Managing Towards Sustainability in the Arctic: Some Practical Considerations

*by Brooks B. Yeager**

Introduction

The earth's Arctic is at the threshold of historically unprecedented ecological change. This transformation, brought on by a powerful regional warming trend associated with global climate change, will radically alter the fundamental conditions of life in the Arctic over the next few decades. This paper offers some reflections regarding the likely impact of climate change and global economic forces on the prospect of sustainable development in the Arctic, and discusses some possible approaches to establish a more solid foundation for a sustainable future for the region.

Given the important role that the living resources of the Arctic marine environment – marine mammals, seabirds, and fish – play in supporting the human communities of the Arctic, and in particular indigenous communities, sustainability in the future is intimately related to the capacity to conserve the ecosystem values of the Arctic Ocean. Unfortunately, it is not possible to predicate a sustainable "vision" for the Arctic of the future on the retention of the status quo in the physical system, which is impossible; nor can it be based on a return to prior historical patterns of resource exploitation, which have in general not been sustainable. In this respect, "sustainable development" in the Arctic must be seen as a project for the future. Even in this light, the prospect for sustainability is in peril. The capacity of current institutions and cooperative frameworks to meet the challenges to sustainability is in question. A deeper look at the management issues likely to arise as economic activity in the region intensifies will help us to understand whether a more effective and better integrated form of management is possible, and if so, whether such an approach can be developed within the current institutional framework, or, alternatively, will require new institutional arrangements. Cooperative efforts to assure the sustainability of development in the Arctic will require the active support of the Arctic nations and the appropriate involvement of the international community.

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Sustainable Development as Applied to the Arctic

Our hosts have asked us to assess "the main threats to sustainable development in the Arctic Region", to consider how existing international organizations might address them, and, finally, to consider the role of the international community in the future of the Arctic. These are daunting and complex issues; the ambition of this paper is not to solve them, but rather to shed some light, and to point out some features of the problem that may help in finding a solution.

Before attempting to assess the threats to "sustainable development in the Arctic", it is probably worthwhile to undertake a quick examination at the concept of "sustainable development" itself, as applied to the Arctic.

Various indigenous peoples lived sustainably in the Arctic region for some thousands of years prior to the advent of exploration and exploitation of Arctic resources on behalf of more economically powerful population centers outside the region.

Since the advent of commercial exploitation of the Arctic in the 17th century, there is precious little evidence of truly sustainable development in the region. In this regard, we can cite the depletion of the Spitzbergen and Greenland bowhead whale populations at the beginning of the commercial whaling era, the extinction of the Steller's sea cow and the depletion of sea otters in the North Pacific and Bering Sea in the 18th century, the subsidized industrialization of the Kola Peninsula and resulting degradation of the environment under Stalin, and the current pattern of development of inherently finite oil and gas resources and the transformation of Arctic community life on Alaska's north slope.[1]

Despite this history of unsustainable exploitation, however, the Arctic has been relatively less altered by human activity than most regions of the earth, and contains many reasonably intact ecosystems and areas that currently provide a sustainable subsistence resource to Arctic communities.[2]

The point of this brief history is that the ideal of sustainable development, as development that meets "the needs of the present without compromising the ability of future generations to meet their own needs …",[3] while still meaningful in an Arctic context, cannot be predicated on maintaining the status quo, nor on a return to some preceding historical condition or baseline, but rather must be seen as a

[1] See Turner et al. (eds.) The Earth as Transformed by Human Action: Global and Regional Changes in the Biosphere Over the Past 300 Years (CUP Cambridge 1990) 375 ff.; Ford Where the Sea Broke its Back (Little Brown Boston 1966) 187 ff., 'The Plunderers'; Csonka/Schweitzer 'Societies and Cultures: Change and Persistence' in: Stefansson Arctic Institute Arctic Human Development Report (Stefansson Arctic Institute Akureyri 2004) 47-49; National Research Council of the National Academies Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope (National Academies Press Washington 2003).

[2] See Conservation of Arctic Flora and Fauna (CAFF) *Arctic Fauna and Flora: Status and Conservation* (Edita Helsinki 2001).

[3] UNGA Res 42/187 'Report of the World Commission on Environment and Development' (11 December 1987) GAOR 42nd Session Supp 49 vol. 1, 154.

project, and a commitment, for the future. We might call this project "managing towards sustainability".

