

1. Introduction and Overview

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BACKGROUND

The Arctic continues to experience rapid change. But the changes now occurring in the region are producing a more complex situation than the one envisioned just a few years ago by those who predicted that increased accessibility resulting from the melting of sea ice would ignite a scramble for control of the region's resources and the emergence of a new "great game" in the Arctic. This more complex situation calls for innovative thinking that can provide the basis for increasingly sophisticated forms of cooperation at the international and transnational levels. Both states and non-state actors can play constructive roles in the effort to maintain the Arctic as a zone of peace and prosperity and to develop the region's resources in a sustainable manner as links between the region and the global system continue to grow. But realizing this potential will require a willingness to break the conceptual grip of old antagonisms and to embrace new approaches to problem solving on the part of all parties concerned.

Sea ice in the Arctic Basin reached an all-time low in the late summer of 2012, but it bounced back in 2013, trapping a number of vessels that had ventured into the Northwest Passage expecting to be able to make ice-free transits. Serious constraints affecting the use of the Northern Sea Route (NSR) for commercial shipping have become evident. Many now expect that commercial use of the NSR will take the form mainly of destination shipping, rather than through traffic, for the foreseeable future. Ship traffic in the NSR during 2014 was well below the level reached in 2013. More generally, the growing impact of climate change in the Arctic is intensifying pressure to relocate coastal communities (e.g., Kivalina in northwest Alaska), shortening the season for the use of ice roads critical to the extraction of raw materials, and threatening the integrity of infrastructure (such as airfields, pipelines, and commercial buildings) located in areas underlain by permafrost. None of this runs counter to the fact that Arctic resources are becoming more accessible. But these conditions do emphasize

the importance of avoiding simplistic assumptions about the likely trajectory of Arctic development.

Because Arctic resources are expensive to extract and to transport to southern markets, their economic attraction is sensitive to fluctuations in world market prices. North America's shale gas revolution, for example, has dramatically altered the economic attractiveness of Arctic hydrocarbons. As a result, the development of once promising projects (e.g., the supergiant Shtokman gas field in the Barents Sea) has been delayed indefinitely. The sharp drop in the world market price for oil during the second half of 2014 has raised fundamental questions about the economics of extracting oil in the Arctic. Among other things, this has serious implications for Russia, whose economic redevelopment is tightly coupled to the exploitation of Arctic resources. In some parts of the Arctic, interest in mining (e.g., lead, zinc, nickel, copper, iron ore, and uranium) may outstrip the development of oil and gas reserves, which now seem much less attractive than they did even three or four years ago. A particularly interesting prospect is the development of Greenland's deposits of rare earth, a potential source of income that could strengthen the hand of those Greenlanders who wish to achieve full independence from Denmark.

Overall, the Arctic remains a zone of peace, but complex political issues affecting the region are developing rapidly. Competing claims to jurisdiction over the seabed extending beyond the limits of Exclusive Economic Zones are coming to the fore. Canada, Denmark/Greenland, and Russia have articulated claims that overlap to a significant extent in the area around the North Pole. Although all the Arctic coastal states have pledged to resolve these differences under the provisions of the UN Convention on the Law of the Sea, the political intensity of national seabed claims is worrisome. Under the most optimistic scenario, it will take years to resolve the conflict arising from these overlapping claims. Meanwhile, Russia is taking steps to rebuild its military presence in the Arctic, based in part on claims that this is necessary to counter the capacity of the United States Navy to operate in Arctic waters as well as the prospect of increased interest in the Arctic on the part of NATO. Despite the fact that most observers see no basis for serious conflict in the Arctic, the danger of an action/reaction process involving the buildup of military forces is real.

Broader changes in the international system are also affecting the Arctic. In the 1990s, at the time of the creation of the Arctic Council, the Arctic was peripheral to the main currents of international affairs. The

hegemonic role of the United States as the sole remaining superpower sheltered the region from the impact of broader geopolitical developments. Today, the links between the Arctic and the broader international system have become considerably stronger. The dominance of the United States is fading, and rising powers like China, Germany, and Korea are developing Arctic strategies to guide their activities in the region. China, for example, is flexing its muscles with regard to the Arctic, largely through the development of bilateral relationships with Greenland, Iceland, and Russia focusing on the exploitation of energy resources and minerals. It is important not to exaggerate the significance of the resultant political tensions. Nevertheless, ignoring them would be equally inappropriate at this stage.

