International Law and Scientific Research in the Arctic – The Role of Science in Law and the Role of Law in Science

*by Marie Jacobsson**

I. Introduction

It is sometimes necessary to start an article by stating the obvious, which in this case is that the Arctic region consists of land, water and air, and that international law applies to this region as it does to any region in the world. Likewise, States have sovereignty over their land and sea territory, as well as over their air space, and coastal States have certain well-defined sovereign rights and certain functional jurisdiction in their adjacent coastal areas. There is no legal vacuum that is peculiar to the Arctic region.

Why Then Is It Worth Discussing the Subject *International Law and Scientific Research in the Arctic*?

There are a few main reasons for this:

1. Science and scientific cooperation have proven to be an important currency of cooperation in tense political situations.
2. Regulation of scientific research, i.e. sharing of information, sharing the results of research, encouragement of cooperation and coordination, have long been important features of international and regional agreements in the Arctic region.
3. The principle of freedom of scientific research prevails in major parts of the Arctic Ocean.
4. 'Scientific research' is not defined in the United Nations Convention on the Law of the Sea (UNCLOS).[1]
5. The manner in which research is undertaken has changed since UNCLOS was adopted.
6. The Arctic region does not consist of water alone.

II. The Scientific Interest in the Arctic Region – A Historical Perspective

For centuries, the Arctic region has been subject to mankind's indomitable desire to explore unknown territory and to seek knowledge. Exploration, survey and research went hand in hand, particularly throughout the 18th and 19th centuries. So-

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1 United Nations Convention on the Law of the Sea (concluded 10 December 1982, entered into force 16 November 1994) 1833 UNTS 396.

vereigns and States sent out or endorsed expeditions, no matter whether they were privately funded or not. Freedom of scientific research in maritime areas stemmed from the principle of freedom of the high seas, and unknown land that was discovered was *res nullius* and subject to occupation. The parallel searches for new land, resources and knowledge were perfectly legal. It was all quite simple.

The activities had a lasting impact, resulting as they did in the 'sovereignty picture' that we see today in the Arctic. However, the fact that the Arctic was partly inhabited by indigenous peoples was more or less ignored by the States struggling to establish supremacy over various parts of the Arctic region, except as evidence that claimed land areas had been inhabited by nationals of the claiming State. The rights of the indigenous peoples as a group or as individuals were hardly ever on the agenda.[2]

Hence, the Arctic was already a tool in international politics at the time of 18th and 19th century exploration. As a result, sovereignty over Arctic and sub-Arctic areas, be they land or sea territory, reflects the political and legal realities of that time (such as the right of occupation and annexation), as evidenced by the bilateral and regional agreements concluded.

This is the background to treaties and agreements such as the Sami Codicil of 1751, the Alaska Purchase of 1867,[3] the 1920 Spitsbergen Treaty[4], and the 1933 decision of the Permanent Court of International Justice regarding sovereignty over Eastern Greenland,[5] but also the background to more modern solutions, such as the one between Denmark and Greenland regarding Greenland's Home Rule[6] and Greenland's withdrawal from the EU, to mention just a few.

In addition, scientific activities have always played a role in the drawing of the Arctic legal and political map. Science was used to 'prove' presence and provide evidence in connection with geographical disputes. But scientific activities have also served as a currency and a management tool.

Let me shed some light on a few examples of how the regulation of science is embodied as an integral part of some specific Arctic treaties, leaving aside, for the

[2] One rare example is the so-called *Lappekodicill (the Sami Codicil)* of 1751. The Codicil is annexed to the bilateral 1751 border treaty between Sweden and Norway and is particularly interesting in that it recognizes the customary right of the Sami people to cross-border reindeer herding – in times of both peace and war. The rights recognized have both an international law dimension and a private property dimension. The border treaty and the annexed codicil is available in Swedish, see B o ë t h i u s (ed.) *Sverges traktater med främmande magter jemte andra dit hörande handlingar* (P.A. Norstedt & Söner Stockholm 1922) Part VIII, 1723-71.

