

# A legal regime for the Arctic? Interplay with the Law of the Sea Convention

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Received 7 July 2006; accepted 6 October 2006

## Abstract

The Law of the Sea Convention constrains regional environmental regimes, especially with respect to navigation beyond the territorial sea. Existing soft-law institutions, notably the Arctic Council, have already strengthened environmental governance in the region by (1) improving the knowledge base; (2) preparing practical guidance on risk reduction; (3) highlighting in broader regulatory fora the Arctic dimension of problems like long-range transported hazardous compounds; and (4) supporting the capacity of Arctic states to implement existing commitments. None of those functions would be much enhanced by a legally binding Arctic environmental regime. The political impediments to reaching circumpolar agreement on a single comprehensive legal regime would suggest a flexible approach to norm building that seeks productive interplay with existing institutions.

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**Keywords:** Arctic; Law of the Sea Convention; Environment; Arctic Council; Resource management; Navigation

## 1. Introduction

The idea of a binding legal regime for the Arctic, inspired by the one already existing for the Antarctic, has been articulated by various civil-society organizations, among them the International Union for Conservation of Nature and Nature Protection (IUCN) [1] and the World Wide Fund for Nature (WWF) [2]. In 2004, the Standing Committee of Parliamentarians of the Arctic Region was asked to ‘[c]onsider possibilities to initiate a process which over time could lead to a binding legal regime for conservation and sustainable use of the Arctic and its marine environment’, an issue debated at the Seventh Conference of Parliamentarians of the Arctic Region, held in Kiruna in August 2006.<sup>1</sup>

This article outlines some implications of the UN Law of the Sea Convention (LOS) for recent proposals to establish a comprehensive and legally binding regime for the Arctic marine environment. The broad architecture of

that document is sketched and the scope allowed for regional regimes with stronger rules than those articulated in the Convention is noted. Against that background, various contributions made by Arctic soft-law institutions, especially the Arctic Council, to international efforts to protect the Arctic environment are examined. Throughout, comments are offered on whether those contributions would be significantly enhanced by the adoption of a comprehensive legal regime.

## 2. The Law of the Sea Convention and regional regimes

The First UN Conference on the Law of the Sea, held in Geneva in 1958, produced four global conventions—on the high seas, the territorial sea and the contiguous zone, the continental shelf, and fishing and conservation of the living resources of the high seas.<sup>2</sup> By 1982, the 9-year long Third UN Conference on the Law of the Sea had succeeded in producing a comprehensive Convention covering all segments of the ocean space and specifying rules on a

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<sup>1</sup>See Conference Statement, Sixth Conference of Parliamentarians of the Arctic Region, available at ([www.arcticparl.org](http://www.arcticparl.org)).

<sup>2</sup>Of these, the Fishing and Conservation Convention was ratified by only 37 states. Most major fishing states did not sign, and it remained largely a paper tiger.

wide range of uses.<sup>3</sup> The LOSC codified changes that had occurred in customary international law since the adoption of the Geneva Conventions, most saliently the right of coastal states to establish 200-nautical mile exclusive economic zones (EEZs). The EEZ concept placed the coastal state in the driver's seat for most activities undertaken within such a zone, including resource utilization, environmental protection and scientific research—but not navigation, which remained a high-seas freedom also within the EEZ.<sup>4</sup> Indeed, an EEZ is not a national space since the coastal state does not have full sovereignty, only certain sovereign rights and jurisdiction. This important concept reflects the balance that had to be struck between coastal states that argued that multilateral resource management had failed to conserve living resources, and those major states—including the USA, the Soviet Union, and the UK—that were set on retaining the freedom of navigation for commercial and naval vessels.

Two dimensions should be kept in mind when examining the rights of various categories of states (mainly coastal states and flag states) laid down in the LOSC: they vary as to *spatial* segment, and as to type of *activity*. The general pattern is that the right of coastal states to set and enforce rules on various activities decreases with distance from the coastline; and it is more extensive for scientific research and resource management than for navigation. In ports and internal waters, i.e., waters on the landward side of the baseline of the territorial sea, coastal states have the same monopoly on regulation and enforcement of all activities as they do on land.<sup>5</sup> With respect to navigation, due to its global nature, the set of measures that coastal states can take unilaterally is somewhat constrained in the territorial sea, which may extend 12 miles from the baselines; it is even further restrained in the EEZ.

