



Arctic and International Relations Series



The Many Faces of Energy in the Arctic



JACKSON SCHOOL OF INTERNATIONAL STUDIES
UNIVERSITY *of* WASHINGTON
Canadian Studies Center

Canadian Studies Center
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Preface

This issue of Arctic and International Relations Series is dedicated to the long-standing relationship between the Canadian Studies Center, Henry M. Jackson School of International Studies, and the Foundation for Educational Exchange Between Canada and the United States of America, Ottawa (Fulbright Canada); and the more recent collaboration between the our Center and the Fulbright Program, the Bureau of Educational and Cultural Affairs, United States Department of State.

This year celebrates the tenth anniversary of our partnership with Fulbright Canada. In 2006 we signed an agreement for a Canada Fulbright Visiting Chair in Canadian Studies. In 2012 that agreement was renegotiated and became the first Fulbright Chair in North America to focus on the Arctic – the Canada Fulbright Visiting Chair in Arctic Studies. The agreement would also extend to include College of the Environment in a vision to create a truly interdisciplinary approach to Arctic issues. The UW sponsoring units include the Office of Global Affairs, the Henry M. Jackson School of International Studies, Social Sciences Division, College of Arts and Sciences, and College of the Environment. The Canadian Studies Center serves as host for the Chair. Every year a scholar or practitioner with expertise in Arctic issues spends up to six months at the UW, and teaches one of the core courses for the new interdisciplinary minor in Arctic Studies.

To date, the UW has hosted five chairs in Arctic studies. These scholars have assisted in building one of the most vibrant Arctic Studies research and teaching programs in North America. Former Fulbright Visiting Chairs in Arctic studies include Claudio Aporta (2011–12), Director of the Marine Affairs Program, Dalhousie University; Sari Graben (2012–13), Department of Law and Business, Ted Rogers School of Management, Ryerson University; Tony Penikett (2013–14), consultant, Vancouver, British Columbia; Joel Heath (2014–15), Executive Director, Arctic Eider Society and Director/Producer of the award-winning feature film *People of a Feather*; and Heather Nicol (2015–16), Department of Geography, Trent University. We are pleased to announce the 2016–17 Canada Fulbright Visiting Chair in Arctic Studies – Kent Moore, Department of Chemical and Physical Sciences, University of Toronto, Mississauga.

In 2015 the US Fulbright Program launched an interdisciplinary collaborative research initiative focused on the Arctic region. The Fulbright Arctic Initiative (FAI) supported a team of scholars and researchers from the Arctic Council member countries to research and assess the impact of change in the Arctic and engage in collaborative thinking, analysis, and problem solving. This issue of *Arctic and International Relations Series* features the work of a number of those scholars who were part of subgroup focused on energy issues in the Arctic.

In this past year, we had the opportunity to host three of the energy scholars: Gunhild Hoogensen Gjørsv, UiT The Arctic University of Norway, Tromsø, Norway; and Maria Tysiachniouk, Centre for Independent Social



Gunhild Hoogensen Gjørsv, front (blue jacket), and the 2016-17 Fulbright Arctic Initiative scholars in Iqaluit, Nunavut, Canada in May 2015.

Research, St. Petersburg, Russia, who each served a short residency at UW; and Noor Johnson, currently a Research Scientist with the National Snow and Ice Data Center, Cooperative Institute for Research in Environmental Science, University of Colorado, who was invited to give a talk on her research concerning Inuit knowledge and global environmental politics. All three FAI scholars played a role in enhancing the vibrancy of Arctic Studies at the UW and in assisting the Center in building international research networks. Both Gunhild and Maria participated in several of UW's Future of Ice meetings, including our first Polar Day, and both met with the students from the Task Force on the Arctic to advise them on their research projects.

We would like to extend a special thank you to Gunhild Hoogensen Gjrv for serving as special editor for this issue, *The Many Faces of Energy in the Arctic*, and for bringing together the tremendous team of scholars whose work is featured here. Together, the policy papers in Issue #4 address Arctic energy concerns from a circumpolar perspective, including from Canada, the United States, Russia, Norway, Greenland, and Iceland, and take into consideration the question of community consultation. Of any issue facing the Arctic region today, energy security is one of the most critical, particularly in the context of global warming and Indigenous rights.

The existence of significant energy reserves in the Arctic has raised major issues associated with the management of these resources. The issues involve national interests related to where the resources are located and where they would be extracted but also issues of social justice where Indigenous people are involved. Extraction methods have the potential to contaminate huge areas for periods of time in excess of the lifetimes of inhabitants, human and otherwise. The decline in the intensity of extraction is not a consequence of the goodwill of the drilling industry, but rather is due to the low market prices that both oil and gas bring and the sanctions that many nations around the world have imposed upon Russia. The current lull in the development of Arctic offshore resources presents opportunities to develop and enhance mechanisms for communication of planned extraction activities as well as activities to minimize the likelihood of accidents that will contaminate the environment.

It is difficult to generalize the impacts, both positive and negative, of resource extraction across the Arctic. In addition, these impacts are felt differently across the circumpolar world from environments where there remain remnants of the Soviet era and a dependence upon a central governmental authority, to areas where strong paternal relationships exist between the extraction industry and northern peoples, to areas where more democratic and socially responsible traditions have developed. This is reasonable since the history upon which the relationships in the Arctic are built rests upon national traditions such as seen in Canada, the United States, West Europe, and Russia. As one examines the various relationships, the notion of sustainability must enter and with that so does the notion of climate change, specifically Arctic warming and its associated implications for coastal erosion and increased rainfall, migration of species northward from the south, and even the potential extinction of some Arctic species.