The sense of a few years ago that the development of Arctic resources would take the form of a giant, unstoppable “gold rush” has abated. For the most part, this is good news. It deflates some of the alarmist projections regarding the rise of severe conflicts in the Arctic and provides us with some leeway to think about innovative ways to address needs for governance now arising in the region. It is important to treat this change as an opportunity to establish mechanisms designed to ensure that the Arctic’s resources are developed in a responsible manner and to strengthen measures dealing with the protection of the region’s environment; it is not a basis for complacency. For this reason, we focused the 2014 North Pacific Arctic Conference (NPAC) on an examination of international cooperation in the Arctic in an effort to identify and evaluate the effectiveness of innovative measures designed to contribute to maintaining the Arctic as a zone of peace and promoting sustainable development in the region.

Cooperation can take many forms. Intergovernmental arrangements, perhaps the most obvious form of cooperation, can range from bilateral initiatives (e.g., Norwegian/Russian cooperation in managing the fisheries and potential energy resources of the Barents Sea) through regional actions (e.g., the work of the Arctic Council on search and rescue and oil spills) to multilateral steps (e.g., the development of the Polar Code for commercial shipping in the Arctic under the auspices of the International Maritime Organization). In some cases, there are differences among states regarding the proper forums for addressing particular issues. A current example involves the issue of how to deal with the possibility that fisheries of commercial significance could develop in the Arctic basin during the next several decades. The five Arctic coastal states have taken the

initiative regarding this issue; they are considering the merits of a proposed agreement that would impose a moratorium on commercial fishing in this region, at least until more is known about the status of potential fisheries in the Arctic and their capacity to sustain a commercial harvest. But this approach is controversial. Some major environmental groups (e.g., the Pew Charitable Trusts and the Ocean Conservancy) have expressed strong support for this approach, while others (including the remaining members of the Arctic Council, some indigenous peoples' organizations, and some distant-water fishing nations) have been more skeptical about it. In any event, it is worth noting that a sizable fraction of the water column of the Arctic Basin will remain high seas under the terms of the UN Convention on the Law of the Sea, however the claims of the coastal states regarding jurisdiction over the seabed are resolved. This means, among other things, that non-Arctic states will have the right to engage in fishing and other activities in these waters, regardless of the measures that the Arctic coastal states adopt.

There are important questions regarding the identity of those who can and should participate in cooperative measures relating to emerging Arctic issues. We tend to think first of states and intergovernmental agreements regarding matters of mutual interest. Arrangements of this sort are common in the Arctic, though some of the most important ones (such as the Arctic Council) are informal arrangements based on agreements (e.g., the ministerial declaration establishing the Council) that do not involve any legally binding obligations. A particularly interesting aspect of cooperation in the Arctic, however, is the prominent role of various non-state or semi-autonomous actors that are associated formally or informally with national governments. The International Arctic Science Committee, for example, is a nongovernmental organization in formal terms, but its members are national academies of science and national research councils.

Many examples involve economic relationships. Some, like the alliance among Gazprom, Statoil, and Total regarding the development of the Shtokman gas field, or the alliance between Rosneft and ExxonMobil regarding exploration for oil in the Kara Sea, have taken the form of coalitions of private corporations, though the links between Gazprom and Rosneft on the one hand and the government of the Russian Federation on the other are strong. Others, like the partnership among Novatek, Total, and the China National Petroleum Corporation to establish a liquefaction facility on the Yamal Peninsula in northwestern Siberia, include enterprises

that are state-owned but nevertheless able to operate with a high degree of autonomy. Still others, like the proposed Isua iron ore mine in Greenland, feature complex partnerships in which private entities (in this case, the London Mining Company) and government entities (here, agencies of the Chinese government) join forces to develop mineral deposits in distant locations. In all these cases, cooperation is sensitive both to world market forces (e.g., the postponement of development of the Shtokman gas field for economic reasons) and to larger political forces (e.g., the freezing of the Rosneft-Exxon/Mobil collaboration due to sanctions associated with the Ukraine conflict).

