation

According to article 7 of the Espoo Convention, the concerned Parties decide about a post-project evaluation of the petroleum activity, which contains mainly the monitoring of the operation and the identification of any pollutant transboundary impacts with the aim at examining compliance with the authorization decision and monitoring the effectiveness of the mitigation measures.²³⁸ In case the Party of origin or the affected Party conclude on a reasoned basis that there arises a significant harmful transboundary influence or problems have been

²³² Ibid., article 5, par.2.

²³³ Ibid., article 5, par.1.

²³⁴ Ibid., article 5, par.1 (a), (b), (c).

²³⁵ Ibid., article 6, par.1.

²³⁶ Ibid., article 6, par.1.

²³⁷ Ibid., article 6, par.3.

²³⁸ Ibid., article 7, par.1.

detected which may ensue a negative influence on their territories, the other Party is informed at once; both Parties will then discuss about which actions are considered necessary to decrease or completely remove the effect.²³⁹

4.4.6. Applicability on the arctic marine area

As discussed above, the aim of a TEIA process is to give a concise overview of the drilling project along with its likely transboundary impacts in the context of the emerging challenges of the unique, pristine and sensitive Arctic marine environment. It should include at first an accurate description of the arctic marine area where the activity is planned to take place and identification of its main characteristics, highlighting for example vulnerable nesting sites, habitats, reproduction, breeding or hunting grounds for seabirds or fish species.

The description of the proposed offshore hydrocarbon activity, along with its goals, place, time length, and physical features during all phases of design, construction, commissioning, delivery, and operation of petroleum activity should be documented. Moreover, account must be given to the type and quantity of materials to be used, construction and commissioning of production plants and associated equipment for oil and gas processing in addition to floating offshore units and installations.

The extraterritorial region that will be likely affected and its probable significant effects should also be delineated and for how long all the marine ecosystems, territories and communities may be foreseen to be under these influences.

Furthermore, potential sources of pollution and noise coupled with their probable impacts on wildlife should be also identified, like drilling infrastructure on the seabed, ice-breaking machinery, helicopters. Due regard must be given to the fact that, if this machinery remains exposed to the arctic weather, may malfunction due to extreme cold whereas freezing temperatures also place workers at risk. Moreover, the estimated type and quantity of black carbon deposits and gas release in air, water, soil as well as vibrations, light, heat, and radiation pollution.

In addition, the EIA should incorporate an evaluation of impacts from the problems that may arise during the drilling process as strong winds, permanent ice cap, and rigid climate conditions in Arctic waters have the potential to make things more difficult and thwart effective management of potential accidents. Response methods or reduction risk strategies in terms of

²³⁹ Ibid., article 7, par.2.

oil spills or gas leakages should be identified, the difficulties (ice, freezing weather, strong winds, etc.) in tackling with them under the extremely harsh climate conditions of the arctic marine environment, the limitations in realizing the project and any adjustment estimations for different environmental conditions.

In particular, as discussed above, a description of the measures proposed to avoid, reduce or rectify identified potential significant adverse effects, taking into consideration the recovery and regenerative capacity of the Arctic, an accounting with the principles of conservation biology, including disturbance and cumulative effects, other development options, and where authorities prepare the analysis, this may include the alternative of no action. This discussion should include an evaluation of the different alternatives and the reasons for choosing the selected activity or other means of displaying this information, based on cultural heritage of the local and indigenous residents. Also, possible socio-economic concerns, such as how the lifestyle of people or specifically indigenous communities will change due to the drilling project.

Some Arctic areas may be so distant that the nearest Coast Guard station may be hours away. Much of the Arctic shoreline lacks infrastructure or natural harbours large enough for boats to anchor in, making it difficult – if not impossible – to safely rescue crews or store the equipment needed to respond to a spill. The aggregate effect of such restrictive elements can make marine oil spill response operations difficult in the Arctic, creating a “response gap.” Such a gap exists when activities that may cause an oil spill are handled during a time period when an effective response cannot be achieved, either because the available technologies will not be effective or because their deployment is prohibited because of harsh environmental conditions.