[3] Convention Ceding Alaska between Russia and the United States (signed 30 March 1867, entered into force 20 June 1867) (1867) 134 CTS 332.

[4] Treaty Concerning the Archipelago of Spitsbergen (concluded 9 February 1920, entered into force 14 August 1925) 2 LNTS 7.

[5] *Legal Status of Eastern Greenland (Denmark v Norway)* PCIJ Series A/B No. 53 (1933).

[6] H a r h o f f *Rigsfæ¦llesskabet* (Klim Århus 1993); Home Rule was introduced to the Faroe Islands before it was introduced on Greenland. The Faroe Islands are situated south of the Polar Circle but can be said to have an Arctic connection.

time being, the most important universal convention relevant to the Arctic, namely the United Nations Convention of the Law of the Sea.

The 1920 Spitsbergen Treaty

The importance of scientific investigation is recognized in the 1920 Spitsbergen Treaty, which stipulates that nationals of all the contracting parties "shall have equal liberty of access and entry for any reason or object whatever …"[7] and foresees the establishment of an *international meteorological station* in the treaty area as well as conventions to be "concluded laying down the conditions under which scientific investigations may be conducted in the said territories".[8]

Neither an international meteorological station, nor conventions laying down the conditions under which international investigations may be conducted, have been established or concluded. The meteorological stations that exist are operated by Norway and information is made available to the international community through the appropriate channels, such as the World Meteorological Organization.[9] It should be underlined that Norway's sovereignty over the Svalbard archipelago implies a right to set the conditions for any meteorological station, or any other research station, subject, of course, to the provisions of the treaty (first and foremost the rule of equal treatment) and international law in general.

To eliminate all uncertainties regarding the extent of the freedom of scientific research for Swedish scientists in the area of application of the Spitsbergen Treaty, Sweden and Norway agreed that Swedish scientists should enjoy bilateral guarantees to enable them to continue to conduct scientific research in the treaty area on the same terms as Norwegian scientists.[10] The guarantees reflect a recognition of long-standing Swedish scientific activity in the region. Sweden considered that continued free access to the Svalbard region was of the utmost importance and to exclude any interpretation of the Treaty to the contrary, a separate guarantee was negotiated.

[7] Treaty Concerning the Archipelago of Spitsbergen (note 4) Art. 3.

[8] Ibid. Art. 5.

[9] Ulfstein *The Svalbard Treaty: From Terra Nullius to Norwegian Sovereignty* (Scandinavian University Press Oslo 1995) 390-99.

[10] Exchange of Notes between the Norwegian Minister for Foreign Affairs and the Swedish Minister in Kristiania (12 January 1920). The notes are published in direct connection with the official Swedish publication of its ratification of the Spitsbergen Treaty, see 'Sveriges överenskommelser med främmande makter' *(Sweden's agreements with foreign powers)* SÖ 1924:25.

The 1946 International Convention for the Regulation of Whaling

The International Convention for the Regulation of Whaling was signed in Washington on 2 December 1946.[11] Although this Convention is not the subject of this article, it is relevant to recall that any contracting government may grant to any of its nationals a special permit authorizing that national to kill, take and treat whales for purposes of scientific research, subject to certain restrictions.[12] This brief reference serves to illustrate the role of science as a tool and integral part of a treaty.

The 1973 Agreement on the Conservation of Polar Bears

Scientific cooperation was, as mentioned, a useful instrument during the last part of the Cold War period. One of the most important confidence-building measures was the conclusion of the Agreement on the Conservation of Polar Bears in Oslo on 15 November 1973, between the United States, the Soviet Union, Norway, Denmark and Canada.[13] It was concluded at a time when the prospect of any disarmament agreement between the two superpowers (and of relevance to the Arctic region) was slim, and when the Arctic was as politically cold as its own temperature. The Polar Bear Agreement was as far away as the States could come from hard security measures at the time, yet it served as an important confidence-building measure: it was evidence of the parties' ability to cooperate.[14] The parties agreed that it was important to protect polar bears and they therefore decided to prohibit the taking of polar bears – except for scientific purposes.

