Environmental Sustainability in the Arctic

On Modern Threats to Environmental Sustainability in the Arctic: The Climate Change Factor

*Kyriaki Noussia**

Given the high pace of acceleration with which climate change is occurring, the unprecedented amount of floods and fires and the extremely high temperatures of the last years, new habitable and exploitable areas are bound to increase as a result of the extremely rapid ice melting in the Arctic. These areas will allow the exploration of natural resources and the use of new navigation routes in shipping. The Arctic region is rich in natural resources, but, at the same time, faces challenges due to its sparse population, limited logistical networks, and fragile environmental conditions; hence, any future sustainable growth and development in it should address the need to build sustainable infrastructure and explore and expropriate the natural resources sustainably, in an effort to achieve transformation towards an inclusive green economy that respects the indigenous peoples and their communities and lifestyle. This article not only synthesizes the existing literature on the topic of the impact of climate change on the Arctic, but also discusses and analyses the ways in which any exploration and exploitation of natural resources and any increased shipping activity in the Arctic should take place, in the light of the impact of climate change. By bringing together different literatures – on the Arctic exploration, legal regulation and Arctic shipping – not usually considered together, it analyses and discusses the multiple social and environmental effects of climate change in the region and its indigenous populations, and, finally, proposes policy options and legislative and other measures so as to best meet the various challenges imposed.

Keywords: *climate change, sustainable development, Arctic oil and gas, Arctic shipping, environmental protection, Arctic*

1 Introduction

The world as we know it is experiencing a momentous transformation, due to climate change. Regions such as the Arctic have succumbed to total changes in their landscapes, with entire icescapes either being on the move or totally disappearing in recent years. Lately, ice melts and wild fires in areas close to the Arctic region, such as e.g. in Siberia during the summer of 2019, have resulted in the re-evaluation of previous estimates. According to Cochran, the climate change effects such as accelerated fires and rapid ice melts already entail a much earlier ice free Arctic, i.e. by the year 2030 or even earlier, when original projections were estimating this to occur earliest in 2040.[1] Such a time shift in the estimated projection imposes also the need to recognize the way in which such global incidents affect local regions and their inhabitants, and to urgently act so as to reverse the speed of climate change and to take all measures necessary to address its impact on people and the natural habitat.[2]

The rhythm with which climate change is currently occurring in the Arctic region will result in the melting of the ice in areas that are currently covered with ice and which are known to be rich in natural resources which will then become exploitable. It will also reverse economic growth and global economy as higher temperatures will deplete various industries and reduce Gross Domestic Product (GDP) per capita. Ice melting also means that Arctic shipping will be larger in volume as new routes will become deployable. The fact that climate change will cause the increase of vessel traffic in the Arctic means that Arctic shipping will need to be enhanced and, to do so, it will have to be sustainable.[3]

The Governing Council of the United Nations Environment Programme (UNEP) characterizes the Arctic and sub-Arctic as 'barometer regions' in terms of the acceleration of global climate change, and the Intergovernmental Panel on Climate Change (IPCC) predicts further implications to the lives of indigenous peoples who depend upon the natural environment and have a special cultural and spiritual relationship with it. The indigenous peoples of the Arctic are experiencing climate change at the forefront due to their geographical position, previously already having had to drastically change their cultures and lifestyles so as to adapt to the accelerated development of their environment and the natural resources within it. Hence, any new policies relating to the exploration of new areas that will emerge must put the indigenous peoples and regions in the centre of attention and promote ways which will enable them to achieve sustainable growth and development and be the least distracted in their way of living.[4]

* Senior Lecturer in Law, University of Exeter, Law School, CSSIS, Amory Building, Rennes Drive, EX4 4RJ, UK. Email: k.noussia@exeter.ac.uk.

[1] P. A. Cochran, *Impacts on Indigenous Peoples from Ecosystem Changes in the Arctic Ocean*, in *Environmental Security in the Arctic Ocean*, NATO Science for Peace and Security Series C: Environmental Security 75 (P. A. Berkman & A. N. Vylegzhanin eds, Springer 2013).

[2] *Ibid.*

[3] K. Stephen, *Sustainability Understandings of Arctic Shipping*, The Arctic Institute, Centre for Circumpolar Security Studies (2018), https://www.thearcticinstitute.org/sustainability-understandings-of-arctic-shipping/. (accessed 15 Mar. 2020).

[4] Cochran, *supra* n. 1, at 75.

Environmental Sustainability in the Arctic

Cochran's view is pertinent to that of many environmental activists, including the teenager Greta Thunberg, who are against economic growth by all means where such economic growth has any impact on and cost for the environment. However, Cochran's argument is distinctive in that she does not altogether abolish the idea of development but proposes that the latter be done in a way so as to address the needs and future or humanity at the same time, including taking into account the special impact that such development will have on indigenous populations who are spiritually and culturally bonded with this natural environment, and depend upon it for their survival.[5]

This article adds to this view and to the existing literature: (1) by identifying the potential threats and problems of the exploration and exploitation of natural resources in the Arctic; (2) by identifying the challenges and effect of such exploration and exploitation on the lifestyle of indigenous peoples of the Arctic; and (3) by proposing ways to legislate and other actions so as to guarantee that any exploitation and expropriation of natural resources in the Arctic will be sustainable and conducted in a manner which will protect the environment and the indigenous people. Hence, this article discusses whether such exploration and expropriation of natural resources in the Arctic should occur or not, and emphasizes the need for an absolute warranty to act as a pledge that any such exploration and expropriation should be conducted only if it is to be done in a sustainable manner and after having taken into account and into consideration both the environment and the local indigenous communities that are being largely affected by such operations. This article also discusses the way to handle the increased enhanced shipping in the Arctic so as to achieve sustainability, the policy options available for this and legislative and other measures able to mitigate the consequences of climate change for both the environment and the indigenous communities With regards to the new areas to be revealed and the prospect of exploration and expropriation of natural resources and the new navigational routes to be revealed in these new areas, this article not only synthesizes the existing literature but, more importantly, by bringing together different literatures on the Arctic exploration, legal regulation and Arctic shipping which are not usually considered together, it analyses the ways in which any exploration and exploitation of natural resources and any increased shipping activity in the Arctic should take place, it discusses the multiple social and environmental effects of climate change in the Arctic and its indigenous populations and last but not least, it proposes policy options and legislative and other measures so as to best meet the various challenges imposed.