We hope that this issue of *Arctic and International Relations Series* adequately raises the complexity of the issues involved in what would otherwise appear to be a simple issue of avoiding oil spills. These considerations and other concerns of resource extraction must be carefully considered so that future generations of Northerners can experience health and well-being.

We would like to thank the UW supporting units for the Canada Fulbright Chair in Arctic Studies (mentioned above), and our colleagues at Fulbright Canada for supporting the on-going partnership between our two institutions. We also wish to thank Dr. Joanne Muzak, copyeditor, and Monique Thormann, Director of Communications for the Jack-

son School of International Studies for their expert consultation; Alessandro Leveque from UW Creative Communications for his design abilities; and Monick Keo for her assistance in everything undertaken at the Center.

The Canadian Studies Center, Henry M. Jackson School of International Studies, was established in 1987 as a U.S. Department of Education National Resource Center on Canada with the Center for Canadian-American Studies at Western Washington University. The Canadian Studies Center, a member organization of University of the Arctic, oversees the Arctic and International Relations initiative in the Henry M. Jackson School of International Studies and serves as the hosting unit for UW's Canada Fulbright Chair in Arctic Studies and the interdisciplinary minor in Arctic Studies (a partnership between the Jackson School and the School of Oceanography).

Arctic and International Relations Series is the outcome of a partnership between the Canadian Studies Center/Arctic and International Relations and the International Policy Institute in the Jackson School of International Studies (supported by funding from Carnegie Corporation of New York), and UW's Future of Ice initiative. The series is dedicated to translating scholarship into policy options to enhance understanding of the Arctic as a unique region in international affairs and to support the inclusion of Arctic Indigenous peoples in policy shaping for the region.

Issue #4 was made possible by Title VI grant funding from the Office of Postsecondary Education, International Education Program Services, U.S. Department of Education, a grant that supports research in international studies and on critical issues in world affairs; and the International Policy Institute in the Jackson School (supported by funding from Carnegie Corporation of New York) to bridge the gap between scholarly work and policymakers dealing with complex international issues.

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The Fulbright Arctic Initiative (FAI) – Letter from the FAI Chairs

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The Arctic faces complex sustainability challenges that are critical to the social and economic well-being of its communities. There is a critical need for more interdisciplinary research designed to inform policy decisions in areas such as community health, energy development, environmental protection, climate change response, infrastructure, and governance. This collection of papers authored by Fulbright Arctic Initiative scholars demonstrates the value of international collaborative research across disciplines to move toward a more sustainable Arctic future.

The work presented here is an outcome of the Fulbright Arctic Initiative sponsored by the US State Department's Bureau of Educational and Cultural Affairs. This initiative was created in 2015 to initiate new research broadly supportive of the US Arctic Council Chairship (2015–17) priorities in the focal areas of improving economic and living conditions for Arctic communities; Arctic Ocean safety, security and stewardship; and addressing the impacts of climate change.

The Fulbright Arctic Initiative brings together 19 scholars in diverse fields from the 8 Arctic nations to work on individual research projects and in teams on energy, water, health, and infrastructure problems. The scholars were organized into thematic research teams with the goal of creating interdisciplinary dialogue and diversifying international perspectives on solutions to pan-Arctic problems. The energy research group was formed to consider a set of interlocking challenges: How will oil, gas, and other natural resources be developed in the Arctic? What can be done to promote clean renewable energy, reduce pollutants, guarantee the inclusion and rights of Indigenous people, and protect the environment?

The Fulbright scholars in this issue bring energy expertise bridging the fields of anthropology, engineering, international law, political science, and environmental science. They consider the role and impacts of extractive industries and the many opportunities and challenges presented by the transition to a renewable energy future for the Arctic.

The Fulbright Program was established in 1946 “to increase mutual understanding between the people of the United States and the people of other countries.” The work produced by the Fulbright Arctic Initiative demonstrates the power of international cooperation and interdisciplinary collaboration to create policy-relevant research to solve problems facing the Arctic and the world.

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INTRODUCTION

The Energy in the Arctic

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The inaugural Fulbright Arctic Initiative (FAI) program is moving into its final phases, and FAI scholars are looking towards finding new and continued synergies between their research efforts. The articles in this issue of the *Arctic and International Relations Series* represent the excellent work done by scholars contributing to the theme of “energy” for the FAI project. This collection exemplifies not only the FAI team’s diverse approaches to energy but also the Arctic researchers’ energy and dedication to scholarship itself. This volume presents the independent, individual projects by some of the FAI scholars. Though each author addresses the issue of energy from a different perspective, their combined efforts tell a comprehensive story about energy in the Arctic and the ways in which energy issues will likely develop in the future.

It was not a foregone conclusion that such diverse research projects would coalesce in such a way that together they could provide a well-rounded and insightful view into the role of energy in the Arctic. The volume is divided into three different sections, telling different parts of the Arctic energy story. The first section addresses “Listening and Learning” and focuses on the importance of community engagement and consultation with government and industry to ensure that all voices are at the negotiating table when energy needs and issues are at stake in the Arctic. The first article in this section by Noor Johnson reveals the challenges involved in ensuring adequate community consultation whereby what is required by law is not always reflected in practices on the ground. She further reflects upon mechanisms that could improve the consultation process, to the benefit of all concerned. Maria Tysiachniouk examines benefit-sharing practices between extraction industries and local communities, and concludes that benefits are not negotiated equally or evenly amongst Indigenous communities in the Russian Federation. She identifies different types of benefit-sharing practices and discusses the ways in which Indigenous groups may indeed be harmed by some of the arrangements. Anne Merrild Hansen further explores the relevance of consultation by examining processes of impact assessments in the case of Greenland, drawing upon experiences from Alaska, which has similar social structures to those in Greenland. Hansen uses social disruption and boom-bust theories to assess the benefits and potential of impact assessments in Greenland.