Other forms of cooperation that have emerged in the Arctic are less conventional in nature but potentially important not only for their ability to contribute to peace and sustainability in the Arctic, but also as experiments that may prove interesting in other settings. A distinctive feature of the Arctic Council is the engagement of indigenous peoples' organizations as Permanent Participants able to play an active role in all the activities of the Council. The Barents Euro-Arctic Region, launched in 1993 and encompassing the northern counties/oblasts of Norway, Sweden, Finland, and northwestern Russia, is distinctive because it has a dual structure encompassing both the intergovernmental Barents Council and a separate Regional Council whose members are subnational governments in the areas covered by this arrangement. This initiative has fostered cooperation in a wide range of areas, including education, health, and cultural survival, as well as economic development. The Northern Forum, founded in 1993 as an association of subnational governments throughout the Circumpolar North, has sought to foster cooperation among its members regarding issues of common concern that are often poorly understood or ignored in the southern capitals of their respective nation states. Although the forum is now struggling to reinvent itself following a relocation of its administrative apparatus from Alaska to the Sakha Republic in Russia, it has provided an important example of the prospects for transnational relations carried out by subnational governments operating independently of their national governments. Indigenous peoples' organizations, such as the Inuit Circumpolar Council and the Saami Council, offer additional lessons in the efficacy of transnational initiatives. A particularly important feature of these arrangements is the role they have played in articulating the political rights of aboriginal peoples who are citizens of their respective nation states but who argue that they are entitled at the same time to exercise certain

forms of sovereignty regarding the control of their own destinies. These less-conventional forms of cooperation that have taken root in the Arctic over the last several decades constitute the leading edge of a development that seems destined to become more and more important on a global scale.

A development in 2013 of particular importance from the perspective of NPAC was the acceptance by the Arctic Council of five non-Arctic Asian states (China, India, Japan, Korea, and Singapore) as council observers. They join seven European countries as members of the corps of Arctic Council observers. Recent developments, including climate change and economic globalization, have strengthened the links between the Arctic region and the global system and brought the region to the attention of political and economic decision makers worldwide. In formal terms, observer status in the Council provides limited opportunities to participate in Arctic affairs, especially at the policy level. Yet the members of the Council, the eight Arctic states, now recognize that it is impossible to address a range of transregional issues affecting the Arctic (e.g., climate change, contaminants originating beyond the confines of the region, the protection of migratory species) without finding a means of engaging major non-Arctic states. As a result, all parties concerned are interested in exploring the extent to which it is possible to develop informal but effective practices through which the Council can become an effective forum not only for addressing regional issues of concern to the eight Arctic states, but also for dealing with transregional issues that require cooperation on the part of key non-Arctic states as well as the Arctic states themselves. NPAC 2014 provided an early but significant opportunity to examine the efficacy of the new practices of the Arctic Council regarding the role of observer states, to consider adjustments that could improve the existing situation, and even to compare this situation with possible alternative arrangements.

This volume contains the thematic papers and shorter presentations prepared for NPAC 2014. Part I consists of two thematic papers and seven commentaries examining patterns of Arctic investment. Part II compares the experiences of six states in the formulation and implementation of Arctic policies. Individual papers explore the approaches and challenges of three Arctic states (Canada, the Russian Federation, the United States) and three non-Arctic Asian States (China, Japan and Korea). Part III presents one chapter and four international commentaries on avenues of Arctic state/non-Arctic state engagement. The two thematic papers and five comments in Part IV address R&D innovations applicable to the Arctic. The thematic

paper and three commentaries in Part V examine indigenous responses to Arctic development. Part VI, the product of a roundtable discussion, contains six perspectives focusing on visions of Arctic development and paths to sustainability, funding mechanisms, and the role of the Arctic Council.

PART I: PATTERNS OF ARCTIC INVESTMENT

The authors of the chapters and commentaries included in Part I address three key questions regarding patterns of Arctic investment: (i) What is the magnitude of investment in Arctic projects, and what are the trends over time in this regard, both onshore and offshore? (ii) Who are the actual and potential investors (private corporations, state-owned enterprises, governments)? and (iii) What are the likely growth areas for investment in the future, and what factors will determine trends in this area?

Whereas it is difficult to provide a comprehensive estimate of investments needed to realize resource development and improve infrastructure in the Arctic, scattered data indicate that these needs are enormous. The authors of the thematic chapters, all the commentators, and most of the participants in the discussion agreed that oil companies are now more reluctant to go ahead with Arctic offshore development than they were a few years ago. Among the reasons mentioned were the revolution in unconventional gas and oil, changing world market prices, increasing costs due in part to the strengthening of environmental regulations, and pressure from shareholders to produce short-term dividends.

Increasing expectations for a future climate-constrained world may have an impact on Arctic energy investments in the short term because of the long lead times associated with energy projects in this region. Historically, fluctuations in the price of oil have produced a stop-and-go pattern of development in the Arctic. Arctic projects are marginal in economic terms and are among the first to be cut when prices fall. Nevertheless, some argued that oil companies also would be interested in amassing oil reserves in the Arctic, even though they may put off production in the face of an uncertain future.