2 The Effect of Climate Change in the Arctic and the Need to Cooperate

Climate change in the Arctic cannot be solely addressed via protective measures taken by the Arctic states alone but calls for cooperation between the various actors in the region and the various fields and sectors of the economy and society. The decrease of ice in the Arctic opens the region for other activities, such as shipping and resource exploration, which may already occur, but, will certainly increase and, in the case of resource exploration, will change nature, hence, causing a need for further infrastructure and for international cooperation with global institutions.[6]

Cooperation as a term suggests that cooperating states should do so in any way that would not harm the environment.[7] The necessity for such cooperation at international level imposes also the need for a special responsibility for regional cooperation as well, so as to achieve the sustainable development and management of the area.[8]

Jacobsson states that the need to cooperate in the Arctic is dictated by the need for survival.[9] The Arctic states have already been proactive in that they have recognized the need for cooperation as an overarching duty stemming from international law and as a crucial prerequisite so as to manage migration flows, contacts and trade.[10] Pertinent to Jacobsson's view, this article further argues that such a need for cooperation is necessary so as to guarantee a sustainable expropriation of natural resources and a sustainable development of Arctic shipping, able to guarantee an equilibrium for the lifestyle of the indigenous communities.[11]

Cooperation among governmental or other institutions takes place in a number of regional fora,[12] and has been declared in various legislative instruments and international conventions, such as e.g. The Rio Declaration on Environment and Development (Seventh Principle)[13] or the United Nations Convention on the Law of the Sea 1982 (UNCLOS) (Article 197).[14] Such an obligation has also been further confirmed in important court cases of the

[5] *Ibid.*
[6] M. Jacobsson, *Cooperation in the Arctic Region: Legal Aspects*, in *Environmental Security in the Arctic Ocean*, NATO Science for Peace and Security Series C: Environmental Security 359, 361–362 (P. A. Berkman & A. N. Vylegzhanin eds, Springer 2013).
[7] *Ibid.*, at 362–363.
[8] *Ibid.*, at 361–362.
[9] *Ibid.*, at 359.
[10] *Ibid.*, at 360.
[11] *Ibid.*, at 363.
[12] Such as, the Arctic Council, the Nordic Council of Ministers, the Barents Euro Arctic Council and Council of the Baltic States, the EU and NATO.
[13] Jacobsson, *supra* n. 6, at 363; Rio Declaration (1992) on Environment and Development. Rio de Janeiro (14 June 1992).
[14] Jacobsson, *supra* n. 6 at 363; United Nations Convention on the Law of the Sea (UNCLOS), 1833 U.N.T.S. 397 (10 Dec. 1982).

Environmental Sustainability in the Arctic

International Tribunal of the Law of the Sea (ITLOS)[15] and it is further exemplified by the UNCLOS[16] as an obligation in relation to the protection of the environment. In addition, cooperation is also dictated by the fact much of the airspace and ocean consists of international airspace and international waters.[17]

Moreover, the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)[18] emphasizes that indigenous peoples, in particular those divided by international borders, have the right to maintain and develop contacts, relations and cooperation, including activities for spiritual, cultural, political, economic and social purposes, with their own members as well as other peoples across borders, and that states, in consultation and cooperation with indigenous peoples, shall take effective measures to facilitate the exercise and ensure the implementation of this right.[19]

3 Links Between the Obligation to Cooperate and Liability and Responsibility

In spite of the fact that the international law of cooperation is not so well-developed in international law, still the most important areas of that law are applicable to the Arctic, namely, the areas of environment, security, and human rights, particularly those of the indigenous peoples. Although there exists already a legal regime within the ambit of international law that provides for cooperation, i.e. the UNCLOS, however, there is no guarantee as to the extent of the duty to cooperate under international law in relation to the areas of environment, and indigenous peoples' rights. This is due to the fact that relating legal and soft law instruments have not yet been tested in courts so as to help determine the ambit of the enforceability of the duty and obligation to cooperate and in this way provide the best protection to the Arctic and guarantee its sustainable growth. It is positive to note that there is scope for developing and redefining the extent and content of the legal framework for the Arctic, either through the enactment of various policy instruments or through the cooperation of state regions and private actors, to ensure the detailed determination of liability and responsibility in terms of the law of the sea and environmental law[20] as depicted in the Stockholm Declaration[21] on the human environment,[22] or in the Rio Declaration[23] or in the UNCLOS.[24]

4 Oil and Gas Operations in the Arctic Ocean

It is estimated that the Arctic holds 13% of the world's oil reserves, 30% of undiscovered gases, and substantial deposits of metals such as palladium, nickel, iron ore, and many others.[25] Oil companies have already started exploiting offshore Arctic oil reserves, with Russia's Arctic mining efforts accounting for roughly 50% of the global supply of palladium, and 20% of the global supply of nickel.[26] Oil and gas development in the Arctic is not unknown and the region has always provided unique challenges for the oil and gas sector, which due to the

[15] Jacobsson, *supra* n. 6 at 364; *MOX Plant Case, Ireland v. United Kingdom*, Order, Request for Provisional Measures, ITLOS Case No 10, ICGJ 343 (ITLOS 2001), 3 Dec. 2001.
[16] UNCLOS, *supra* n. 14.
[17] Jacobsson, *supra* n. 6, at 361.
[18] United Nations, *United Nations Declaration on the Rights of Indigenous Peoples*, General Assembly (UNIDRIP), A/Res/61/295 (2 Oct. 2007).
[19] The Formulation in the Declaration bears out the obligation of states to cooperate with indigenous peoples. The Declaration was adopted with 144 states in favour (a majority) but that two Arctic countries were among those who voted against it, namely Canada and the United States. A third Arctic country, Russia abstained. However, several important states (including Australia and New Zealand) have reversed their positions and now endorse the Declaration; Jacobsson, *supra* n. 6, at 365.
[20] Jacobsson, *supra* n. 6, at 368.
[21] Stockholm Declaration, *Declaration of the United Nations Conference on the Human Environment* (Stockholm, 16 June 1972).
[22] The Stockholm Declaration, *ibid.*, states in Principle 22 that States shall co-operate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such States, to areas beyond their jurisdiction.
[23] Rio Declaration, *Rio Declaration on Environment and Development* (Rio de Janeiro, 14 June 1992), whereby it is stated in Principle 13 that States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage and that States shall also cooperate in an expeditious and more determined manner, to develop further international law regarding liability and compensation for adverse effects of environmental damage, caused by activities within their jurisdiction or control to areas beyond their jurisdiction.
[24] UNCLOS, *supra* n. 14. The UNCLOS clearly obliges states to cooperate in the implementation of existing international law and the further development of international law relating to responsibility and liability. Art. 235, provides that States shall cooperate in the implementation of existing international law and in the further development of international law, relating to responsibility and liability for the assessment of and compensation for damage and the settlement of related disputes, as well as, where appropriate, for the development of criteria and procedures for payment of adequate compensation, such as compulsory insurance or compensation funds, Jacobsson, *supra* n. 6, at 368.
[25] H. A. Conley, T. Toland & J. Kraut, *A New Security Architecture for the Arctic: An American Perspective: A Report of the CSIS Europe Program*, Washington, DC: Center for Strategic and International Studies (2012); B. D. Trump, M. Kadenic & I. Linkov, *A Sustainable Arctic: Making Hard Decision*, 50(1) Arctic, Antarctic & Alpine Res. (2018). e1438345, DOI: 10.1080/15230430.2018.1438345.
[26] Trump, Kadenic & Linkov, *supra* n. 25.

