

Climate Governance in the Arctic

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Climate Governance in the Arctic

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Preface and Acknowledgements

This book is a product of a research project that began in 2006. The research group consisted of an inter-disciplinary group of scholars from numerous countries aiming to examine how various governance mechanisms contributed to mitigation and adaptation to climate change in the Arctic. The original name of the project was “The Capability of International Governance Systems in the Arctic to Contribute to the mitigation of Climate Change and Adjust to its Consequences” (CIGSAC, project No. 8110564), which later was changed to “Climate Governance in the Arctic” (see the project’s website at <http://www.arcticcentre.org/?deptid=25873>). The project was funded by the Academy of Finland, and we want to express our gratitude for the Academy’s financial support.

The research project benefitted greatly from the two seminars that were organised during its life-cycle. The launch meeting of the project was in Pyhänturi Finland from August 30 to September 3, 2006, where the initial research topics were discussed and their viability and desirable future focus examined. The final meeting (9th and 10th of January 2008 Arctic Centre, Rovaniemi, Finland) concentrated on fine-tuning the individual contributions and developing a similar general framework for the different contributions.

We would like to express our sincere thanks to all the contributors for making an honest attempt to follow this framework. We would also like to thank the contributors for participating in these two meetings; we think it was a learning experience for all since our different expertise informed a critical but constructive discussion. Apart from valuable suggestions for improving the quality of the individual chapters, the meetings also provided important guidance for the introductory and concluding chapters of the book. Important roles in assisting us in the editing process were played especially by researcher Adam Stepien from the Northern Institute for Environmental and Minority Law (Arctic Centre, University of Lapland), and, at the final stages, researcher Henna Tervo, also from NIEM. Thank you for all the hard work!

Many of the authors have also made an effort to follow developments in some cases up to spring 2008 when the contributions for this book were due: this holds true especially for legal developments surrounding the Arctic marine environment. We hope that this book will open up new horizons for thinking about climate governance issues from an Arctic viewpoint. We also hope that this book may help inspire

those persons involved in the various governance mechanisms that have implications in the Arctic to find new ways of viewing the climate policies of their respective institutions, and thereby contributing to climate policy mainstreaming in general.

We would also like to thank our families: the book added much work to the normal workload, requiring many extra evenings behind the computer. Thanks for being so patient and interested!

Rovaniemi, Finland
Umeå, Sweden
Alberta, Canada

Timo Koivurova
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Contents

1 Climate Governance in the Arctic: Introduction and Theoretical Framework	1
E. Carina H. Keskitalo, Timo Koivurova and Nigel Banks	

Part I Climate Change in the Arctic

2 The Climate Change Regime and the Arctic Region	27
Meinhard Doelle	
3 The Climate Policy of the Arctic Council	51
Timo Koivurova and Md. Waliul Hasanat	
4 A Changing Arctic Climate: Science and Policy in the Arctic Climate Impact Assessment	77
Annika E. Nilsson	
5 “New Governance” in the Arctic and Its Role for Supporting Climate Change Adaptation	97
E. Carina H. Keskitalo	

Part II Looking Outwards

6 Should the Law Governing Maritime Areas in the Arctic Adapt to Changing Climatic Circumstances?	119
Erik Franckx	
7 Climate Change and Arctic Fisheries	145
Erik J. Molenaar	
8 World Heritage Convention, Climate Change and the Arctic	171
Lotta Viikari	

9	Rethinking the Status of Indigenous Peoples in International Environmental Decision-Making: Pondering the Role of Arctic Indigenous Peoples and the Challenge of Climate Change	207
	Leena Heinämäki	
10	The Potential of the Convention on Biological Diversity to Address the Effects of Climate Change in the Arctic	263
	Thilo Marauhn	
 Part III Looking Inwards		
11	Is Adaptation Governable in the Arctic? National and Regional Approaches to Arctic Adaptation Governance	289
	Monica Tennberg	
12	Mitigation Possibilities in the Energy Sector – An Arctic Perspective .	303
	Maria Pettersson	
13	Climate Change Policy in the Arctic: The Cases of Greenland and Nunavut	327
	Natalia Loukacheva	
14	Climate Change and the Regime for the Conservation of Polar Bears	351
	Nigel Bankes	
15	Subjective Environmentalism: The Barents Euro-Arctic Council and Its Climate Change Policy	383
	S.G. Sreejith	
16	Climate Change and the Future of Arctic Governance: A Slushy Seascape and Hard Questions	403
	David L. VanderZwaag	
17	Conclusions on Climate Governance in the Arctic	429
	E. Carina H. Keskitalo, Timo Koivurova and Nigel Bankes	
	Index	445

