ACCESS
Arctic Climate Change
Economy and Society

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ACCESS

Arctic Climate Change, Economy and Society

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Contents

1. Introduction

This is the second in a series of reports produced by the ACCESS Project Work Package 5 (WP5) addressing Arctic Ocean governance. It comprises the deliverable D5.21.

Existing general options for governance are presented and the positive and negative aspects of each are discussed based on a review of the literature and the work carried out by WP5 during year 1 of the project (See D5.11). Further analysis, development and refinement of these and the inclusion of possible further options will follow in the later WP5 report, D5.41[1], which will build on work by other ACCESS work packages as the project progresses.

The Arctic Ocean comprises the deep Canadian and Eurasian basins surrounded by the land masses of the Eurasian and North American Continents. The main connection between the Arctic Ocean and the North Atlantic is through the deep Fram Strait between Northeast Greenland and Svalbard. The connection with the North Pacific is via a stretch of shallow water (mostly <50 m) of about 1000 km through the northern Bering Sea, the Bering Strait (80 km wide) and the Chukchi Sea (AOR, 2011). Arctic Ocean coastal states comprise the Russian Federation, USA, Canada, Denmark (Greenland) and Norway (Figure 1). These coastal states together with the Arctic non-coastal states of Iceland, Sweden and Finland and indigenous peoples' organizations have central responsibilities for stewardship of the Arctic Ocean.

The Arctic region is currently undergoing a multitude of changes – both environmental and economic. In the Arctic, species and societies have developed highly specialised methods of adaptation to the harsh conditions, making them vulnerable to significant rapid changes in these conditions. Similarly, development of the existing international legal and regulatory framework governing the Arctic originally took place when activities were constrained by ice and extreme cold. However, diminishing sea ice makes the expansion of fishing, shipping and offshore oil and gas activities possible, and this has already started. Such increased activities in combination with advances in technology are revealing significant gaps in existing regulation. The challenge is to establish and implement a sustainable process that will achieve integrated management. This is where a multidisciplinary program like ACCESS can make a difference. WP5 of ACCESS is tasked with reviewing governance and providing strategic options to address this challenge.

The Arctic Ocean comprises neither a single ecological nor political system. To date the legal and regulatory framework for managing resources and activities in the Arctic has been primarily defined by international law and in particular the United Nations Convention on the Law of the Sea (UNCLOS). Five coastal states encompass the Arctic Ocean and the laws of these individual nations, each with their own agendas and priorities (and their attendant tensions), prevail within territorial waters and exclusive economic zones (EEZs). The Ilulissat Declaration[2] of May 2008, the 2009 Arctic Region Policy Directive of the United States[3] and the March 2009 Arctic State Policy of the Russian Federation[4] exemplify the push by Arctic

[1] "Production of summary of governance options over ACCESS time period (ca. 30 years)". To be completed and delivered at the end of year 4 of the project (48 months).

[2] http://www.oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf

[3] http://www.fas.org/irp/offdocs/nspd/nspd-66.htm

[4] http://arcticgovernance.custompublish.com/russia-basics-of-the-state-policy-of-the-russian-federation-in-the-arctic-for-the-period-till-2020-and-for-a-further-perspective.4651232-142902.html

coastal states to reinforce their sovereign rights and jurisdiction seawards (Berkman and Young, 2009). Similar attitudes were expressed in 2011 by Canada[5], Denmark[6] and Norway[7]. Six non-Arctic countries have been admitted as Permanent Observer States to the Arctic Council[8]. Further non-Arctic states are seeking an enhanced role in the Arctic Council including India, China, Japan, South Korea and Italy, as is the European Commission.

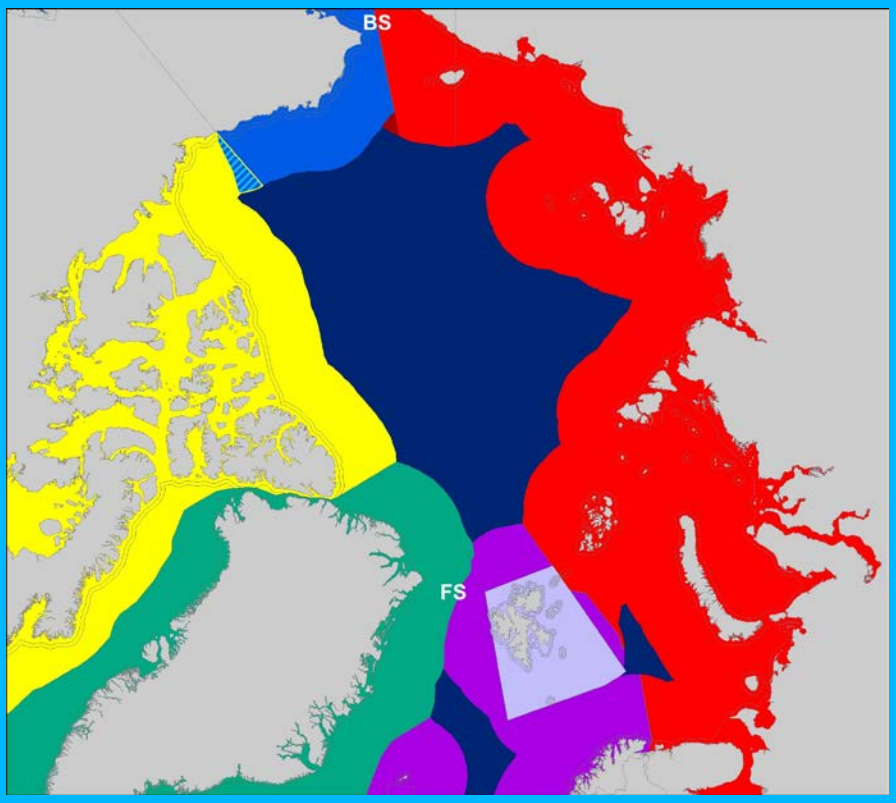

Figure 1. *Summary of Arctic coastal States EEZ regions (red – Russia, purple – Norway, green – Denmark/Greenland, yellow – Canada, mid-blue – USA), and high seas in dark blue. Dark red area denotes area subject to the 1990 agreement between USA and USSR[9], pale purple covers the area of the Treaty of Spitsbergen[10], hatched blue covers the disputed area between Canada and the USA in their Arctic EEZs. FS: Fram Strait, BS: Bering Strait.*