A coastal state also enjoys exclusive management authority over resources found in the continental shelf, including those parts that extend beyond 200 miles from the baselines. The resources found on the deep-sea bed beyond the continental shelves—notably nodules containing such strategic minerals as cobalt and copper—are defined in the LOSC as the 'common heritage of mankind' and made subject to a specific regime [3]. Beyond its EEZ and continental shelf, a coastal state generally has few rights or obligations that are not also held by others, except that conservation measures under regional fisheries management regimes on stocks straddling between an EEZ and the high-seas area are to be compatible with coastal state measures.<sup>6</sup>

Particular rules apply to spatial areas with certain physical or socio-economic characteristics, such as en-

closed or semi-enclosed seas, straits used in international navigation, and ice-covered areas.<sup>7</sup> Article 234 on ice-covered areas originated in Canada's concern with foreign vessel traffic in the Canadian Arctic, and enables coastal states to pass and enforce especially strict rules on vessel-source pollution. Canada's 1985 Arctic Waters Pollution Prevention Act establishes a 100-mile zone in Arctic waters where special standards apply for vessel construction, crewing and pollution standards [4].

In some fields, such as conservation and use of shared fisheries resources, the LOSC strongly *encourages* regional management regimes.<sup>8</sup> With respect to stocks occurring both on the high seas and in waters where states exercise sovereign rights, that encouragement was upgraded to an obligation in the 1995 UN Fish Stocks Agreement, which stipulates that only states that have joined such regimes or adhere to their rules may participate in the harvesting of straddling or highly migratory fish stocks.<sup>9</sup> Similar encouragement of regional solutions is articulated in LOSC provisions on pollution from land-based sources or sea-bed activities under national jurisdiction. Thus, in adopting laws and regulations to prevent, reduce and control such pollution, states 'shall endeavour to harmonize their policies in this connection at the appropriate regional level'.<sup>10</sup>

In some other issue areas, however, the LOSC *restricts* the leeway for regional action, by setting either 'floors' or 'ceilings' for regional regimes. An important example of substantive floors, or *minimum* standards, are the provisions on dumping. Any regionally agreed standards and recommended practices 'shall be no less effective... than the global rules and standards', meaning those set forth under the London Convention 1972 [5].<sup>11</sup> Above that floor, however, there is nothing in the LOSC to keep states from agreeing among themselves to require stricter dumping regulations for vessels operating within their EEZ. For instance, an environmental agreement targeting the Baltic Sea banned dumping of all radioactive waste as early as in 1974, nearly two decades before a similar ban was agreed globally [6]. Arctic institutions—especially the Arctic Military Environmental Cooperation, which involves the foreign ministries of Norway, Russia, the UK and the USA—have played an important role in improving Russia's treatment facilities for low-level waste, thereby enabling it to join a global ban on the dumping of such material [7].

While dumping is subject to minimum requirements, the LOSC sets *maximum* standards for rules on other kinds of vessel pollution by foreign vessels—and those ceilings

<sup>3</sup>The second UN Conference on the Law of the Sea, held in 1960, had failed to produce agreement on the extent of the territorial sea.

<sup>4</sup>LOSC Arts. 58 and 87; among other high-seas freedoms retained is the laying of submarine cables and pipelines.

<sup>5</sup>On the drawing of baselines, see LOSC Arts. 5–8.

<sup>6</sup>Fish Stocks Agreement Art. 7, in conjunction with LOSC Art 63, para 2.

<sup>7</sup>See LOSC Arts. 34–36 (straits), 122–123 (enclosed and semi-enclosed seas), and 234 (ice-covered areas).

<sup>8</sup>LOSC Arts. 63–64 and 116–119.

<sup>9</sup>Fish Stocks Agreement, Art. 8.

<sup>10</sup>LOSC Arts. 207, para 3 (land-based activities) and Art. 208, para 4 (sea-bed activities).