It goes without saying that such an exception will not in itself bring the parties to the agreement closer to each other, nor make them cooperate. However, the agreement obliges the contracting parties to conduct national research programs on polar bears, particularly research relating to the conservation and management of the species, and to coordinate such research with research carried out by other parties. There is a duty to consult and to exchange information on research and management programs, research results and data on bears taken.[15] One of the most interesting aspects of the Agreement is the recognition of the rights of 'local peoples' – although the term 'indigenous peoples' is not mentioned. The parties to the Agreement agreed in 1981 that the Agreement should be maintained indefinitely.

[11] International Convention for the Regulation of Whaling (concluded 2 December 1946 entered into force 10 November 1948) 161 UNTS 72.

[12] Ibid. Art. VIII.

[13] Agreement on Conservation of Polar Bears (concluded 15 November 1973, entered into force 26 May 1976) 13 ILM 13 (1974).

[14] Fikkan/Osherenko/Arikainen 'Polar Bears: The Importance of Simplicity' in: Young/Osherenko (eds.) *Polar Politics: Creating International Environmental Regimes* (Cornell University Press Ithaca 1993) 96-151.

[15] Agreement on Conservation of Polar Bears (note 13) Art. 7.

It is a well-known fact that the present threat to the polar bear population is of a different nature from the one that existed when the Agreement was concluded in 1973. At that time, the threat to polar bears was primarily due to the hunting and killing of the animals. There were hardly any signs of climate change. Today, we have a different view of what constitutes the threat to polar bears, namely the impact of human activity on the global climate and melting Arctic ice caps.

It was against this background that Norway hosted the third meeting of the States Parties on the Polar Bear Agreement in Tromsø in March 2009. The meeting was the first in what is likely to become a new era of more frequent meetings on a biennial schedule. At the Tromsø meeting, the parties to the Agreement clearly stated in the outcome document that it is the "impacts of climate change and the continued and increasing loss and fragmentation of sea ice ... [that] constitutes the most important threat to polar bear conservation".[16]

Although the five Arctic rim countries can be said to have a special responsibility with regard to the conservation and protection of polar bears, two important international legal dimensions cannot be disregarded. The first relates to the right of all States to undertake scientific research on polar bears, subject to international law (including the law of the sea). The second relates to the fact that if the cause of the threat to polar bears stems from a source outside the region in which they live, non-rim countries, too, have a legitimate interest in any relevant regulation.

III. Science as a Tool of Cooperation in the Arctic Region – the Bodies

The importance of science in the Arctic region, and of scientific knowledge of the Arctic region, is also evidenced by the number of bodies that in one way or another deal with or coordinate research relevant to the region.

Comité Arctique

The first attempt to overcome political tensions – which also caused problems for the scientists – was a private initiative by the Swiss businessman and enthusiast Louis Rey, who created the *Comité Arctique* in 1979. The *Comité Arctique* had its registered office in Monaco and, when established, was certainly ahead of its time.[17] However, the scientists alone were unable to bring about a fundamental change to the structure of cooperation. In fact, even among the scientists, views on how to move forward differed. At a brainstorming meeting in Monaco in February 1979

[16] Outcome of Meeting, Meeting of the Parties to the 1973 Agreement on the Conservation of Polar Bears, Tromsø, 17-19 March 2009 <http://www.polarbearmeeting.org/> (4 August 2009).

[17] Monaco has maintained its interest in the polar regions, as evidenced by the engagement of Prince Albert II, both in Arctic and Antarctic matters.