Much of the predicted new economic activity within the Arctic Ocean will take place in the coastal zones surrounding the high Arctic – the same areas which are becoming increasingly fragile and stressed due to impacts of climate change. Ehler and Douvere (2007) warn that as less than 1% of large marine ecosystems in the Arctic are currently protected these vulnerable areas are left open to harmful impacts before their potential value is understood.

[5] http://www.international.gc.ca/polar-polaire/canada_arctic_foreign_policy_booklet-la_politique_etrangere_du_canada_pour_arctique_livret.aspx?lang=eng&view=d)

[6] http://uk.nanoq.gl/~/media/29CF0C2543B344ED901646A228C5BEE8.ashx

[7] http://www.regjeringen.no/upload/UD/Vedlegg/Nordområdene/UD_nordomrodene_innmat_EN_web.pdf

[8] France, Germany, The Netherlands, Poland, Spain and the United Kingdom

[9] http://www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/USA-RUS1990MB.PDF

[10] http://www.arcticgovernance.org/the-treaty-on-the-status-of-spitsbergen-paris-9-february-1920.4642059-137746.html

Broad international engagement in Arctic Ocean issues is not a recent development but dates back to the 1920 Spitsbergen Treaty[11] (Annex 1). However, one of the biggest necessities with regard to the Arctic Ocean is to identify the roles and responsibilities of Arctic and non-Arctic states as well as those of indigenous peoples. Similarly important is finding a balance between Arctic and non-Arctic states and indigenous peoples via common interests (Berkman, 2012).

2. Governance

A number of studies have been undertaken and projects initiated to explore governance options in the Arctic in the light of climate change and globalization. The Arctic Governance Project[12] brought together preeminent researchers, indigenous leaders and members of the policy community to frame critical questions and issues of governance in the Arctic. The Project's leadership compiled an Action Agenda and a report entitled "*Arctic Governance in an Era of Transformative Change: Critical Questions, Governance Principles, Ways Forward*." The recommendations contained in these documents were presented to key policymakers in the national, international and non-governmental sectors. The Project has also assembled an Arctic Governance Compendium[13] comprising an array of documents covering, *inter alia*, existing and proposed governance arrangements and governance systems.

In a similar vein, the report in 2011 by The Aspen Institute[14] Energy and Environment Program, "*The Shared Future: A Report of the Aspen Institute Commission on Arctic Climate Change*" identifies key principles of Arctic Governance and presents recommendations. In addition the report expands on the concept of marine spatial planning as an appropriate method by which to apply an ecosystem-based approach to management in the Arctic. This is, of course, an area which the EU itself is very supportive of[15].

The Arctic Governance Project (2010) defines 'governance' as "a social function centred on efforts to steer human actions toward collective outcomes that are beneficial to society and away from harmful outcomes. Governance systems emerge to address a variety of societal needs, ranging from the production of public goods (e.g. maintaining healthy populations of living resources subject to human harvesting), to avoidance of public bads (e.g. preventing dangerous climate change or the degradation of large marine ecosystems), internalization of externalities (e.g. curbing the spread of contaminants across borders, avoiding the environmental impacts of oil spills), and protection of human rights (e.g. strengthening the right to self-determination of indigenous peoples)".

[11] http://www.arcticgovernance.org/the-treaty-on-the-status-of-spitsbergen-paris-9-february-1920.4642059-137746.html

[12] http://www.arcticgovernance.org/

[13] http://www.arcticgovernance.org/compendium.137742.en.html

[14] The Aspen Institute is a 'not for profit organisation' the aims of which are to "foster values-based leadership, encourage individuals to reflect on the ideals and ideas that define a good society, and to provide a neutral and balanced venue for discussing and acting on critical issues" (http://www.aspeninstitute.org/).

[15] Roadmap for Marine Spatial Planning: Achieving Common Principles in the EU. Communication from the Commission. COM (2008) 791. Dated 25.11.2008. 11pp.

For governance to be successful in a time of rapid environmental and social changes a number of criteria need to be considered. The Aspen Institute (2011) proposes that governance reform proposals should be responsive to the rate of changes occurring in the Arctic. It also proposes that governance options:

- should be consistent with the United Nations Convention on the Law of the Sea (UNCLOS);
- should be appropriate to the scale of the issue being addressed;
- should build on the strengths of the existing institutions;
- should address issues cooperatively and diplomatically, and without destabilizing peace, security, and stability in the region.

A range of requirements have been identified and endorsed by a number of international bodies[16, 17] as fundamental to successful governance and sustainable management of the Arctic Ocean. These include:

- the need for a coordinated and consistent approach encompassing regulation mechanisms for sectoral issues;
- the need to give attention to and involve Arctic inhabitants, especially indigenous peoples and stakeholders;
- the need to understand and acknowledge the importance of the science-policy interface;
- the need for transparency;
- the need for integrated assessment, monitoring and management of multiple human activities which takes into account risks and cumulative and interacting impacts;
- the need to review existing arrangements reinforcing, where necessary, existing systems and adjusting or replacing those that are no longer adequate to meet changing circumstance;
- the need for an ecosystem-based approach to management and implementation of marine spatial planning.