Environmental Sustainability in the Arctic

occurrence of the climate change become more important and emphasize even more the importance of cooperation between stakeholders, especially with regards to the impact that such extraction operations will have on the indigenous peoples lifestyle and habits.[27] The potential to extract natural resources within the new lands and waters which emerge due to climate change and ice melting, together with the receding sea ice and the improvements in sea and air transport raise the threat to sustainability for the environment and the indigenous local communities.[28]

Climate change and ice melting will yield greater access to a previously inhospitable climate and year round sea ice and will allow for resource extraction and geographic exploitation as well as new commercial shipping opportunities.[29] Concerns raised by the Arctic Council, relate to the prospect of achieving sustainability in relation to increased operations in Arctic lands and waterways, where activities including natural resources extraction or increased shipping pose short-term benefits that may not yield longer-term economic, environmental, or social benefits to local and regional communities.[30] Socially, such activities pose risks to the survival and well-being of indigenous communities, not least due to the economic effect that may incur should any such industrial or commercial activity cease. Also, because any such activity will generate sustainability concerns for the environment and have social implications for the indigenous peoples, guidance is needed for any policy proposals with regards to projects to be undertaken in the Arctic.[31]

This is in accordance with the view supported by Blaauw, who argues that because human activity is having a huge impact on the world's climate and, in doing so, it is also contributing to the alteration of the natural environment to which indigenous peoples are so closely attached to and on which they so heavily rely, therefore any large scale project for the exploration and expropriation of natural resources, needs firstly address any potentially negative impacts it might have on indigenous peoples and include mitigating factors and measures to address such negative results. More specifically, he argues that there is an absolute need for international and cross-sector collaboration for the conservation of both the Arctic biodiversity and its ecosystems, and this can only achieved if oil and gas and in general natural resources exploration and expropriation in the Arctic happens after careful consideration of its impact on the physical environment, and most notably after careful planning of the ways in which to manage a potential oil spill.[32] Hence, a logical question that has been raised is whether an oil spill, like the Macondo blow-out in the Gulf of Mexico, can happen in the Arctic. Shell, being one of the major Arctic investors and players in oil and gas in the Arctic, has a good record of spill prevention in the region, as safety is at the forefront of its priorities, and Shell has in place multiple mitigating measures such as barriers able to prevent the release of oil in its operations, and a solid response programme for its Arctic operations.

At the same time that the possibility of an oil spill is pertinent as a consequence resulting from oil and gas operations in the Arctic, it is also widely acknowledged that oil and gas developments can also provide clear benefits to the people of the Arctic region, such as economic growth and stability. Any such development has to occur and be planned in a way so that it is delivered in a sustainable manner, without depriving the augmentation of public revenues from such activities and the major and lasting impact they can have on local economies, as well as in a way which will respect the modus of lifestyle of the local indigenous peoples and will account for the strain that such activities can put upon small communities. To achieve such a result, Blaauw points out the need to involve the indigenous peoples in the process and design of oil and gas extraction operations, so as to guarantee that their lifestyle balance is respected and preserved and that they are also aware and contribute to the debate regarding any mitigation plans. It follows that it is imperative that the indigenous people be involved in the planning, design and execution of oil and gas activities, so that their opinions and wishes are respected and so that any proposed solutions will also mitigate any possible negative impacts.[33]

4.1 Challenges of a potential oil spill response

The Arctic environment poses limitations in relation to the capacity to respond to an oil spill. Some limitations include adverse weather, locating the oil, as well as the physical barriers imposed by ice to the mechanical recovery technology. The presence or absence of ice is one of the largest factors in the ability to respond to a spill, and so is temperature, because it affects the consistency of oil and the speed at which it degrades, winds and wave action, the various weather limitations such as fog and storms and the seasonal local limitations, such as the short Arctic days.[34]

[27] R. J. Blaauw, *Oil and Gas Development and Opportunities in the Arctic Ocean*, in *Environmental Security in the Arctic Ocean*, NATO Science for Peace and Security Series C: Environmental Security 175 (P. A. Berkman & A. N. Vylegzhanin eds, Springer 2013).

[28] D. Avango, L. Hacquebord & U. Wrakberg, *Industrial Extraction of Arctic Natural Resources Since the Sixteenth Century: Technoscience and Geo-Economics in the History of Northern Whaling and Mining*, 44 J. Hist. Geography 15–30 (2014); M. S. Becker & W. H. Pollard, *Sixty-Year Legacy of Human Impacts on a High Arctic Ecosystem*, 53(3) J. Applied Ecology 876–84 (2016); Trump, Kadenic & Linkov, *supra* n. 25.

[29] Trump, Kadenic & Linkov, *supra* n. 25.

[30] *Arctic Oil and Gas: Sustainability at Risk?* (A. Mikkelsen & O. Langhelle eds, Routledge 2008); Trump, Kadenic & Linkov, *supra* n. 25.

[31] Trump, Kadenic & Linkov, *supra* n. 25.

[32] Blaauw, *supra* n. 27, at 175.

[33] *Ibid.*

[34] Staff Working Paper No. 5, National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, *The*

Environmental Sustainability in the Arctic

Another main challenge for oil spill responders in the Arctic is the problem of locating oil, whilst other challenges entail the different drilling conditions and response needs and issues in the Beaufort and Chukchi Seas, whereby response may prove more difficult, especially in relation to the later sea due to the distance from the shore and due to the lack of infrastructure.[35]

Considering past oil spills such as the British Petroleum (BP) Oil spill, the Arctic areas stand in contrast with the Gulf of Mexico, in terms of the issues posed by deepwater drilling. The Deepwater Horizon containment efforts were complicated immensely by the depth of the wellhead, whereas wells in both the Chukchi and the Beaufort Seas would be in far shallower water, making it easier to respond to a potential blowout or leak. As differences between open water and ice conditions and in distance affect the nature of spill response and planning, such differences should be counted for when planning or executing mitigation mechanisms.

Subsistence resource use is also a topical factor of major importance as the Arctic indigenous peoples have a subsistence-based lifestyle, which is imposed by the costs for goods and services, depend on subsistence resource such as bowhead whale, and are expected to oppose to offshore drilling, as detrimental to such species which are important for their everyday alimentation.[36]

5 Policy Options to Address the Rapidly Changing Arctic

The impact of the rapidly occurring climate change in the Arctic is bringing new challenges that threaten the Arctic ecosystems, and the way of life of indigenous peoples. Any substantial progress in ensuring a solid plan in terms of environmental sustainability in the Arctic depends on the development of a resilient, mitigating regime capable of protecting the natural environment and habitat of the region. The existing governance framework is not solid as it consists of many fragmented legal instruments, which require coordination so as to be able to function and help manage the Arctic region.[37]

The European Union was amidst the first ones to formally recognize the need for an integrated policy approach to the Arctic Ocean in its 'Integrated Maritime Policy'[38] adopted in 2007. This integrated policy approach entailed the funding and execution of an eighteen-month dialogue called Arctic TRANSFORM, which initially brought together experts from the US and from the EU, to develop policy options for the Arctic, and already emphasized the need to expand the dialogue to all Arctic states. In March 2008, the European Commission and the High Representative released the 'Climate Change and International Security' report,[39] which reiterated the increased accessibility of the enormous hydrocarbon resources in the Arctic region and its impact on the geo-strategic dynamics of the region with potential consequences for international stability and European security interests and which, in its subsequent Communication titled 'The European Union and the Arctic Region',[40] set as its three main objectives, the need to: (1) protect and preserve the Arctic in unison with its population; (2) promote sustainable use of resources; and (3) contribute to enhanced Arctic multilateral governance. In 2009, the EU Council adopted the 'Council Conclusions on Arctic Issues',[41] (a) emphasizing the need to maintain the Arctic as an area of peace and stability, and (b) highlighting the need for responsible, sustainable and cautious action in view of new possibilities for transport, natural resource extraction and other entrepreneurial activities linked to melting sea ice and other climate change effects. The European Parliament further adopted a resolution on 'A Sustainable EU Policy for the High North', recommending ways that the EU could increase its presence in Arctic affairs.[42] Not least, the fact that both the EU and the US are implementing ecosystem-based management in their Exclusive Economic Zones (EEZs), further dictates the need for cooperation between all states which are stakeholders in the region, so as to promote a broader application of transboundary and cross-sectorial Arctic governance. In doing so, it is imperative that indigenous peoples be recognized as 'rights' holders' so as to ensure that their interests are on the forefront and are not marginalized.[43]

Challenges of Oil Spill Response in the Arctic, in *Environmental Security in the Arctic Ocean*, NATO Science for Peace and Security Series C: Environmental Security, 255–279, 264–266 (P. A. Berkman & A. N. Vylegzhanin eds, Springer 2013).