Threats to Sustainability in the Arctic

Yet, we must admit that even the prospect of a future Arctic in which the pattern of development is sustainable is in danger. The chief danger comes from the combined effect of climate change and global economic forces.

As the Arctic Climate Impact Assessment[4] has shown, climate change is already directly impacting the Arctic environment in countless ways, from melting sea ice and permafrost to eroding shorelines and altering tundra vegetation. Even if world greenhouse gas emissions are eventually reduced, climate change in the Arctic will continue for a significant period, as the world's ocean-atmosphere system realizes the full extent of the warming to which we are already committed. This trend will likely result, in our children's lifetimes, in major alterations of Arctic ecosystems and significant population declines of ice-dependent species.[5] These changes could significantly impoverish the marine food web. If ocean acidification proceeds apace, the entire Arctic marine system must be considered in peril.

These impacts will diminish the capacity of the Arctic marine ecosystem to provide the ecosystem services necessary for sustainable community life in the Arctic, and particularly for the ongoing subsistence economy of Arctic indigenous communities. Just to give one example among many: Inuit families in northern Alaska have long kept fish and caribou meat cold in natural refrigerators, dug as much as four meters into the permafrost. Nowadays, natives throughout the North Slope report that their natural refrigerators are failing as the permafrost melts.[6]

Over the same time period in which these direct impacts of climate change are being felt, the combination of melting sea ice and global economic factors will likely result in more intense use of the Arctic marine system. We can expect new oil and gas development in frontier regions such as the Northern Barents, Beaufort and Chukchi Seas. Shipping is already increasing in certain regions, and though transcontinental shipping routes will likely take some decades to develop, their economic efficiency will eventually prove compelling.

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[4] Arctic Climate Impact Assessment (ACIA) Impacts of a Warming Arctic (CUP Cambridge 2004).

[5] See Amstrup/Marcot/Douglas 'Forecasting the Range-wide Status of Polar Bears at Selected Times in the 21st Century: US Geological Survey Administrative Report' (2007) <http://www.usgs.gov/newsroom/special/polar_bears/docs/USGS_PolarBear_Amstrup_Forecast_lowres.pdf> (18 June 2009) .

[6] Personal Communication, Cynthia D. Shogan, Alaska Wilderness League, 2009.

Tourism, and particularly cruise tourism, is already on the increase in Greenland waters, and the first large cruise ship stopped in Barrow, Alaska last year.[7] Commercial fishing is already expanding north in the Barents Sea, and may move to the high Arctic as fishery stocks respond to thermal changes in the ocean.

These accelerated activities will place new stress on the very physical and natural systems of the Arctic already stressed by rapid climate change;[8] and they will also add new stresses to the infrastructure of northern communities. At the same time, they will bring economic activity that could, if managed properly, provide benefits to the regional economy.

Institutional Arrangements for Cooperative Management in the Arctic

Do existing institutions have the capability to address the emerging challenges in the Arctic? An assessment of the adequacy of current legal and institutional frameworks to achieve "management towards sustainability" must take into account the specific threats to sustainable development, and also the current legal and institutional means through which the governments and peoples of the Arctic seek to encounter and manage these issues.

We should acknowledge at the outset that there already exists a fabric of legal, regulatory, and cooperative arrangements that apply to the Arctic and are relevant to the issue of sustainable development.

The United Nations Convention on the Law of the Sea (UNCLOS)[9] applies to the Arctic marine environment, as do a variety of other conventions and agreements.[10] Although the US has not yet ratified UNCLOS, its stated policy is to recognize many of its provisions as customary international law. With a new administration fully committed to ratification, we may have some confidence that the US will become a party in the near future.

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[7] Bryson 'Receding Ice Pack Means more Traffic in the Arctic' *Anchorage Daily News* (11 August 2008), worth reading in full for the somewhat comic story of Barrow's encounter with 400 unexpected German tourists.

[8] The projected repercussions of climate change and new economic activities in the Arctic have been well described in a number of reports and studies in addition to the ACIA, including, inter alia: Stroeve et al. 'Arctic Sea Ice Decline: Faster than Forecast?' *Geophysical Research Letters* 34 (9) (2007); National Oceanic and Atmospheric Administration 'Arctic Report Card' (2008) <http://www.arctic.noaa.gov/reportcard/ArcticReportCard_full_report.pdf> (18 June 2009); Huebert/Yeager A New Sea: the Need for a Regional Agreement on Management and Conservation of the Arctic Marine Environment (WWF International Arctic Programme Oslo 2006, republished 2008) <http://assets.panda.org/downloads/a_new_sea_jan08_final_11jan08.pdf> (18 June 2009).

