Extractive Industries in Arctic: The International Legal Framework for the Protection of the Environment

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Abstract

The objective of this article is to provide an overview and an examination of the international legal framework for the protection of the environment from the impacts of extractive industries in the Arctic. The focus of this article is on the most significant global and regional instruments and treaties for protection and conservation of nature, its ecosystems, habitats and biological diversity that are applicable within the Arctic. One finding is that with the lack of a comprehensive global agreement dealing both with mining and oil and gas activities, as well as the lack of a comprehensive regional environmental agreement, the legal situation is fragmented with potential legal gaps and legal uncertainties. The global instruments provide significant obligations for the states to protect the marine environment and the biological diversity against the impacts from extractive industries. These are implemented with more specified regional regulations through the OSPAR Convention, which applies to parts of the marine Arctic. There is however, a need for further cooperation between the Arctic states in developing more specific regional regulations to protect the whole Arctic from extractive industries such as mining and oil and gas activities.

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1. Introduction

The Arctic marine and the terrestrial environments are under pressure from climate changes and human activities.[1] The melting of sea ice, caused by climate change, provides new possibilities for human activities in the Arctic, such as tourism, shipping and fishing. The possibilities for exploitation of natural resources through mining and oil and gas activities are also increasing.[2] This has caused a strong interest by new extractive industries in the Arctic, an area rich in hydrocarbons and minerals on land and in the sea.[3] However, mining and oil and gas activities risk damaging the environment through pollution of the air and the sea, improperly disposing of waste materials, and by destroying habitats and biological diversity. Due to this development, the vulnerable Arctic environment and its valuable ecosystems may come under threat.

The objective of this article is to provide an overview and an examination of the international legal framework for the protection of the environment from the impacts of extractive

[1] Susan Joy Hassol, *Impact of a Warming Arctic: The Arctic Climate Impacts Assessment*. (Cambridge University Press) 2004.

[2] Arctic Council, Arctic Ocean Review (AOR) (2011–2013) Final Report, p. 18. The report is available at http://www.pame.is/images/Documents/AOR_Final_Sept_2013.opna.pdf (May 2014).

[3] AOR, Final Report, p. 18. See also Nigel Banks, "Oil and gas and Mining Development in the Arctic: Legal Issues" p. 100–124, Polar Law Textbook, Natalia Loukacheva (ed.), 2010, p. 103.

industries in the Arctic.[4] It is, however, limited to the legal regulation of offshore hydrocarbon exploitation and of land-based mining activities. There are no comprehensive global treaty regulating these activities nor is there any Arctic environmental treaty.

Mining and hydrocarbon extractive activities are subject to a broad range of international environmental legal instruments. This article does not aim to assess all of these environmental instruments and treaties.[5] Moreover, the article does not analyse relevant EU law. The focus of this article is on the most significant global and regional instruments and treaties for protection and conservation of nature, its ecosystems, habitats and biological diversity that are applicable within the Arctic. The 1982 United Nations Convention on the Law of the Sea[6] (LOS Convention) includes obligations to conserve living resources as well as obligations to protect and preserve the marine environment. The Convention on Biological Diversity[7] (CBD) introduces obligations on the conservation and sustainable use of biological diversity. At the regional level, the 1992 Convention for the Protection of the Marine environment of the North East Atlantic[8] (the OSPAR Convention) contains obligations to protect the marine environment, the ecosystem and the biological diversity. These newer environmental obligations to conserve ecosystems and the biological diversity require more holistic approaches to the protection of the marine environment.[9]All human activities must be assessed together to ensure protection of sensitive and valuable ecosystems. The article analyses how these environmental obligations and environmental principles such as the precautionary principle, set limits for extractive industries in the Arctic.

2. The legal starting point – sovereign rights over natural resources

The eight Arctic states enjoy sovereignty over their land territories.[10] Most of the marine Arctic resources are located in areas subjected to the sovereign rights of the five Arctic coastal states.[11] Traditionally, neither mining nor oil and gas ac-

[4] There is no agreement regarding the areas that constitute the marine Arctic. *See* Rosemary Rayfuse, "Melting Moments: The Future of Polar Oceans Governance in a Warming World", *Review of European Community & International Environmental Law,* vol. 16:2, pp. 196–197 (2007); Alf Håkon Hoel, "Do We Need a Legal Regime for the Arctic Ocean?", *The International Journal of Marine & Coastal Law*, vol. 24 pp. 443–444 (2009) (providing examples of the many different definitions of the areas that constitute the marine Arctic).

[5] For an overview of global instruments that relate to chemicals, climate, atmosphere, oil, and gas activities that are applicable to the marine environment in the Arctic, see Arctic Council, The Arctic Ocean Review (AOR) (2009-20011), Phase I Report. Available at http://www.aor.is/images/stories/AOR_Phase_I_Report_to_Ministers_2011_2nd_edition_Nov_2013_b-1.pdf (May 2014) See also Linda Nowlan, *Arctic Legal Regime for Environmental Protection*, IUCN Environmental Policy and Law Paper 44, 2001.

[6] United Nations Convention on the Law of the Sea, 10 December 1982, entered into force 16 November 1994. 1833 UN *Treaty Series* p. 3.