Mineral projects, on the other hand, have a different logic. Legal frameworks and the climate for investments are not favorable to such projects. In fact, they have become less friendly over the last six years, at

the same time as the resource base is becoming more heterogeneous and in need of new technologies and approaches for development. The most interesting part of the Russian Arctic in these terms is Northern Siberia. One big investment project in the Norilsk area is underway, initiated by a private group that is big enough to handle the institutional complexities.

There are big differences among the Arctic coastal states regarding government involvement in energy and mineral development. In North America, development is entirely dependent on private capital. In Russia and Norway, private capital also plays a major role, but governments are involved both as shareholders in state-owned or state-dominated companies and through direct public investment. Both these countries have resource-dependent economies in which oil and gas play crucial roles. As a result, the governments see support for energy development in the Arctic as essential. Government support also focuses on creating a favorable investment climate. In the U.S. and Canada, by contrast, governments are often indifferent. Foreign investment in offshore development is possible in all these countries. But in Russia, which has the largest share of the resources, the options for foreign investors are limited due to monopolization in the sector.

Normally, Arctic maritime infrastructure would be the responsibility of the governments. On the federal level in the U.S. and Canada, there is less willingness now than in earlier times to engage in infrastructure development. Needs are identified, but little is happening. Norway, which has the most developed Arctic coastline, has the means and tradition for public investment, but is undecided about future port priorities. Russia has large ambitions for upgrading decaying Arctic infrastructure, but faces financial constraints. Financing for the NSR derived from user fees is not sufficient. New state investments are lacking. Private–public partnerships are presented as a solution, but proper mechanisms have not been developed. One recent example of state investment in Arctic infrastructure, however, is the new port of Sabetta on the Yamal Peninsula, which will mainly serve the Yamal LNG project but may also be useful to other emerging hydrocarbon projects in its vicinity.

The key determinants of investment growth are expectations regarding profitability and risk mitigation. The various joint ventures and cooperative arrangements set up to finance and operate tankers for Yamal LNG illustrate the broad cooperation needed to mitigate risk and pull off major Arctic resource projects. To help reduce uncertainty and risk, high political

priority plus state involvement in infrastructure development seem to be important. The factors that hold back investment in the U.S. and Canada would have to be altered to encourage growth. In Russia, investors found a solution three years ago by persuading big foreign oil companies to pledge huge investments in offshore development. But these are high-profile prestige projects for Russia. In the minerals sector, which has a potential for many smaller projects, problems concerning stable property rights and respect for contracts remain constraints on investment activity. The present tense international situation, with accompanying political uncertainty in Russia, increases investment risks. Sectors hit by sanctions will have big problems satisfying their investment needs, although sanctions may create opportunities for companies in countries not participating in the sanctions.

PART II: COMPARING NATIONAL ARCTIC POLICIES

Part II contains six thematic papers exploring national experiences in the formulation of Arctic policies in three Arctic states (Canada, Russian Federation, U.S.) and three Asian non-Arctic states (China, Japan and Korea). Each chapter addresses seven key issues: (i) Does the country have an overall Arctic strategy or policy? (ii) Are there sectoral policies, for example, on shipping, oil and gas, fisheries, or foreign relations? (iii) To what extent is there a balance between development and environmental protection? (iv) What institutional arrangements exist to develop national policy, for example, a lead department, interdepartmental committee or task force? (v) What forces have spurred or hindered the development of Arctic policy? (vi) What is the status of national Arctic policy implementation? and (vii) To what extent are Arctic issues considered in national positions and approaches in international fora, for example, in climate change negotiations and implementation of the Stockholm Convention on Persistent Organic Pollutants?

The three Arctic states are similar in having established overarching Arctic policies, even though they rely on multiple documents. Canada's main policy documents include *Canada's Northern Strategy* (2009) and *Canada's Arctic Foreign Policy Statement* (2010). Russia issued an *Arctic Fundamentals* policy in 2008 followed by a 2013 *Arctic Strategy*. Recent policy documents in the United States include the *National Strategy for the Arctic Region, 2013* and the *Implementation Plan for the National Strategy*

for the Arctic Region, 2014.