The next section is concerned with the next stage and examines approaches to “implementing” energy options in the Arctic. Greg Poelzer looks at the options governments and communities have in meeting their energy requirements while mitigating against climate change and explores renewable energy options for Arctic communities. He focuses on the experiences of Northern Saskatchewan and the provincial government’s commitment to reduce the province’s reliance on non-renewable energy resources while increasing Indigenous community well-being through cleaner energy options. Gwen P. Holdmann makes the case for knowledge export industries drawing upon the experiences and knowledge generated from the geothermal resource development in Iceland. She argues that the sharing of such knowledge provides new opportunities for small communities looking for better energy options. Laura Sokka makes us think critically about the ways in which we explore renewable energy options, focusing on forest biomass as a renewable alternative that has both positive and negative impacts. Without developing this resource in a balanced and

sustainable way, it is possible that the use of forest biomass could produce increased carbon emissions rather than mitigate against climate change.

The final section looks at energy in the Arctic in broader terms, from international law to energy and environmental security. Bjarni Már Magnússon examines the implications of the United States' continued refusal to become a signatory to the United Nations Convention on the Law of the Sea (UNCLOS) that impacts jurisdiction over the two hundred nautical mile zone. Although the United States has made sound arguments in its insistence to not become a party to the convention, Magnússon argues that the United States nevertheless benefits more by joining this important mechanism of international law. Finally, I take a look at the tensions evident between energy and environmental and economic security, and how these tensions potentially play out at different levels of analysis – from the individual and community to the state and the international domain. I argue that understanding energy security in the Arctic means taking seriously the values and priorities of Arctic communities, as well as the ambitions of the state, to attempt to find the best balance in energy policy.

It is said that the Arctic is the proverbial “canary in the mine” where climate change is concerned. Energy security today is inextricably linked to changes in the climate and the decisions Arctic states and communities make regarding their energy options. This volume attempts to explore important stages in making these decisions: from increasing our understanding of community needs through consultation and fair and equitable practices in sharing the benefits of these energy choices, to breaking new ground in energy options by pursuing renewables. These decisions have local, regional, national, and international implications. They will impact the future development of legal agreements and cooperation in the Arctic, as well as the values of Arctic communities and states that are considered integral to the long-term survival of the northernmost region on the planet.

ACKNOWLEDGMENTS

Many thanks to the Fulbright Arctic Initiative scholars who have contributed to this publication and to the University of Washington for supporting this important endeavor.

Gunhild Hoogensen Gjørsv is Professor of International Relations (Political Science) at the University of Tromsø – The Arctic University of Norway.





Part 1: Listening and Learning

Knowledge and Community Consultation in Offshore Decision Making in the Canadian Arctic

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SUMMARY

Arctic nations are legally required to consult with Indigenous peoples in resource development decision making on traditional territories, particularly when it will affect subsistence practices and rights. In Canada, meaningful consultation is guaranteed by the Constitution's recognition of treaty rights as manifested in modern land claims. Although legally required, consultation is often practiced in ways that are unsatisfactory to Indigenous communities involved. Some challenges associated with consultations related to offshore oil and gas exploration in Canada include problems with availability and communication of information, problems with participation in consultation, and problems inherent to the underlying intent of consultation. The current pause in offshore exploration presents an opportunity to improve mechanisms for participation in consultation and knowledge production to guide future decision making.

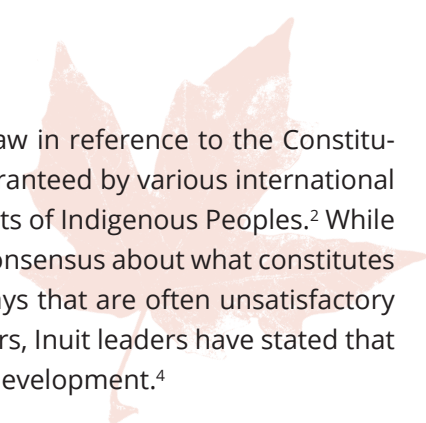
BACKGROUND

The Arctic Ocean, ice-covered for a significant part of the year, is a critical life support system for diverse species, including birds, fish, marine mammals, microscopic plankton, as well as the human species. For millennia, Indigenous Arctic residents have hunted and fished in the Arctic Ocean and in the terrestrial rivers that feed it. While these subsistence uses persist, the Arctic marine environment is increasingly claimed for other uses, including as a transit way for commercial ships and ship-based tourism, a venue for commercial fisheries, and a frontier for oil and gas companies seeking new repositories for potential development.

In Canada, Arctic offshore development is primarily governed by national government institutions. Indigenous and Northern Affairs Canada (renamed in 2015 from its former name, Aboriginal Affairs and Northern Development) oversees offshore exploration, while the National Energy Board has jurisdiction over offshore drilling. Regional land claims specify mechanisms for Indigenous participation in natural resource decision making, including co-management boards. These mechanisms create formal frameworks through which residents are able to contribute local and Indigenous knowledge and observations relevant to offshore development.