[7] Convention on Biological Diversity, 5 June 1992, entered into force 29 December 1991, 1760 UN *Treaty Series*, p. 79.

[8] Convention for the Protection of the Marine Environment of the North-East Atlantic, 22 September 1992, entered into force 25 March 1998, 2354 Un *Treaty Series*, p. 67.

[9] Tore Henriksen, "Conservation and Sustainable Use of Arctic Marine Biodiversity", *Arctic Review on Law and Politics*, vol. 1:2, 2010, p. 250.

[10] The Artic Council has eight member states: the United States, Canada, Russia, Norway, Finland, Sweden, Iceland and Greenland (Denmark). Five of the Arctic states are Arctic coastal states with maritime zones within the marine Arctic: the United States, Canada, Russia, Norway and Greenland.

[11] There are four high seas areas in the marine Arctic that are beyond the national jurisdiction of these Arctic coastal states: the "Banana hole" in the Norwegian Sea, the "Loop Hole" in the Barents Sea, the "Donut Hole" in the Bering Sea, and the Central Arctic

tivities have been subject to international legal treaties. The exploitation of these resources is therefore left to the sovereign and independent control of the states.[12]

The legal starting point in international environmental law with regard to hydrocarbon extraction and mining activities is the principle of sovereignty over natural resources.[13] The sovereignty principle is qualified by the duty not to cause environmental damage. The duty not to cause transboundary environmental damage or the "no harm principle" is developed based on judicial practice.[14]

The 1972 Stockholm Declaration established in principle 21, sovereignty over natural resources as well as the responsibility not to cause damage to the environment.

Whereas, the Trail Smelter and Corfu Channel cases dealt with the responsibility not to cause damage to other states, the Stockholm Declaration expresses the added duty not to cause damage "…to areas beyond the limits of national jurisdiction." The principle was later reaffirmed in Article 2 of the Rio Declaration in 1992. In the 1996 Nuclear Weapons Advisory Opinion, the duty not to cause harm to the environment beyond national jurisdiction was confirmed as part of customary law by the International Court of Justice (ICJ).[15]

According to the principle of sovereignty over natural resources, States have the right to exploit their natural resources, such as minerals and oil and gas, without interference from other states. As for offshore oil and gas resources, the sovereign right of states to explore and exploit the natural resources on the continental shelf is set out in Article 77 of the LOS Convention. However, as shown above, this right is not absolute or unlimited, as states may not exploit their mineral resources or engage in oil and gas activities that may cause damage to the environment of other states or of areas beyond national jurisdiction.[16]

In addition, other international environmental obligations may further limit the sovereign powers of the states to exploit their natural resources.[17] This includes the obligation to protect the marine environment and to conserve marine biodiversity, to be discussed below. Question is also raised whether these obligations include activities under the jurisdiction of a state, which do not involve transboundary harm.

3. Global treaties

3.1 General

The Arctic is subject to the global legal regime for the protection of the environment. Numerous global instruments are applicable to the Arctic and require that the states take measures to protect and conserve the environment and biological diversity. During the 1960s and 1970s, various conventions dealing with pollutants or polluting activities were adopted.[18] The LOS Convention is a comprehensive treaty that includes obligations for the states to protect and preserve the marine environment. The LOS Convention has a broader

[12] Cecilia, G. Dalupan, "Mining and Sustainable Development: Insights from International Law", *International Law and Comparative Mineral Law and Policy. Trends and Prospects*, The Hague 2005, p. 149. See also George (Rock) Pring, James Otto and Koh Naito, "Trends in International Environmental Law Affecting the Minerals Industry, *Journal of Energy & Natural Resources Law*, vol. 17:1, 1999, p. 47.

[13] Dalupan (2005), p. 149.

[14] See Ulrich Beyerlin and Thilo Marauhn, *International Environmental Law,* Oxford 2011, p. 39.

[15] See Nuclear Weapons Advisory Opinion, ICJ Reports 226 (1996), para. 29.

[16] For more about the duty to prevent environmental harm, see Birnie, Boyle and Redgwell, *International Law & the Environment,* Oxford 2009, pp. 143–152.

[17] Dalupan (2005), p. 152.

[18] Donald Rothwell, "Global environmental protection instruments and the polar marine environment" in D. Vidas (ed.), *Protecting the Polar Marine Environment. Law and Policy for Pollution Prevention*, Cambridge 2000, p. 57–59.

focus than the earlier legal instruments, as it not only deals with specific sources of pollution but with the protection and preservation of the marine environment. Hence, the LOS Convention represents a shift of perspective from the responsibility not to cause damage from pollution, to a duty for states to protect the marine environment as such.[19] In the aftermath of the LOS Convention, environmental principles have emerged in soft law instruments such as Agenda 21 and the Rio Declaration and in treaties such as the CBD and the Climate Change Convention.[20] The CBD has a broader scope than the LOS Convention does, as it takes a more holistic approach to the protection of the environment, in which the biological diversity and the ecosystems are protected and conserved, and the effects of human activities are assessed in a cumulative way.[21]

In this section, the objective is to present and assess the relevance and significance of the LOS Convention and the CBD to the protection of the Arctic environment against the threats and impacts of oil and gas activities and of the mining industry.