(held under the aegis of EUROCEAN[18] but also against the background of a direct interest of the Sovereign Prince of Monaco Rainer III), which aimed to explore the possibility of forming a Scientific Advisory Committee on the Polar Seas, the British representatives apparently tried to delay and water down the ambitions. The move was opposed by the Swedish representative, who wanted a clear reference to freedom of scientific research in the region. However, rather than risk having no paper at all to present to Prince Rainer, the cautious approach was allowed to prevail.[19]

International Arctic Science Committee

Today we take the *International Arctic Science Committee (IASC)* for granted. What could be more natural than an 'organization' (though not in the legal sense of the word)[20] with a mission to "encourage and facilitate cooperation in **all aspects** of Arctic research, in **all countries** engaged in Arctic research and **in all areas** of the Arctic region", as it is was once formulated on the Committee's website.[21]

But the negotiations that led to the establishment of IASC in 1990[22] were by no means free from political overtones. Indeed, the establishment of IASC took place during the last phase of the Cold War. Despite the partial improvements in the relationship between the United States and the Soviet Union, the lack of confidence between the Eastern and Western political blocs remained and influenced the discussions on membership, mandate and openness, including issues such as whether non-Arctic States should be entitled to participate, and where the secretariat should be located. The discussions were nothing but a manifestation of the role of international scientific cooperation as a political factor.[23]

[18] European Centre for Information on Marine Science and Technology, for further information on EUROCEAN, see <http://www.eurocean.org/> (5 August 2009).

[19] The information on what took place stems from reports and letters written by various delegates from different countries that participated in the meeting. They are all on file with the author and most of them are registered in the archives of the Swedish Ministry for Foreign Affairs. The fact that the reports and letters are filed at the Foreign Ministry shows the political dimension of the initiative.

[20] As of January 2009, the IASC Secretariat is hosted by the Alfred Wegener Institute for Polar and Marine Research in Potsdam, Germany. It was previously located in Stockholm, Sweden.

[21] See <http://arcticportal.org/iasc/general-information/what-iasc-does> (15 April 2009); the quotation does no longer appear on the web page.

[22] The decision to establish an International Science Committee was taken in Stockholm in March 1988, see International Cooperation in Arctic Science, Report of a Meeting in Stockholm, 24-26 March 1988, The Royal Swedish Academy of Sciences, Sweden (on file with the author).

[23] One of the first and most important documents was the document: Root/Rogne/Taagholt 'International Communication and Coordination in Arctic Science: Proposal for Action' (Paper prepared at the request of an informal consultative meeting in Oslo 1987, on file with the author). The meeting was attended by representatives from Canada, Denmark, Finland, Iceland, Norway, Sweden, the Soviet Union and the United States.

Now that IASC brings together 18 member countries' national science organizations covering all fields of Arctic research, the historical background may seem remote, but it must not be forgotten.

Arctic Council

If there were political concerns in setting up IASC, they were of course nothing compared with the concerns that surfaced when the establishment of the Arctic Council was discussed. This time, it was the States themselves that were to be the founding members.[24] The discussions covered everything from the definition of an Arctic State to membership, observer status and the role of indigenous peoples.[25]

As in the case of IASC, we also take the Arctic Council for granted. The scientific work under the auspices of the Arctic Council, conducted under its six expert working groups (focusing on e.g. monitoring, assessing and preventing pollution in the Arctic, climate change, biodiversity conservation and sustainable use, emergency preparedness and prevention, and the living conditions of residents of the Arctic), is essential for policymaking in matters related to the Arctic region.

European Polar Board

The European Polar Board is an expert group under the European Science Foundation, established in 1995. It is a regional cooperation board with a seat in Strasbourg. It also has its equivalents among the Nordic States and the Pacific States (Pacific Arctic Board).[26]

It is worth underlining that the above-mentioned bodies are not the only ones relevant to the Arctic region. Ocean science and marine science have organizations of their own, such as the Arctic Oceans Science Board and the European Marine Board.

The question is whether this proliferation of bodies has any legal implications. To answer this question, we have to look at the legal framework, primarily UNCLOS.