The western Canadian Arctic has seen offshore exploration in the Beaufort Sea since the 1970s; the Inuvialuit Settlement Region (ISR) was created through a land claims process oriented in part towards increasing Inuit involvement in decision making in relation to the oil and gas sector. In contrast, oil and gas exploration in the Baffin Bay region of Canada adjacent to Nunavut Territory has been relatively limited. In 2014 the National Energy Board approved a five-year seismic testing proposal for Baffin Bay by a consortium of companies that was then challenged through a series of legal and activist strategies initiated by the Hamlet of Clyde River. Community concerns were raised both about the potential impact of seismic testing on marine life as well as about the process of consultation implemented prior to the proposal's approval.¹

¹ Noor Johnson, Shari Gearheard, Jerry Natanine, and Shelly Elverum, "Community Actions to Address Seismic Testing in Nunavut, Canada," *Practicing Anthropology* 38, no. 3 (2016): 13–16.



The right to meaningful consultation has been established by Canadian common law in reference to the Constitution Act's Section 35 recognition of treaty rights; meaningful consultation is also guaranteed by various international agreements to which Canada is a signatory, including the UN Declaration on the Rights of Indigenous Peoples.² While consultation is guaranteed through these legal mechanisms, there is little clarity or consensus about what constitutes meaningful consultation.³ In practice, consultation is conducted unevenly and in ways that are often unsatisfactory to Arctic residents. Because oil spills and accidents pose risks to their lands and waters, Inuit leaders have stated that Inuit should have a significant role in decision making about all aspects of offshore development.⁴

For this Fulbright Arctic Initiative research project, I visited the ISR and Nunavut to research how communities are involved in decision making about offshore oil and gas exploration. Given the different historical and contemporary relationships with offshore exploration in the two regions, my project examined how different actors evaluate the success of consultation and how consultation practices could be adapted to better support decision making for social and environmental sustainability. I interviewed residents of three coastal communities (Tuktoyaktuk in the ISR, and Clyde River and Pond Inlet in Nunavut), as well as individuals working with land claim organizations and government agencies in both regions. Interviews focused on the role of consultation and way that different kinds of knowledge (based on conventional and Indigenous science) inform how individuals assess risk and opportunity in offshore decision making.

CHALLENGES IN CONSULTATION PROCESSES

Overall, while there is a clear legal requirement for consultation about offshore development, in practice, consultation is conducted unevenly and in ways that are often unsatisfactory to Arctic residents. Preliminary analysis of interviews conducted with residents of Nunavut and the ISR about recent offshore consultation processes reveals a number of challenges and concerns that can be grouped into three themes, as summarized below:

- 1) **Problems with the availability and communication of information.** This includes concerns about the state of knowledge of current and potential impacts on the Arctic environment, issues related to information sharing and communication through consultation, and issues with incorporating Indigenous knowledge into monitoring, assessment, research, and decision making.

Interview participants pointed to the relative paucity of research on the risks associated with both seismic testing and oil spills; many residents felt that more information was needed for informed decision making. Of particular concern were the uncertainties that emerge from cumulative impacts of climate change, development, and shipping in the marine environment. Participants also felt that the environmental knowledge that they shared as part of consultations was not always taken seriously and that mechanisms to formally involve their knowledge in decision making were weak or were not clearly articulated.

² The legal framework for consultation on offshore oil and gas is presented in greater detail elsewhere. See Betsy Baker, "From the Gulf of Mexico to the Beaufort Sea: Inuit Involvement in Offshore Oil and Gas Decisions in Alaska and the Western Canadian Arctic," *Environmental Law Reporter* 43 (2013): 10925–37. See also Dwight Newman, Michelle Biddulph, and Laurelle Binnion, "Arctic Energy Development and Best Practices on Consultation with Indigenous Peoples," *Boston University International Law Journal* 32 (Summer 2014): 449.

³ Newman, Biddulph, and Binnion, "Arctic Energy Development"; Charles K. Ebinger, John P. Banks, and Alisa Schackmann, *Offshore Oil and Gas Governance in the Arctic: A Leadership Role for the U.S.*, Policy brief 14-01, Energy Security Initiative, Brookings Institution, March 2014, <https://www.brookings.edu/wp-content/uploads/2016/07/Offshore-Oil-and-Gas-Governance-text-revised.pdf>.

⁴ Inuit Circumpolar Council, *A Circumpolar Inuit Declaration on Resource Development Principles in Inuit Nunaat*, 2011, <http://www.inuitcircumpolar.com/resource-development-principles-in-inuit-nunaat.html>.

Interview participants were also concerned about how information was shared through consultation processes. This included long lag times in getting responses to questions or requests for information that could not be addressed by representatives during consultations, themselves. These concerns also reflect a more general problem in Arctic research and governance in which community members are asked to participate in meetings, consultations, and research and then are not informed about results.

- 2) **Problems with participation in consultation.** Interview participants raised concerns about the design and implementation of consultations. They pointed to the fact that consultations are often outsourced to third parties; company representatives are often technical experts rather than senior decision makers. On the community side, consultations can be poorly attended or attended by those who hold strong views but do not represent the entire community. Given the many activities happening and the small size of most Arctic communities, residents often do not have time to stay informed about all relevant meetings in the community. Those with vested interests, such as individuals or families with small businesses that may benefit from development, are more likely to attend than others. Additionally, younger residents are less likely to feel free to speak up at public meetings, even though they are the ones who stand to benefit or lose the most from development projects in the long term.
- 3) **Problems inherent to the underlying intent of consultation.** Perhaps the greatest challenge related to consultation from the perspective of Arctic residents was the fact that they did not feel there was always a mechanism for refusal. In the case of seismic testing in Nunavut, potentially affected communities felt that they had clearly voiced opposition and yet the government had proceeded to issue a permit. This raised the question of intent: What was the purpose of consulting with communities in the first place if the final decision seemed disconnected from the input received? How could communities be confident that their views and knowledge were deeply considered? These questions and the anxieties they point to reflect the long historical experience of colonialism in Arctic communities that has marginalized residents from decision making.