3.2 The LOS Convention

3.2.1 General

The LOS Convention is applicable to the Arctic Ocean and its adjacent seas. All of the Arctic states, except the United States (US), are parties to the Convention. One of the objectives of the LOS Convention is to establish "a legal order for the seas and oceans" or a constitution for the oceans.[22]

According to the LOS Convention, the coastal State may establish maritime zones within which sovereignty; sovereign rights, jurisdiction, obligations, and rights of states are allocated. The maritime areas of the Arctic are subject to different legal regimes ranging from internal waters, territorial seas to the Exclusive Economic Zones (EEZ), the continental shelf to the high seas and the Area.[23]

The LOS Convention contains obligations for the states to manage and conserve living resources and obligations to protect the environment from pollution from different human activities. The latter obligations are found in LOS Convention Part XII which includes general obligations in Articles 192 and 194, applicable to maritime zones including areas beyond national jurisdiction and which cover all sources of marine pollution.[24] They are further specified in Articles 207–212, which regulate pollution from different sources and activities, such as land-based sources, dumping at sea, seabed activities and atmospheric pollution.

3.2.2 Protection and preservation of the marine environment

Under Article 192, states have the obligation "to protect and preserve the marine environment." The obligation is broad and applies to all types of pollution of the marine environment from offshore hydrocarbon exploitation and of mining activities. Land based mining activities that pollute the marine environment, for instance, by discharges of chemicals into the sea are covered by this obligation. Moreover, the duty applies to disposing of waste into the sea. In addition, oil and gas activities that take place on the continental shelf must be carried out in compliance with the obligation to protect and preserve the marine environment.

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[19] Yoshifumi Tanaka, *The International Law of the Sea*, Cambridge 2012, p. 264.
[20] Birnie, Boyle and Redgwell (2009), p. 384.
[21] Henriksen (2010), p. 250.
[22] LOS Convention, Preamble.
[23] The Area is defined in the LOS Convention, Article 1 (1) (1) as "the seabed and the ocean floor and subsoil thereof, beyond the limits of national jurisdiction."
[24] Tanaka (2012), p. 263.

As oil and gas activities may not only cause damage from pollution, one may question whether the duty to protect the marine environment also may cover other environmental damage such as destruction of habitats. Most of the provisions in Part XII of the LOS Convention deal with marine pollution. Article 192 is however, formulated in a broad way and does not specify the activities or environmental damage to which it applies. However, since the phrase "protect and preserve the marine environment" is wide and general, this indicates that the obligation applies also to physical degradation of habitats from hydrocarbon extractive activities.

Article 194 sets out duties for the states to take measures to prevent and reduce pollution from all sources. According to Article 194(1), states shall take "…all measures consistent with this Convention that are necessary to prevent, reduce and control pollution of the marine environment from any source…" Moreover, it follows from Article 194(2) that the states shall also take all measures that are "…necessary to ensure that activities under their jurisdiction and control are so conducted as not to cause damage by pollution to other States and their environment… and does not spread beyond areas where they exercise sovereign rights according to this Convention." Article 194 (3) specifies the need to take measures to address all sources of marine pollution such as from toxic, harmful or noxious substances from land-based pollution, atmospheric pollution and from dumping as well as pollution from installations. According to Article 194(5), states are also required to take all necessary measures to protect and preserve "rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life."

As a rule, the wording of the obligations provides the states with freedom to determine themselves what measures they want to apply to comply with the obligations in Article 192 and 194. However, when read together with Article 192, the provision in Article 194(5) suggests that the states are obliged to take positive steps to protect habitats and ecosystems against the environmental impacts of, for instance, oil and gas activities by using Marine Protected Areas (MPAs).[25]

Article 207 concerns land-based pollution. It provides that states "…shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources…" Furthermore, when adopting such laws, states shall take "into account internationally agreed rules, standards and recommended practices and procedures." States shall under paragraph 20f Article 207 also "take other measures as may be necessary to prevent, reduce and control such pollution." Furthermore, states shall "…endeavour to harmonize their politics in this connection at the appropriate regional level."

Land-based pollution is only dealt with to a limited extent in global instruments, with few and general legal regulations.[26] As a response to this, some global soft law documents have been adopted, in particular under the United Nations Environment Programme (UNEP) Of importance are the "Guidelines for the Protection of the Marine Environment against Pollution from Land-Based Sources"[27] adopted by UNEP in 1985.[28] Moreover, the 1995 "Global Programme of Action for the Protection of the Marine En-

[25] See Ingvild Ulrikke Jakobsen, "Marine Protected Areas as a Tool to Ensure Environmental Protection of the Marine Arctic: Legal Aspects", in E. Tedsen et al. (Eds), *Arctic Marine Governance. Opportunities for Transatlantic Cooperation*, Berlin Heidelberg 2014, p. 225.

[26] R. R. Churchill and A.V. Lowe, The Law of the Sea, Manchester 1999, p. 379.

[27] 1985 Montreal Guidelines for the Protection of the Marine Environment against Pollution from Land-Based Sources, available at http://www.pnuma.org/gobernanza/cd/Biblioteca/Derecho%20ambiental/28%20UNEPEnv-LawGuide&PrincN07.pdf (May 2014).