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

[10] See on this point: Nowlan Arctic Legal Regime for Environmental Protection (IUCN Gland 2001); Corell 'Reflections on the Possibilities and Limitations of a Binding Legal Regime for the Arctic' (Address to Arctic Frontiers Conference, Tromsø, 22 January 2007); Bellinger 'Treaty on Ice' New York Times (23 June 2008).

In addition to the "constitutional" framework provided by UNCLOS, there are various regulatory regimes with application in the Arctic, including the International Maritime Organization (IMO) and the various treaties through which it operates, and a number of regional fishery management organizations which include portions of the Arctic within their area of jurisdiction.

Finally, the eight Arctic nations[11] have, over the past 12 years, evolved an innovative cooperative approach to issues in the Arctic, in the form of the Arctic Council. The Council is a unique intergovernmental forum, with representation from all eight "Arctic nations" and with the formal participation of six so-called "Permanent Participants", representing the indigenous peoples of the region.

Though it is not a regulatory body, and has no mandate to make decisions in its own right, the Arctic Council has been very successful at identifying issues of importance to the conservation of the Arctic environment and the well-being of Arctic peoples, and in developing assessments and other analyses that have laid a foundation for discussion and action to address the issues identified. In this respect, we can cite, among others, the 1998 AMAP Assessment Report: Arctic Pollution Issues, the 2001 CAFF assessment Arctic Flora and Fauna, Status and Conservation, the 2004 Stefansson Arctic Institute Arctic Human Development Report, and the 2004 ACIA assessment Impacts of a Warming Arctic.[12]

Acknowledging the existing framework of hard and soft law, the question remains whether current arrangements are sufficient, in the face of the likely changes in the environment and human access to the Arctic, to ensure the conservation of the region's natural resource base and the regulation of development activities in a manner that provides for the sustainability of future development.

In addressing this question, it will be helpful to frame the Arctic sustainable development "problem" so as to a) produce a useful assessment of the strengths and weaknesses of current arrangements, and b) identify potential pathways to improving existing arrangements or establishing new ones as appropriate.

Although we can address the question of adequacy from a variety of viewpoints—as a legal question, a practical matter, or a political problem—the fundamental point remains that our view of the adequacy of the institutional structure must depend on the goals that we wish to accomplish. In this respect, much of the current debate is at best misleading.

The media's treatment of the issue of territorial claims has at times conveyed the impression that the Arctic is a new "Wild West", without law, but with gunboats at the battle stations. At the same time, some parliamentarians and non-governmental organizations have issued well-intentioned, but not equally well-informed calls for an "Antarctic-style" treaty[13] for the Arctic.

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[11] Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, and the United States.

[12] Arctic Monitoring and Assessment Programme (AMAP) AMAP Assessment Report: Arctic Pollution Issues (AMAP ,Oslo 1998); CAFF (note 2); Stefansson Arctic Institute (note 1); ACIA (note 4).

[13] Cf. Antarctic Treaty (signed 1 December 1959, entered into force 23 June 1961) 402 UNTS 71.

Naturally these views have called forth a somewhat indignant defense on the part of a number of international lawyers and scholars, who have pointed out that there is indeed a body of law and an institutional framework that "covers the Arctic." In response, those who call for new institutions have argued that there are "gaps in the legal regime" that at present limit its effectiveness.

However, this argument begs the question of whether the provisions of UNCLOS are sufficient to guide an effective management regime in the Arctic. We might better regard UNCLOS as a "constitution" for ocean governance, upon which appropriate regulatory and governance institutions can be inscribed. The fact that UNCLOS envisions the need for various implementing agreements, such as the UN Fish Stocks Agreement[14], only serves to reinforce its role as a framework document, which can give rise, as appropriate, to implementing agreements, including region-specific approaches. It is also worth noting that UNCLOS remains open for interpretation in many areas, and that cooperation among States pursuant to UNCLOS could provide further development of the law in the area of matters pertaining to the Arctic, which has not been thoroughly developed to date.[15]

Perhaps, instead of inquiring whether there are gaps in the legal regime, we should look more closely into the regulatory framework in the Arctic with regard to various sectors of human activity. Recently, the "Arctic Transform" project has made a useful contribution to this discussion through a series of excellent sectoral papers examining the regulatory coverage of activities in the fishing, shipping, and oil and gas sectors, and in the complex of issues important to the region's indigenous peoples.[16] These papers have led to a number of useful recommendations for the improvement of the management of these key sectors of human activity with reference to the special conditions of the Arctic.