Among the three Arctic states, Russia has produced the clearest policy vision for the future of Arctic shipping. The Russian Federation has identified the opening of the Northern Sea Route to international shipping as a matter of priority, with detailed plans for supporting infrastructure, such as ice-breaking assistance and search and rescue centers. Canada and the United States are less clear in their policy positions toward the future of Arctic shipping. Canada has no active vision for opening the Northwest Passage to international traffic. Discussion during this session suggested that this may be explained by two factors. Canada may have underlying concerns regarding the potential adverse impacts of increased shipping on coastal communities and the marine environment. Also, Canada is sensitive about giving the impression that the passage is a strait used for international navigation. The United States also has not formulated clear policy directions for developing shipping infrastructure such as port facilities and ice-breaking capacities. The Arctic receives limited political attention in the U.S. due to the fact that Alaska has only two senators and one representative in Congress. The Arctic also has been marginalized in the media and public awareness with some maps of the United States even failing to show the State of Alaska.

The three non-Arctic Asian states have yet to formulate comprehensive Arctic policies. Nevertheless, political attention and public awareness regarding the Arctic have been growing in all three countries with an emphasis on concerns relating to the impacts of climate change including decreasing ice cover and interests in Arctic transportation routes and potential access to natural resources.

At the same time, the Asian States differ in the development of their Arctic policies. Korea is perhaps the most advanced as reflected in the publication of an *Arctic Policy Master Plan* in December 2013, although the Plan is not a comprehensive policy but more of a collection of existing government priorities. Japan has given Arctic issues “secondary treatment” through the adoption of the *Second Basic Plan on Ocean Policy* in April 2013. Arctic shipping routes, climate change and ocean acidification, and the need for international cooperation in studying and protecting the Arctic Ocean were all identified as important issues to be addressed. China has lagged in Arctic policy formulation, although a white paper on Arctic policy is being considered for publication within the next few years.

Turning to the implications for the Arctic Council, participants

identified regional buy-in and continuity over time as important challenges. Some participants suggested that Canada's emphasis on local economic development in the Arctic during its chairmanship may conflict with the priorities of other Arctic states. One participant suggested that the U.S. State Department may be "less than enthusiastic" about the creation of the Arctic Economic Council. Participants also identified ensuring implementation of national Arctic policies as a problem. Existing policies do not have reporting and accountability mechanisms; implementation is dependent on political will and proper financing. Understanding the status and roles of bilateral agreements and arrangements in the Arctic also was identified as a challenge. Transboundary cooperation is a key component of Arctic policy, yet information regarding the numerous bilateral arrangements in the Arctic is limited. The Arctic Council's *Arctic Ocean Review (AOR) Report*, issued in May 2013, did not examine the status of bilateral cooperation in the Arctic but focused on the adequacy of regional and global arrangements in protecting the Arctic's marine environment. Finally, confronting the difficulties of interagency coordination and multilevel governance is especially problematic in the formulation and implementation of Arctic policies. Numerous distinct departments/agencies at the national level seek to claim a "piece of the action." In the United States, there have been tensions between federal and State of Alaska perspectives over appropriate policy directions. The Canadian policy seascape is also complicated by the problems of coordinating multiple levels of governance, including federal and territorial governments and institutions created under land-claim agreements.

PART III: ARCTIC STATE/NON-ARCTIC STATE ENGAGEMENT

Part III of this volume comprises one thematic paper and four commentaries. The authors examine Arctic state/non-Arctic state engagement on Arctic issues in accordance with four sets of questions: (i) What are the lessons from past engagements by non-Arctic states in Arctic Council working groups or subsidiary bodies? What are the rules, criteria and working group operating guidelines for non-Arctic state participation in Council activities? (ii) Are there particular transregional issues relevant to the Arctic that non-Arctic states can highlight as areas for

possible cooperation? (iii) Are there examples of bilateral or multilateral cooperation between Arctic states and non-Arctic states in other fora that might provide models or best practices for cooperation in relation to the Arctic? and (iv) What are the particular circumstances of non-Arctic state/Permanent Participants relationships in the context of working group activities?

Key messages drawn from Part III include:

- ① The Arctic is a dynamic region. Environmental, geoeconomic, and geopolitical forces are causing transformative change in the high latitudes; linkages between the Arctic and the global system are growing stronger.
- ② The Arctic is not immune to geopolitical changes in the world at large.
- ③ An important feature of regional/global linkages is the extent to which the fate of the Arctic is affected by the actions of outsiders who often pay little attention to the consequences of their actions for the well-being of the Arctic's human residents or the integrity of the Arctic's biophysical systems.
- ④ No single existing or potential forum provides a complete answer to the challenges of Arctic state/non-Arctic state engagement. Numerous options across a range of levels and sectors exist for enhancing the engagement of non-Arctic states (and other non-Arctic actors) in Arctic affairs, while at the same time protecting the interests both of the Arctic states and of the region's permanent residents. As a result, policy makers should "mix and match."
- ⑤ Engagement is a two-way street: A balanced approach stressing both interests and responsibilities will be the key to progress in navigating the Arctic/non-Arctic interface.
- ⑥ The Arctic Council is evolving as a central forum for Arctic state/non-Arctic state engagement. However, there remains significant frustration about the effectiveness of existing structures and arrangements.
- ⑦ As the connections between the Arctic and the global system become stronger, there is a growing need to think about distinguishing between regional issues that can be dealt with effectively in Arctic venues (e.g. the Arctic Council) and transregional issues that require action within broader international or global venues in which

interested non-Arctic states are able to participate on an equal basis.