[35] *Ibid.*, at 264–266, 269–273.

[36] *Ibid.*, at 255–256, 269–271.

[37] S. Cavalieri & R. A. Kraemer, *Transatlantic Policy Options to Address the Rapidly Changing* Arctic, in *Environmental Security in the Arctic Ocean*, NATO Science for Peace and Security Series C: environmental Security 281 (P. A. Berkman & A. N. Vylegzhanin eds, Springer 2013).

[38] European Commission, *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions* (2007), An Integrated Maritime Policy for the European Union, https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=-COM:2007:0575:FIN:EN:PDF (accessed 15 Mar. 2020).

[39] European Union, *Climate Change and International Security.* Paper from the High Representative and the European Commission to the European Council, Brussels (2008), https://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/reports/99387.pdf (accessed 15 Mar. 2020).

[40] *Ibid.*

[41] European Council, *Council Conclusions on Arctic Issues.* Foreign Affairs Council Meeting (Brussels, 8 Dec. 2009), https://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/EN/foraff/111814.pdf (accessed 15 Mar. 2020).

[42] European Parliament, *Resolution on a Sustainable EU Policy for the High North*, European Parliament (Strasbourg 2011), http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P7-TA-2011-0024&language=EN (accessed 15 Mar. 2020).

[43] Cavalieri & Kraemer, *supra* n. 37, at 281–293.

Environmental Sustainability in the Arctic

The EU has already committed to reducing its total greenhouse gas emissions by 40% by 2030 and has set an indicative target of 80–95% by 2050. A significant portion of the black carbon reaching the Arctic originates from the European continent. The EU Clean Air policy package adopted in December 2013 includes actions on short-lived climate forcers. The EU legislation influences black carbon emissions in the Northern Europe, including via National Emissions Ceiling Directive (2016/2284/EU) and the Ambient Air Quality Directive (2008/50/EC). EU legislation affects air pollution also via setting standards for vehicles and residential wood combustion. The EU also funds the EU Action on Black Carbon in the Arctic (2018–2020, coordinated by Arctic Monitoring and Assessment Programme (AMAP) Secretariat). In 2013, the EU adopted the Climate Adaptation Strategy package. Arctic regions are identified as particularly vulnerable. Adaptation is to be taken into account across various EU policies: transport, health, migration, cohesion, agriculture, disaster insurance, fisheries, maritime and coastal issues.[44]

5.1 'Indigenous peoples' and their rights

Indigenous peoples are defined as per the following three characteristics. Indigenous peoples are those who: (1) identify themselves as indigenous groups, (2) have established their cultures and social institutions prior to European colonialism, and (3) continue to maintain those traditional ways of life to this day. Such a culmination of criteria in defining the indigenous peoples seeks to distinguish them from broader groups, such as ethnic minorities, so as to afford them the best possible protection of their rights and help them secure their unique cultures, resources, and habitats.

The 2007 UNDRIP[45] establishes numerous indigenous rights. Land rights and rights to ownership of natural resources exist in numerous sections of the UNDRIP.[46]

The first case to be heard by the Inter-American Court in which the central issue concerned 'indigenous rights to traditional land and natural resources' was the *Mayagna (Sumo) Awas Tingni Community v. Nicaragua*[47] case. The Inter-American Commission forwarded this case to the Inter-American Court of Human Rights (IACHR) for trial in 2000, which ruled in favour of the Mayagna (Sumo) tribe of Awas Tingni in 2001.

The Inuit Circumpolar Council (ICC) was founded in Barrow, Alaska on 1977 and serves as a transnational network, for approximately 1,50,000 Inuit giving them a united voice on issues of common concern. The mandate of the ICC calls on the organization to: promote the unity and rights of the Inuit people; protect the Arctic environment; and seek full and active participation of the Inuit in all developments within the polar region. Hence, the ICC has been active in lobbying for the indigenous peoples' rights at the Arctic Council and at the United Nations.[48]

5.2 Transatlantic policy options relating to indigenous peoples

The EU and US through their various policy statements[49] clearly recognize the important role of indigenous peoples in the Arctic decision-making process. The Arctic Council is a key forum that affords indigenous groups special status as Permanent Participants.

There are multiple ways to help indigenous peoples face the consequences of climate change in their home environment i.e. the Arctic. Any such efforts should focus on securing the position of indigenous peoples' as a high-level stakeholder in the Arctic Council or any other mechanism. The US and the EU should also aim in establishing a Working Group to act as review board able to assess any legal developments pertinent to the promotion of the interest of indigenous peoples and to provide funding for the participation of indigenous people to such forums as well as their training and education in relation to the new circumstances which their communities will face. This will help indigenous people identify their needs and priorities and better adapt to changes caused by the climate change, whether we are talking about natural changes in the environment or changes caused by human activities as a result of climate change and the subsequent new activities that will emerge such as the exploration and expropriation of natural resources.[50]

[44] Arctic Centre of the University of Lapland. *Background Seminar: Sustainable Arctic in the Context of Environmental and Socio-Economic Changes* (Brussels 2019), https://www.arcticcentre.org/loader.aspx?id=ec20f3cf-52de-49a7-af58-41e9cfbf6b51 (accessed 15 Mar. 2020).

[45] UNIDRIP, *supra* n. 18, Art. 10 on the prohibition of forced relocations, Art. 23 on the right to development, Arts 25, 26 on the protection of the distinctive spiritual' relationship of indigenous peoples and their territories, Art. 28 on restitution or fair compensation.

[46] W. H. Meyer, *Indigenous Rights, Global Governance, and State Sovereignty*, 13 Hum. Rights Rev. 327–347 (2012).

[47] *Mayagna (Sumo) Awas Tingni Community v. Nicaragua IACHR Series C No 79,* [2001] IACHR 9, IHRL 1462 (IACHR 2001).

[48] Meyer, *supra* n. 46 at 327–347.

[49] European Commission, *Communication from the Commission to the European Parliament and the Council*, The European Union and the Arctic Region (2008), http://eeas.europa.eu/archives/docs/arctic_region/docs/com_08_763_en.pdf (accessed 15 Mar. 2020); United States (2009a), *Arctic Region Policy*, National Security Presidential Directive 66 and Homeland Security Presidential Directive 25 (Washington, DC, Jan. 2009), http://polarconnection.org/national-security-presidential-directive-66homeland-security-presidential-directive-25-january-2009/ (accessed 15 Mar. 2020); United States (2009b), Fisheries of the United States Exclusive Economic Zone off Alaska; Fisheries of the Arctic Management Area; Bering Sea Subarea. Fed Regist 74 (211):56734–56746, https://www.federalregister.gov/documents/2019/07/17/2019-15194/fisheries-of-the-exclusive-economic-zone-off-alaska-exchange-of-flatfish-in-the-bering-sea-and (accessed 15 Mar. 2020).