CONCLUDING THOUGHTS

The past years have seen a retreat from offshore development in the Arctic due to declining oil prices and activism from environmental and social justice organizations. Yet interest in the Arctic offshore has always come in waves; there is a strong likelihood that these issues and questions have been delayed but not put to rest. The current lull presents an opportunity to invest in new systems of information gathering and sharing and better participatory mechanisms to involve Arctic residents in future decision making. Regardless of what happens in offshore energy development, it is clear that management of the Arctic marine environment will require some adaptation of current approaches.

At a minimum, consultation is intended to allow those who may be affected by a proposed activity to have a say in whether or not it should take place. The opportunity exists to rethink how consultation is practiced so as to make Arctic residents and Indigenous peoples – those most affected by development – central to the decision-making process. This should involve re-examining how information is shared through consultation processes and how diverse perspectives, including those of youth, are engaged. It should also involve laying the groundwork for future decision making by investing in community-led and -initiated research and monitoring, strategic environmental assessment, and other participatory approaches to knowledge production. These investments will help support collaborative

management of the Arctic marine environment that can address both anticipated and unanticipated challenges in the years and decades to come.

ACKNOWLEDGMENTS

The author acknowledges generous research support from the Fulbright Arctic Initiative. The Department of Anthropology and UAlberta North at the University of Alberta were gracious academic hosts. I am especially grateful for the participation and assistance of residents of Tuktoyaktuk, Clyde River, and Pond Inlet. *Quyanainni/Qujannamiik!*

Noor Johnson is a cultural anthropologist who specializes in issues related to Arctic communities, environmental change, and sustainable development.

Benefit-Sharing Arrangements in the Arctic: Promoting Sustainability of Indigenous Communities in Areas of Resource Extraction

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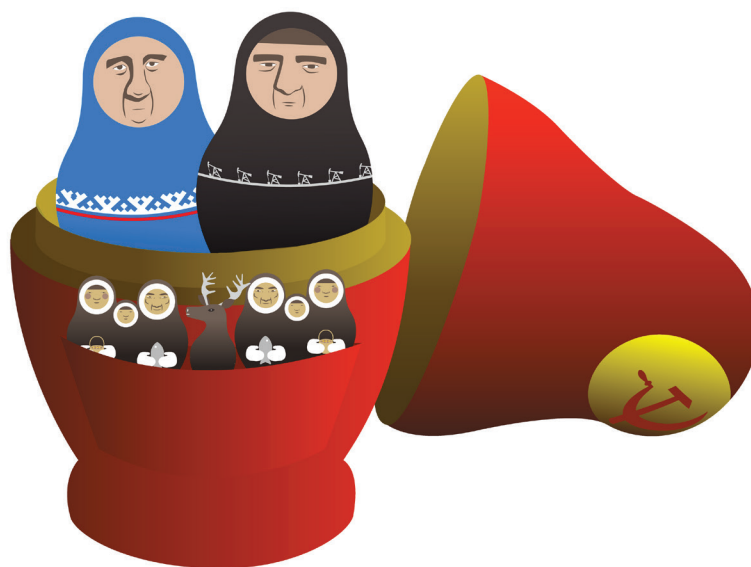
SUMMARY

Can the interests of both the extractive industries and Indigenous communities in the Arctic be balanced through the implementation of benefit-sharing practices in the places of resource extraction? Most transnational corporations in the Arctic oil and gas sector have declared their commitment to benefit-sharing arrangements that assist Indigenous communities and protect Indigenous rights to land and access to traditional resources, but the local implementation of these commitments is highly variable. Benefit-sharing arrangements between oil companies and Indigenous communities were investigated in several regions of Russia (Nenets Autonomous Okrug, Komi Republic, Yamalo-Nentsk Autonomous okrug, Irkutskaya oblast) and on the North Slope of Alaska (Barrow, Nuiqsut, Kaktovik). Research demonstrates that Indigenous communities are not equally benefiting from oil and gas extraction, and moreover many of them are harmed as the industrial development threatens their traditional livelihoods of hunting, fishing, and reindeer herding. The following analysis explains how different types of benefit-sharing arrangements impact Indigenous communities.

BENEFIT-SHARING ARRANGEMENTS

Benefits from oil extraction can be shared by oil companies with local communities in a number of ways: taxes, development of infrastructure, local employment, and through less formal negotiated benefits, such as sponsorship, compensation for damage, oil dividends, socioeconomic agreements, etc. Through field research and literature review, several ideal types of benefit-sharing arrangements have been identified that resulted in different outcomes for local communities and Indigenous peoples.