[24] It is worth mentioning that the Inuit Circumpolar Conference was among the first to propose the establishment of an Arctic Council.

[25] The Arctic Council has Member States, observers and permanent participants.

[26] Note also EUROPOLAR, which is supported by the EU under ERA-NET under the 6th Framework Programme, for more information, see <http://www.europolar.org/> (6 August 2009); for the 6th Framework Programme, see <http://ec.europa.eu/research/fp6/index_en.cfm> (6 August 2009).

IV. The United Nations Convention on the Law of the Sea (UNCLOS)

UNCLOS[27] sets out the parameters for the conduct of marine scientific research: subject to the rights and obligations in UNCLOS, all States and competent international organizations have the right to conduct marine scientific research.[28] In addition, there is an obligation imposed on States and international organizations to promote and facilitate the development and conduct of marine scientific research.[29]

The basic legal parameters are that marine scientific research shall be conducted exclusively for peaceful purposes, with appropriate scientific methods and means and without unjustifiable interference with other legitimate uses, and in accordance with regulations adopted in conformity with UNCLOS.[30] This means that different regulations will apply in the territorial sea, the Exclusive Economic Zone (EEZ), and on the continental shelf. Marine scientific research cannot constitute a legal basis for any claim to the marine environment or its resources.[31]

Furthermore, States and competent international organizations are under an obligation to cooperate and promote cooperation, and to create favorable conditions for the conduct of marine scientific research. In addition, States and international organizations have an obligation to make the scientific results available through publication, in particular to developing States.[32]

This sounds more or less perfect – and could have been so – had the States that negotiated UNCLOS been able to agree on a definition of 'scientific research' or 'marine scientific research', which they failed to do despite numerous proposed definitions.

The issue was highly political and closely connected with the question of how scientific research was to be regulated within the framework of the new EEZ legal regime, and how a distinction could be made between, on the one hand, research on the continental shelf and in the Area and, on the other hand, research in the water column of the high seas. The matter had south–north and east–west dimensions. Underlying the conflict was the distinction between research and exploration.

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[27] United Nations Convention on the Law of the Sea (note 1).

[28] Art. 238 UNCLOS; on the issue of marine scientific research and international law, see e.g. Soons *Marine Scientific Research and the Law of the Sea* (Kluwer Law and Taxation Publishers Deventer 1982); Roach 'Marine Scientific Research and the New Law of the Sea' Ocean Development and International Law 27 (1996) 59-72; Wegelein *Marine Scientific Research: The Operation and Status of Research Vessels and Other Platforms in International Law* (Nijhoff Leiden 2005); Freeman 'Legal Aspects of Marine Scientific Research (MSR) and Part XIII of the UN Convention on the Law of the Sea (UNCLOS)' (Paper presented at ABLOS Conference, Monaco, 10-12 October 2005), see <http://www.gmat.unsw.edu.au/ablos/ABLOS05Folder/DanielPaper.pdf> (6 August 2009).

[29] Art. 239 UNCLOS.

[30] Art. 240 UNCLOS.

[31] Art. 241 UNCLOS.

[32] Arts. 242-244 UNCLOS.

By the seventh session in 1978 (held in New York and Geneva), it had become clear that the States would not be able to agree on a definition. The United States made a last attempt to define marine scientific research at the eighth session in 1979 (in New York and Geneva) but by that time, it was too late for any modifications to be made to Part XII (on marine scientific research) and hence, also, with respect to any definition of the concept.

Admittedly, the lack of a definition is a *lacuna.* But, so far, it has been a valuable lacuna. The first generation of political tensions relating to the establishment of a legal regime for an EEZ has died down. We are now entering the second generation of differences of opinion regarding the unaddressed issues, matters relating to residual rights and the enhanced need for the protection of the marine environment and its resources for the benefit of both the coastal States and other legitimate stakeholders. Older legal solutions are not always the appropriate means of responding to modern technological developments. Nor would it have been possible then to foresee technological developments. In fact, it never is.