[28] Tanaka (2012), p. 267.

vironment from Land-based Activities"[29] (the 1995 GPA) aims to prevent the degradation of the marine environment from land-based activities by assisting states in taking actions. The need to implement and improve the 1995 GPA is emphasized in the 2001 Montreal Declaration on the Protection of the Marine Environment from Land-Based Activities.[30]

Article 208 concerns pollution from seabed activities subject to national jurisdiction. This provision requires that states adopt laws and regulations and take other measures regarding pollution arising from seabed activities. The laws, regulations and measures that the states are obliged to take shall, in accordance with Article 208(3), be "no less effective than international rules, standards and recommended practices and procedures."

As with land-based pollution, there are few international rules or procedures related to the exploration and exploitation of oil and gas resources. Certain regulations on operational pollution in the International Convention for the Prevention of Pollution from Ships[31] (the 1973/1978 MARPOL Convention) and the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other matter[32] (the London Dumping Convention) are relevant to oil and gas activities at the continental shelf.[33] Moreover, UNEP adopted in 1981 a soft law instrument, a set of Conclusions concerning the Environment related to Offshore Mining and Drilling within the Limits of National Jurisdiction.[34] The guidelines are formulated in a very general way, and are not legally binding.[35] Consequently, one may question if and how they provide guidance when states are developing laws and regulations.[36]

The LOS Convention requires states according to Article 210 (1) to adopt laws and regulations to prevent, reduce and control the pollution of the marine environment by dumping. These regulations shall as set out in Article 210 (3) ensure that dumping is not carried out without the permission of the competent authorities of states. Dumping within the territorial sea and the EEZ or the continental shelf, shall not according to Article 210 (5) be carried out without the prior approval by the coastal State. The national laws and regulations shall moreover be no less effective "in preventing, reducing and controlling such pollution than the global rules and standards" (Article 210 nr 6.) Such global rules as referred to here are provided in the London Dumping Convention and the 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (the 1996 Protocol).[37] The London Dumping Convention defines dumping according to article III 1. a) as "the deliberate disposal at sea of wastes or other matter from vessels, aircraft, platforms or other man-made structures." This means that whereas the London Convention applies to dumping from oil and gas installations, but not to disposal

[29] See http://www.gpa.unep.org/ (May 2014)
[30] See Tanaka (2012), p 267. The Declaration is available at Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA), www.gpa.unep.org/ (May 2014).
[31] The International Convention on the Prevention of Marine Pollution from Ships, as modified by the Protocol of 1978 relating thereto, adopted 2 September 1973 and 17 February 1978, entered into force 2 October 1983, 1340 UN Treaty Series, p. 61.
[32] Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, adopted 13 November 1972, entered into force 30 August 1975, 1046 UN *Treaty Series*, p. 138.
[33] R.R. Churchill and A.V. Lowe, *The law of the Sea*, Manchester 1999, p. 372.
[34] *Ibid.*, 371.
[35] The Conclusions were approved as Guidelines by the UN General Assembly, in Res. 37/217.
[36] For more about the Guidelines, see Robin Churchill, pp. 371–372.
[37] Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, adopted 7 November 1996, entered into force 24 March 2006. See Tanaka (2012), p. 298.

of industrial waste from land based mining activities. On the basis of the London Convention, the wastes are divided into three categories. The Convention has developed since it was adopted and become more restrictive The 1996 Protocol represents a shift from permission to prohibition of dumping at sea.[38]

Conclusively, the LOSC contains important general obligations to protect the marine environment from all sources of marine pollution. The states must therefore adopt measures to protect the marine environment against all possible marine pollution from the offshore hydrocarbon activities and land-based mining. Moreover, the coastal states are obliged to adopt laws and regulations to protect the marine environment from land – based sources, dumping, seabed activities and pollution from the atmosphere. The obligations of the LOSC are however, broad and general and do not contain specific duties with regard to the protection of the marine environment from offshore or land-based extractive industries.

3.3 The Convention on Biological Diversity

3.3.1 General

The CBD was adopted in 1992. All the Arctic states with the exception of the US are parties.[39] Article 1 states that the objective of the Convention is to ensure conservation of biological diversity, sustainable use of its components, and the fair and equitable sharing of the benefits arising from genetic resources.

3.3.2 Obligations on sustainable use and conservation of biological diversity

The concept of biological diversity is defined in Article 2. It includes diversity at the genetic level between species and the diversity of ecosystems. Biological diversity means thus the variation of life and not the sum of all life.[40]

The geographical area of application of the CBD is regulated in Article 4. According to 4(a), the CBD is applicable "in the case of components of biological diversity, in areas within the limits of national jurisdiction." Consequently, with regard to the components of biological diversity, the CBD applies to the land territory, the territorial waters, archipelago waters, the EEZ and the continental shelf of the states. With regard to "processes and activities", it follows from Article 4(b) that the CBD applies "…regardless of where their effects occur, carried out under its jurisdiction or control, within the area of its national jurisdiction or beyond the limits of national jurisdiction." As a result, a state may not adopt conservation measures to protect a certain ecosystem in areas beyond its national jurisdiction, but the obligations are applicable to the flag state when for instance a vessel is fishing on the high seas.[41]

The CBD includes obligations for sustainable use and conservation of biological diversity. The precautionary principle is included in the Preamble. Although it is relevant when interpreting the obligations of the operational provisions of the Convention, it is not legally binding. The principle of sovereignty over natural resources is found in Article 3. It has a wording that is similar to the Stockholm and Rio Declarations. This signals a starting point or a legal foundation for the following obligations of the CBD.