<sup>11</sup>LOSC Art. 210, paras 4 and 6. The London Convention was reorganized in a 1996 Protocol which is not yet in force.

become lower, the further away from the coastline a vessel operates [5]. Thus, in internal waters and ports, states ‘which establish particular requirements’ shall only ‘give due publicity to such requirements’ and communicate these to the International Maritime Organization (IMO).<sup>12</sup> In the territorial sea as well, states are free to ‘adopt laws and regulations for the prevention, reduction and control of marine pollution from foreign vessels’ as long as innocent passage is not impeded.<sup>13</sup> In the EEZ, however, there is considerably less leeway: coastal states can unilaterally only set rules ‘conforming to and giving effect to generally accepted international rules and standards established through the competent international organization or general diplomatic conference’—meaning through the IMO.<sup>14</sup>

The LOSC entered into force in 1994 and is legally binding on those 149 parties that have ratified or acceded to the Convention.<sup>15</sup> Included here are all Arctic states except the USA. Important parts of the Convention, including the EEZ concept and the extent of the territorial sea, have now entered into the body of customary law and are therefore binding on all states, whether or not they have joined the Convention.

### 3. Arctic institutions and environmental protection

In 1991, a Finnish initiative to set up a cooperative intergovernmental vehicle for protection of the Arctic environment produced the Arctic Environmental Protection Strategy (AEPS), a soft-law instrument that created a string of permanent working groups tasked with various programme activities [8,9]. The four original AEPS activity areas, each coordinated by a working group, were the Arctic Monitoring and Assessment Programme (AMAP), Conservation of Arctic Flora and Fauna (CAFF), Emergency Prevention, Preparedness and Response (EPPR) and Protection of the Arctic Marine Environment (PAME) [10]. When the Arctic Council was established in 1996, it was to ‘coordinate and oversee’ the AEPS groups as well as the new Working Group on Sustainable Development. Decisions of the Arctic Council are made by biannual ministerial meetings, in the form of non-binding declarations that give direction for future work under the Council. Day-to-day operations of the Council are taken care of by the countries’ Senior Arctic Officials, normally polar or Arctic ambassadors. The Arctic Council does not have its own budget or secretariat: work under the Council is dependent on its members for direct national financial

contributions and willingness to act as lead country for specific projects.

This section sketches the roles played by the Arctic Council in developing measures for protection of the Arctic marine environment, with special attention to environmental monitoring, oil and gas activities, shipping and discharges of hazardous substances. First, however, it seems useful to consider a limitation on the potential effectiveness of an Arctic regime that does not stem from the legal obligations set forth in the LOSC.

#### 3.1. *The Arctic as an importer of pollutants*

An important feature common to Arctic territories is that they serve as reservoir, or sink, for many hazardous substances that have been generated and discharged elsewhere. Most of the radionuclides currently found in Arctic marine and terrestrial environments originate from activities outside the region [11, p. 59]. Main sources are reprocessing plants in the UK and in France, atmospheric nuclear tests conducted 40 or 50 years ago, and fallout from the Chernobyl accident in 1986. Also many other pollutants have been produced and discharged well outside the Arctic. Strong south–north air flows, rivers and ocean currents transport a range of hazardous compounds into and within the Arctic. Particular worries concern persistent organic pollutants (POPs), including organochlorine pesticides used in agriculture, industrial chemicals such as polychlorinated biphenyls (PCB), and various combustion products. The low temperatures of the Arctic serve as a ‘cold trap’ for some of these POPs, preventing their further transport. Similarly, some heavy metals found in high concentrations in the Arctic, mercury not least, originate largely from waste incineration and coal-burning power plants and residential heaters as far away as Eastern China—and these are discharges expected to accelerate in the future due to economic growth [11].