PART IV: INNOVATIONS APPLICABLE TO THE ARCTIC

The two thematic papers and four commentaries in Part IV explore technological innovations applicable to the Arctic. The first paper focuses on a major project involving the construction of a new fiber optic cable along Canada's Mackenzie River valley. The second paper presents the development of Korea's new ice model tank.

The four commentaries note the importance of several key Arctic R&D issues: the need for better coordination and collaboration in research strategies of the eight Arctic states and twelve non-Arctic state observers; the need to establish a compendium of Arctic R&D efforts; the value of drawing lessons from the history of icebreaker technology going back to the 1890s; the significance of new hull forms and technical approaches to icebreaking ships that optimize energy and are more economical than current ships; the possibilities for using new Arctic routes based on advanced knowledge of ice thickness and ice coverage; the need for new infrastructure related to information systems that can monitor ice cover and thickness, and the importance of Korea's Arctic research investments reflecting substantial economic interests in the Arctic region.

The discussion identified additional Arctic technologies, some available today and others under development, including: seabed and under ice technologies and the need for better communication with these systems; ice navigation training systems and the simulation of voyages through sea ice; satellite monitoring of sea ice and the continuing challenge of more accurately measuring sea ice thickness; online education for those located in remote Arctic regions; telemedicine technologies and opportunities for enhanced delivery of health services; new technologies for Arctic communities (e.g., cold climate housing, renewable energy sources, sewage systems), and the technical and operational challenges of operating larger ships in a future Arctic Ocean.

Several key messages emerge from Part IV:

- ① There are many new Arctic technologies being developed, particularly in the maritime shipping and offshore energy sectors. Innovations are aimed at improving efficiency and enhancing

safety. The Arctic and Asian states in the NPAC partnership are all increasing their Arctic innovation and research budgets.

- ② NPAC should consider ways to coordinate and enhance collaboration among the various Arctic state and non-Arctic state national strategies for research in the Arctic. It would be helpful to create a compendium to document the full range of Arctic R&D activities and projects initially including strategies of these 20 leading nations.
- ③ One of the challenges of sharing R&D advances is the proprietary nature of much of the technology developed in the commercial world. Corporations around the globe pay great attention to intellectual property rights; these rights are increasingly accorded special protections by national and international laws.
- ④ Monitoring of ship traffic and environmental factors (such as sea ice) is tied closely to new advances in satellite and land-based observation technologies, including AIS and related systems. New technologies are needed for the measurement of Arctic sea ice thickness to improve understanding of changes in sea ice volume and improve maritime domain awareness in coastal Arctic regions.
- ⑤ The Arctic Council does not appear to have paid close attention to R&D issues. However, many technologies relating to Arctic climate change, marine operations, and environmental protection (for example, Arctic oil spill response and cleanup) have important implications for the work of the Council. Enhanced international cooperation in R&D will be essential in the years ahead. Innovators should present new and advanced Arctic technologies at meetings of the Arctic Council's working groups and in other council venues to improve the knowledge of diplomats and government experts regarding future technologies related to matters of environmental protection and sustainable development.
- ⑥ Arctic R&D should be linked more closely to the improvement of environmental stewardship. R&D today is too isolated to support direct policy making. Innovative technologies must be developed with the needs of indigenous communities in mind.

PART V: INDIGENOUS RESPONSES TO ARCTIC DEVELOPMENT

Part V comprises one thematic paper and three commentaries intended to enhance the understanding of non-Arctic policy makers and researchers regarding the circumstances of Arctic peoples and to explore opportunities for cooperation across this divide. Now that China, Japan, and Korea are Arctic Council observers, they must consider the fact that there are six indigenous peoples' organizations sitting at the table with the Arctic states as Permanent Participants and participating in the activities of the working groups. The indigenous peoples of the Arctic will be impacted both positively and negatively by increased ship traffic and coastal and offshore development.