The CBD is a framework convention with broad and general obligations that are to be further elaborated by the CBD bodies and in particular the Conference of the Parties (the COP). The obligations are also qualified by the use of such terms as "as far as possible" and "in accordance

[38] Tanaka (2012), p. 299–300.

[39] For an overview of the member states, see www.cbd.int/convention/parties/list

[40] Birne, Boyle and Redgwell (2009), p. 588.

[41] Henriksen (2010), p. 258.

with its particular conditions and capabilities". Their normative character and legally binding effect is therefore discussed debated.[42] Articles 6 to 10 contain the most significant obligations for implementing the two first-mentioned objectives of the CBD. Article 6 and Article 10 contain general measures for the conservation and sustainable use of biodiversity, such as the development of national strategies and integration into plans and programmes. Under Article 7 states are required to identify and monitor biological diversity and conditions that threaten it. They are specifically under 7 (c) to "…identify processes and categories of activities which have or are likely to have significant adverse impacts on the conservation and sustainable use of biological diversity…" This duty applies to mining and oil and gas activities.

CBD Article 8 includes different measures states are required to take in order to ensure *in situ* conservation of biological diversity. In situ conservation is defined in Article 1 as:

> "…the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties."

Several of the measures identified relate to protected areas (CBD, Article 8(a), (b), (c) and (e)). Under Article 8(a) states shall "as far as possible and as appropriate", establish a system of protected areas. A "system of protected areas" can be read as a "network", which implies that states should establish protected areas in a systematic way as part of a wider plan for conservation of biodiversity. Within such protected areas, it is reasonable to argue that all activities that may threaten biological diversity, including mining and oil and gas activities, must be regulated and restricted.

States are further required under Article 8(l), when "a significant adverse effect on biological diversity has been determined pursuant to Article 7, to regulate or manage the relevant processes and categories of activities…". Consequently, if a state determines that a mining activity has or is likely to have a "significant adverse effect" on biological diversity, the state is obliged to regulate or manage this activity.

Article 14 regulates the use of environmental impact assessment (EIA) of projects that are likely to have significant adverse effects on the biodiversity. This obligation must be seen in the context of the Articles 7 (c) and 8 (l). Article 14 relates however, to individual "proposed projects that are likely to have significant adverse effects on biodiversity", whereas the Articles 7 (c) and 8 (l) contain more general obligations on identification and mitigation of processes and activities that may cause such damage. The duty to carry out EIAs is of importance in relation to extractive industries where the environmental consequences may be severe. The duty in Article 14 applies both to assessments of projects which may cause environmental damage within national jurisdiction and to projects that have transboundary effects.[43] However, Article 14 is formulated in general and soft terms and does therefore not make it clear for which projects an EIA is required, nor how detailed assessments the states must carry out. In addition, the duty is qualified due to the terms "as far as possible and as appropriate.

The ecosystem approach is not explicitly set out in the CBD, but it follows implicitly from a

[42] Birnie, Boyle and Redgwell (2009), p. 612–616.

[43] Birnie, Boyle and Redgwell (2009), p. 621.

number of its provisions.[44] To assist the states when implementing the obligations, the Conference of the Parties (COP), the superior body under the CBD has developed principles for ecosystem approach.[45] In these principles, the ecosystem approach is described as a method or a framework for implementing the obligations on conservation and sustainable use of biological diversity.[46] The core of the ecosystem approach is however, that it focuses on the ecological interactions and where all human activities are addressed and the marine environment protected from physical degradation and pollution, which could damage the ecosystems. When the states implement their obligations on conservation and sustainable use of biological diversity and make decisions such as where, whether and how land-based mining activities or off-shore oil and gas activities should take place, the principles for ecosystem approach may provide some guidance for the states. The principles for ecosystem approach are however, broad and difficult to use in practice.

4. Regional cooperation and implementation

4.1 *General*

This section analyses how the global obligations to protect the environment and to conserve biological diversity are implemented in the Arctic at the regional level. The global obligations contained in the LOS Convention and the CBD are to be implemented at the national level. However, ecosystems are large, and the terrestrial, coastal and marine environments are interlinked with species that migrate across the jurisdictional boundaries of states. Many threats to biological diversity, such as atmospheric and water pollution, are transboundary in nature. This requires that, to ensure successful protection and conservation of the environment and the ecosystems, states cooperate with each other. LOS Convention Article 197 also requires that states shall "cooperate on global basis and, as appropriate, on a regional basis," for the protection and preservation of the marine environment."

The OSPAR Convention applies to the North East Atlantic, and includes therefore parts of the marine Arctic. Norway, Denmark, Iceland, Sweden and Finland, together with other European states and the European Community, are contracting parties to the Convention.[47] As Russia is not a contracting party, the Convention does not apply to the whole European part of the marine Arctic.

Since there is no comprehensive regional environmental agreement for the Arctic and not all of the Arctic states are parties to the global agreements (the LOS Convention and the CBD), political cooperation among the states on environmental protection is of importance. This section therefore also aims to provide an overview of the relevant work under the Arctic Council.