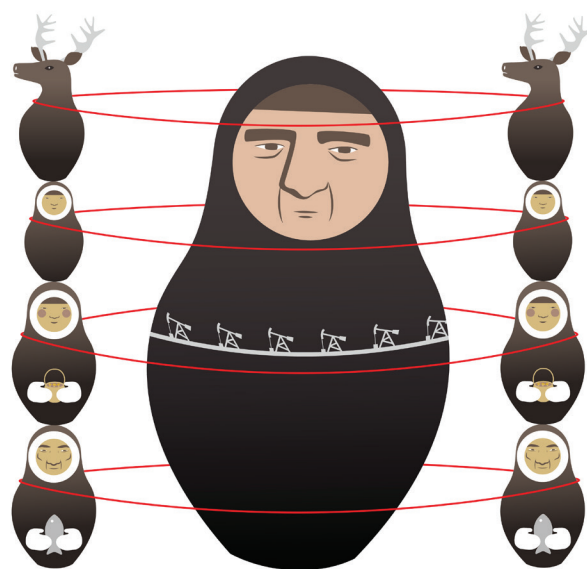
Paternalistic mode: The state is dominant in this mode and it monitors and intervenes in companies' corporate social responsibility. The company adds to or substitutes from the state's efforts to provide support to local communities and Indigenous peoples, who do not control delivery



Paternalistic way of benefit sharing

of benefits. In Russia, the paternalistic mode is rooted in the lingering effects of the Soviet past and often results in the Indigenous people's dependency on the oil companies. This mode of benefit sharing has been observed predominantly in Nenets Autonomous Okrug: oil money channeled to Indigenous communities through state-led socioeconomic partnership agreements was spent without control by Indigenous people. This resulted in housing provided to Indigenous reindeer herders that was not adapted to permafrost conditions, loss of money during construction projects, etc. Until 2013 direct socioeconomic agreements between oil companies and Indigenous enterprises involved only in-kind support as oil companies did not trust Indigenous people to manage their bank accounts, and the amount of money was dependent on reindeer herders' negotiation skills. Since 2013 these agreements have been substituted by formal compensation for damage to the pasture lands.

Corporate social responsibility mode: The oil company network is dominant in this mode. The company adopts globally developed standards coming primarily from the International Labour Organization convention, United Nations guidelines, the Arctic Council guidelines, standards of the European Bank for Reconstruction and Development, and the World Bank. Companies follow regional laws and informal practices of socioeconomic partnership agreements and/or compensation. Companies pursuing benefit-sharing arrangements take into account both global standards and local path-dependent practices in a minimalistic way. The corporate social responsibility mode involves socioeconomic agreements with regions and municipalities and results in compensation for damage, including sponsorship of cultural and sporting events. Involvement of Indigenous peoples in decision making related to benefit sharing is limited. This mode of benefit-sharing arrangements was observed in several Russian regions: Komi Republic, Khanti-Mansiyski Autonomous Okrug and Irkutskaya oblast.

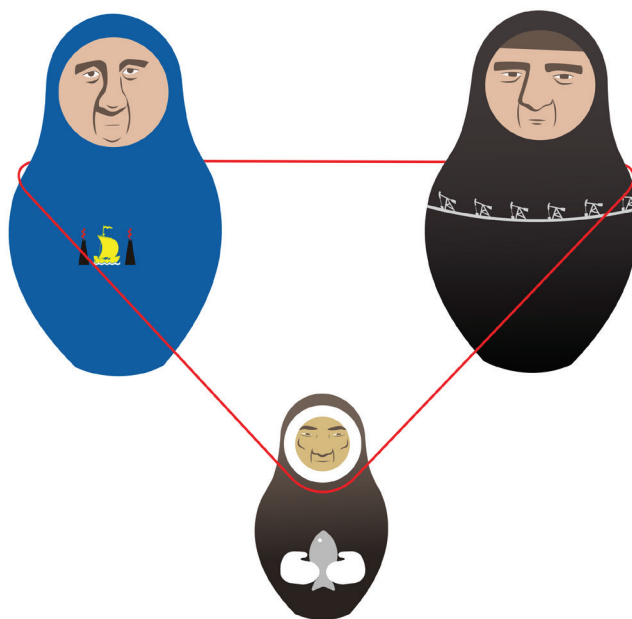


Benefit sharing as corporate social responsibility

Partnership mode: This type of benefit sharing takes the form of tripartite partnerships among the oil companies, government, and Indigenous communities and is a form unique to the Russian Federation. The partnership mode fosters development, empowerment, self-sufficiency, and participatory decision making in the Indigenous communities. This mode of benefit-sharing arrangements was observed in oil companies and operators of two large transnational consortia: Sakhalin Energy and Exxon Neftegas Limited in the sub-Arctic region of Sakhalin Island. Success of benefit-sharing practices depends upon the corporate policy of the consortium operator and on whether loans from investment banks are received. I show that Sakhalin Energy, through loans and investments, was profoundly influenced by the global rules of international financial institutions related to the environment and Indigenous people. The consortium adopted all global standards, including free prior and informed consent, and became subject to annual third-party evaluations. The benefit-sharing arrangement that evolved under these influences was relatively complex and was available to all districts populated by Indigenous people. It included the participation of Indigenous people in distributing grant funding to community groups. Although this approach was popular, it also generated some

conflict among community members around distribution of funds. In contrast, Exxon Neftegaz Limited depended less on loans and was not significantly influenced by international financial institutions. The resulting benefit-sharing arrangement was initiated by the head office of the company, yet mostly developed by the Sakhalin office. It is less complex and more flexible, including grant funding available to communities where drilling occurs, but not for other communities. It has been less prone to conflict than benefit sharing by Sakhalin Energy.