The effects of POPs and heavy metals on humans are more dramatic in the Arctic than those documented at lower latitudes because such substances bio-accumulate in the fatty tissue and blood of some species, including marine mammals and sea birds, which are important in the diet of Arctic indigenous residents. The Inuit of Canada and Greenland have among the highest exposures to PCB and mercury measured on the planet. Foetuses and infants relying on breast milk are particularly vulnerable [12]. These hazardous substances also demonstrate the close links that can exist between pollution and conservation issues. Some of the highest PCB levels ever measured in fat and blood are currently found in polar bears around Svalbard and Franz Josef Land, and recent studies indicate negative impacts on this animal’s immune systems and reproduction [13, p. 76]. Such effects are all the more dramatic because this is a species already threatened by declining ice extension due to global warming, and by increased hunting activities [14,15].

<sup>12</sup>LOSC Art. 211, para 3.

<sup>13</sup>LOSC Art. 211, para 4. Passage is ‘innocent so long as it is not prejudicial to the peace, good order or security of the coastal State’; among the acts considered as prejudicial in those respects are ‘wilful and serious pollution contrary to this Convention’; LOSC Art. 19, paras 1 and 2(h).

<sup>14</sup>LOSC Art. 211, para 5.

<sup>15</sup>This status is per 10 June 2006; see ([www.un.org/depts/los](http://www.un.org/depts/los)).

### 3.2. Environmental monitoring

Environmental monitoring activities have emerged as the ‘specialization of the Arctic Council’ [16, p. 837]. AMAP examines pathways and levels of hazardous contaminants, including POPs, heavy metals, radionuclides and hydrocarbons; examines their effects on human health and Arctic flora and fauna; and assesses impacts of climate change [17]. A series of high-profiled reports have been prepared on Arctic challenges, including two comprehensive AMAP Assessment Reports and several more specific ones in such areas as health, climate change, and oil and gas activities.<sup>16</sup>

These authoritative reports on the state and dynamics of the Arctic environment are based on data acquired through national and international research and monitoring programmes. The main role of AMAP has been to harmonize ongoing activities, by coordination and review of National Implementation Plans in light of the AMAP Trends and Effects Programme, and to promote studies and monitoring activities to close identified knowledge gaps. In the case of POPs, for instance, Denmark was induced by AMAP to upgrade existing ad hoc investigations to a systematic and long-term monitoring programme [13, p. 64]. The Persistent Toxic Substances project under AMAP, with funding from the Arctic states and several international institutions, engaged the Russian ministries of natural resources and health as well as the Russian Federal Service for Hydro-meteorology and Environmental Monitoring (Rosgidromet) in assessing the significance of aquatic food chains as pathways of exposure for indigenous peoples, the relative importance of local and distant sources, and the role of atmospheric and riverine transport.<sup>17</sup> Similarly, the USA, which had provided very little data on POPs for the first AMAP assessment, intensified its collection of data from Alaska for the second assessment, partly in collaboration with Canadian colleagues [18, p. 221].

Thus, the soft-law nature of the AEPS and the Arctic Council has not impeded their ability to induce states to invest more in Arctic environmental monitoring and to harmonize some of those activities. There can be no doubt that the high priority accorded to environmental monitoring in the 1991 Declaration on the AEPS implied strong expectations within and outside the Arctic that governments would intensify such activities. For the Arctic states as a group, environmental monitoring has stood out as an attractive object of cooperation—in part because it does not raise controversial questions about the appropriateness of international regulation, but also because of the substantial benefits of harmonizing data collection and analysis throughout the circumpolar area, especially given

the high costs of conducting environmental research in the Arctic.

### 3.3. Oil and gas activities

Hydrocarbons are among the pollutants prioritized under the Arctic Council. Its Oil and Gas Assessment, to be finalized in 2007, will update and expand on the hydrocarbon evaluations provided in the comprehensive AMAP Assessment Reports. Until recently, the main focus of the working group on Emergency Prevention, Preparedness and Response was on petroleum activities, with the Circumpolar Map of Resources at Risk from Oil Spills in the Arctic [19] as an important output. Now the scope has been expanded to include nuclear installations and other facilities that use or store hazardous material, and natural disasters.