Despite the recent large number of transboundary EIA treaties, there is little scholar literature on whether or how these agreements affect planned projects. Since the treaties stipulate regulations, decision-makers examine whether the parties are in alignment with the process as designated in the respective legal provisions.²⁴⁰ Furthermore, the effectiveness of an EIA

²⁴⁰ For example, one of the few systematic case studies discusses whether the acting state publicized its final decision but never mentions what that final decision was. U.N. Econ. Comm'n for Eur., supra note 5, at 22-24, 30-40.

process is difficult to decide; no one may appreciate whether a state's choice to alter a project ensued from the results in an EIA or from elsewhere, for example a budget shortage.²⁴¹

CHAPTER 5. Current and future perspectives of Arctic TEIA

5.1. Comparative evaluation of the current TEIA process in the Arctic hydrocarbon development

The Espoo Convention is particularly important as a multilateral framework for establishing comprehensive processes on transboundary harmful drilling projects. Due to the arctic marine area being so vulnerable because “almost every activity in the arctic will be close to one or more sensitive areas”²⁴² prior assessment of petroleum projects and mitigation of their adverse impacts is of utmost importance. Undoubtedly, the TEIA process enhances Arctic cooperation by raising awareness on the unique Arctic environment, and hence, supports dialogue in order to avoid tensions. However, States are faced with several difficulties during its application, as will be discussed in the following paragraphs.

Taking into account long distances, and the risk that environmental pollution or ecological damage due to oil and gas transportation/extraction affects more than one national jurisdiction, TEIA “is considered a necessary tool in order to give the environment its proper place in the decision-making process by improving the quality of information to decision makers, so that environmentally sensitive decisions can be made by paying careful attention to minimizing impacts, improving the planning of activities and protecting the environment.”²⁴³

According to the Espoo convention a “TEIA is conducted only for proposed activities listed in appendix 1 that are likely to cause significant transboundary harm”.²⁴⁴ NEPC²⁴⁵ requires a

²⁴¹ See How Successful Are Member States in Implementing the EIA Directive, 6, COM (2003) 334 final (June 23,2003),available at <http://ec.europa.eu/environment/eia/pdf/report-en.pdf>.

²⁴² Arctic Environmental Protection Strategy, Guidelines for Environmental Impact Assessment in the Arctic Helsinki Finnish Ministry of Environment 1997, 12.

²⁴³ See J. Woodliffe, “Environmental Damage and Environmental Impact Assessment”, in M. Bowman and A. Boyle (eds.), *Environmental Damage in International and Comparative Law: Problems of Definition and Valuation* (Oxford: Oxford University Press, 2002) 133-147, at 134.

²⁴⁴ ESPOO article 2 (2)

²⁴⁵ The Nordic Environmental Protection Convention was signed by Norway, Denmark, Finland, and Sweden in 1974. The objective of the Convention is like the ESPOO Convention, but it was developed

TEIA for activities that entail or may entail nuisance of significance²⁴⁶ and the UNCLOS indicates the need for a TEIA in case there are reasonable grounds to believe that the activity may cause substantial pollution or significant and harmful changes to the marine environment.²⁴⁷ State practice indicates that the Espoo provisions are relevant if there is a possibility, no matter how uncertain of a significant transboundary damage.²⁴⁸ On the whole, a central problem in the TEIA process is that the criterion of impact importance is not precise enough in order to evaluate cumulative impacts of many independent projects or just substantiate it in case of the particularly sensitive arctic ecosystems.

Although Arctic EIA Guidelines stipulate that cumulative impacts should be also considered, these are voluntary, non-binding guidelines.²⁴⁹ The Guidelines provide guidance on how to conduct EIAs under Arctic conditions.²⁵⁰ Their aim is to provide “suggestions and examples of good practice to enhance the quality of EIAs and the harmonization of EIA in different parts of the Arctic.”²⁵¹ Espoo applies only to relations between its parties and therefore, even within the arctic, the five Espoo parties are not obliged to enforce its provisions to petroleum projects taking place in their marine areas with potential transboundary damage on marine regions under American, Canadian, or Russian jurisdiction. In practice, it must be highlighted that Finland treats Russia as an Espoo party and follows the processes of notification and consultation in the same way as for Sweden or Norway.²⁵²

The Espoo convention applies to all transboundary impacts between the contracting States, not just those between the neighbouring States. It is only provided that potential harm must

before the introduction of EIA requirements in the national legislations, and it gives little concrete guidance related to activities and procedures.

²⁴⁶ Ibid., article 1

²⁴⁷ UNCLOS at article 206

²⁴⁸ Schrage, Wiek. “The Convention on Environmental Impact Assessment in a Transboundary Context.” In *Theory and Practice of Transboundary Environmental Impact Assessment*, edited by Kees Bastmeijer and Timo Koivurova, 29–51. Leiden: Martinus Nijhoff Publishers 2008.

²⁴⁹ Arctic EIA guidelines, Chapter 5.2.

²⁵⁰ Koivurova, “Implementing Guidelines for Environmental Impact Assessment in the Arctic,” in *Theory and practice of transboundary environmental impact assessment*. Ed. Kees Bastmeijer and Timo Koivurova, 151–74 (Leiden: Nijhoff, 2008), 151–74, at 154.