Shareholder mode: Benefit-sharing arrangements are extremely complicated and involve several layers of governance. In Alaska every resident annually receives Permanent Fund Dividends. Indigenous people of the North Slope are almost always shareholders of the Arctic Slope Regional Corporation (ASRC) and usually of one of the village corporations and receive dividends from both. ASRC contracts with many oil companies and receives royalties from oil extraction on Indigenous-owned land. The village corporation for the community of Nuiqsut (Kuupik Corporation), for example, is very successful, owns the surface title to the land, receives royalties through surface-use agreements with industry and with ASRC, is involved in oil-field services, and benefits from contracts with oil company ConocoPhillips. This results in significant dividends from Kuupik to its shareholders, while dividends from less successful village corporations may be much lower. ConocoPhillips provides additional support to the Nuiqsut, including free natural gas for the community, scholarships to students, and sponsorship of events, and contributes to community infrastructure. For unavoidable impacts to subsistence and culture, mitigation money will be provided through the Northeastern NPR-A Regional Mitigation Strategy currently under development. In addition, multiple benefits come to Indigenous people through the State of Alaska and the North Slope Borough, both of which receive taxes from oil infrastructure. The North Slope Borough is the largest employer, has its own hospitals and police, builds houses for Indigenous families, and funds schools. However, there are multiple conflicts and tensions in communities around benefit sharing and distribution of funds. Tensions emerge between the city, tribal government, and Kuupik Corporation in Nuiqsut around distribution of funds as these three governance entities have different interests. Tribal governments are not benefiting from oil, are more environmentally oriented, and are often not in favor of future oil development. The city government is usually neutral or pro-development, while Kuupik Corporation is pro-development. Therefore, difficulties occur in decision making around mitigation funds. Another set of tensions occur between those who are born before 1971 and younger “afterborn” people in Nuiqsut. ASRC and several village corporations give fewer rights to “afterborns,” but still provide shares, while the Kuupik Corporation distributes dividends only for those born before 1971 or who have inherited shares. Tensions continue within Indigenous families around gifted and inherited shares. Despite tensions, it is important to acknowledge that income from oil extraction is shared between companies and Indigenous communities, and Indigenous peoples have broad opportunities for economic development.



Benefit sharing via tripartite partnership agreement

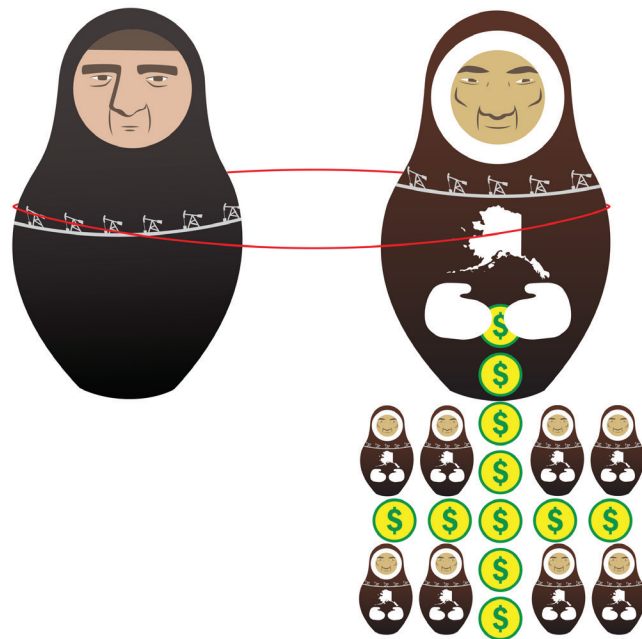
CONCLUDING THOUGHTS

Research demonstrated that benefit-sharing arrangements between oil companies and Indigenous people in the Arctic differ in both procedural and distributional equity. Indigenous people in all research sites become dependent on oil money and experience significant impacts from oil extraction on their subsistence lifestyle and culture. There is a need for further research on benefit-sharing arrangements between extractive industries and Indigenous communities across in the Arctic states. We urge the Arctic Council Sustainable Development Working Group to conduct a study with the aim of finding best practices, reproduction of lessons learned, and development of guidelines for companies on benefit-sharing arrangements.

ACKNOWLEDGMENTS

This work became possible with the generous support of the Fulbright Arctic Initiative, Finnish Academy Arctic Program (“Oil Production Networks in the Russian Arctic,” No. 286791) and the NWO, the Netherlands Organization for Scientific Research, Arctic Program (“Developing Benefit Sharing Standards in the Arctic,” No. 866.15.203). I am especially thankful to the Canadian Studies Center at Washington University for being a wonderful host during my Fulbright fellowship and providing me with excellent opportunities for research. I highly appreciate Giulia Landoio’s artwork, which was created especially for illustrating findings of this research.

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Shareholder type of benefit sharing

Managing the Social Impacts of Offshore Hydrocarbon Development in Greenland: Lessons Learned from Alaska

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SUMMARY

Oil development in Greenland is being pursued as a means to develop the economy and a path to increased economic and political independence from Denmark. Oil projects are expected to produce economic and social benefits for Greenlanders through job creation. To achieve the expected benefits, however, careful planning and project management are required. Development in Greenland is still in its early phases and no commercial discoveries have yet been made. To inform future regulation in Greenland and social impact assessment and impact benefit agreements in the case of a discovery, a study was conducted on social impacts of oil development on the North Slope of Alaska, as the settlements there have social structures that resemble the settlements in Greenland and have been subject to oil production since the 1970s. Based on theories on social disruption and boom-bust relations, the study identifies and discusses recommendations for future regulation and social impact management in Greenland.