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Abbreviations

AAU	Assigned amount unit
AC	Arctic Council
ACAP	Arctic Council Action Plan to Eliminate Pollution in the Arctic
ACIA	Arctic Climate Impact Assessment
ACPB	Agreement on the Conservation of Polar Bears
AEPS	Arctic Environmental Protection Strategy
AEWA	African-Eurasian Waterbird Agreement
AF	Adaptation Fund
AHDR	Arctic Human Development Report
AHTEG	Ad hoc Technical Expert Group on Biological Diversity and Climate Change
AMAP	Arctic Monitoring and Assessment Programme
AMSA	Arctic Marine Shipping Assessment
AMSP	Arctic Marine Strategic Plan
BEAC	Barents Euro-Arctic Council
BEAR	Barents Euro-Arctic Region
CAFF	Conservation of Arctic Flora and Fauna
CARMA	CircumArctic Ragnifer Monitoring and Assessment Network
CBD	Convention on Biological Diversity
CBMP	Circumpolar Biodiversity Monitoring Program
CCL	Combined cycle technology
CCPR	International Covenant on Civil and Political Rights
CCS	Carbon capture and storage
CDM	Clean Development Mechanism
CER	Certified emission reduction
CERD	International Convention on the Elimination of All Forms of Racial Discrimination
CESCR	International Covenant on Economic, Social and Cultural Rights
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention on Migratory Species
CoP/COP	Conference of Parties

CSIPN	Center for Support of Indigenous Peoples of the North
CSLF	Carbon Sequestration Leadership Forum
CSS	“Critical security studies”
DG RELEX	Directorate-General for External Relations (EU Commission)
DoE/DOE	Department of Energy
EAF	Ecosystem approach to fisheries
EC	European Community
ECOSOC	Economic and Social Council (UN)
EEA	European Economic Area
EEZ	Exclusive economic zone
EFTA	European Free Trade Association
EIA	Environmental impact assessment
EIT	Economies in Transition
EPPR	Emergency Prevention, Preparedness and Response
ERU	Emission reduction unit
ESA	Endangered Species Act
ESC	“Extended security concept”
ET	Emissions Trading
EU	European Union
EU ETS	European Union Emission Trading System
EWG	Working Group on Energy
FAO	United Nations Food and Agriculture Organization
FCCC	see UNFCCC
FLC	Fort Lauderdale Criteria
FSTF	Forest Sector Task Force
FWS	see US FWS
GHG	Greenhouse gas
GHR	Greenland Home Rule
GN	Government of Nunavut
GRID	Global Resources Information Database
GSO	Group of Senior Officials (BEAR)
GWEC	Global Wind Energy Council
HRC	Human Rights Committee
IACHR	Inter-American Commission on Human Rights
IAEA	International Atomic Energy Agency
IASC	International Arctic Science Committee
ICC	Inuit Circumpolar Conference, from 2006 Inuit Circumpolar Council
ICCAT	International Commission on the Conservation of Atlantic Tunas
ICES	International Council for the Exploration of the Sea
ICOMOS	International Council on Monuments and Sites
IDGEC	“Institutional Dimensions of Global Environmental Change”
IEA	International Energy Agency
ILO	International Labour Organisation
IMO	International Maritime Organisation

IPCC	Intergovernmental Panel on Climate Change
IPG	Institution of public government
IPHC	International Pacific Halibut Commission
IPOA	International Plan of Action
IPY	International Polar Year
IQ	Inuit Qaujimagatuqangit (Inuit traditional knowledge)
IR	International Relations
ITK	Inuit Tapiriit Kanatami
IUCN	World Conservation Union
JI	Joint Implementation
JLG	Joint Liaison Group
LDCF	Least Developed Countries Fund
LME	Large maritime ecosystems
LNG	Liquefied Natural Gas
LOS	Law of the sea, see also UNCLOS
LULUCF	Land-use, land-use change and forestry
MARPOL	International Convention for the Prevention of Pollution from Ships
MEA	Multilateral environmental agreement
MoP/MOP	Meeting of Parties
MoU/MOU	Memorandum of understanding
MSY	Maximum sustainable yield
NAFO	Northwest Atlantic Fisheries Organization
NAP	National Action Programme
NAPA	National Adaptation Programme of Action
NASCO	North Atlantic Salmon Conservation Organization
NBSAP	National Biodiversity Strategy and Action Plan
NEAFC	North East Atlantic Fisheries Commission
NLCA	Nunavut Land Claims Agreement
NPAFC	North Pacific Anadromous Fish Commission
NPFMC	North Pacific Fishery Management Council
NTI	Nunavut Tunngavik Incorporated
OPEC	Organisation of Petroleum Exporting Countries
PAME	Protection of Arctic Marine Environment
PBSG	Polar Bear Specialists Group
PICES	North Pacific Marine Science Organization
POPs	Persistent organic pollutants
PPM	Parts per million
RAIPON	Russian Association of Indigenous Peoples of the North, Siberia and Far East
RC	Regional Committee (BEAR)
RFMO	Regional fisheries management organization
RMU	Removal unit
RPA	Regional Programme of Action for the Protection of the Arctic Environment from Land-based Activities