However, there is room to doubt whether improvements of traditional sectoral management approaches will be sufficient to assure the conservation of Arctic ecosystems and the ecological services they provide.

The current state of the world's oceans does not offer much support for the adequacy of sectoral management of the marine environment, which has, after all, been the fundamental basis of most marine management until very recently. In many seas, from the Mediterranean and the Baltic to the Coral, and in ocean basins from the North Atlantic to the South Pacific, historical management techniques have left fisheries badly depleted or even commercially extinct, many habitat types significantly degraded, and the water column and benthic environments severely

[14] Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (done 4 August 1995, entered into force 11 December 2001) 2167 UNTS 3.

[15] Personal communication, Charlotte Breide, Solicitor, Ince & Co., 2009. Breide also makes the point that UNCLOS incorporates other internationally accepted standards and agreements, and therefore covers a wider ambit than the text of the convention itself might indicate.

[16] See <http://arctic-transform.org/> (19 June 2009).

polluted. Some might argue that this sorry state of affairs represents at most a failure to undertake sectoral management rigorously, but leaders in the field of ocean conservation have taken the lesson to be that a more integrated, ecosystem-based management methodology is badly needed.[17]

The Management Challenge in the Arctic

In this respect, addressing the question of whether existing institutions can provide the basis for "management towards sustainability" may benefit from a somewhat different approach, which looks first at the management challenges that are likely to arise with the changing Arctic situation, and then inquires into the adequacy of existing institutions and frameworks to meet these management challenges.

The Arctic, although very large in area at 13,986,000 km², remains the smallest of the world's ocean basins and in some important respects bears the character of a "semi-enclosed sea".[18] Among other characteristics, it is characterized by being virtually landlocked for much of its periphery, with a deep basin surrounded by very large continental shelves, a limited exchange of deep water with the Atlantic and Pacific Oceans, and a recirculating current that carries ice, marine organisms, and wildlife around the system.

The management implication of all this may seem obvious, but it is useful to make it explicit: the various sectoral activities that we consider may need planning and management are, perforce, taking place in the same interconnected space. This gives rise to the question of whether the management of these activities should and can be integrated, and if so, according to what purposes and principles.

A number of the more promising contemporary marine management efforts are embracing the concept of ecosystem-based management (EBM) as a key guiding

[17] See, *inter alia*, US Commission on Ocean Policy *An Ocean Blueprint for the 21st Century: Final Report* (US Commission on Ocean Policy Washington DC 2004); Pew Oceans Commission *America's Living Oceans: Charting a Course for Sea Change* (Pew Oceans Commission Arlington 2003); Food and Agriculture Organization of the United Nations (FAO), Fisheries and Aquaculture Department 'Fisheries Topics: Ecosystems' <http://www.fao.org/fishery/topic/2880/en> (19 June 2009).

[18] The question of whether, as a legal matter under UNCLOS, the Arctic Ocean qualifies as a semi-enclosed sea has not been adjudicated, but most scientific accounts describe the Arctic's characteristics in a fashion that could be expected to lead to a positive conclusion. The concise description in *the Columbia Encyclopedia* includes the following: "Nearly landlocked, the Arctic Ocean is bordered by Greenland, Canada, Alaska, USSR, and Norway. The Bering Strait connects it with the Pacific Ocean and the Greenland Sea is the chief link with the Atlantic Ocean. … Since the Arctic's connection with the Pacific Ocean is narrow and very shallow, its principal exchange of water is with the Atlantic Ocean through the Greenland Sea. Even there, though surface waters communicate freely and a strong subsurface current brings warm water from the Atlantic into the Arctic basin, exchange of deeper waters is barred by submarine ridges. … The water that does not flow out by the Greenland Sea seems to be deflected by N Greenland and forms the current that gives rise to a circular gyre in the Arctic basin itself" *The Columbia Encyclopedia* (5th edn CUP New York 1993); see also Royer/Stabeno 'Chapter 3: Polar Ocean Boundaries' in: Robinson/Brink (eds.) *The Sea* vol. 11 *The Global Coastal Ocean: Regional Studies and Syntheses* (John Wiley and Sons New York 1998) 69-78; Sverdrup/Johnson/Fleming *The Oceans: Their Physics, Chemistry, and General Biology* (Prentice Hall New York 1942).