The contributors to Part V address five key questions about indigenous responses to Arctic development: (i) How will large-scale resource development in the Arctic affect nearby communities? (ii) Are there opportunities for local communities to benefit from resource development while remaining sustainable in social and cultural terms? (iii) Can Arctic communities assert and exercise rights in the face of resource development driven by outside private and public actors? (iv) Will increased participation in the Arctic Council on the part of observer states dilute or even drown out the voices of the Permanent Participants? and (v) How can indigenous communities across the circumpolar Arctic effectively participate in and influence the development of government policies in the non-Arctic state observers as well as in the Arctic states themselves.

Key messages drawn from this session include:

- ① *Changes Affecting Indigenous Peoples.* Climate and socio-economic changes are already producing significant consequences for indigenous peoples of the Arctic region, and these changes are accelerating. To a large extent, the sources of these changes are global. The indigenous peoples of the Arctic have inhabited the region for thousands of years and evolved a culture and way of life that depends on the natural environment as a source of food, habitation, and other necessities of life. The prospect of large-scale development of natural resources, the opening of Arctic seaways, and demographic changes driven mainly by global forces are requiring these communities to adapt to mixed-economies and conditions that

are outside their historical experiences. The Inuit, Saami and other indigenous peoples have long histories of ingenious adaptations to changing conditions. Current trends in economic development raise a sense of vulnerability as the world comes north. These indigenous communities perceive that they are being asked to open their historic homelands to help support the world with northern resources, giving rise to a wave of development activities in which Inuit and others are asked to leave their subsistence-oriented cultures and become miners, oil/gas roughnecks, construction workers, or employees of development-based service industries. These are dramatic changes in their way of life. As Sheila Watt-Cloutier puts it in her paper: “*All of this has confirmed that the Arctic is an area of utmost importance in the minds of global policy-makers, economic decision-makers, and researchers. But this interest needs to be better informed by an awareness of what is happening to the largely indigenous and subsistence-oriented communities that provide the human face of the Arctic.*”

- ② ***Framing an Indigenous-Oriented Action Perspective.*** In general, Arctic communities are modest in size; they do not have significant political power or economic influence at the national and international levels. But they feel that they are the heart and soul of the Arctic. As Watt-Cloutier says: “I believe we must reframe the current debate, adopting a *rights-based approach* to Arctic development.” She has worked intensively both on the problem of persistent organic pollutants and on the connections between human rights and climate change. Her presentations at NPAC 2014 and elsewhere have focused on seeing the issues holistically and on recognizing the human face of the issues. She asks that researchers, policy-makers, and industry leaders consider how to adapt to a *rights-based approach* to Arctic development. The contributors to Part V suggest that Arctic policies are typically framed in global terms and are not sensitive to what is right or good for our Arctic communities. Despite the problems of poverty in many Arctic communities, they suggest, it may be better to leave resources underground as a signal to the world that those who are affected by the negative impacts of globalization have rejected the attractions of large-scale resource development. They see the opportunities as attractive. But the issues of cultural sustainability and human well-

being dominate their hopes for a sustainable future. In her main message to the NPAC community, Watt-Cloutier asserts that a *rights-based approach* to Arctic development must be the foundation for planning the future of the Arctic taking into account the welfare of its peoples and their cultures.

PART VI: OPPORTUNITIES FOR INTERNATIONAL COOPERATION IN A CHANGING ARCTIC

Part VI contains the reflections of six conference participants who explore opportunities for international cooperation in a changing Arctic and emphasize concrete options from a variety of perspectives. In contrast to other parts of this volume, Part VI does not begin with a thematic paper. Rather, this Part contains a record of a focused discussion in which six experts respond to a series of specific questions about opportunities for international cooperation in the Arctic. Panelists responded to three questions provided to seed the conversation: (i) Do recent biophysical and socioeconomic changes in the Arctic alter either the need for international cooperation regarding the region or the feasibility of achieving *effective cooperation* to address emerging needs? (ii) What are the appropriate venues for pursuing international cooperation regarding Arctic issues (e.g. bilateral settings, the Arctic Council, broader international venues like the International Maritime Organization)? and (iii) What is the proper division of labor in this realm among public arrangements, private initiatives, and public/private partnerships?