R&D	Research and development
SAAO	Senior Arctic Affairs Officials
SAO	Senior Arctic Officials
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SCCF	Special Climate Change Fund
SDWG	Sustainable Development Working Group
SPCAR	Standing Committee of Parliamentarians of the Arctic Region
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environment and Development
UNCLOS	United Nations Convention on the Law of the Sea
UN ECE	United Nations Economic Commission for Europe
UNEP	United Nations Environmental Programme
UNESCO	United Nations Education, Scientific and Cultural Organisation
UNFCCC	United Nations Framework Conventions on Climate Change
UNGA	United Nations General Assembly
UNPFII	United Nations Permanent Forum on Indigenous Issues
US	United States
US FWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VACCA	Vulnerability and Adaptation to Climate Change in the Arctic
WCMC	World Conservation Monitoring Centre
WCPFC	Western and Central Pacific Ocean Fisheries Commission
WEAR	Working Group on education and research
WGIP	Working Group on Indigenous Populations
WG	Working group
WGE	Working Group on Environment
WGEC	Working Group on Economic Cooperation
WHC	World Cultural and Natural Heritage Convention
WHIPCOE	World Heritage Indigenous Peoples Council of Experts
WMO	World Meteorological Organization
WWF	World Wide Fund for Nature

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Chapter 1

Climate Governance in the Arctic: Introduction and Theoretical Framework

E. Carina H. Keskitalo, Timo Koivurova and Nigel Bankes

Abstract The introductory chapter describes the objectives of this edited volume and provides a theoretical framework for considering the contributions of the various authors. The objective of the book is to take an institutional perspective on climate change in the Arctic discussing both mitigation and adaptation. Beginning with an account of the soft law institutions in the Arctic, the chapter then briefly canvasses the relevance of general legal norms that apply in the Arctic e.g. the law of the sea and international human rights. The theoretical framework is introduced by a discussion of key terms including mitigative and adaptive capacity and vulnerability. The chapter canvasses the different perspective of both international lawyers and international relations scholars and some of their terminology before concluding with summary accounts of the various contributions.

1.1 Introduction

Climate change poses a challenge to societies all over the world. Mitigation (reducing greenhouse gas emissions) will help stabilize concentrations of greenhouse gases in the atmosphere at lower levels, thereby decreasing the risks of more severe climate change impacts. However, adaptation to climate change – responding and adapting to the results of climate change – will be a necessity. The Intergovernmental Panel on Climate Change (IPCC, 2007) makes it clear that we are already committed to a certain amount of global warming and the implications thereof even if we were to succeed in stabilizing atmospheric greenhouse gas levels in the near future.

The Arctic Climate Impact Assessment (ACIA, 2004, 2005) emphasises that the Arctic will in many respects serve as a barometer of climate change. Climate change

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will occur earlier and the rate of warming will be greater than in other parts of the globe. Some of the effects of climate change have already been observed in the Arctic (ACIA, 2005). Beyond this, climate change in the Arctic will also have worldwide implications. The ACIA report indicates, among other things, further rising sea levels as a result of rapidly melting glaciers and thermal expansion of the oceans. In many parts of the region, thawing permafrost may impact infrastructure and transport. Intense and rapid change thus places a heavy adaptation burden on both Arctic ecosystems and the human institutions through which adaptation needs to take place, as well as a mitigation burden on the states that are part of the Arctic region as well as globally.

This book considers two aspects of climate change from an institutional perspective. Firstly, the book focuses on how regimes, institutions and governance systems functioning in the Arctic or relevant to the Arctic may support mitigation of climate change. While greenhouse gas emissions in the region as such are relatively low, the industrialized countries that are part of the Arctic include high per capita greenhouse gas emitters (ACIA, 2005). Secondly, the book examines how the varying governance arrangements in the Arctic may support adaptation and the development of adaptation processes for the region.

Governance is defined here as consisting of elements of steering in a region, including but not limited to the state, with the understanding that “new governance” through NGOs, soft law organizations in political fora and economic market actors, as well as legislation and international treaties, will influence adaptation and mitigation in the region (cf. Keohane & Nye, 2000; Adger, 2006). “New governance” can be defined as the non-binding, mainly normative means of steering that are developed for instance in soft law (cf. Eberlein & Newman, 2008). Such soft law and non-binding arrangements have been prominent in the Arctic, with the development of the eight-state Arctic Council “high level forum”, and the prominence of indigenous peoples’ and environmental NGOs, as well as science organizations.

In this book, the focus has been placed on the political and legal aspects for the international region, including legal regulation and political governance relevant for the Arctic as well as new governance organizations in the international Arctic region. Legally, some focus is placed on selected international conventions that impact or have been designed for the region. Regional or even global international treaties and declarations may have specific implications in the Arctic, and here especially maritime law and the law relating to indigenous peoples will be examined. Politically, a large focus is placed on the international level and the soft-law structures that have emerged for the circumpolar Arctic region. The book also to some extent examines the role of states in mitigating and adapting to climate change impacts and the role of selected sub-national home rule or indigenous governments. While a more limited focus has been placed on the steering actions of economic market actors, such as transnational companies in the Arctic, some of the impacts of, for instance, the energy sector are illustrated in studies of mitigation.