[50] Cavalieri & Kraemer, *supra* n. 37, at 281–293.

Environmental Sustainability in the Arctic

5.2.1 Policy considerations in relation to hydrocarbon exploration, expropriation and exploitation in the Arctic Ocean

Energy production and consumption is a central concern to both the US and EU, however, there are no comprehensive mandatory regulations for prevention, reduction and control of pollution caused by offshore hydrocarbon activities, within the ambit of the cold Arctic conditions. The Arctic Council's 'Offshore Oil and Gas Guidelines',[51] provide a useful starting point; however, they are voluntary and of limited application as they were not developed by consensus. Furthermore, emergency response infrastructure is needed to quickly respond to accidents to protect the environment and ensure human safety. In addition, there is an imperative need for putting in place solid environmental impact assessments (EIAs) so as to promote best practices generally within and between EEZs in the Arctic.

The changes in the Arctic detect the need for an international response regarding the sustainable development of the resources which will emerge as a result of climate change.[52] To achieve such a sustainable development, it is also important to identify the key factors of any such changes, and to draft mitigation mechanisms to be put in place.[53] The reality is that the rising global demand for energy has also 'touched' the Arctic and will continue to do so as climate change accelerates and reveals new areas for such development. Until now growth in the Arctic energy sector has concentrated on onshore oil and gas reserves or in coastal waters but this will change as climate change opens further the Arctic waters zone and as offshore areas will emerge to be explored. This new potential of expropriation and exploitation will need to be accompanied by mitigation mechanisms for the new risks to be created as a result in the Arctic. The BP Deepwater Horizon oil disaster stands as a bitter reminder of how problematic deep sea drilling can be, even in more favourable conditions than those imposed by the natural characteristics and by the geophysical position of the Arctic. It follows from the above that it is imperative that the extraction of any form of hydrocarbons out of the Arctic is designed and implemented in a way that it ensures the address of all environmental, social and legal challenges and it also ensures the implementation of measures for the preservation of the natural environment and the protection of the indigenous peoples' lifestyle.[54]

5.2.2 Policy considerations for a sustainable development in the Arctic

Arctic governments continuously need to introduce appropriate measures to preserve the environment and the lifestyle of indigenous peoples in a sustainable way while still allowing for economic development and job creation in the Arctic.[55] Policymakers and private sector see green and blue growth as key strategies towards developing Arctic regions, while at the same time promoting sustainability. However, it is difficult to define what is truly sustainable, and which activities contribute to green and blue growth.[56] In the 2016 Joint Communication, the European Commission and the High Representative underline that opportunities in the green economy could be developed further in Arctic regions. Also, the European Commission has declared its willingness to help to monitor potential opportunities for sustainable economic activities, including in 'Blue Economy' sectors. The EU is also aware of the influence it has in the European part of the region, as the EU can play an influential role in shaping the future development of the European part of the Arctic through the application of EU rules relevant for the European Economic Area (EEA) and the deployment of financial instruments. In particular, the EU's cohesion policy supports investments as well as capacity building in the European Arctic, supporting the shift towards a low-carbon economy. The EU territorial and cross-border cooperation programme initiatives also have a role to play in these efforts.[57]

Policy makers need to address resource efficiency and ecosystem preservation so as to offset economic growth. Management plans such as the past examples of the EU Integrated Maritime Strategy or Norway's Integrated Management Plan for the Barents Sea and sea areas off the Lofoten Islands, can help create similar plans for the Arctic,-[58] although in the latter case any sustainable development plans need to be designed in accordance with the needs of the Arctic (indigenous) populations and the respect to their intrinsic and traditional lifestyle, aiming to improve their living conditions and create job opportunities for them.

Efforts to promote sustainable development in the Arctic has since 1996 been coordinated by the Arctic Council[59] and continue to be jointly addressed by all

[51] AOG, *Arctic Offshore Oil and Gas Guidelines*, Protection of the Arctic Marine Environment Working Group of the Arctic Council (Akureyri 2009),https://govmin.gl/images/stories/petroleum/Arctic_Offshore_Oil_and_Gas_Guidelines_2009.pdf (accessed 15 Mar. 2020).

[52] Cavalieri & Kraemer, *supra* n. 37, at 281–293.

[53] N. Bock, *Sustainable Development Considerations in the Arctic*, in *Environmental Security in the Arctic Ocean*, NATO Science for Peace and Security Series C: Environmental Security 37–57 (P. A. Berkman & A. N. Vylegzhanin eds, Springer 2013).

[54] *Ibid.*, at 39.

[55] Such as clean air and drinking water, healthy and unpolluted food or the capacity of fish stocks to regenerate.

[56] Arctic Centre of the University of Lapland, *supra* n. 44.

[57] High Representative of the Union for Foreign Affairs and Security Policy, *21 Final Joint Communication to the European Parliament and the Council: An Integrated European Union Policy for the Arctic* (2016), http://eeas.europa.eu/archives/docs/arctic_region/docs/160427_joint-communication-an-integrated-european-union-policy-for-the-arctic_en.pdf (accessed 15 Mar. 2020).

[58] Bock, *supra* n. 53.

[59] Namely that it was established as a decision shaping and not decision-making body, that decisions are made by consensus which slows progress and could lead to the lowest common denominator and that a number of important policy areas

Arctic states, in a way that promotes sustainability and environmental protection. This fact alone is a safeguard for the continuation of sustainable development strategies to be further adopted by the Arctic Council,[60] respecting at the same time the indigenous communities and their lifestyle and social customs, habits and traditions, such as communal hunting which is of pivotal importance to the Inuit people. Such an approach will guarantee economic growth, environmental protection and preservation of the Inuit cultural identity.[61]

In order for the Arctic stakeholders to put themselves in a better position to achieve sustainable development, a better understanding of the Arctic and Arctic-Global systems is needed, and to this effect the Arctic Council has already initiated a process, to establish a comprehensive observation network, to provide long-term monitoring of key parameters and exchange of views between the Arctic nations and other international actors.[62]

6 Oil and Gas Expropriation in the Arctic and Climate Change Ethics

A significant share of the world's currently unexploited oil and gas resources are at the bottom of the Arctic Ocean. As climate change melts the Arctic and other sea ice, the expropriation and exploitation of previously untouchable northern Arctic resources appears as a prospect for potential further growth and evolution of the Arctic. In relation to the potential of natural resources expropriation, different actors in the field have expressed different views and arguments. Because using those resources would create emissions and accelerate climate change, a debate has started about whether the new Arctic oil and gas reserves should be utilized or left untouched. In its turn, this debate has transformed the Arctic oil and gas development unavoidably into an ethical issue, i.e. whether it is acceptable to explore and exploit new oil and gas in the Arctic, at a time when humankind needs to reduce its carbon emissions. In the case of the Arctic and pertinent to the above dilemma, there are differences in how the actors perceive and promote the oil and gas development. To some it is an ethical problem, to some it is a question of technical standards, and to others it is not a problem at all. No matter which line of argument one follows, the bottom line is that the Arctic is currently in the midst of an ongoing process of transformation which entails conflicting dynamics such as cooperation versus conflict, environment versus extraction, globalization versus periphery, and indigenous peoples' economic growth versus their traditional livelihoods.