principle.[19] The ecosystem management-based approach is characterized by leading practitioners as having six main features:

- Focus on the ability of the ecosystem to support human well-being through the provision of ecosystem services;
- Geographical scope of management set by natural boundaries;
- Integration of management across sectors, recognizing the interactions of human activities;
- Management attention to cumulative impacts of activities over time, space, and scale;
- Acknowledgement that there will be tradeoffs among services that should be made explicit as part of the planning process; and
- Participation of stakeholders in planning and decision-making.

One can see that the EBM approach holds a certain promise in helping to address the management challenge in the Arctic. If such a concept could be employed effectively, it would allow the use of an integrated management approach that could reach activities in the key economic sectors likely to expand over the coming years, as well as the consideration of how best to conserve the wildlife and natural resource values that are of prime importance to local and indigenous communities, as well as being a global patrimony. It could provide a basis for improved sectoral approaches, and could help inform a process of spatial planning for areas of the Arctic likely to come under stress from multiple activities.

Potential Institutional Frameworks for Effective Management

It is worth noting that Norway and Canada, among the Arctic nations, have already moved significantly towards the ecosystem-based approach in the Arctic. Norway's *Integrated Management* plan for the Barents Sea[20] embodies a highly sophisticated integrated spatial planning approach for the Norwegian portion of the Barents Sea, for instance. Canada's *1997 Oceans Act*[21] is notable in that it clear-

[19] The following articles and statements give a more detailed picture of the current thinking with regard to ecosystem-based management: McLeod et al. 'Scientific Consensus Statement on Marine Ecosystem-Based Management' (21 March 2005) <http://www.compassonline.org/pdf_files/EBM_Consensus_Statement_v12.pdf> (19 June 2009), signed by 217 academic scientists and policy experts with relevant expertise and published by the Communication Partnership for Science and the Sea; Rosenberg/McLeod 'Implementing ecosystem-based approaches to management for the conservation of ecosystem services' *Marine Ecological Progress Series* 300 (2005) 270-74; US Commission on Ocean Policy (note 17). A number of recent multi-lateral efforts at ocean management, such as the OSPAR and CCAMLR Conventions, appear to be taking EBM approaches into account (Convention for the Protection of the Marine Environment of the North-East Atlantic [opened for signature 22 September 1992, entered into force 25 March 1998] 32 ILM 1069; Convention on the Conservation of Antarctic Marine Living Resources [concluded 20 May 1980, entered into force 7 April 1982] 1329 UNTS 47); see for example, Global Environment Facility (GEF) project description 'Regional Activities of the Strategic Partnership for a Sustainable Fisheries Investment Fund in the Large Marine Ecosystems of Sub Saharan Africa, Tranche 1' <http://www.gefonline.org/projectDetails.cfm?projID=3271> (19 June 2009).

[20] Royal Norwegian Ministry of the Environment 'Report No. 8 to the Storting: Integrated Management of the Marine Environment of the Barents Sea and the Sea Areas off the Lofoten Islands' (2005-2006) <http://www.regjeringen.no/upload/MD/Vedlegg/STM200520060008EN_PDF.pdf> (19 June 2009).

[21] Oceans Act, SC (1996) ch 31 (Canada) Section 30 "Principles of Strategy".

ly sets out three principles for the national ocean strategy, including sustainable development, integrated planning, and precaution.

A key question, then, is whether a more integrated management approach for the larger Arctic can be brought forward through the existing framework of governance, or through some politically realizable improvement to it. This question is currently being actively explored in the context of the Aspen Institute's ongoing *Commission and Dialogue on Arctic Climate Change*.[22]

Some preliminary observations on this point are possible. First, a desire to move towards a more integrated, ecosystem-based management approach in the Arctic does not prescribe just one institutional context—one can conceive, for instance, of an integrated management effort that is coordinated among national governments and appropriate international institutions, such as the Arctic Council and the International Maritime Organization. It is also conceivable that a strengthened Arctic Council could play the role of coordinator in such a system, for instance by putting forward standards and principles for regulation and by setting the agenda of management issues and opportunities for consideration by the eight Arctic governments. The advantage of this course of action would be that the optimal use of existing regulatory arrangements would allow more rapid progress towards integrated management. However, to succeed in integrating management through such a dispersed institutional framework, the political will of the governments involved would have to be marked by an unusual level of agreement, as well as being effectively focused and consistently applied over time.