This introductory chapter is organized as follows. First, it outlines in a general manner the international governance framework that presently exists in the Arctic, and that is further analysed and described in subsequent chapters. Second, the chapter defines the concepts of mitigation and adaptation in the context

of climate change. Third, and given the multi-disciplinary nature of the research venture involving scholars of international law and international relations (IR), the chapter also aims to provide some background to the diverging perspectives of these disciplines. The introduction concludes with a summary of the various contributions organized in accordance with the three main parts of the volume. The first part sets the stage by examining broad international and Arctic measures in response to climate change. The second part examines the interaction between climate change, the Arctic and global regimes such as the law of the sea regime, and the third part examines climate change in the context of institutions and governance regimes focused on the Arctic.

1.2 Introduction to the Arctic Governance Framework

Before examining the governance system in the Arctic, it is pertinent to try to define how the Arctic has been conceived of as a political region with a specific delineation. The definition of the southernmost boundary of the Arctic is complicated since several different criteria can be presented. Possible southernmost natural boundaries are, for instance, the tree line (i.e., the northernmost boundary where trees grow) or the 10°C isotherm (i.e., the southernmost location where the mean temperature of the warmest month of the year is below 10°C). In Arctic-wide co-operation, the Arctic Circle and the internal Canadian delineation of the north at 60° N latitude have been those most widely used, the latter in North America and the former in Europe. Arctic regional cooperation has been developed to include eight states: the Nordic countries (Norway, Sweden, Finland, Denmark-Greenland, and Iceland), and Canada, Russia and the USA (through Alaska) (cf. Keskitalo, 2004) (Fig. 1.1).

The eight-state region has been formalised through the development of a number of Arctic- or far northern-related bodies since the 1970s and most prominently the 1990s. Organisationally, the foremost example of Arctic region-building is the development of an Arctic Council in 1996, seen as a “symbol of the emergence of the Arctic as an international region” (Young, 2000). The Arctic Council has no independent legal status but is conceived of as an “international high-level forum” for these eight states, and with indigenous peoples’ organizations as “permanent participants”. The organization also includes a large involvement of environmental NGOs and science organizations (cf. Keskitalo, 2004; Koivurova & VanderZwaag, 2007). Given the institutional emphasis of most of the contributions to this volume, we generally refer to this politically based definition of the Arctic, as including eight states and areas ranging from between 60° N and the Arctic Circle to the pole.

Much of the region falls under the sovereignty and sovereign rights of the eight states. Sovereignty has been established over all land areas in the area by the states.¹

¹One exception is tiny Hans Island between Greenland and Canada’s Ellesmere Island over which both Canada and Denmark assert sovereignty and thus it was left out of the maritime boundary delimitation agreement between the two countries. For an analysis, see Carnaghan and Goody (2006) and Stevenson (2007).