Ocean management based on an ecosystem approach is a widely recognized objective of the international community. The Johannesburg Plan of Implementation from the World Summit on Sustainable Development (WSSD) in 2002[18], United Nations General Assembly

[16] The Aspen Institute, 2011

[17] The Arctic Governance Project, 2010

[18] WSSD, paragraphs 30(d) and 32(c)

resolutions[19], work under the Convention on Biological Diversity[20], the 2001 Reykjavik Declaration on Responsible Fisheries in the Marine Environment[21] and the EU Marine Strategy Framework Directive[22] all call for implementation of the ecosystem-based approach. Ecosystem-based management is viewed by many commentators as a potential framework for decision making in the Arctic (for example, see also Laughlin and Speer, 2011; Hoel, 2009a). PAME, (the Protection of the Arctic Marine Environment Arctic Council Working Group), is pursuing work to develop an understanding how ecosystem-based management can be applied in the Arctic Ocean[23].

There is clearly a need to apply a precautionary approach in the development of governance for the Arctic Ocean. However, pressures are already present on the system and are increasing. Greenpeace, (2010) proposes that poor knowledge of Arctic Ocean ecosystems and lack of maps and other data necessitate that a precautionary approach is taken to exploitation of resources. The Greenpeace report further proposes that while an overarching governance regime is negotiated for the Arctic Ocean the first step should be agreement on a moratorium on all industrial activities in the area that has historically been covered and protected by sea ice.

In 1996 the Arctic Council PAME Working Group produced the first report on the Arctic marine environment[24], followed in 2004 with the adoption of the Arctic Marine Strategic Plan in 2004[25]. The Plan, *inter alia*, asks for a periodic review of "the status and adequacy of international/regional agreements and standards that have application in the Arctic marine environment, new scientific knowledge of emerging substances of concern, and analyze the applicability of a regional seas agreement to the Arctic". This requirement/request is one which should be mandatory for any governance systems under discussion for the Arctic.

2.1 The integration-fragmentation spectrum

Here we review the existing general governance options for the Arctic Ocean currently under discussion by placing them within an arbitrary range of regulation, extending from one end, an entirely integrated and holistic arrangement, to the other reflecting a completely separate multiplicity of governance instruments. This range has been referred to as an integration-fragmentation spectrum.

Keohane and Victor (2011) describe a continuum between comprehensive international regulatory institutions, usually focused on a single integrated legal instrument, at one end of a spectrum and highly fragmented arrangements at the other. In between these two

[19] For example, UNGA Resolution 61/105, Preamble: 5; Section I: 5, 6, 7. Section IX: 70, 72. Section X: 76, 80 83.

[20] COP 5, Decision V/6, Ecosystem Approach http://www.cbd.int/decision/cop/?id=7148

[21] ftp://ftp.fao.org/fi/DOCUMENT/reykjavik/y2198t00_dec.pdf

[22] MSFD Article1(3)

[23] http://www.pame.is/index.php/ecosystem-approach

[24] Working Group on the Protection of the Arctic Marine Environment 1996: Report to the Third Ministerial Conference on the Protection of the Arctic Environment, 20-21 March 1996, Inuvik, Canada.

[25] Arctic Marine Strategic Plan, available at: http://www.pame.is/index.php/arctic-marine-strategic-plan

extremes are lay regimes and regime complexes, which are loosely coupled sets of specific regimes.

Fully integrated systems are those in which all the issues relating to a functionally or spatially defined area are embedded in a common arrangement and are linked via well-defined connections in contrast to a fully fragmented arrangement is one in which every issue is treated separately and there are no explicit connections between or among the elemental regimes dealing with individual issues. In between these extremes lie a range of alternatives (Young, 2011).

Young (2011) notes that governance systems are not static but can move along the integration-fragmentation spectrum over time as a result of either conscious decisions or of informal practices. He suggests that Arctic governance should be viewed as step-by-step process, which welcomes the development of strengthened governance systems dealing with specific issues, (for example the SAR agreement[26] and a mandatory Polar Code) while also remaining alert for opportunities to identify interactions between these issue-specific arrangements and to build appropriate linkages between or among them. He further suggests that in the foreseeable future the result will be "messy" and may seem unappealing to some. However, this is justified by such a process providing the ability to make significant progress in governing a range of human-environment interactions under real world conditions.

Here we use a simplified adaptation of the integration-fragmentation spectrum which may provide a useful framework for exploration of the current Arctic Ocean governance options (Figure 2).

2.2 Options for governance

Young (2011) asks what the way forward may be for governance in the Arctic Ocean when one dismisses the single, legally binding treaty option. The single treaty option lies at the fully integrated extreme of the spectrum with the other options ranged along its length. Each option has its own spectrum and many of these individual spectra overlap and in some cases evolve into another option.