It has been suggested that tackling the climate change is a global responsibility in need of global response and global action. The Arctic can respond by adapting and building resilience. As the Arctic glacier and sea-ice melting has direct impact on sea-level rise, any future oil and gas development in the Arctic needs to be sustainably conducted, taking into account the populations which are located in areas where they are being threatened by a potential sea-level rise.[63] It has also been suggested that the emissions resulting from Arctic oil and gas will be detrimental to the environment, and hence oil and gas resources that become available as the ice melts, are better left untouched, as the resultant emissions will be harmful no matter how sustainably designed and safe the operations might be. Proponents of this view argue that the drilling of Arctic oil and gas in areas that have historically been covered by sea-ice has to be banned altogether.[64] Pertinent to the above view is the climate change strike action wave that was initiated by the sixteen-year-old Greta Thunberg when, just in 2018 she started her 'school strike for climate' outside the Swedish parliament in Stockholm. On 23 September 2019, Thunberg gave a speech at the United Nations Climate Action Summit, in which she included a major and harsh critique of economic growth in the climate change story frame and warned that although people are in the beginning of a chain effect initiated by climate change and possible to lead to mass extinction, people continue to primarily talk and think about money and endless economic growth. Scholars and activists share Thunberg's concerns about the current system of endless economic growth and have raised voices of concern against economic growth.[65]

Expropriating oil and gas from the areas to be accessible once the ice melts in the Arctic is for many a necessary evil. The truth is that such an economic activity will impact both positively and negatively the region and the lifestyles and societies of Arctic indigenous peoples. No development at all is the same radical an approach, as is development with ruthless economic growth in mind. With that in mind, any future drilling in the Arctic needs to be done in a sustainable way with the aim to preserve and protect the environment and at the same time respect the culture, lifestyles and societies of the indigenous people whilst allowing them to benefit from controlled economic growth.

relevant to sustainable development discussions like security or fisheries policy are not addressed; Bock, *supra* n. 53.

[60] Bock, *supra* n. 53.

[61] Meyer, *supra* n. 46, at 327–347.

[62] Such as the European Environment Information and Observation Network, the Arctic Observing Network in North America or the Global Environment Outlook through the United Nations Environmental Programme; Bock, *supra* n. 53.

[63] T. Palosaari, *The Arctic Paradox (and How to Solve It). Oil, Gas and Climate Ethics in the Arctic*, in *The Global Arctic Handbook* 141, 144–146 (M. Finger & L. Heininen eds, Springer 2019).

[64] *Ibid.*

[65] http://theconversation.com/greta-thunbergs-radical-climate-change-fairy-tale-is-exactly-the-story-we-need-124252 (accessed 15 Mar. 2020).

Environmental Sustainability in the Arctic

7 Shipping in the Arctic as a Result of Climate Change

In a timeframe less than a decade, there has been a visible increase in Arctic shipping, due to the growing loss of sea ice and the gradual prolongation of the navigation season which has resulted in more frequent shipping, especially on the Russian Northern Sea Route (NSR) where Russia is actively engaged in the development of a new maritime trade route. The Arctic is attracting more and diverse shipping as, on paper, new maritime trade routes linking Asian, North American and European markets are attractive will drop down costs in comparison to navigation through the Suez or Panama canals or cape routes, thus resulting in substantial savings. In reality navigation remains hazardous because of ice, fog and bad weather. Delays are costly for industry because markets rely on just in time delivery of goods.

The most important international instruments, from the point of view of safe and sustainable shipping and offshore operations are: (1) the International Convention for the Prevention of Pollution from Ships (MARPOL) (1973/1978) which is the main international Convention covering prevention of pollution of the marine environment by ships from operational or accidental causes; (2) the International Convention for the Safety of Life at Sea (SOLAS) (1974, as amended) regarded as the most important of all international treaties concerning the safety of merchant ships; (3) the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) (1978) on safety of life and property at sea and on the protection of the marine environment through the establishment of a common agreement on international standards of training, certification and watchkeeping for seafarers; (4) the UNCLOS (1982) which the limits of the territorial seas of nations and the areas in which they could exploit marine resources; (5) the International Convention for the Safety of Fishing Vessels (Torremolinos Convention) (1977/1993, not yet in force) on the safety of fishing vessels; (6) the Convention on Biological Diversity (CBD) (1993) on biological diversity; (7) International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea (HNS) (1996/2010, not yet in force) on compensation for damage occurring as a result of the maritime transport of hazardous and noxious substances; (8) the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM) (2004, not yet in force) on standards and procedures for the management and control of ships' ballast water and sediments to prevent the spread of harmful aquatic organisms from one region to another.[66]

In 2009, the Arctic Council issued via its Protection of the Arctic Marine Environment (PAME) working group a report namely the Arctic Marine Shipping Assessment (AMSA) Report, tackling a number of shipping issues facing the future of shipping in the changing Arctic and providing numerous recommendations. Most importantly, it highlighted the need to identify areas of big ecological and cultural significance and ensure that they be protected from a range of shipping impacts. It also highlighted the need for Arctic States and the International Maritime Organization (IMO) to address issue relating to noise and disturbance of marine species as a result of increased shipping and also the need to develop and implement mitigation strategies, such as the allocation of designated areas for vessel-source pollution and the implementation of laws and other measures in particularly sensitive sea areas to mitigate particular impacts from international shipping. Given the challenge of responding to oil spills because of remoteness and of ice conditions, the Arctic Council has facilitated the adoption of a regional agreement to address vessel-source pollution prevention, i.e. the Polar Code, which serves as a comprehensive regulatory instrument and adds additional requirements to the already existing environmental regulations, requiring ship owners to comply with and to produce the expected environment protection outcomes. The Polar Code apart, the UNCLOS[67] also provides Arctic States with a power to regulate shipping for the purposes of prevention, reduction and control of pollution in ice covered areas, on the basis of scientific evidence and with due regard to navigation.[68]

The predominant assumption behind the fact that climate change melts the Arctic and creates new waterways means that Arctic shipping will steadily rise in volume. Increased shipping and other operations in the Arctic will have multiple social and environmental effects in the region. However, large-scale Arctic shipping is still facing today many obstacles and it is also doubtful whether it is sustainable, even from an economic point of view. While actors agree that Arctic shipping can be sustainable, environmental Non-Governmental Organization (NGOs) cite the current use of heavy fuel oil in the Arctic as unsustainable, given the risk it poses on the environment, the climate and the local communities. In contrast, shipping operators have a strong focus on economic benefit. Overall the point is to not try to prevent Arctic shipping but to eliminate any of its unsustainable features. Another obstacle to sustainable development is the threat of rise in black carbon emissions originating in the Arctic, which can be expected as shipping become technologically and economically feasible in the region. This is due to the expansion of mining, energy and transport activities into newly accessible areas that were previously ice-bound – especially along the Russian Arctic coast, but also in Greenlandic and North American

[66] Institute of Marine Engineering, Science and Technology (IMarEST), *Safety and Sustainability of Shipping and Offshore Activities in the Arctic: A Round Table Report* 1–21, 7, https://www.imarest.org/reports/731-imarest-arctic-roundtable-report/file (accessed 15 Mar. 2020).