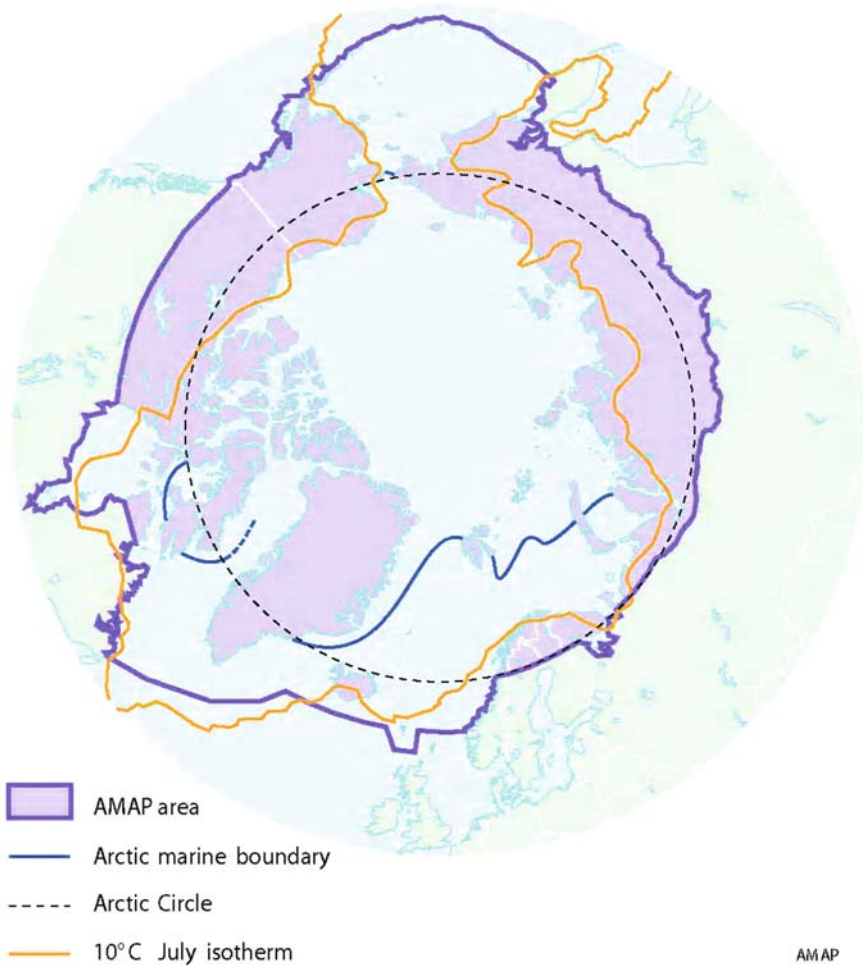


Fig. 1.1 AMAP area. Delineation of the Arctic as applied by the Arctic Monitoring and Assessment Programme working group of the Arctic Council (reproduced from AMAP, 1997, p. 6)

The three federal states (Russia, Canada and the US) accord varying kinds of mandates to their sub-administrative units (the state of Alaska, the northern territories of Canada, and the subjects of the Russian Federation). Finland, Sweden and Denmark are Member States of the EU, which provides a further layer of decision-making; for instance, a Northern Dimension of the EU has been developed on the initiative of Finland to deal with, among other things, relations with Russia. Greenland, which possesses extensive autonomous powers in the form of a home-rule government, has exited the EC and EU, to some extent as a result of a conflict over marine resource rights and trade. The states and their interactions both with the EU and in particular with home rule or semi-autonomous regional government are thus a major

part of emerging governance relations in the Arctic. The states are also the only full members in the Arctic Council, and the resources they volunteer to devote to this and other Arctic organisations are of decisive importance for how these function. Below, we review the basic elements of the region's soft law governance approach followed by a summary of the regional and global legal framework as it applies in the Arctic.

1.2.1 Soft Law in the Arctic

The first stage of the institutionalised Arctic-wide co-operation started with the 1991 Arctic Environmental Protection Strategy (AEPS), advanced by Finland but with relatively large input from Canada in the drafting. The Strategy identified six priority environmental problems facing the Arctic (persistent organic contaminants, radioactivity, heavy metals, noise, acidification and oil pollution), identified the key international environmental protection treaties that apply in the region, and developed specific actions to counter the identified threats. The AEPS established four environmental protection working-groups: Conservation of Arctic Flora and Fauna (CAFF), Protection of the Arctic Marine Environment (PAME), Emergency Prevention, Preparedness and Response (EPPR), and the Arctic Monitoring and Assessment Programme (AMAP). Three ministerial meetings (after the signing of the Declaration and the Strategy) were held in this first phase of Arctic co-operation, generally referred to as AEPS co-operation (Koivurova & VanderZwaag, 2007).

The establishment of the Arctic Council in 1996 broadened the mandate of the co-operation to common issues facing the Arctic (excluding military security) focusing on environmental protection and sustainable development. The four environmental protection working-groups of the Strategy were integrated into the structure of the Council, and one new working-group was established (the Sustainable Development Working-Group, SDWG). In the absence of a permanent secretariat, the work of the Arctic Council is heavily influenced by the priorities the chair-states lay out for their two-year chair period.² Senior Arctic Officials (SAO), a group of high-level officials, guides the work of the Council in between the ministerial meetings which occur every two years. The Arctic Council has also adopted new programmes related to environmental protection, such as the Arctic Council Action Plan to Eliminate Pollution in the Arctic (ACAP), which was recently developed into a sixth working-group,³ and the Arctic Climate Impact Assessment (ACIA). The ACIA was undertaken as a large-scale scientific assessment of climate change impacts on the region's environment, peoples (with a focus on indigenous peoples) and major resource-dependent sectors such as forestry and fishing (ACIA, 2005, 2004).

²The first chair-state was Canada (1996–1998), followed by the United States (1998–2000, Barrow ministerial), Finland (2000–2002, Inari), Iceland (2002–2004), and the Russian Federation (2004–2006). The current chair is Norway, which has announced, together with the two next chairs, Denmark and Sweden, that a temporary secretariat till 2012 will be established for the Arctic Council.

³It was re-titled the Arctic Contaminants Action Program. See at <http://arcticportal.org/acap>. Retrieved August 20, 2008.

Unique to the Arctic Council is the role the Council accords to the region's indigenous peoples as permanent participants, a distinct category of membership in between members proper and observers. The most long-standing indigenous peoples' organisations in the Council have been those of the Inuit, Saami and Russian northern minorities, but, more recently, additional groups have been accepted. The Arctic Council member states must consult the permanent participants and have generally adopted a process of consensus decision-making. In addition to the permanent participants there is a large group of observers consisting of inter-governmental and non-governmental organisations as well as other states active in the Arctic region, including, most recently, China (Koivurova & VanderZwaag, 2007).