The following examples, while not an exhaustive list, represent the current international/organisational governance options identified to date by ACCESS WP5:

A. A single Arctic Treaty

B. Strengthen the Arctic Council

C. Expand and strengthen existing instruments and agreements

D. Address separately each of the shortfalls identified in the current regime

[26] Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic. http://www.arctic-council.org/index.php/en/about/documents/category/20-main-documents-from-nuuk

E. Do nothing

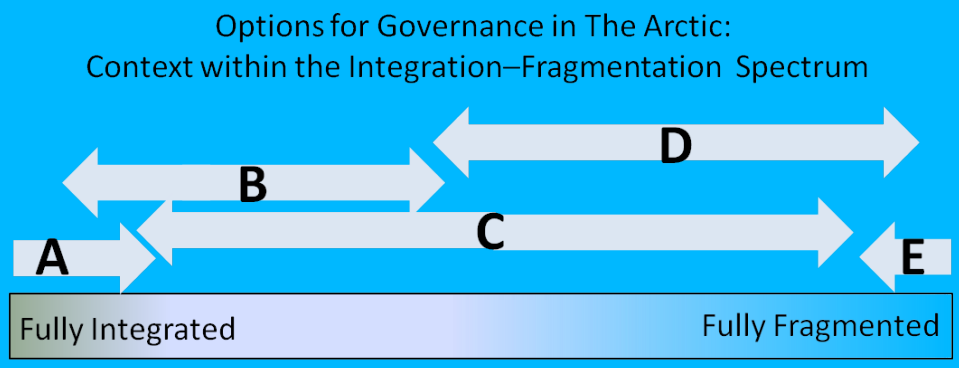

Figure 2. *Integration-Fragmentation Spectrum indicating the position of the current governance options identified in this report.*

Although a range of options is presented they are not necessarily intended to be directly comparable in scale or scope - and there is by no means parity between the alternatives. Some are more sectorally focussed, others geographically/regionally. Our illustration is to establish the context, option range and the potential to migrate in time along or within the spectrum.

For each of the options addressed here, we include an introductory section, followed by: (1) positive aspects; (2) negative aspects and (3) summary of observations.

2.2.1 Option A: A single Arctic Treaty

Some commentators and legal scholars who have explored Arctic governance have considered and, in some instances, championed a single legally binding Arctic convention or treaty (see for example Koivurova and Molenaar, 2009). In 2008 the European Parliament proposed a single treaty (European Parliament, 2008) – but the Council of Ministers expressed a different position (Council of the European Union, 2009) and the European Parliament in a subsequent pronouncement (2011) abandoned its previous proposal[27].

Cava et al., (2011), while recognizing the contrasting geographical, political and social differences between the Arctic and Antarctic (Table 1), consider the lessons learned in governance of the Antarctic. Science is proposed as a unifying force in the Antarctic and the authors suggest a similar role for science in the Arctic thereby providing a mechanism by which to focus on global priorities as well as national interests. Berkman and Young (2009) ascribe a dual role to science: to interpret the dynamics of the Earth system and to carry out

[27] http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P7-TA-2011-0024+0+DOC+XML+V0//EN

the monitoring, reporting, and verification needed to maintain trust in international cooperation. They predict that the success of science diplomacy in the Arctic will depend on knowledge-sharing and the steady generation of scientific findings ranging from climate feedbacks to human adaptations under conditions of rapid biophysical and socioeconomic change.

Table 1. ***Polar contrasts relevant to governance*** (Cava, et al., 2011).

The Antarctic	**The Arctic**
A continent surrounded by ocean	An ocean surrounded by land
No permanent residents	Many permanent residents
Jurisdictional status frozen	Multinational jurisdiction
No large-scale industry	World-class industry
Demilitarized	Highly militarized
Denuclearized	Nuclearized

Positive: Koivurova and Molenaar, (2009) propose that a single legally binding treaty would:

- allow for management on an ecosystem level,
- fulfil obligations under international law to cooperate to address transboundary issues and effects,
- offer a regional level-playing field with regional uniformity and be conducive to integrated cross-sectoral ecosystem based ocean management.

Further potential benefits of a single legally binding treaty (Koivurova et al., 2009):

- greater political and bureaucratic commitment,
- providing firmer institutional and financial foundations,
- transcending the vagaries of changing personal and governmental viewpoints,
- providing 'legal teeth' to environmental principles and standards,
- raising public profile of regional challenges and need for cooperation ,
- providing dispute resolution mechanisms.

(Although these benefits are not necessarily exclusive to Option A.)

Negative: Young (2009) observes that, although legally binding agreements are more likely to be complied with than informal arrangements, the limitations of such agreements are that such instruments:

- require protracted negotiations to reach agreement on their principal provisions,
- avoid issues expected to prove contentious in the interests of building consensus,
- are difficult to adapt to changing circumstances in a timely manner,
- do not accord roles to non-state actors that are commensurate with their importance in the relevant system.

In addition:

- There is unlikely to be a consensus.
- Such a treaty would have to be written in broad, generic sense (like UNCLOS) so would be open to abuse.
- Such a treaty would be inflexible (Arctic Governance Project, 2010).
- A single treaty would not be capable of addressing effectively issues driven by global forces (e.g. climate change) (Arctic Governance Project, 2010).
- Such a treaty presents the risk of legalizing the lowest common denominator standards (Koivurova et al., 2009).
- Such a treaty presents the risk of stifling political and bureaucratic flexibilities (Koivurova et al., 2009).
- Contributing another layer of complexity to an already fragmented array of multilateral agreements (Koivurova et al., 2009).

Summary: The above review of positions indicates that the option of a single binding treaty, though in many ways attractive, would meet with serious practical and political difficulties. This has been widely recognised, and (for example) repeatedly and unequivocally noted in pronouncements by the EU institutions and representatives.

2.2.2 Option B: Strengthen the Arctic Council

The Arctic Council provides a forum promoting cooperation, coordination and interaction among the Arctic States, with the involvement of the Arctic Indigenous communities and other Arctic inhabitants.

The Arctic Governance Project (2010) uses the phrase “optimizing the role of the Arctic Council”. The AGP Report highlights the role of the Council in identifying emerging issues and placing them on policy agendas as well as providing analyses to support consideration of the issues policy arenas. The Arctic Governance Project (2010) and Aspen Institute (2011) both portray the Council as a policy-shaping forum rather than a decision-making body. However, the recent signing of the legally binding Search and Rescue (SAR)

Agreement[28] signals a shift in the Council's potential as regulating body rather than a regional organisation. All decisions of the Arctic Council and its subsidiary bodies are by consensus of the eight Arctic Member States and the Council's activities are conducted in six working groups composed of representatives at expert level from sectoral ministries, government agencies and researchers.