The authority of the coastal states, as confirmed in the LOSC, to regulate the exploitation of shelf resources means that there is little to constrain regional states from agreeing on more stringent environmental standards for hydrocarbon exploration and production than those laid down globally, should they wish to do so. As pointed out by Offerdal [20], however, the strategic significance of oil and gas resources has led to reluctance among Arctic petroleum states to place binding regulation of such matters on the Arctic agenda. Indeed, the normative activities of Arctic Council working groups have been modest in this area, with few efforts to create rules that are more ambitious or more specific than those already embraced in broader international fora. A recurrent activity under the working group on Protection of the Arctic Marine Environment, for instance, has been to encourage Arctic states to sign and ratify international conventions of particular relevance to regional marine pollution [21]. More substantively, this working group has also engaged—sometimes jointly with the EPPR—in developing Arctic guidelines for certain activities that pose threats to the Arctic environment. The most prominent example is the 1997 Arctic Offshore Oil and Gas Guidelines, reviewed and updated in 2002. More specific products have been the Field Guide for Oil Spills Response in Arctic Waters and the less formal Manual on a Shoreline Cleanup Assessment Technique. The latter, adapted for Arctic conditions, is meant to enable residents and decision makers to draw an accurate picture of the nature and extent of shoreline oiling following a spill, as this is one necessary condition for effective response [22].

Explicitly non-binding, these various documents are intended to support governments and operators of Arctic installations and vessels in their efforts to enhance environmental safety, pinpointing and responding to conditions specific to this region—such as low temperatures, ice presence and long periods of darkness. They provide information about the practices of Arctic states considered to be the most advanced on the issues in question, and to some extent articulate norms developed under broader international organizations, such as the

<sup>16</sup>The comprehensive reports were published in 1997 and 2002, the health report in 2002; the Arctic Climate Impact Assessment (produced jointly by AMAP, CAFF and the International Arctic Science Committee) in 2004–05, and the oil and gas assessment in 2006.

<sup>17</sup>On this and other Arctic Council activities, see ([www.arctic-council.org/en/main/infopage/5#a4](http://www.arctic-council.org/en/main/infopage/5#a4)).



IMO or regional pollution regimes like the OSPAR Convention on marine pollution. The normative force of these various guidelines is low, however, and there has been no systematic review of whether governments or others actually make use of them. Had the norms articulated in these documents been legally binding, their level of implementation would probably have been subjected to greater scrutiny. On the other hand, given the caution that states usually display in accepting legal constraints on their freedom of action in areas important to them, negotiating such rules would have been far more difficult [23]. Moreover, procedures for review of follow-up activity can be introduced also for non-binding norms.

### 3.4. Arctic shipping

It was noted above that the LOSC placed restrictions on coastal state regulation of navigation beyond its territorial sea—notably that such regulation shall conform to and give effect to ‘generally accepted’ rules, i.e., those adopted under the IMO. Should the coastal state consider the IMO rules inadequate for certain sensitive areas, it must seek approval from this ‘competent international organization’—even for relatively modest interventions such as requirements to use particular sea lanes. For instance, on 24 April 2006, Norway submitted to the IMO a proposal for mandatory ship routing with a traffic separation scheme for tankers and other cargo ships off the coast of Northern Norway, from Vardø to Røst. The proposed routing system involves shifting the routes of vessels away from the coast, in order to avoid grounding and to separate north- and south-bound traffic. Under the LOSC, any additional measures taken by the coastal state ‘shall not require foreign vessels to observe design, construction, manning or equipment standards other than generally accepted international rules and standards’.<sup>18</sup>

Given these constraints, and the navigational interests of leading powers that have produced them, it is not surprising that the Arctic Council has chosen to tread gently when it comes to the issue of Arctic shipping. PAME is the most relevant working group here: it has produced several evaluations of policy priorities regarding environmental hazards related to increased regional shipping, the most ambitious of which is the Arctic Marine Shipping Assessment, to be completed in 2008.<sup>19</sup> Some soft normative activities have also been undertaken, including the Guidelines for Transfers of Refined Oil and Oil Products in Arctic Waters [24]. Beyond this, the Arctic Council has provided a platform for encouraging regional states to join or participate more extensively in spatially

broader environmental instruments, including the LOSC [21]. Successes have been few and far between. Although Canada and Denmark have recently ratified the Convention, it is unlikely that the signals provided through the Arctic Council were significant drivers behind those decisions; and, as noted, the USA still remains outside the LOSC. Similarly, despite continuous encouragement, also in several Ministerial Declarations, Russia has not joined the comprehensive and ambitious OSPAR Convention on marine pollution in the Northeast Atlantic.