Can UNCLOS Meet the Needs of Modern Science?

Can UNCLOS meet the needs of modern science, or has the interface between scientific methods and applicable international law changed? This question was extensively debated at a conference in Oslo in August 2008.[33]

Let us look at a few aspects, the first of which relates to the *manner in which science is conducted*. When undertaking marine research, scientists today use new technologies such as Argo profiling floats[34], Autonomous Underwater Vehicles (AUVs) and new acoustic methods. They do so to explore the marine environment and to learn more about the causes of climate change. This means that marine science does not necessarily take place on or in the seas.

This challenges UNCLOS's assumption of how marine scientific research is conducted, since UNCLOS is based on the premise that it is possible to differentiate between science that is conducted in the various maritime zones (territorial sea, EEZ or high seas, the continental shelf and the international seabed [the Area]).

This is particularly relevant in the context of physical oceanography and came to the fore when the Argo Project was launched. The Argo Project stems from the 1990-1997 *World Ocean Circulation Experiment (WOCE),* which in turn is part of the *World Climate Research Programme (WCRP).*[35] The legal uncertainties under-

[33] See <http://www.fni.no/conference/index.html> (6 September 2009); some of the conference papers will be published in: Davor Vidas (ed.) *Law, Technology and Science for Oceans in Globalization: IUU Fishing, Oil Pollution, Bioprospecting, Outer Continental Shelf* (the Fridtjof Nansen Institute Norway).

[34] For more information, see <www.argo.ucsd.edu> (7 August 2009).

[35] See <http://www.argo.ucsd.edu/Origins_of_Argo.html> (7 August 2009).

pinning this global project[36] led the Intergovernmental Oceanographic Commission to adopt a resolution stating that: "[C]oncerned coastal states *must be informed* in advance, through appropriate channels, of all deployments of profiling floats which might drift into waters under their jurisdiction, indicating the exact locations of such deployments".[37]

The Resolution went on to suggest further measures on information, cooperation and consultation, but stopped short of any legal regulation since it is not the task of the IOC to develop new legal regulations in respect of scientific research on the high seas.

The second aspect relates to the truth value of scientific models. This is clearly linked to the role of science as a decisive factor in the implementation of legal provisions. Requirements, such as the one contained in Art. 234 UNCLOS stipulating that laws and regulations relating to ice-covered areas should be based on the best available scientific evidence, are becoming more and more frequent. Another highly relevant matter is the role of science in the context of implementing Art. 76 UNCLOS.[38]

The issue of the truth value of scientific models is directly connected with the 'new' precautionary approach to managing natural resources. The more important scientific advice becomes, the more important it is that scientific models are reliable. If a treaty obligation stipulates that States must adopt an ecosystem approach, then it is highly relevant to know whether the scientific models can predict the consequences in a reliable way. This is particularly relevant in the context of marine biology.

Indeed, scientists' reference to 'boundary conditions for models' is as relevant as the geographical boundaries themselves.[39] Bioinformatic data are crucial not only for policy and management, but also for the formulation of legal parameters. Is the depletion of a species a matter for the coastal State, a regional organization or the international community as a whole? It is important to recall that scientific conclusions are to be analyzed against the legal cartography.

Scientists have shown how different methods and combinations of methods are the best way of assuring solid evaluation of sustainable management, including Marine Protected Areas and marine reserves. At the same time it is clear that there

[36] Bork et al. 'The Legal Regulation of Floats and Gliders – In Quest of a New Regime' Ocean Development and International Law 39 (2008) 298-328.

[37] Intergovernmental Oceanographic Commission 'IOC Assembly Resolution XX-6: The *Argo* Project', see <http://argo.jcommops.org/FTPRoot/Argo/Doc/IOC_Resolution_XX-6.pdf> (7 August 2009) (emphasis added).

[38] See Reichert 'Determination of the Outer Continental Shelf Limits and the Role of the Commission on the Limits of the Continental Shelf' International Journal of Marine and Coastal Law 24 (2009) 11.