4.2 The OSPAR Convention

4.2.1 General

The OSPAR Convention contains obligations to protect the marine environment and marine biodiversity in the North East Atlantic. According to Article 1(a), the Convention applies to all maritime zones within and beyond national jurisdictions.[48]

[44] Hanling Wang, Ecosystem Management and Its Application to Large Marine Ecosystems: Science, Law, and Politics, *Ocean development & International Law, vol. 35,* (2004) p. 51–52.

[45] CBD COP Decision V/6.

[46] *Ibid.,* A para 1.

[47] For an overview of the contracting parties, see www.ospar.org

[48] The area of application for the Convention is described in Article 1(a).

The objective of the OSPAR Convention is to protect the marine environment within the geographical area of application against the adverse effects of human activities.[49] The Convention has a broad scope as it addresses all sources of marine pollution and other effects of human activities on the environment.[50] The Convention was also further broadened with the adoption of Annex V, which imposed the obligations to protect and conserve biological diversity and ecosystems.

4.2.2 Obligations to protect the maritime area of the OSPAR

Under Article 2 (1) (a) the states parties have a general obligation to take "…all possible steps to prevent and eliminate pollution…" and furthermore to take "the necessary measures to protect the maritime area against the adverse effects of human activities", to safeguard human health and to conserve marine ecosystems. In complying with this obligation, the contracting parties are according to Article 2 (2) a required to apply the precautionary principle. In contrast to the CBD, the precautionary principle is part of operational part of the Convention. The state parties are therefore obligated to take preventive measures when there are "reasonable grounds" for expecting "…hazards to human health, living resources and marine ecosystems…"[51]

The general obligation is developed through Articles 3–7, which are further elaborated in Annexes I–V. These obligations cover such issues and activities as dumping, pollution from land-based sources, pollution from offshore sources and assessment of the quality of the marine environment, which is important for the protection and conservation of marine ecosystems and biodiversity as provided in Annex V.

The obligations regarding land-based pollution in Article 3 and in Annex I are relevant to land-based mining activities. States are required to "take, individually and jointly, all possible steps to prevent and eliminate pollution from land-based sources…" The duty requires that states take measures to prevent pollution of the maritime area from such activities.

The OSPAR Convention includes provisions regulating dumping and pollution from offshore oil and gas activities in Articles 4 and 5 and Annexes II and III. According to Article 4, the states shall all possible steps to prevent and eliminate pollution by dumping. Annex II includes in Article 3 a ban on dumping of wastes except for listed substances such as dredged material. Annex II is not, however applicable to deliberate dumping from offshore installations.[52] Under Article 5 states have an obligation to take "all possible steps to prevent and eliminate pollution from offshore sources…" This duty is further specified and elaborated in Annex III on the prevention and elimination of pollution from offshore sources. It follows from Article 4 (1) of Annex III, that "the use on, or the discharge or emission from, offshore sources of substances which may reach and affect the maritime area shall be strictly subject to authorisation or regulation by the competent authorities." In addition, it follows that such authorization or regulation shall implement the relevant decisions and recommendation adopted by the OSPAR Commission.[53] The OSPAR Commission has adopted numerous of decisions and recommendations to minimize discharges from oil and gas activities, to reduce the risk of acute oil pollution and to manage the use of produced

[49] The OSPAR Convention, Preamble and Article 2.
[50] Louise de La Fayette, "The OSPAR Convention Comes into Force: Continuity and Progress", *The International Journal of Marine and Coastal Law*, vol. 14, (1999), p. 253.
[51] The OSPAR Convention, Article 2 (2) (a).
[52] The OSPAR Convention, Annex II Article 3
[53] The OSPAR Convention, Annex III Article 4 (1).

water etc.[54] Dumping from offshore installations is regulated in Annex III Article 3, where any "dumping of wastes or matter from offshore installations is prohibited." To provide guidance for the states, the OSPAR Commission has also adopted a strategy for offshore oil and gas industries to prevent and eliminate pollution from offshore sources.[55]

Annex V is relevant to regard to the protection of the environment against mining and oil and gas activities. The purpose of the annex is the implementation of the CBD at a regional level. Under its Article 2(a) states shall take "the necessary measures to protect and conserve the ecosystems and the biological diversity of the maritime area." This duty is formulated in a strict way and includes a duty to protect the ecosystems and biological diversity from all the human activities within the competence of the OSPAR Convention.[56] Although the OSPAR Convention does not explicitly set out an obligation for to states to adopt an ecosystem approach, such an approach is adopted by the OSPAR Commission in several documents.[57] The strategy on the Protection and Conservation of the Ecosystems and Biodiversity was adopted by the Contracting Parties in 2010 to guide the work of the OSPAR Commission in the implementation of the OSPAR Convention.[58]

Consequently, the OSPAR Convention includes obligations with regard to land-based pollution and offshore activities that are stricter and more specific than the obligations at the global level.[59] With Annex V and the obligation to protect the ecosystems and the biological diversity, the OSPAR provides a comprehensive framework for the implementation of the LOSC Part XII and the CBD in the North East Atlantic.