The discussion produced four key messages:

- ① *Visions of Arctic development and paths to sustainability.* In thinking about Arctic development, we often focus on the Arctic as a storehouse of natural resources of interest to advanced industrial societies located outside the region and assume that the emphasis will be on megaprojects requiring very large-scale capital investment and generating demands for cost-intensive infrastructure. But there is an alternative vision of Arctic development emphasizing smaller scale projects that are more compatible with sustainable development at the subregional and community levels. There is a tension between these visions with the megaprojects being preferred

by large multinational corporations and state-owned enterprises as well as by regional and national governments that see them as sources of tax revenues and the smaller scale projects being preferred by Arctic communities that see them as more compatible with rights-based development. These visions are not necessarily incompatible; both megaprojects and smaller scale projects can proceed at the same time. But the two types of projects present different issues regarding international cooperation, and the conditions governing their success are likely to be different.

- ② ***Funding mechanisms.*** A recurrent theme in the session centered on funding mechanisms that may be available to provide the resources required to implement international agreements. The panelists discussed a variety of mechanisms including: multilateral arrangements (e.g., a development bank oriented toward financing Arctic projects), international banking consortia, a dedicated funding arrangement operating under the auspices of the Arctic Council, bilateral arrangements managed by public agencies, purely private project funding, and various forms of public/private partnerships. Panelists and other participants debated the relative merits of these different mechanisms. Commentators also sought to clarify and evaluate experience with the Nordic Environment Finance Corporation (Nefco), the Project Support Instrument (PSI) associated with the Arctic Council, and the funding arrangements operating under the Barents Euro-Arctic Region. One practical suggestion called for the development of a menu of alternative funding mechanisms relevant to the Arctic to serve as the basis for a systematic assessment of the strengths and weaknesses of individual options as sources of support for specific initiatives involving Arctic cooperation. Most speakers expressed the view that the challenge is to develop the skill needed to make use of a variety of funding mechanisms, selecting the most appropriate arrangement on a case-by-case basis.
- ③ ***Role of the Arctic Council.*** Although international cooperation can take a variety of forms, there was extensive discussion of the role of the Arctic Council as a particularly important means of organizing cooperation relating to the Arctic. The Council has accomplished a lot. But there are problems with this arrangement as a mechanism for organizing cooperation going forward. The Council

launches lots of projects but has little capacity to follow through to determine whether the projects achieve their intended goals. The Council lacks an adequate funding mechanism of its own; it is at the mercy of those who are prepared to provide funding to carry out various initiatives. There is a widening gap between the Senior Arctic Officials and the working groups, a situation that can lead to incoherence in the day-to-day activities of the Council. No solution has emerged for the problem of providing adequate support to allow the Permanent Participants to engage fully with the growing array of Council activities. The observers are still not integrated adequately into the activities of the Council. The role of the Arctic Economic Council, initiated under the current Canadian chairmanship, remains unclear. Some participants suggested that it would be timely to initiate a general review of the structure and procedures of the Council with the goal of enhancing its capacity during the coming years to orchestrate international cooperation regarding Arctic issues. Others felt that such an effort would consume a great deal of time and energy and might well fail to produce useful results. Overall, it seems clear that the Arctic Council will be central to the pursuit of international cooperation regarding Arctic issues. But there is no consensus on how to maximize the effectiveness of the Council going forward.

- ④ ***Broader factors.*** In reflecting on opportunities for international cooperation, we tend to think in terms of political calculations or in terms of somewhat narrow benefit/cost calculations. Of course, such considerations are central to any assessment of the prospects for international cooperation. But they do not tell the whole story in this regard. There is a need to build trust and confidence across cultures and across levels of social organization. There is also a need to develop operating principles that can underpin cooperative initiatives and to encourage the emergence of honest brokers who are able to facilitate communication among all parties and to craft the terms of agreements that are acceptable to all those engaged in cooperative activities. One concrete step that might help in this regard would be to emphasize the importance of open information/data and to take steps to ensure that all parties concerned are on an equal footing regarding the best available information about the issues at stake.

CONCLUSION

We began NPAC 2014 by posing a set of challenging questions about the prospects for international cooperation in a changing Arctic. The contributions included in this volume provide some tentative answers to these questions. But many important issues remain to be addressed in a compelling manner. These include: the implications of climate change in the Arctic for both Arctic and non-Arctic actors; the future course of the commercialization of the Arctic Ocean; the rising concern for marine stewardship in the Arctic; the impacts of global geoeconomic and geopolitical forces on the Arctic, and the dynamics of multilevel governance affecting efforts to maintain the Arctic as a zone of peace and prosperity. These and other related concerns will provide a rich array of topics for discussion during the 2015 NPAC. As always, the goal will be to identify emerging issues and opportunities for cooperation and to provide a forum in which both policy-makers and analysts can exchange ideas about these issues in an informal and wide-ranging discussion proceeding under the Chatham House Rule.