Positive: Signing of the first legally binding agreement by the Arctic Council has dispelled the criticism that the Council is primarily a forum and as such has no legal or policy-forming remit with which to address emerging governance challenges in the region. The Arctic Council is now in the process of drafting a proposal for an international instrument on Arctic marine oil pollution preparedness and response[29].

The Council has a strong relationship with indigenous peoples, illustrated by the formal inclusion of the six permanent participant (PP) representatives of Indigenous Peoples.

Negative:

- There is a difference in both perspective and potential influence between Arctic Ocean coastal states and Arctic non-coastal states and an even greater difference between all Arctic states and the rest of the world – including the EU.
- The question of what is meant by 'strengthen' is an important one. Does it mean able to negotiate binding and enforceable decisions? If so, this is likely to be viewed with suspicion by non-Arctic States. The Arctic Council is viewed as 'excluding' by non-Arctic states. Any strengthening of the Arctic Council could reinforce this view.
- It remains to be seen whether the Arctic Council alone will be sufficient - particularly bearing in mind the predicted increase in activities both within EEZs and territorial seas as well as in the High Seas. Increasingly, issues of geopolitical significance for the region are being debated among the Arctic Ocean states outside the auspices of the Council (Aspen Institute, 2011).
- There are potential and actual conflicts between state interests and the social and economic demands of Arctic inhabitants. Similarly, conflicts can be anticipated between Arctic insiders and outsiders as the region becomes increasingly accessible (see, for example, Kiel, 2011).
- The Aspen Institute (2011) suggests that the Arctic Council currently suffers from a lack of funding, which could hinder its ability to act.

Summary: While providing an integrated framework for cooperation, coordination and interaction among the Arctic States and peoples the Arctic Council is currently viewed with a degree of suspicion by non-Arctic states. In addition, there is some tension between member states of the Council, as well as member states and other participants, which may impair the Council's action.

2.2.3 Option C: Expand and strengthen existing instruments and agreements

[28] http://www.arctic-council.org/index.php/en/about/documents/category/20-main-documents-from-nuuk

[29] http://www.arctic-council.org/index.php/en/about-us/task-forces/280-oil-spill-task-force

The range of 'soft law' options for strengthening ocean governance in the Arctic include harmonization of environmental and technical standards by coastal states in key sectors including shipping, fishing and hydrocarbon activities and development of integrated ocean planning initiatives for transboundary marine ecosystems (Koivurova et al., 2009). Proposed 'hard law' approaches include negotiating a regional seas agreement with protocols; establishing a new ocean management organisation for governing areas beyond national jurisdiction; transforming the Arctic Council into a treaty-based organisation and negotiating sectoral agreements such as, for example, joint marine contingency planning and search and rescue (Koivurova et al., 2009). (The latter has already been achieved by the signing in 2011 of the Arctic Council SAR agreement[30].)

The existing complex array of governance arrangements includes UNCLOS, The International Convention for the Prevention of Pollution from Ships (MARPOL), International Maritime Organisation (IMO) instruments, bilateral and multilateral agreements and voluntary guidelines (see ACCESS report D5.11 for an overview of these arrangements).

The Arctic Governance Project (2010) suggests that "what is needed is a strategy that builds on success and features a suitable division of labour in which individual bodies do what they are able to do best". Furthermore, the strategy should address functional overlaps and governance gaps.

Positive: There is more likelihood of successfully amending or revising existing governance arrangements than drafting and introducing completely new arrangements. Similarly, such amendments and revisions are likely to be achieved faster. Existing issues are already identified and addressed. This option allows emerging issues to be addressed within a pre-established framework.

Negative: It is likely that governance arrangements will remain fragmented.

Summary: At this point in time this seems to be a promising option. It overlaps in some respects with Option B as strengthening the Arctic Council could be seen to underpin the success of this option – just as clarifying and re-aligning the roles of other bodies.

An illustration of how well this option could work comes from the Polar Code, an international code of safety for ships operating in polar waters currently being developed by IMO and expected to be mandatory. As work on the Polar Code is building on and refining elements of existing legislation and guidelines this option falls within the spectrum of Option C. The Code will cover the full range of design, construction, equipment, operational, training, search and rescue and environmental protection matters relevant to ships operating in the inhospitable waters surrounding the two poles. On the positive side, the IMO is extremely well resourced and has access to a wide range of expertise, and the result will be practical as it based on pre-existing guidelines already in use. Furthermore, an IMO-Polar Code will be accepted worldwide rather than only by the Arctic States.

On the negative side of this approach, the Code, although it relates to shipping and also impacts on hydrocarbon and fisheries activities, in the current draft (11 November 2011[31]), applies only to passenger and cargo ships as defined in the International Convention for the Safety of Life at Sea (SOLAS) with the exception of the chapters related to environmental protection which, where appropriate, apply to all ships types according to the various

[30] Ibid. 26

[31] IMO Sub-Committee on ship Design and Equipment, 56th Session, Agenda item 10. DE 56/10/1.Development of a Mandatory code for Ships Operating in Polar Waters, Report of the correspondence group. Annex 1.

annexes of MARPOL. A further limitation is that the draft Code focuses only on new ships. Measures on existing ships will be addressed later in the drafting process. While the current draft of the Code contains no mention of climate change, provisions which would allow amendments to the Code to be made in relation to the effects of climate change and any other relevant, temporally variable parameter(s), would be advisable. The development of the Code, due largely to the complexity and range of issues addressed, has been slow.