4.3 The Arctic Council

4.3.1 General

The Arctic Council, a high-level forum for environmental cooperation among the Arctic states, was established in 1996.[60] The Arctic Council is not an international organization, and it does not have the competence to adopt legally binding regulations. It has been described as a consensus and project driven body rather than an operational body.[61] However, in the last year, the Arctic Council has contributed to the development and adoption of legally binding instruments.[62]

According to Article 1(a) of the Ottawa Declaration, the Arctic Council was established as a high-level forum for promoting cooperation in particular on the issues sustainable development and environmental protection. The Arctic Council has made some important efforts and devel-

[54] For a list of relevant decisions and recommendations see http://www.ospar.org/v_measures/browse.asp?menu=01110305610124_000001_000000

[55] The North-East Atlantic. Environment Strategy: Strategy of the OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic 2010–2020, OSPAR Commission, available at http://www.ospar.org/html_documents/ospar/html/10-03e_nea_environment_strategy.pdf#OIC

[56] Fishing and shipping are excluded from the competence of OSPAR; see Preamble and Annex v, Article 4.

[57] Such as the Statement on the Ecosystem Approach to the Management of Human Activities, First Joint Ministerial Meeting of the Helsinki and OSPAR Commissions, Bremen, 25–26 (June 2003)

[58] The North-East Atlantic. Environment Strategy: Strategy of the OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic 2010–2020, OSPAR Commission, *available at* http://www.ospar.org/html_documents/ospar/html/10-03e_nea_environment_strategy.pdf#BDC (May 2015)

[59] See Robin Churchill, pp. 372 and 383.

[60] The 1996 Declaration on the establishment of the Arctic Council (The Ottawa Declaration), available at http://www.arctic-council.org/index.php/en/document-archive/category/5-declarations (May 2014).

[61] Timo Koivurova and Erik J. Molenaar, "International Governance and Regulation of the Marine Arctic", Report prepared for the WWF International Arctic Programme, Oslo 2009, p. 13.

[62] An example of this is the agreement on search and rescue which is negotiated under the auspices of the Arctic Council. (Arctic SAR Agreement 2011).

opments which are relevant to protecting the environment against threats from mining and oil and gas activities and which are reviewed below.

4.3.2 Background and structure of the Arctic Council

The Arctic Environmental Protection Strategy (AEPS) adopted 1991 was the basis for the foundation of the Arctic Council.[63] In AEPS, the states committed themselves to assessing and protecting the Arctic environment against pollution.[64] The states identified heavy metals and oil pollution as two of the prioritized environmental problems.[65] As part of the AEPS, the main international instruments that are relevant to the prioritized environmental problems are also identified.[66] Also, the AEPS emphasizes the need to take preventive measures consistent with the LOS Convention, regarding marine pollution.[67] The Strategy requires action regardless of the source of the pollution, whether it is land-based or marine pollution and whether the pollution stems from activities carried out by Arctic or by non-Arctic states.[68]

The work of the Arctic Council is organized under four working groups: Conservation of Arctic Flora and Fauna (CAFF), Protection of the Arctic Marine Environment (PAME), Emergency Prevention, Preparedness and Response (EPPR) and the Arctic Monitoring and Assessment Programme (AMAP).[69] The two working groups, CAFF and PAME, have provided the states with critical knowledge about the status of Arctic biological diversity and current and future threats. Important tasks for these working groups are to collect data about the status of the environment and the biological diversity and to identify, monitor and assess the risks of human activities, which information serves as the basis for advice to the Arctic states in their decision-making.[70]

Recent relevant projects carried out under CAFF and PAME are the Arctic Biodiversity Assessments[71] and the Arctic Ocean Review (AOR).[72] Through these projects, the Arctic states obtain knowledge on the status and threats to the Arctic biological diversity and knowledge about applicable legal instruments regulating activities such as mining and oil and gas. This knowledge is significant, as it may provide guidance to the states when they plan and regulate mining and oil and gas activities in the Arctic region. In the final report, the AOR suggested as one opportunity for cooperation that the Arctic states consider strengthening or creating new measures to address pollution form oil and gas activities and that they strengthen protection against land-based sources of marine pollution.[73] More concretely, one of the recommendations from the AOR is that the Arctic states strengthen the protection of marine pollution from that may arise

[63] About theko background for this strategy see Timo Koivurova and David VanderZwaag, "The Arctic Council at 10 years: Retrospect and Prospects", *University of British Columbia Law Review*, vol. 40:1, 2007, p. 121–194.
[64] Betsy Baker, "The Developing Regional Regime for the Marine Arctic", *The Law of the Sea and the Polar Regions: Interactions between Global and Regional Regimes*, Erik J. Molenaar, Alex G. Oude Elferink and Donald R. Rothwell (eds), Leiden 2013, p. 37.
[65] See AEPS, pp. 12–20.
[66] *Ibid.* pp. 20–33.
[67] Ibid. p. 33.
[68] Baker (2013), pp. 37.
[69] An overview of the working groups is available at http://www.arctic-council.org/index.php/en/about-us/working-groups (May 2014).
[70] For more about the work carried out under the working groups, see Time Koivurova & David VanderZwaag, "The Arctic Council at 10 Years: Retrospect and Prospects", *University of Colombia Law Review*, Vol. 40:1, 2007, pp. 121–194, pp. 137–153.
[71] Available at http://www.arcticbiodiversity.is/
[72] Information about the project and reports is available at http://www.aor.is/.
[73] AOR, Final report, p. 75.