²⁵¹ Guidelines for Environmental Impact Assessment (EIA) in the Arctic, supra note 128, p. 5.

²⁵² Koivurova, “Implementing Guidelines for Environmental Impact Assessment in the Arctic,” in *Theory and practice of transboundary environmental impact assessment*, ed. Kees Bastmeijer and Timo Koivurova, (Leiden: Nijhoff, 2008), 151–74, at 168.

originate from one contracting party whereas its effects may be felt in any other contracting State, not only the adjacent one.²⁵³ In practice, impediments like determining the level of impact or identifying the area of impact restrict the effectiveness of Espoo.²⁵⁴

According to UNCLOS, EIAs are mandatory for any planned activity that may trigger substantial pollution or significant and harmful changes to any marine environment, as well as a state's territorial waters and EEZ.²⁵⁵ There is no procedure or content of an EIA that is described in UNCLOS, thus it is easy to conclude that the State concerned enjoys a wide discretion as mentioned in Pulp Mills.²⁵⁶

It has to be noted that the management of environmental impacts of petroleum extraction needs higher protection due to the particular arctic conditions. Furthermore, UNCLOS stipulates that EIAs should be made available to the public and even delivered to international organizations for sharing with all states.²⁵⁷ In the arctic context, the Arctic Council consisting of the eight (8) Arctic States does not constitute an international organization. UNCLOS does not stipulate who must be consulted before the execution of such projects.²⁵⁸

EIA procedure, in essence, contains two phases;²⁵⁹ an initial assessment of the planned project in order to conclude whether the comprehensive assessment is necessary.²⁶⁰ According to Espoo, in case the state of origin refuses that significant adverse transboundary impacts are likely to arise from its planned petroleum project and, thus, does not accept to follow a TEIA procedure for the said project, an Inquiry Commission may be established to resolve the problem and decide whether the Espoo provisions about notification and the duty to undertake a TEIA will be enforced.²⁶¹ However, this provision is very narrow because only a contracting

²⁵³ ESPOO Convention article 1 at (ii) and (iii)

²⁵⁴ United Nations Economic Commission for Europe, guidance on the practical application of the ESPOO convention UN DOC no. ECE-MP-EIA-8. 2006, paras. 79-82

²⁵⁵ UNCLOS, art.206.

²⁵⁶ Pulp Mills, par.205.

²⁵⁷ UNCLOS, article 206.

²⁵⁸ UNCLOS requires only notification, not consultation.

²⁵⁹ In fact, the EIA system for Antarctica has an initial EIA and a comprehensive EIA in the case that the initial EIA denotes that the activity would have more than minor or transitory effects: Madrid Protocol, Protocol on Environmental Protection to the Antarctic Treaty, April 24, 1991, 30 I.L.M. 1455, at 8 and Annex 1.

²⁶⁰ Arctic Offshore Oil and Gas Guidelines, 3rd edn, Akureyri: Arctic Council/Protection of the Arctic Marine Environment (PAME), 2009 Ch. 1.5.

²⁶¹ Espoo Convention, article 3(7).

party to the Espoo Convention, who is likely to get significantly affected by the petroleum operations, may ask for a TEIA to be performed or an inquiry commission to be launched, not the other, non-contracting States although they may be seriously affected by the project.

The above narrow perspective is emphasized by the narrow delineation of the respective public that should be engaged in the consultation process; in other words, the public being in the regions likely to be affected.²⁶² However, in the uniquely particular Arctic environment, a likely to be affected region may involve dispersed human residents, extremely long distances and remote places.

In Pulp Mills Argentina and Uruguay decided that there is a duty to consult affected communities; such communities refer not only to residents near the project site but they may also refer to groups of people whose subsistence gets obstructed in case fish species get heavily influenced by oil and gas drilling.²⁶³ Although not legally binding, the Arctic EIA Guidelines, which refer not only to potential transboundary impacts but to all activities in the Arctic, suggest consultation with “indigenous peoples, groups, organizations or communities sharing an interest or could be influenced.”²⁶⁴ According to the guidelines on the implementation of the Espoo, public participation should be “tailored to fit practices of the affected Party” especially in the Arctic it should be suited to the local peculiarities of the region in question.²⁶⁵

Thorough regulations about participation are stipulated in the Aarhus Convention²⁶⁶ even though Canada, Russia, and the United States are not parties whereas the Kingdom of Denmark does not expand the Aarhus Convention to include the Faroe Islands or Greenland.²⁶⁷ Espoo

²⁶² Ibid., article 2(6).