Beyond these organisations there also exists a multitude of other organisations. The Standing Committee of the Parliamentarians of the Arctic Region (SCPAR) describes itself as a "shadow Arctic Council". Developed at the same time as the Arctic Council it provides a more informal forum for discussion between Arctic Council members and also acts as an Observer to the Arctic Council. Following the end of the Cold War, cooperation in the northern European area was also extended by the Norwegian initiative to develop a Barents Euro-Arctic Council (BEAC) on both intergovernmental and interregional levels to support security in the "Barents region": northern Norway, Sweden, Finland and north-west Russia. In addition, the Northern Forum, founded in 1991 following a Canadian suggestion to Hokkaido, Japan, is an international organisation composed of sub-national or regional governments from ten northern countries with the general aim of improving northern cooperation. The BEAC and the Northern Forum are thus the organisations in this survey that include local or regional cooperation: for the Northern Forum as a primary aim, while for the BEAC as a part of a two-tier structure of national and regional cooperation.

1.2.2 Legal Frameworks with Relevance to the Arctic

Within the Arctic region as defined, all the levels of law – international law, European law and national legal systems – come into play (Boyle 2000). In contrast with the "new governance" measures described above, the discussion here emphasises the role of the state and international conventions. The European Free Trade Association (EFTA) states of Iceland and Norway (with the exception of the Svalbard Islands, which was excluded from the EEA agreement by a special Protocol due to its unique status established through an international treaty in 1920 (Ulfstein, 1995; *Treaty on the Status*, 1920)) are bound by much of European law as Parties to the Agreement on the European Economic Area (1993). The precise legal status of indigenous peoples within each of the Arctic states varies as does the degree of autonomy accorded to such peoples but in general indigenous peoples are entitled to a degree of constitutional protection and special status (Arctic Human Development Report (AHDR), 2004).

Territorial sovereignty accords the Arctic states additional maritime zones and a large portion of the Arctic waters falls within these states' Exclusive Economic Zones (EEZs) or continental shelf. The core of the Arctic Ocean remains part of the

high seas as do some areas enclosed by the EEZs of Arctic coastal states. The deep sea-bed is governed by the International Sea-Bed Authority, although the littoral Arctic states (with the exception of the US)⁴ are developing claims to the Commission on the Limits of Continental Shelf to extend their continental shelves to the extent permitted by Article 76 of the LOS Convention (Koivurova, 2008).⁵ There are also on-going and potential disputes over the location of some of the maritime boundaries, especially those between Canada and the US in the Beaufort Sea, and Russia and Norway in the Barents Sea, although in general the Arctic states have been able to resolve their maritime boundary disputes peacefully, via negotiations, conciliation and judicial procedures (Koivurova, 2002, pp. 56–64).⁶

International treaties and customary international laws obviously apply in the Arctic since the legal norms generated by custom or adopted in a treaty apply throughout the state's sovereign territory and usually apply as well to those areas where states exercise sovereign rights, such as the EEZ. The eight states of the region are also members of many inter-governmental organisations, which, therefore, wield influence in the Arctic (AHDR, 2004). Some of the important international regimes and organisations have a prominent place in the Arctic governance, and a short overview of the most relevant conventions and inter-governmental organisations is therefore necessary.

The United Nations Convention on the Law of the Sea (LOS Convention, 1982) – which largely codifies customary law of the sea binding on all states of the world – extends to the Arctic Ocean and more generally to all Arctic waters. The Convention, which is in force for all Arctic states except the US, provides basic regulation relating to all major uses of the seas (fisheries, navigation, offshore hydrocarbon exploitation etc.) and lays out the jurisdictional rights of states in the maritime field. With melting sea ice and increased open water conditions the law of the sea becomes much more important. Resource companies are actively re-examining the potential for exploiting known reserves of both hydrocarbons (e.g., Petro Canada's Drake Point and Hecla natural gas discoveries (Chan et al., 2005) and hard rock minerals (e.g., Baffinland's Mary River iron ore project on North Baffin island, Nunavut) as well as new exploration prospects. The increased access and extended navigations seasons will also entail corresponding risks for the Arctic environment.

A connected convention to the LOS, the so-called Straddling Stocks Convention (*Agreement for the Implementation*, 1995), deals with the management of fish

⁴The US is also mapping out its sea-bed but since it is not a party to the LOS Convention, it cannot (yet) make a submission to the Commission (Continental slope off Alaska, 2008).

⁵See the submissions to the Commission on the Limits of Continental Shelf by the Russian Federation in 2001 and Norway in 2006, and reactions to these by other states, at the Commission's website at http://www.un.org/Depts/los/clcs_new/clcs_home.htm.

⁶The most recent was the conclusion of an Agreement between the Government of the Kingdom of Norway on the one hand, and the Government of the Kingdom of Denmark together with the Home Rule Government of Greenland on the other hand, concerning the delimitation of the continental shelf and the fishery zones in the area between Greenland and Svalbard, Copenhagen, 20 February 2006 (signed 20 February 2006, entry into force: 2 June 2006)

stocks which straddle the EEZs of coastal states and high seas. The Convention also contains principles on sound management of fish stocks in the EEZs. This Convention is highly relevant in the Arctic, given that all the Arctic states are Parties.