[67] UNCLOS, *supra* n. 15.

[68] A. Chircop, *Sustainable Arctic Shipping: Are Current International Rules for Polar Shipping Sufficient?*, 11(3) J. Ocean Tech. 39–59, 4041 (2016).

Arctic areas. In addition to having potentially severe health and climatic effects in the Arctic itself, these emissions could also reach lower latitudes, thereby aggravating the environmental health risks posed by air pollution in Europe, too.[69]

The consequences of Arctic development present risks to the environment, to people undertaking the operations, and also to people living in the Arctic. Impacts on the environment include, atmospheric emissions affecting climate and air quality, ecological impacts, chemical and biological contamination by hazardous materials and physico-chemical impacts such as from oil spills.[70] The international Conventions apart, the Polar Code reflects what was commonly acceptable at the global level at the time of its design and implementation. Even if criticized for substantial shortcomings such as the narrow environmental scope, namely that it is limited to pollution which is just one threat posed by ships, nevertheless it is a starting point for further regulatory initiatives so as to achieve sustainable shipping in the Arctic and safeguard the environment and the lifestyle of the indigenous communities. Currently the possibility to use and carry heavy grade oils via the Arctic waters, as opposed to the ban in the Antarctic waters, together with the lack of rules with regards to ballast water management practices in the Arctic region and with regards to the impact from emissions from ships, contribute to the adverse effects of climate change in the Arctic and endanger the quality of life of the indigenous and other coastal populations. Such a lack of a regulatory regime is also alarming from a private civil liability perspective, because current international rules do not adequately provide for compensation for damage from oil pollution and, similarly, there is a failure in implementing reasonable measures to mitigate and respond to damage in remote areas. All this relates to sustainability and the need for further regulatory action.[71]

8 The Way Forward

Changes are inevitable, and societies have always experienced changes. However, the pace and nature differ, over time, where the changes that are taking place these years have gone much faster than previously, due to a number of factors. The Arctic is the region of the world that is the most sensitive to climate change.[72]

Towards the end of the Cold War, Soviet President Mikhail Gorbachev made several proposals to mitigate instabilities in the Arctic, including the proposal for peaceful cooperation in developing its resources. Those proposals provided a baseline to chart progress with international relations and infrastructure development in the Arctic.[73] Since the end of the Cold War, the Arctic has become economically globalized for its resources and its transport routes as well as in relation to changes in resources extraction practices and changes in Arctic economies, societies and cultures.[74]

Climate change has provided access to new oil and gas resources in the Arctic, the utilization of which will contribute to further changes in climate. One view has supported the argument that the new Arctic oil and gas development is justifiable provided that it can be done 'sustainably' as it will also support local economic growth. Another view has supported a different interpretation of sustainable development and has questioned the sustainability of Arctic oil and gas development due to the potential harm in the environment and the indigenous people. Perhaps, the best approach to be followed lies somewhere in between.[75] In addition, new shipping will contribute to augmented activity in the Arctic. All of the expected changes of human activities will need be to be achieved sustainably.[76]

A way to protect the indigenous people is the arrangement of benefit sharing which occurs all over the world, in numerous industrial sectors.[77] In relation to the Arctic due to the vast concentrations of oil and mineral wealth, the significance of extractive industries, and the prospect of Arctic shipping, as well as livelihood practices of indigenous people, such agreements are important and seem like a plausible solution, yet actors such as the Arctic Council and its Sustainable Development Working Group have not yet issued any such guidelines on benefit sharing, or any models of engagement, in the form of such arrangements with the indigenous communities.[78]

The political repercussions are also not to be ignored. Six nations, the US, Canada, Russia, Finland, Sweden, Norway, and Denmark – have land borders above the Arctic Circle. Today, the Arctic is routinely described as an emerging frontier, and many polar nations, are angling for access to the region's rich stores of natural resources. For many scientists, analysts, and native people, the rapid and severe transformations unfolding in the Arctic, including ice loss and melting permafrost, are considered

[69] Stephen, *supra* n. 3.
[70] IMarEST, *supra* n. 66, at 8.
[71] Chircop, *supra* n. 68, at 58.
[72] I. H. Olsen, *Opening Remarks*, in *Environmental Security in the Arctic Ocean*, NATO Science for Peace and Security Series C: Environmental Security 7–10 (P. A. Berkman & A. N. Vylegzhanin eds, Springer 2013); M. Finger & L. Heininen, *Introduction*, in *The Global Arctic Handbook* 1 (M. Finger & L. Heininen eds, Springer 2019).
[73] P. A. Berkman & A. N. Vylegzhanin, *Conclusions: Building Common Interests in the Arctic Ocean*, in *Environmental Security in the Arctic Ocean*, NATO Science for Peace and Security Series C: Environmental Security 371 (P. A. Berkman & A. N. Vylegzhanin eds, Springer 2013).
[74] Finger & Heininen, *supra* n. 72, at 1–2.
[75] Palosaari, *supra* n. 63, at 144–146.
[76] A. S. Crépin, M. Karcher & J. C. Gascard, *Ambio*, 46(Suppl 3), 341, 345, 346 (2017).
[77] C. O'Faircheallaigh, *Community Development Agreements in the Mining Industry: An Emerging Global Phenomenon*, (44)2 Comm. Dev. 222–238 (2013).
[78] M. Tysiachniouk et al., *Oil and Indigenous People in Sub-Arctic Russia: Rethinking Equity and Governance in Benefit Sharing Agreements*, 37 Energy Res. & Soc. Sci. 140–152, 147 (2018).

Environmental Sustainability in the Arctic

negative consequences of climate change, omens of worse to come.[79]

In December of 2016, then-President Obama banned drilling and pulls the United States out of several leases within the Arctic region. In his first hundred days in office, President Trump overturned then-President Obama's ban on offshore drilling.[80] In May 2019, for the first time the US administration stated that 'disappearing sea ice and the subsequently emerging sea lanes could be seen as the twenty-first century's Suez and Panama Canals', that would potentially reduce the time it takes to travel between Asia and the West by as much as twenty days. This fresh interest in the Arctic can be traced to bold and aggressive moves by Russia and China, both of which have made significant investments in northern gas and oil infrastructure. US Secretary of State Mike Pompeo said he welcomed cooperation with both nations, and then he warned them against taking provocative actions.[81]

As the ice continues melting within the Arctic, the territorial race continues to grow. Countries looking to tap into the natural resources once not available has started what is being referred to as the 'New Cold War'. Military presence within the area has also increased as discovery of natural resources has proven to be commercial.[82] However, talk of a new Cold War in the Arctic might be overstated. Closer analysis of the actual importance of Arctic oil and gas to the countries concerned and the uncertainty and spatial distribution of Arctic hydrocarbons, offers a much more differentiated picture. The USA and Canada are unlikely to join a potential rush for Russia's Arctic resources given their own vast resource bases. Norway and Denmark both concentrate on their own hydrocarbon potential, because it is needed for economic and autonomy reasons, respectively. Not least, the Arctic Council has kept the peace in the area for the time being, but as time passes states are going to push harder to explore this new frontier.[83]