2.2.4 Option D: Address separately each of the shortfalls identified in the current regime

As issues arise they are dealt with piecemeal – although the framework of the Arctic Council ensures that there is an element of cooperation/integration in some areas.

Positive: This option addresses emerging issues.

Negative: In its current form this option is fragmented.

Summary: It could be argued that this is the situation that now exists.

2.2.5 Option E: Do nothing

This option would be simply to take note of the existence of the current regulations but not to establish any additional linkages between, or develop further, what already exists.

Positive:

- No action is required.
- There would be no additional costs involved.
- The status quo would be maintained. (This could however also be also be viewed as a disadvantage.)

Negative:

- Lack of action is not wanted. Interested states are pressing for involvement in the Arctic (for example India, China, Japan, South Korea, Italy and the European Commission are all seeking ad hoc observer status at the Arctic Council).
- Lacunae and overlaps present potential difficulties (see ACCESS report D5.11).
- Tension exists between national/international interests and legislation. This is exemplified in the exploration of the high seas and the Area, for example overlapping regimes consequent on UNCLOS.
- This option would result in a lack of integration with the potential to get worse over time as climate change impacts increasingly on the system.

Summary: It is already clear that this option is not sustainable. Changes in governance are already underway, for example the recent Arctic Council SAR agreement and work by the IMO on a mandatory Polar Code. However, these developments are currently uncoordinated and not integrated.

2.3 Governance options for ACCESS sectors

While the previous section outlined the current general governance options the following section describes the current governance options for each of the three sectors of human activities identified by ACCESS.

2.3.1 Fisheries

There are very limited commercial fisheries in the Arctic Ocean north of the Bering Strait due to a known lack of resources, operating difficulties and distance from markets (Vilhjálmsson and Hoel, 2005). However, reduced sea-ice cover and warmer waters in the Arctic may increase the extent and abundance of Arctic fishing grounds. Although opposing drivers such as ocean acidification and competition from invasive species may to some extent counteract these changes, there remains a need to address the sustainable development of such emerging fishing opportunities (Cavalieri et al., 2010).

In the seas bordering the Arctic Ocean there are three areas of high seas: the "Banana" hole in the Norwegian Sea, the "Loophole" in the Barents Sea and the "Doughnut" hole in the Bering Sea. While all three high seas areas are managed by Regional Fisheries Management Organizations (RFMOs)[32] and by regional arrangements[33], there is no RFMO or similar arrangement covering the Arctic Ocean beyond national jurisdiction. Currently, fisheries activities in the Arctic Ocean are governed by a multitude of national legislation, UNCLOS, the UN Fish Stocks Agreement (the FSA) and the Food and Agriculture Organisation (FAO) code of Conduct.

A limitation to the current instruments is that FSA only applies to straddling and highly migratory fish stocks but not shared and anadromous stocks. In areas where fishing is already taking place (for example, Arctic areas in the North Atlantic) national regulation is already well established. However, in other areas where previously ice has restricted fishing activities such regulation has been unnecessary. Molenaar (2009) suggests that basic fisheries research and research into future scenarios is needed in the Arctic possibly within the framework of the Arctic Council or the International Council for Exploration of the Seas (ICES).

One option may be for the North East Atlantic Fisheries Commission (NEAFC), Western and Central Pacific Fisheries Commission (WCPFC) and the North Pacific Anadromous Fish Commission (NPAFC) to extend their regulatory areas. An alternative option may be to establish one or more new RFMOs or Arrangements for species other than tuna or tuna-like species[34] and anadromous species[35].

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[32] The North East Atlantic Fisheries Commission (NEAFC) (http://www.neafc.org/) and the North Pacific Anadromous Fish Commission (NPAFC) (http://www.npafc.org/new/index.html).

[33] Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea – the 'Donut Hole Convention' (http://www.nmfs.noaa.gov/ia/intlagree/docs/Pollock_in_Bering_Sea.pdf)

[34] The International Commission for the Conservation of Atlantic Tuna (ICCAT) convention area covers "waters of the Atlantic Ocean, including adjacent seas" – although the Arctic Ocean is not specifically identified. http://www.iccat.es/en/

[35] An open letter released by the Pew Environment Group at the International Polar Year Conference (22-27 April 2012) calling for the development of an international fisheries agreement to protect the waters of the Central Arctic Ocean was signed by more than 2,000 scientists from 67 nations. (http://www.pewenvironment.org/news-room/media-coverage/scientists-issue-call-for-arctic-fisheries-plan-85899382836)

The Convention on Biological Diversity (CBD) would seem an appropriate forum in which to address loss of species in the Arctic (Young, 2009).

2.3.2 Oil and gas

While no single global instrument covers offshore oil and gas activities, UNCLOS, the International Seabed Authority (ISA) and MARPOL all contain provisions relevant to offshore hydrocarbon activities. At a regional level in the North Atlantic the OSPAR Commission[36], the regulatory area of which extends into Arctic Waters, undertakes regulation of offshore hydrocarbon activities. In addition, bilateral and multilateral agreements and national legislation and voluntary guidelines – including the Arctic Council Offshore Oil and Gas Guidelines[37] - all contribute to the complex array of instruments governing these activities (see ACCESS Report D5.11).

Although no legally-binding Arctic-specific instrument for regulation of oil and gas activities is envisaged, the Arctic Council is currently in the process of drafting a proposal for a legally binding international instrument on marine oil pollution preparedness and response.

2.3.3. Shipping and tourism

An increase in regional and coastal marine transport to support the exploration and extraction of oil, gas and minerals together with an increase in the marine tourism are predicted (AMSA, 2009). Furthermore the usage of the Northern Sea Route for marine transport from Europe to East Asia has increased significantly.