In the field of environmental protection the main Arctic-specific wildlife protection convention is the 1973 Polar Bear Agreement (*Agreement on the Conservation*, 1973), which aims to protect the polar bear and its habitat, a goal that has become difficult to achieve with melting sea ice. The Polar Bear Agreement is the only legally binding treaty focusing on the Arctic region, and applies to the range states of the polar bear (USA, Canada, the Russian Federation, Norway and Denmark (Greenland)). In addition to this Arctic-focused instrument, all of the main MEAs apply within the Arctic region including the 1992 Convention on Biological Diversity (CBD, 1992), with its ambitious aims of enhancing biological diversity (within species, between species and of ecosystems), promoting the sustainable use of components of biological diversity and fair and equitable sharing of the benefits arising out of the utilization of genetic resources. All of the Arctic states except the US are Parties, and the CBD applies to both the terrestrial and marine environment, to the extent of national jurisdiction and in some cases beyond. The only MEA to specifically mention the Arctic is the global 2001 Stockholm Convention on Persistent Organic Pollutants (2001), which identifies the Arctic and its indigenous peoples as vulnerable to POPs (Downey & Fenge, 2003).

The universal human rights treaties apply in the Arctic (AHDR, 2004). Many of these are relevant for the region's indigenous peoples since they guarantee basic human rights, but, more importantly, provide additional protection to indigenous peoples. Chief among these is the Covenant on Civil and Political Rights (1966) and its monitoring body the Human Rights Committee. In its practise – via its General Comments, its Concluding Observations to country reports and in its views on individual cases brought before the Committee under its Optional Protocol jurisdiction (applying to all Arctic states except the US) – the Committee has emphasised the protection of the traditional livelihood and culture of indigenous peoples. In addition, the Committee has urged states to report on measures taken to further the Article 1 right of self-determination with respect to indigenous peoples within their territory. This Covenant is particularly important in the Arctic since it is in force for all eight Arctic states. There is also the ILO Convention on the Rights of Indigenous and Tribal Peoples in Independent Countries (1989) which has been ratified by two of the Arctic states (Norway and Denmark). Yet, it has had a significant effect on the discourse and the rights of indigenous peoples in Norway (Graver & Ulfstein, 2004) and may also be used as a standard setting exercise against which to measure the domestic policies of other states even if they are not formally Parties to the instrument. It remains to be seen how the recently adopted UN Declaration on the Rights of Indigenous Peoples (2007) (the US and Canada voted against, and Russia abstained), will affect domestic policy in the Arctic states. In addition, a draft Nordic Saami Convention has been produced under the auspices of the Nordic Council. The decision as to when and if the negotiations will

commence on the basis of this draft will be made in November 2008 (Koivurova, in press).

Inter-governmental organizations may be particularly relevant for the Arctic especially if all eight states are members. Mention can be made of the International Atomic Energy Agency (IAEA), which plays an important role in promoting conventions and other guidance to increase nuclear safety, an agenda item chosen as a priority as early as the 1991 AEPS. In addition, the United Nations Economic Commission for Europe (UN ECE) which bridges both Europe and North America and eastern and western Europe has accomplished significant work in reducing long-range transboundary air pollution affecting the Arctic but also in developing protocols, especially the Protocol on persistent organic pollutants that served as a regional precursor to the global Stockholm Convention (Downey & Fenge, 2003). In addition the UN ECE has also taken a leadership role in laying down rules for transboundary environmental impact assessment procedure through the so-called Espoo Convention (*Convention on Environmental*, 1991) although the US, Russia and Iceland are not Parties to this treaty (Koivurova, 2002).

1.3 Approaches to Mitigate or Adapt to Climate Change – Defining the Concepts

The paragraphs below outline the main concepts for dealing with climate change that have been prevalent in the United Nations Framework Convention on Climate Change (UNFCCC) and associated processes, and which have emerged from IPCC literature: mitigation and adaptation as well as mitigative and adaptive capacity (and the relation between adaptive capacity and vulnerability). Adaptation and mitigation can generally be seen as specific actions undertaken in order to decrease greenhouse gas emissions or adapt to the effects of climate change, respectively, while mitigative and adaptive capacity determines the possibility for undertaking such actions. Mitigative and adaptive capacity depend on a wide array of resources, such as access to and cost of technology, political resources and willingness, and economic means, and are unevenly distributed among actors on all levels, including states (Kane & Shogren, 2000). The wide range of actors defined above as part of governance may play varying roles in adaptation and mitigation, and take part in or design mitigation or adaptation actions for different purposes not only in order to adapt to climate change but also in response to changes in economic conditions (O'Brien & Leichenko, 2000).