This article proposes that the Arctic Council and the governments of the States with borders above the Arctic Circle need advocate, draft and implement solid legal instruments, at state, regional and international level to help safeguard the conditions under which further exploitation of the Arctic should occur. Any legislative or regulatory intervention needs take the form of a uniform code or law, or of an international legislation which will be binding for all nations having an interest in the Arctic. Soft law guidelines and recommendations are also welcome provided that the interested parties have bound themselves in drafting, enacting and in being bound by them.[84]

As an example, one could mention the three Bills[85] enacted in the period 2008–2010 on the sustainability of Alaska and sustainable energy future, and all were instrumental in establishing an energy policy to guide the legislature towards the goal of sustainable energy. Similar to the House Bill 152 in 2998 which created the Renewable Energy Grant Fund and positioned Alaska as a national leader in funding for renewable energy and which provided for assistance for the communities to reduce and stabilize energy, created jobs and foresaw keeping money in local economies, similar initiatives should be undertaken for sustainable extraction of resources and sustainable shipping in the Arctic. Any related Bill should look into broadening the scope of actors and stakeholders engaged so as to achieve a holistic approach towards a sustainable extractive industry and operation in the Arctic. It should also look into educating and training the local communities into a sustainable way of living, working and interacting and in this way also promote local policy and development of local economies. Similarly, tax incentives and funding opportunities should be implemented through legislation in an effort for sustainable natural resources expropriation and sustainable shipping in the Arctic.[86]

With regards to measures for preventing and addressing oil pollution, the international regulations have not taken Arctic high seas into account nor dies a detailed guideline exist on oil spill prevention and response, except for the Intervention Convention of 1969. The sole existence of the latter as an international legal instrument calls for further measures. For the Arctic any response has to be timely otherwise it defeats the purpose of the term 'intervention', where the latter denotes an urgent action to prevent oil spill pollution in case of an accident. The Arctic states should takes measures and extend mandates to regulate accidental pollution in the high seas defining stringently oil spill intervention and its' interpretation. The Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic (ACMOPPRA) of 2013 is such an example of a mandate to regulate oil pollution and response to it. The Agreement serves as a way to fill the gaps of the Intervention Convention of 1969, but conflicts in its Article 6 with Article III(d) of the Intervention Convention which allows unilateral action and consultation with other states to address an accidental oil spill. In addition, the promotion of the Arctic Council to an international organization status would allow all its agreements to have the force of

[79] N. Shea, *Scenes from the New Cold War Unfolding at the Top of the World*, National Geographic (9 May 2019), https://www.nationalgeographic.com/environment/2018/10/new-cold-war-brews-as-arctic-ice-melts/ (accessed 15 Mar. 2020).
[80] ESRI, *The New Cold War: The Ice Race for Claims in the Arctic Oil and Gas Frontier*, https://arcg.is/1P9W0a (accessed 15 Mar. 2020).
[81] Shea, *supra* n. 79.
[82] ESRI, *supra* n. 80.
[83] *Ibid.*
[84] V. Herrmann, *Breaking Free: Alaska's Path Forward for Renewable Arctic Energy* (2018), The Arctic Institute, Centre for Circumpolar Security Studies, https://www.thearcticinstitute.org/breaking-free-alaskas-path-forward-renewable-arctic-energy/ (accessed 15 Mar. 2020).
[85] House Bill 152 (2008) Renewable Energy Grant Fund; House Bill 306 (2009) Roadamap for Alaska's sustainable energy future and Senate Bill 220 (2010) Plan of Action for HB 306.
[86] Herrmann, *supra* n. 84.

hard law. In the near future the melting of the ice on the Arctic will bring in new challenges in oil and gas sea bed and shore mining and will impose an additional challenge as Arctic shipping will also develop. The Arctic is vulnerable die to the lack of binding law and hence an integrated intervention model and hard law instruments are needed to protect the Arctic from detrimental exploitation.

9 Conclusions

Expectations of a geopolitical rush due to the potential for the expropriation of Arctic resources are unrealistic. For now, UNCLOS appears to be a suitable and detailed rule collection to govern possible contentious issues. The Arctic Council is another expedient forum and a safeguard of equilibrium in the region.

That said, the increased accessibility of the region opens up one important field of concern, which is the environmental state of the fragile Arctic ecosystem. The tremendous risks connected to potential Arctic oil and gas exploitation call for robust regulations and for the implementation of national, regional or international legal instruments, be it laws in the form of Acts or soft law guidelines which will bound local and international players in the region whilst taking into account the local indigenous communities and economies.[87]

Attempts to exploit the Arctic's economic potential via the development of offshore oil and gas resources on the continental shelves of Arctic coastal states, or via the use of shipping routes through Arctic waters, the development of global commodity prices for minerals and hydrocarbons, and the risk assessments and premiums offered by the (re-)insurance sector, classification societies and international financial investors are further 'outer-Arctic' factors to consider when designing policies for sustainable future Arctic ventures.[88] Because the achievement of sustainable development is not an easy task integrated approaches and mitigation plans are needed. Such approaches and plans need be balanced, respecting the needs and interests of all stakeholders, most importantly the lifestyle of indigenous peoples.[89] Any changes which will occur as a result of climate change will need careful planning and taking into account societal, working and living environment factors.[90]

Global climate ethics and Arctic energy resources are prone areas for conflict as no golden solutions exist. Those against drilling in the Arctic argue that opening the Arctic up for drilling would needlessly place the entire region at risk. They state that the vast size, remote location, and extreme weather conditions, as well as the severely limited ability to respond to emergencies and the complete lack of infrastructure for responding to oil spills make drilling in the Arctic extremely dangerous for the indigenous communities and overall catastrophic for the amazing life in the area.[91] Due to the fact that sustainability of the environment and the fate of future generations are at stake, prudent thinking and planning is needed before action takes place.[92]

In addition, the potentially transboundary effects of an accident in the Arctic demand common efforts and collaboration between the state actors in the region, and institutional adjustments for the protection of the Arctic environment and the safeguard of the Arctic indigenous peoples' lifestyle are necessary. To achieve sustainable development a robust regulatory environment and peaceful intrastate cooperation is needed. The ultimate goal should be to combine hydrocarbon exploitation and increased shipping activities, in an ecosystem-based management framework in order to account for the risks entailed in such activities and for the environmental and social impact entailed as well as for the effect on climate change and the planet's future.[93] If no sustainable shipping and expropriation of natural resources can be designed and guaranteed, we then urgently need to transition to a totally renewable energy landscape in the Arctic.[94]

[87] K. Keil, *The Arctic: A New Region of Conflict? The Case of Oil and Gas*, 49(2) Cooperation & Conflict 162–190, 180–181 (2014).
[88] IASD, *Sustainable Arctic Futures: A Regional and Global Challenge*, Institute for Advanced Sustainability Studies, Potsdam, https://www.iass-potsdam.de/en/output/dossiers/sustainable-arctic-futures-regional-and-global-challenge (accessed 15 Mar. 2020).
[89] Berkman & Vylegzhanin, *supra* n. 73, at 372.
[90] Palosaari, *supra* n. 63, at 144–146.
[91] WWF, *How Would Offshore Oil and Gas Drilling in the Arctic Impact Wildlife?*, https://www.worldwildlife.org/stories/how-would-offshore-oil-and-gas-drilling-in-the-arctic-impact-wildlife (accessed 15 Mar. 2020).
[92] Palosaari, *supra* n. 63, at 144–146.
[93] Keil, *supra* n. 87, at 180–181.
[94] WWF, *supra* n. 91.