from current and future activities in the Arctic, such as mining and oil and gas activities.[74]

4.3.3 Arctic Council's Arctic Offshore Oil and Gas Guidelines

Apart from the OSPAR regulations, the Arctic Offshore Oil and Gas Guidelines comprise the most important regional instrument for the regulation of oil and gas activities. The guidelines were adopted in 1997 and revised in 2009.[75] The Guidelines aim to "…to be of use to the Arctic nations for offshore oil and gas activities during planning, exploration, development, production and decommissioning."[76] Moreover, the Arctic states have different systems and different allocation of responsibility between the operator and the regulator. Therefore, it is a goal for the Guidelines "…to assist regulators in developing standards, which are applied and enforced consistently for all offshore Arctic oil and gas operators."[77] An important aspect of the Guidelines is that they are based on environmental principles, such as the precautionary approach and the sustainable development.[78] The Guidelines are organized in chapters that address different aspects and stages of the industry, such as environmental impacts assessment, environmental monitoring, safety and environmental management and operational practices. Although the guidelines are of importance as they provide Arctic- specific regulations, it must be noted that they are not legally binding.

4.3.4 Ecosystem-based management

The Arctic Council has also taken important steps to implement the ecosystem approach as referred to in the CBD and in political instruments such as Agenda 21[79] and the World Summit on Sustainable Development.[80] A core element of the ecosystem-based management is that all human activities are assessed together and coordinated so that the environmental threats and damage may be reduced. This process within the Arctic Council is therefore also significant for both mining and oil and gas activities.

First, the Best Practices in Ecosystems Based Oceans Management Project[81] was initiated by the Arctic Council and was developed as a series of case studies from seven of the eight member states during 2007–2009.[82] The project aimed to present the practice and application of the Arctic states of the ecosystem based approach to ocean management.[83] A finding was that all of the Arctic states had adopted ecosystem-based management as the goal for the ocean management. As for the implementation of the ecosystem-based management, there were, however, variations among the states.[84]

More recently, in 2011, the Arctic Council ministers called for an expert group on ecosystem-based management with a mandate to develop a common understanding of ecosystem-

[74] AOR, Final report, p. 75.

[75] Arctic Council Arctic Offshore Oil and Gas Guidelines (PAME 2009) available at http://www.pame.is/images/PAME_NEW/Oil%20and%20Gas/Arctic-Guidelines-2009-13th-Mar2009.pdf (May 2014)

[76] Arctic Offshore Oil and Gas Guidelines, section 1.2, p. 4.

[77] *Ibid.*

[78] *Ibid*. section 1.2. pp. 6–7.

[79] The United Nations Programme of Action, adopted at the Rio Conference in 1992.

[80] World Summit on Sustainable development (WSSD) Plan of Implementation, adopted in Johannesburg in 2002.

[81] Alf Håkon Hoel (ed.), Best Practices in Ecosystem-based Oceans Management in the Arctic (Norwegian Polar Institute; Report Series no. 129: April 2009; available at www.npolar.no).

[82] Alf Håkon Hoel, "Integrated Oceans Management in the Arctic: Norway and Beyond", Arctic Review on Law and Politics, vol. 1:2 (2010) p. 200.

[83] *Ibid*. p. 201.

[84] For an overview of the conclusions of the case studies, see *Ibid*. p. 201–203.

based management and ecosystem based management principles for marine and terrestrial areas, and considering developing Arctic-specific guidelines for applying the ecosystem approach to the Arctic.[85]

The outcome of the expert group, the report on the ecosystem-based management, was presented at the 2013 ministerial meeting in Kiruna. In the report, the expert group provides a definition of the concept as well as principles of ecosystem-based management in the Arctic.[86] The definition, principles and recommendations where approved at the ministerial meeting in Kiruna in 2013.[87] It will be interesting to see to what extent the agreed definition and principles will advance and promote a common approach within the Arctic to ecosystem-based management. With the increased environmental pressure due to increased economic activities including land-based mining and oil and gas development, it can be noted that the need to address the cumulative effects of human activities is included as a principle for ecosystem-based management.

5. Conclusions

With the lack of a comprehensive global agreement dealing both with mining and oil and gas activities, as well as the lack of a comprehensive regional environmental agreement, the legal situation is fragmented with potential legal gaps and legal uncertainties. Also, regulations adopted within this field are adopted in soft law instruments, which are not legally binding. Both the LOS Convention and the CBD contain relevant and significant obligations for the states to protect the marine environment and biological diversity. These general obligations are implemented with more specific obligations at the regional level through the OSPAR Convention. As this Convention applies only partly to the Arctic region, more specific regional obligations are necessary to protect the whole Arctic from extractive industries such as mining and oil and gas activities. Meanwhile, to ensure the protection of the sensitive Arctic environment, the Arctic states must cooperate with each other under the auspices of the Arctic Council.

[85] Ecosystem-based Management in the Arctic p. 3. The report is available at http://www.arctic-council.org/index.php/en/document-archive/category/449-ebm

[86] *Ibid.* p. 9–28.

[87] Arctic Council, Kiruna Declaration, 15 May 2013. http://www.arctic-council.org/index.php/en/document-archive/category/449-ebm (May 2014).