In that respect, it is hard to gainsay the efficiencies that could be attained if it were possible to establish a new management entity, with the support of the Arctic governments, that had the capacity to establish consistent principles and a shared scientific basis for management, including appropriate sharing of data and monitoring responsibilities. Such an entity could be framed by a regional seas or other agreement established pursuant to appropriate UNCLOS authorities.[23] This course of action would undoubtedly involve an extra level of political difficulty, at least in the negotiation of the framework agreement. The compensating advantage would be the potential for the States Parties to the agreement to set strategic directions and parameters by consensus, but to allow day to day management decisions in selected areas of concern to be taken through a common instrumentality, and in a consistent and expeditious manner.

Second, there is no legal deficiency that by itself would prevent the Arctic nations from cooperating in a new more integrated management effort.

Third, efforts to change the Arctic Council so that it could become a management entity in and of itself might actually diminish its value as a forum, which

[22] Aspen Institute, Energy and Environment Programme 'Aspen Commission and Dialogue on Arctic Climate Change', documents available through the Aspen Institute Energy and Environment Program, or at <http://www.aspeninstitute.org> (19 June 2009).

[23] See, *inter alia,* Art. 118 UNCLOS ("Cooperation of States in the conservation and management of living resources"), Art. 123 UNCLOS ("Cooperation of States bordering enclosed or semi-enclosed seas") and Art. 234 UNCLOS ("Ice-covered areas").

would be regrettable. Instead, it might be more strategic to consider how the Council, as a high-level forum, could contribute to a more integrated management framework in the Arctic.

A second, and related question, is whether the political will exists to move towards ecosystem-based management in the Arctic. Interestingly, there appears to be a growing sense among governments that there is a new reality in the Arctic, that it represents a special management challenge, and that cooperative or coordinated management across boundaries may be an important part of the solution. Evidence of this emerging sentiment may be found in the new US "Arctic Region Policy," in the recent European Commission Communication "The European Union and the Arctic Region," and even in the Ilulissat Declaration.[24]

The US policy directive, for instance, notes that increased human activity in the Arctic "is expected to bring additional stressors to the Arctic environment, with potentially serious consequences for Arctic communities and ecosystems"[25] It instructs the Secretary of State to "[c]onsider, as appropriate, new or enhanced international arrangements for the Arctic to address issues likely to arise from expected increases in human activity in that region, including shipping, local development and subsistence, exploitation of living marine resources, development of energy and other resources, and tourism",[26] and it "endorses the protection of vulnerable marine ecosystems in the Arctic from destructive fishing practices and seeks to ensure an adequate enforcement presence to safeguard Arctic living marine resources".[27] Finally, it explicitly endorses the ecosystem approach, instructing the appropriate US departments to "pursue marine ecosystem-based management in the Arctic".[28]

The European Commission communication notes the particular vulnerability of the Arctic environment, the primary need to "prevent and mitigate the negative impact of climate change as well as to support adaptation to inevitable changes",[29] and calls for the development of "a holistic, ecosystem-based management of human activities, ensuring that the latter are administered in a sustainable way, integrating environmental considerations at all levels".[30]

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[24] United States National Security Presidential Directive and Homeland Security Presidential Directive NSPD 66/HSPD 25 'Arctic Region Policy' (9 January 2009) <http://www.fas.org/irp/offdocs/nspd/nspd-66.htm> (17 June 2009); Commission of the European Communities 'Communication from the Commission to the European Parliament and the Council – The European Union and the Arctic Region' COM (2008) 763 final (20 November 2008); Ilulissat Declaration, Arctic Ocean Conference, Greenland, 27-29 May 2008 <http://arctic-council.org/filearchive/Ilulissat-declaration.pdf> (16 June 2009).

[25] United States National Security Presidential Directive and Homeland Security Presidential Directive NSPD 66/HSPD 25 (ibid.) ch III.H.1.

[26] Ibid. ch III.C.5.b.

[27] Ibid. ch III.H.4.

[28] Ibid. ch III.H.6.d.

[29] Commission of the European Communities (note 24) ch 2.1.

[30] Ibid.