²⁶³ Pulp Mills, par. 215.

²⁶⁴ Supra Note 211.

²⁶⁵ Guidance on Public Participation in Environmental Impact Assessment in a Transboundary Context, ECE/MP.EIA/7, 2006, para. 54

²⁶⁶ Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, June 25, 1998, 2161 U.N.T.S. 447; see Langshaw, Alexander. “Giving Substance to Form: Moving Towards an Integrated Governance Model of Transboundary Environmental Impact Assessment.” *Nordic J of Int’l L* 82 (2012): 21–38, 33; and Schrage, supra note 239 at 43–44.

²⁶⁷ United Nations Treaty Series, Ch. XXVII.13. Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, 1998. Status as at October 23, 2012
http://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII13&chapter=27&lang=en

does not stipulate a veto procedure for a potentially damaged State even when significant transboundary harm is probable.²⁶⁸

UNCLOS' environmental impact assessment provisions²⁶⁹ are inadequate for guiding states in activities involving both national and trans-boundary effects.²⁷⁰ Pursuant to Article 206 UNCLOS, States shall, as far as practicable, assess the potential effects of activities on the marine environment, when they have reasonable grounds for believing that planned activities under their jurisdiction or control may cause substantial pollution of or significant and harmful changes to the marine environment.²⁷¹ It is not clear which circumstances are “reasonable grounds” for assuming the causation of “substantial pollution” or “significant and harmful changes to the marine environment” nor are there criteria defining these impacts. Furthermore, the duty to start the EIA procedure applies only “as far as practicable”, providing scope to avoid the assessment.

5.2. Future priorities and recommendations

All the arctic states could implement wider notification and consultation procedures by adopting a Coordinated Practice on TEIA of petroleum projects with likely transboundary significant impacts. A biodiversity protection scheme could be launched for addressing the risks of sea level rise, hurricane damage, flooding, and coastal erosion.

There is also urgent need to build the scientific capacity of civil society organizations and collaborate with universities and research institutions. The role of civil society organizations in EIA should have explicit legal foundation and favorable national laws regulating their activities especially licensing and renewal. The scientific knowledge for oil and gas operations in the Arctic environment could be enhanced. In the case of Norway, Iceland, Canada, United States, and the Russian Federation, TEIA procedure relies on their national, federal or State legislation and their application to their marine Arctic regions. However, the Thesis has not explored these

²⁶⁸ Espoo Convention, article 6.

²⁶⁹ See articles 204 to 206 UNCLOS.

²⁷⁰ Tanaka, Maki, “Lessons from the Protracted MOX Plant Dispute: a Proposed Protocol on Marine Environmental Impact Assessment to the United Nations Convention on the Law of the Sea”. *Michigan Journal of International Law* 25 (2004), 337–428, p. 393.

²⁷¹ UNCLOS, art.206.

individual national EIA/SEA frameworks and their applicability to oil and gas operations in the marine Arctic.

Coordination of domestic EIA systems among arctic States could play an important role in the success of a TEIA procedure along with supporting institutional and monitoring instruments. As EIA is above all a communicative procedure, indigenous and local knowledge must be taken into account in order to address the need for a coordinated practice and application of the Espoo Convention in association with the NEPC.²⁷²

5.3. Conclusions

As discussed above, the obligation of States to prevent, reduce, and control pollution arising from petroleum development is well-established in international hard, soft, and customary law. Because of the transboundary nature of possible impacts in the marine Arctic as well as the uniqueness and vulnerability of the Arctic, legislation is crucial in design and project procedures, along with industry standards and non-legally binding guidelines.

However, there is no provision for following a coordinated arctic TEIA procedure. Until now, the Espoo Convention appears to provide the most appropriate framework for the necessary practice to license such large-scale projects. .

States must face petroleum development as seriously as environmental protection. At the time being, absence of adequate scientific data about the environmental degradation may hinder the initiation of such measures; so, it is necessary that additional research is carried out. However, as the negative impacts from ongoing or future petroleum drilling projects will be devastating, time requires immediate action. That is why a precautionary approach is necessary to be implemented when planning and implementing an effective TEIA procedure.

The Arctic is in transition to a seasonally ice-free situation along with growing economic opportunities from the opening of new and faster trans-Arctic shipping routes. In addition, climate change will alter other particular arctic climate conditions such as ice ridging, fog, waves. Developing the full potential for an effective TEIA requires scientific knowledge and investment incentives for in the Arctic marine regions.

²⁷² Supra Note 236.

CHAPTER 6. Scholars' References

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