The legal framework for the regulation of shipping is set out in UNCLOS. Current regulation of shipping activities falls largely under the auspices of the IMO but also includes a range of national legislation for ships operating in ice-covered waters within their EEZs (for example the Russian Federation and Canada) (see D5.11).

The IMO is in the process of producing a mandatory Polar Code[38] which will address additional provisions beyond the existing requirements of the SOLAS and MARPOL Conventions, to take into account the climatic conditions of Polar waters and to meet appropriate standards of maritime safety and pollution prevention.

While there is no specific legislation relating to tourism in the Arctic Ocean, it has figured in the work of many observers and commentators (see, for example Aspen Institute, 2011; Young, 2011; Arctic Governance Project, 2010; AMSA, 2009; Berkman and Young, 2009). The World Wide Fund for Nature[39] (WWF) and the Association of Arctic Expedition Cruise Operators[40] (AECO) provide voluntary guidelines for both tour operators and tourists visiting the Arctic but these will need to be carefully integrated with the Polar Code and other developments in order to maintain an appropriate regulatory framework.

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[36] http://www.ospar.org/

[37] http://www.pame.is/offshore-oil-and-gas/77-arctic-offshore-oil-and-gas-guidelines-2009

[38] http://www.imo.org/mediacentre/hottopics/polar/Pages/default.aspx

[39] http://wwf.panda.org/what_we_do/where_we_work/arctic/what_we_do/tourism/

[40] http://www.aeco.no/guidelines.htm

3. Summary

A single treaty no longer appears to be a viable option, at least in the short-term. However, Berkman and Young (2009) warn that regimes operating predominantly in sectors risk delivering a fragmented and unstable system. They also warn that such regimes cannot provide integrated governance for the Arctic Ocean treated as a large, complex, and highly dynamic socio-ecological system. Hoel (2009b) proposes that implementation of existing legal instruments at a domestic level is key to addressing the consequences of climate change and governance of fisheries and marine ecosystems in the Arctic.

It is essential that governance arrangements have the ability to respond rapidly to changes – particularly in environments such as the Arctic that are experiencing transformative change or are highly volatile (Young, 2012). However, he cautions that such arrangements have a tendency to become path dependent, resisting adjustments that move them out of their comfort zone.

One approach to developing effective governance in the light of the rapid changes taking place may be to treat the central Arctic Ocean as an international space and to make a clear distinction between the overlying water column and the sea floor. The overlying water column and sea surface of the central Arctic would be ecologically and legally distinct from the sea floor and, as such, can remain an undisputed international area in which the interests of Arctic and non-Arctic states alike play a role in the development of effective governance (Berkman and Young, 2009). Hoel (2009b) proposes that it is the Arctic Council's responsibility to build a common understanding among the stakeholders, by which the potential for further international cooperation amongst stakeholders will be enhanced. Berkman and Young (2009) suggest that the environment provides a physical and a conceptual framework to link government interests in the Arctic Ocean, as well as a template for addressing transboundary security risks cooperatively.

The inclusion of non-Arctic states in the governance dialogue is a pressing issue and Young (2009) suggests that issues of governance in the Arctic should be framed in terms of the 'discourse of ecosystem-based management' and to allow all legitimate stakeholders, including a number of non-state actors, to have a seat at the table in addressing these issues.

In summary, a network of distinct elements operating simultaneously appears to be the way to progress. Such a complex would be positioned somewhere in the middle of the 'integration-fragmentation spectrum' (Figure 3). It would incorporate distinct elements dealing with relatively specific issues, operating under different auspices, encompassing overlapping but not identical sets of members (Young, 2012).

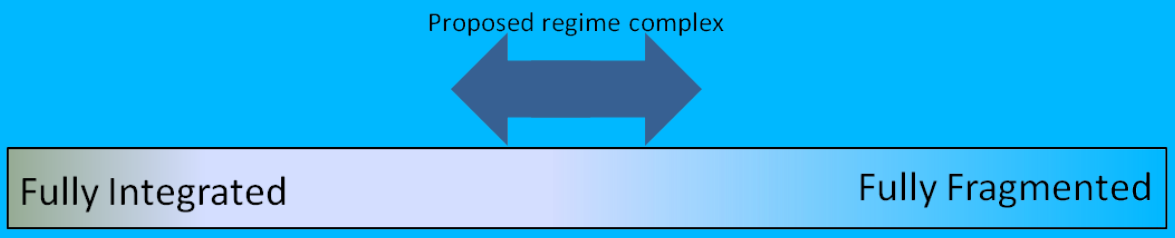

Figure 3. *Integration-fragmentation spectrum showing position of proposed regime complex.*

While this report considers the range of governance options currently under consideration the potential impacts and temporal aspects of climate change are not dealt with. A following report in this series (D5.41) will consider governance options in the light of the effects of long term climate change (30 year time period) using information arising principally from WP1 but incorporating input from WPs 2, 3 and 4 of the ACCESS Project.