[39] Presentation by John Montgomery, Oslo, 2008. A brief summary is produced in the Compendium of Summaries from the Conference, which can be downloaded from <http://www.fni.no/conference/COMPENDIUM-FINAL.pdf> (6 September 2009); see also Montgomery/Carter 'Marine Science in the Past 25 Years: Main Findings and Trends' in: Vidas/Schei (eds.) *The World Ocean in Globalization: Challenges and Responses* (to be published).

will never be a 'final truth model'. We have to act on the basis of the best available knowledge at the time of decision-making. We cannot wait until 'perfect' information is available. If we are ill and go to a doctor, she is likely to want to treat us using the means available. She does not ask us to go home and wait for scientists to come up with the final truth.

Institutional processes and structures will need to be 'nimble' – that is, they must be able to act in the absence of knowledge, adapt in the face of rapidly changing knowledge and be confident that their decisions will be implemented.

New Areas of Interest: Arctic Biotechnology and Bioprospecting

As the Arctic has become more accessible, commercial and industrial interest in the resources of the Arctic has increased considerably. I am not referring to the interest in oil and gas, but to the interest in the genetic resources of the Arctic.[40] Scientists and entrepreneurs share this interest. Unfortunately, however, this interest appears to be perceived as a 'bad thing' – as if it were an interest or activity that is automatically detrimental to the Arctic environment. This is not the case. Examining and making use of the biodiversity of the Arctic can be of great value to mankind, without causing more than a footprint in the Arctic. In addition, the existing legal framework applies, including the UN Convention on the Law of the Sea, the Convention on Biological Diversity,[41] European Community Law and national law – to give but a few examples.

The difficulties lie elsewhere, namely in drawing the line between scientific research and exploration, in benefit-sharing and in creating a legal framework under which the rights of indigenous peoples are recognized and guaranteed. The fine line between marine scientific research and bioprospecting is of particular interest.[42]

V. Concluding Remarks

Most of the Arctic Ocean consists of international waters (i.e. the high seas or areas of Exclusive Economic Zones). How much of the seabed constitutes the 'common heritage of mankind' is not yet known. Irrespective of the difficulties in defining 'scientific research' or 'marine scientific research', the fact remains that the coastal States have jurisdictional rights when it comes to marine scientific research activities in their EEZ. This does not mean that coastal States can regulate marine

[40] For an important first report on the subject, see Leary *UNU-IAS Report: Bioprospecting in the Arctic* (United Nations University, Institute of Advanced Studies Yokohama 2009).

[41] Convention on Biological Diversity (concluded 5 June 1992, entered into force on 29 December 1993) 1760 UNTS 79.

[42] Arico/Salpin *UNU-IAS Report: Bioprospecting of Genetic Resources in the Deep Seabed: Scientific, Legal and Policy Aspects* (United Nations University, Institute of Advanced Studies Yokohama 2005).

scientific research to the detriment of science; the rights of coastal States are clearly spelled out in UNCLOS. Moreover, coastal States are under an obligation to grant permission should their right to restrict activities – as set out in Art. 246 UNCLOS – be denied. But as shown above, there are also other international agreements of direct and indirect applicability and relevance for regulating scientific activities in the Arctic region, on land or sea territory.

Other connections between science and law also merit further discussion: the difficulty of distinguishing between fundamental research and research for the purpose of exploitation, the connection between research and patent law, as well as dispute settlement mechanisms relating to the right of States to undertake scientific research – to mention just a few. Science is not above the law and the law must not be used to abuse the freedom of scientific research.

There is a need for greater openness, transparency and reciprocal sharing of results, and to make the granting of permissions and application procedures faster and simpler. *Bona fide* implementation of existing agreements is crucial.

Increased scientific research will increase knowledge, and benefit-sharing should be the guiding principle. This also includes benefit-sharing with the indigenous peoples in the North and local governments. They are the immediate stakeholders.