The Ilulissat Declaration, while it rejects the need for "a new comprehensive international legal regime to govern the Arctic Ocean",[31] at the same time declares a stewardship responsibility for the five Arctic coastal States.[32] It commits them to taking "steps in accordance with international law both nationally and in cooperation among the five States and other interested parties to ensure the protection and preservation of the fragile marine environment of the Arctic Ocean".[33] It also notes the need to cooperate to reduce the risk of accidents from the "increased use of Arctic waters for tourism, shipping, research and resource development",[34] and commits to strengthening current cooperation on the collection of scientific data concerning the continental shelf, the protection of the marine environment and other scientific research.[35]

The Role of the International Community

Having considered the challenges to sustainable development in the Arctic, and the capacity of existing institutions to address them, we can now turn to the question of the role of the international community, and the contribution it might make to "management towards sustainability" in the Arctic.

The approach to this question depends on how we conceptualize the fundamental issue. It is both a legal and a practical matter. If we consider that the future of the Arctic is to some degree dependent on pressures, trends, and choices emanating from outside the immediate Arctic region, we must admit that the broader community has a *role* in determining the fate of the Arctic.

And if we consider that developments in the Arctic, such as alterations in the physical system that would speed the melting of the Greenland ice sheet, or lead to the release of the vast amounts of methane held in ice crystals beneath the sea floor and in the Arctic tundra, would have significant impacts worldwide, then it is clear that the broader international community has an *interest* in the environmental fate of the Arctic—an interest that goes beyond the Arctic's status as a global patrimony.[36]

In addition, we must consider that all nations share certain rights, for instance to navigation and fishing, that are considered to be applicable in the Arctic as in other maritime areas. At the same time, because the potential for sustainable develop-

[31] Ilulissat Declaration (note 24) para. 4.

[32] Cf. Winkelmann 'Fixed Rules of Play for Dividing up the Arctic Ocean: The Ilulissat Declaration of the Arctic Coastal States' SWP Comments 18 (2008) 1-4; Yeager 'The Ilulissat Declaration: Background and Implications for Arctic Governance' Communication to the Aspen Commission and Dialogue on Arctic Climate Change, Aspen Institute (5 November 2008) on file with the author; Zygar 'In the Close Arctic Circle' *Kommersant* (11 November 2008).

[33] Ilulissat Declaration (note 24) para. 5.

[34] Ibid. para. 6.

[35] Ibid. para. 7.

[36] On this point, see Council of the European Union 'Report 7249/08 from the Commission and the Secretary – General/High Representative to the European Council—Climate Change and International Security' (3 March 2008) <http://register.consilium.europa.eu/pdf/en/08/st07/st07249.en08.pdf> (17 June 2009).

ment in the Arctic depends to a great extent on the viewpoints, interests, and decisions of policy-makers and economic actors within the region, it is clear that the nations of the Arctic have an important and distinct role to play. And within this group of nations, there are five coastal States that have asserted, in the Ilulissat Declaration, a special set of rights and responsibilities.

Perhaps the best we can do with all of this is to make some preliminary observations on the role of the international community. It is clear, even in the Ilulissat Declaration, that the international community, and Europe in particular, cannot be excluded from contributing to the future management of the Arctic. This is not to say that "management towards sustainability" in the Arctic requires a global treaty regime—rather, that, within the vision of a sustainable Arctic, there are elements that cannot happen without international cooperation. Thus, there is an opportunity for a multi-level approach to the Arctic management problem, in which each level includes those parts of the international community and institutional structure that are necessary to achieve a positive result.

In fact, to achieve even the goals set out in Ilulissat, the Arctic coastal States will need the help of the International Maritime Organization and of shipping flag States. To achieve a conservation-oriented fisheries management regime, the Arctic coastal States will need the cooperation of nations with distant water fishing fleets. To avert an unrestrained global climate change which would destroy the Arctic as we know it, the Arctic nations need the cooperation of the full international community. Even to "buy time" for the Arctic, by reducing short-term pollutants such as black carbon that scientists believe are accelerating the regional warming trend,[37] the Arctic nations need the cooperation of Europe and ultimately China.

Finally, it should be said that the achievement of true sustainable development in the Arctic will only be fully realizable as the goal of a sustainable Arctic achieves broad support in the international community.

[37] See Quinn et al. 'Short-lived Pollutants in the Arctic: their Climate Impact and Possible Mitigation Strategies' Atmospheric Chemistry and Physiscs 8 (2008) 1723-35.