1.3.1 Mitigation

Mitigation is defined as the reduction or limitation of greenhouse gas (GHG) emissions. Such a reduction of GHG emissions would decrease future levels of climate change. The IPCC (2007) notes that mitigation can be accomplished through a wide

variety of mechanisms that are available to actors on different levels. For states, the variety of national policies and measures available include regulations, standard setting, the levying of taxes and charges or subsidies or financial incentives for GHG reduction, and development of cap and trade systems. Information efforts and research, as well as integration with or “mainstreaming” of climate change measures may also support mitigation. The efficiency and adaptation of these different measures depends on a number of factors. Regulatory measures may be preferable in cases where price signals have less influence, but may be difficult to implement. Economic instruments such as carbon taxes or cap and trade systems may help internalize the costs of carbon emissions and may achieve emissions reductions at lower cost than other regulatory measures (Wiener, 1999). However, such schemes are not yet well developed (Gupta et al., 2007).

Internationally, the UNFCCC and the Kyoto Protocol to the Convention have been significant steps in starting to establish a system for climate change mitigation globally – among other things by stimulating national policies and the development of a carbon market. The IPCC notes that such policies need to be supported both on an international level by additional agreements to further decrease emissions in the phase following Kyoto, as well as by integration with other policies and in a broad array of institutions and situations (Gupta et al., 2007).

1.3.2 Adaptation and Underlying Capacities

The IPCC defines adaptation as taking place through “adjustments to reduce vulnerability or enhance resilience (the possibility of withstanding or absorbing shocks) in response to observed or expected changes in climate and associated extreme weather events” (Adger et al., 2007, p. 720). Adaptation actions include all actions taken by different actors or groups on different scale levels – from the local to the international – in order to improve the ability of societies to withstand and not be harmed by climate change, i.e., all those actions that limit the vulnerability of a society or its “risk to be wounded” by climate change (cf. Kates et al., 1985; Adger, 2006). How vulnerable a society is to the changes that result from climate change depends on its existing situation: its environmental situation (e.g., exposure and sensitivity to storms, drought or effects on food systems), resources and distribution of resources to respond to such threats, prior stresses, and institutions through which responses to stresses need to be channelled (Adger et al, 2007). Resources for adaptation, as with mitigation, thus often depend on existing on-going processes such as globalisation and economic change in general; but it is rare for adaptation actions only to address climate change as a single stressor (Smit & Wandel, 2006; Keskitalo, 2008).

Adaptation, as well as mitigation, is thereby determined by a number of specific characteristics of the mechanisms, actors, and underlying situation in which adaptation or mitigation is being undertaken. As a result, the concepts of “mitigative capacity” and “adaptive capacity” have been used largely analogously to refer to determinants of capacity to undertake adaptation or mitigation (IPCC, 2001; Kane & Shogren, 2000). These include a large array of political, institutional, economic and human capacities. The IPCC emphasises the importance of contextual factors

in determining mitigative capacity, and sees it as dependent on factors that are also typically associated with the pursuit of sustainable development, such as the distribution of resources and the empowerment of population, the credibility of decision-makers, access to information and knowledge, and the willingness to act on information and spread the risks of climate change (IPCC, 2001). Additionally, determinants of adaptive capacity are strongly context-specific and vary between states and localities, as well as depend on structural characteristics such as employment and socio-economic structure and benefits. While broad factors such as “technology” may be important for adaptation throughout, the way in which technological factors (and which technological factors) are important may vary significantly from case to case (Smit & Wandel, 2006). Similarly, different mechanisms may also transfer vulnerability between different groups – supporting certain groups while disempowering others – and it is therefore crucial to assess which groups are benefitted in their adaptation by specific actions.

As a result of the breadth of factors impacting adaptive or mitigative capacity, the IPCC and much work in the climate change vulnerability assessment field (cf. Janssen et al., 2006) includes a focus on potentials, instruments and barriers. The instruments that might be used to accomplish mitigation are drawn from a broad framework similar to that of adaptive capacity. Major policies and measures that might be used for mitigation of GHG emissions include the array of instruments mentioned in the Kyoto Protocol, economic dimensions, political economy, legal, and institutional elements (a mix also treated in this book). States may select the most appropriate measures based on their assessment of a number of factors including cost effectiveness, distributional effects and national and sector level circumstances. We can also expect decisions on adaptation and mitigation to be influenced by interest groups concerned about the effect of particular measures on their competitiveness and that groups holding opposing interests will often support these rather than consensus decisions (IPCC, 2001). This political context may help explain why implementation so far of adaptive and mitigative actions has been relatively slow. Additionally, any policy instrument, whether on an international or domestic level, depends on having adequate monitoring and enforcement systems for its effective implementation (IPCC, 2001). On the level of organisations other than states, such as international organisations or soft law arrangements, awareness building may play a large role for developing climate change adaptation, and different actors may attempt to influence states to support certain areas or groups (Keskitalo, 2008).

1.4 Legal and Political Science Understandings of Climate Governance

In conceptualising adaptation and mitigation actions for a project such as this – focusing mainly on contributions from international law and political science/international relations – the varying perspectives in these disciplines have to