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5. Annex 1

International participation in Arctic Organizations (Source: Berkman and Vylegzhanin, 2012)

STATES[1]	ARCTIC ORGANIZATION[2.3]															
	AC[4]	AMEC	BEAC[5]	FARO	IASC	NACG	NAFO[6]	NC	NEAF[6]	NF	OSPA	PB	SAR	SCAPA	SPIT	NATO
															x	
Albania															X	X
Argentina															X	
Australia															X	
Austria															X	
Belgium[7]						X					X				X	X
Bulgaria[7]							X		X						X	X
Canada	X		X	X	X	X	X			X		X	X	X	X	X
Chile															X	
China				X	X					X					X	
Croatia																X

STATES[1]	ARCTIC ORGANIZATION[2.3]															
	AC[4]	AMEC	BEAC[5]	FARO	IASC	NACG	NAFO[6]	NC	NEAF[6]	NF	OSPA	PB	SAR	SCAPA	SPIT	NATO
Cuba							X		X							
Czech Republic[7]															X	X
Denmark[7,8]	X		X	X	X	X	X	X	X		X	X	X	X	X	X
Dominican Republic															X	
Egypt															X	
Estonia[7]						X									X	X
Finland[7]	X		X	X	X	X		X		X	X		X	X	X	
France[7]	X		X	X	X	X	X				X				X	X
Germany[7]	X		X	X	X	X					X				X	X
Greece[7]															X	X
Hungary[7]															X	X

STATES[1]	ARCTIC ORGANIZATION[2.3]															
	AC[4]	AMEC	BEAC[5]	FARO	IASC	NACG	NAFO[6]	NC	NEAF[6]	NF	OSPA	PB	SAR	SCAPA	SPIT	NATO
Iceland	X		X	X	X	X	X	X	X	X	X		X	X	X	X
India															X	
Ireland[7]						X					X				X	
Italy[7]			X	X	X										X	X
Japan			X	X	X		X			X					X	
Latvia[7]						X										X
Lithuania						X										X
Luxembourg[7]											X					X
Monaco															X	
Netherlands[7]	X		X	X	X	X					X				X	X
New Zealand															X	

STATES[1]	ARCTIC ORGANIZATION[2.3]															
	AC[4]	AMEC	BEAC[5]	FARO	IASC	NACG	NAFO[6]	NC	NEAF[6]	NF	OSPA	PB	SAR	SCAPA	SPIT	NATO
Norway	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X
Poland[7]	X		X	X		X									X	X
Portugal[7]						X			X						X	X
Republic of Korea (South)				X	X		X			X						
Romania															X	X
Russian Federation	X	X	X	X	X	X	X		X	X			X	X	X	
Saudi Arabia															X	
Serbia															X	
Slovakia																X
Slovenia																X
South Africa															X	

STATES[1]	ARCTIC ORGANIZATION[2.3]															
	AC[4]	AMEC	BEAC[5]	FARO	IASC	NACG	NAFO[6]	NC	NEAF[6]	NF	OSPA	PB	SAR	SCAPA	SPIT	NATO
Spain[7]	X					X			X		X				X	X
Sweden[7]	X		X	X	X	X		X			X	X	X	X	X	
Switzerland											X				X	
Turkey																X
Ukraine							X									
United Kingdom[7]	X	X	X	X	X	X					X				X	X
United States	X	X	X	X	X	X	X			X		X	X	X	X	X
Venezuela															X	
Number of States	14	4	15	17	16	20	13	5	8	8	15	5	8	8	42	28

STATES[1]	ARCTIC ORGANIZATION[2.3]															
	AC[4]	AMEC	BEAC[5]	FARO	IASC	NACG	NAFO[6]	NC	NEAF[6]	NF	OSPA	PB	SAR	SCAPA	SPIT	NATO

1 Among the 52 states in this table, the eight Arctic states are highlighted.
2 Highlighted organizations include all of the Arctic states.

3 **AC** (1996 Arctic Council); **AMEC** (1996 Arctic Military Environmental Cooperation Programme); **BEAC** (1993 Barents Euro-Arctic Council); **FARO** (1998 Forum of Arctic Research Operators); **IASC** (1990 International Arctic Science Committee); **NACG** (2007 North Atlantic Coast Guard Forum); **NAFO** (1978 *Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries*); **NATO** (1949 *North Atlantic Treaty*); **NC** (1952 Nordic Council); **NEAF** (1980 *Convention on Future Multilateral Cooperation in North-East Atlantic Fisheries*); **NF** (1991 Northern Forum); **OSPA** (1992 *Convention for the Protection of the Marine Environment of the North-East Atlantic*); **PB** (1973 *Agreement on the Conservation of Polar Bears*); **SAR** (2011 *Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic*); **SCAP** (1994 Standing Committee of the Conference of Arctic Parliamentarians)

4 Arctic Council – In addition to the eight Arctic Member States and the six non-Arctic Permanent Observer States listed in the table, there are six Permanent Participants from Arctic indigenous peoples organizations (Arctic Athabaskan Council, Aleut International Association, Gwich'in Council International, Inuit Circumpolar Council, Russian Arctic Indigenous Peoples of the North, and Saami Council). The Arctic Council also involves nine Intergovernmental and Inter-Parliamentary Organizations (International Federation of Red Cross & Red Crescent Societies, International Union for the Conservation of Nature, Nordic Council of Ministers, Nordic Environment Finance Corporation, North Atlantic Marine Mammal Commission, Standing Committee of the Parliamentarians of the Arctic Region, United Nations Economic Commission for Europe, United Nations Development Program, United Nations Environment Program) as well as eleven Non-Governmental Organizations (Advisory Committee on Protection of the Seas, Arctic Circumpolar Gateway, Association of World Reindeer Herders, Circumpolar Conservation Union, International Arctic Science Committee, International Arctic Social Sciences Association, International Union for Circumpolar Health, International Work Group for Indigenous Affairs, Northern Forum, University of the Arctic, World Wide Fund for Nature-Global Arctic Program). Non-Arctic states that include China, Japan and South Korea as well as the European Union have applied to the Arctic Council to become Permanent Observer States.
5. Barents Euro-Arctic Council – Permanent Members (Denmark, Finland, Iceland, Norway, Sweden and Russian Federation with the European Commission) and other states are observers.

6. Includes European Economic Community or European Union

7 Member of European Union.

8 Includes Greenland (which is not a member of the European Union) and the Faroe Islands as autonomous areas.


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