### 3.5. Long-range transported hazardous substances

An important achievement of the Arctic Council with respect to transnational flows of hazardous substances is to have extended the sampling of such pollutants to the entire circumpolar area and clarified the pathways and mechanisms involved [13].

Normative contributions have been more indirect, in that the Arctic Council has sought to influence normative developments under spatially broader institutions. Of particular interest in this respect is the development of stricter rules on POPs, first in the 1998 Århus POPs Protocol under the Convention on Long-Range Transboundary Air Pollution (CLRTAP) and then in the global 2001 Stockholm Convention. Following the adoption of the AEPS, delegates from the eight Arctic states expressed their concern about the Arctic health effects of POPs to the Executive Body of CLRTAP. Given the political weight of this group of states, this is likely to have contributed to a subsequent strengthening of the mandate of the task force that examined the basis for a POPs protocol [13, p. 61]. Moreover, the period of producing the first AMAP Assessment overlapped with the negotiation of the POPs Protocol; and the fact that the AMAP chair was also co-chair of the Task Force on POPs meant that Arctic findings could be fed into the process continuously [13, p. 68]. It seems likely that those findings added to the perception that there existed a firm scientific basis for action. On the other hand, the impacts of Arctic Council activities on the adoption or contents of the Århus Protocol should not be over-estimated. Knowledge of extraordinarily high exposure to POPs among some Arctic residents preceded AMAP [12]; and Selin’s [25,26] in-depth study of the POPs Protocol highlights research and monitoring activities by certain Arctic states—especially Canada and Sweden—rather than AMAP or other Arctic Council activities.

With the global Stockholm Convention on POPs, Inuit organizations played an active role, which they had done only towards the end of the Århus Protocol process [27]. Particular attention was given to engaging US support for an ambitious instrument, and the US chairmanship of the Arctic Council in the period 1998–2000 provided a platform for exerting Alaskan influence on those who defined US positions in the global POPs negotiations [18, p. 221–2]. According to the Conference Chair, representatives of indigenous and environmental organizations

<sup>18</sup>LOSC Art. 211, para 6. Such requirements may indeed be agreed upon, as in the case of the 2004 Convention on Ballast Water Management.

<sup>19</sup>The assessment work plan is available at the PAME website ([www.pame.is](http://www.pame.is)); Canada, Finland and the USA are lead countries. A PAME ‘snapshot analysis’, produced under the auspices of the Norwegian Maritime Directorate, was published in 2000.

influenced the multilateral negotiations in a productive way and also ensured sustained publicity on the process [28, p. 250]. The Arctic dimension of the POPs problem was symbolized by a carving of an Inuit woman that was placed on the Chair's table throughout the multilateral negotiations—but caution is again required in assessing the real impacts of the Arctic Council on the negotiated outcome. It seems safe to note that findings generated under AMAP formed part of the scientific basis that substantiated the need for stricter regulations; that participation by Inuit organizations in the Arctic Council strengthened their awareness and knowledge about international POPs politics and improved their access to, and general relations with, Canadian foreign policy makers; and that Arctic Council meetings held in the USA provided platforms for actors (also in Alaska) who favoured an ambitious global instrument for exerting pressure on US foreign policy makers.

In view of the limits on what can be achieved under Arctic institutions, due to the role of this region as a sink for hazardous pollutants discharged elsewhere, the normative focus on broader institutions is quite understandable. The role played by the Arctic Council in strengthening POPs rules under CLRTAP and the Stockholm Convention depended not on the legal status of this institution but on the environmental monitoring activities it had generated and, to some extent, its profiled involvement of indigenous organizations.

### 3.6. *Regional sources of hazardous substances*

Important as external flows are, activities *within* Arctic states also generate a substantial share of regional marine pollution—including organochlorines, heavy metals, and hydrocarbons. Some of the largest and most heavily industrialized centres in Russia are found on the banks of rivers that branch into the Arctic seas. This is true of the Norilsk mining and metallurgical complex, the West Siberian oil and gas industries, the huge Kuznetz coal basin, and even the nuclear reprocessing plant in Mayak, near Chelyabinsk on the southeastern slopes of the Urals. The Yenisei and Ob are the main channels for river-borne pollution into the Arctic. Similarly, as much as two-thirds of the atmospheric heavy metals found in the High Arctic originate from industrial activities in Northwestern Russia, as does most of the sulphur found within the Polar Circle [29, p. vii, 97–9]. Major sources are the smelters in the Kola Peninsula near Russia's Nordic borders and in Norilsk further east.

While international regulation of activities involving discharges of hazardous materials has occurred in broader fora, the Arctic Council has focused on enhancing the capacity to implement such rules, especially in Russia. Under PAME's Regional Programme of Action to Eliminate Pollution from Land-Based Activities, several projects have aimed at developing and implementing a Russian Plan of Action. Tangible results have been

achieved under the Arctic Council's Arctic Contaminants Action Programme (ACAP) not least with respect to PCBs in Russia. In addition to proposing legislative measures and outlining strategies for introducing substitutes, internationally funded ACAP projects have identified existing stockpiles of this material and collected large amounts for safer storage and ultimate destruction. Envisaging application of state-of-the-art technology, this Arctic Council endeavour has now moved to demonstrations of how PCB can be destroyed. A 3-year proposed plan developed in 2002 involved the destruction of nearly 10% of the PCB believed to remain in Russia, but, 4 years later, implementation has remained limited by the inability to identify, and receive permission for, an appropriate site for destruction facilities [30].

Pesticides are another area in which the Arctic Council has spurred practical problem-solving efforts. Having identified various priority regions where obsolete or prohibited pesticides might have considerable effect on the Arctic environment, several ACAP projects have enabled inventorying of most stocks and repackaging and safe storage of more than a thousand tonnes of pesticides, with destruction as the next step [31].

Similarly, training programmes on cleaner production, tailored for engineers at the metallurgical complex in Norilsk, are expected to yield substantial reductions in energy use and emissions of carbon dioxide and nitrogen oxides [32]. Other ACAP activities target mercury, dioxins and furan, but these have not proceeded beyond fact-finding on releases, concentrations and cleaner production options and the identification of pilot projects [31]. The same is true of the most recent substance addressed under this action plan—brominated flame retardants, which originate in electric and electronic equipment, insulation material and transport vehicles.

As with the case of imported pollution, what the Arctic Council has contributed to reducing regional sources of hazardous pollution has been programme activities rather than the development of stronger international rules.

## 4. *Conclusions*

This brief examination of how Arctic institutions relate to the LOSC makes it clear that the latter imposes some constraints on regional regimes, especially with respect to navigation beyond the territorial sea. It also shows that the AEPS and the Arctic Council have strengthened environmental governance in the region in several ways: by improving the knowledge base for environmental measures; by preparing practical guidance on how to reduce risks associated with activities that involve threats to the Arctic environment; by highlighting in broader regulatory fora the Arctic dimension of problems like long-range transported hazardous compounds; and by supporting the capacity of Arctic states to implement existing commitments. A legally binding Arctic environmental regime would not serve to enhance any of those functions

significantly. Indeed, given the political impediments to reaching circumpolar agreement on a single comprehensive legal regime—notably the differing interests of Arctic states on such key issues as shipping and oil and gas activities, and the fact that many of the issues of concern are already regulated in global or regional treaties—the best answer would seem to be a flexible approach to norm-building that seeks productive interplay with existing institutions.

## Acknowledgements

I would like to thank Alf Håkon Hoel, David Scrivener and Davor Vidas for very helpful comments and suggestions. Some descriptive elements of this article draw on Stokke OS, Hønneland, G, Schei PJ. Conservation and Pollution. In: Stokke OS, Hønneland G, editors: *International Cooperation and Arctic Governance: Regime Effectiveness and Northern Region Building*. London: Routledge, forthcoming 2007. Funding for this research has been provided by the Research Council of Norway.

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