BACKGROUND: A CHALLENGING PATH TO A SOUND DEVELOPMENT

According to the United States Geological Survey, the Greenland basin is estimated to contain 17 billion barrels of oil and potentially 138 billion cubic feet of natural gas.¹ Hydrocarbon development is therefore high on the agenda in Greenland. It is being pursued both as the means to develop the economy and as a path to increased economic and political independence from Denmark.² To ensure that negative impacts are mitigated and that positive outcomes are achieved, impact assessments have been implemented to promote sustainable development in the sector.³ Additional impact benefit agreements have to be negotiated between the affected communities, the government, and oil companies to ensure that social investments are made to secure long-term benefits for local communities.⁴ Offshore oil projects are expected to create significant revenues for national economies. At the same time, projects can have negative effects on nearby communities. Although governments and oil companies may have the best intentions to secure local benefits, this is not always the end result of oil ventures. Emphasis in social assessments is often placed on initiatives to train and educate locals and thereby prepare locals to take part in the ongoing development. But during interviews with residents in the settlements in the Upernavik district in Northwest Greenland in May 2013,⁵ community members expressed a clear aspiration to continue the traditional way of living, rather than take on potential jobs in the industry. Community members described their roles as fishers and hunters as a way of life – not just as a livelihood. At the same time, participants expressed an understanding that to secure a continued existence for

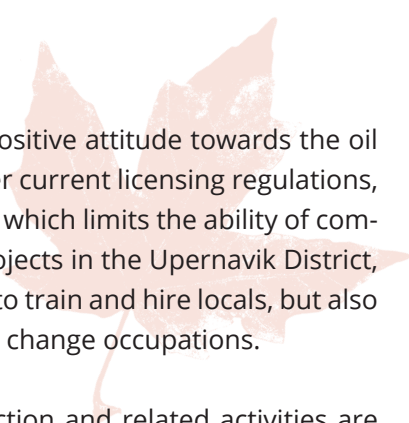
¹ K.J. Bird et al., "Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle," Fact sheet 2008-3049, U.S. Geological Survey, 2008, <http://pubs.usgs.gov/fs/2008/3049/>.

² A. Østhagen, "Dimensions of Oil and Gas Development in Greenland," The Arctic Institute, Center for Circumpolar Security Studies, Washington, DC, December 19, 2012.

³ A.M. Hansen, F. Vancly, P. Croal, and A.S.H. Skjervedal, "Managing the Social Impacts of the Rapidly-Expanding Extractive Industries in Greenland," *The Extractive Industries and Society* 3, no. 1 (2015): 25–33, <http://www.sciencedirect.com/science/journal/2214790X/3/1>.

⁴ A.M. Hansen and P. Tejsner, "Challenges and Opportunities for Residents in the Upernavik District while Oil Companies Are Making a First Entrance in Baffin Bay," *Arctic Anthropology* 53, no. 1 (2016): 84–94, <http://aa.uwpress.org/content/53/1/84.abstract>.

⁵ Ibid.



their communities, change was necessary. Some community representatives had a positive attitude towards the oil industry, which they saw as a potential facilitator of some of the needed change. Under current licensing regulations, companies cannot be licensed to engage in fishing/hunting and extractive production, which limits the ability of community members to participate in both. Securing a high degree of local labor in oil projects in the Upernavik District, and thereby securing local benefits, requires not only willingness from the companies to train and hire locals, but also legislative adjustments of the hunter licensing system and motivations of the locals to change occupations.

While Greenland is only in the early stages of hydrocarbon development, oil production and related activities are already the primary sources of income for the North Slope Borough of Alaska.⁶ People living in these northernmost communities in the United States are highly dependent on dividends and revenues from the industry to maintain their standard of living. Besides the direct economic impacts, recent studies found that the North Slope communities are subject to a variety of indirect socio-cultural changes, which reduce local benefits during oil activities and may challenge maintenance of the communities in the future if oil production stops.⁷ Based on interviews with residents and authorities in the rural villages of Barrow and Nuiqsut on the North Slope, combined with document analysis, the study contributes to a discussion on whether the villages are subject to the same type of development as have been identified in larger so-called boomtowns and if this can be expected in Greenland. Further, a number of recommendations have been identified for future regulation and social impact assessments in relation to hydrocarbon development in Greenland.

CONCLUDING THOUGHTS

The findings indicate that classical boomtown effects are occurring in villages on the North Slope of Alaska, but that there still is a need to develop a theoretical framework to address social disruption patterns in small rural Arctic communities impacted by hydrocarbon development. The results were further used to extract a number of lessons learned from the study presented, for future developments in Greenland. It is clear that the preparation for development is essential, and we must recognize that people with strong connections to the land and strong subsistence cultures will not necessarily experience the development as beneficial or desirable. Moreover, industrial developments can create internal disputes if not managed properly to support the existing culture but instead try to steer people into a modern society by taking jobs with typical schedules in the industry. Some people might choose such a career option. However, such a choice could contribute to internal divisions, especially if the people who engage in industry become wealthier and the traditional hunters become poorer – potentially turning hunting into something less respected or valued. It is important to remember that oil production is temporary but the social disruption may be irreversible. Furthermore, the money flowing from industry should benefit the locals, and to do so it must be spent wisely to support the residents now and for future generations. It is one if not the most indisputably critical issue to ensure that oil development and sustainable community development to go hand in hand.

ACKNOWLEDGMENTS

This work has been supported by a Fulbright grant through the Arctic Initiative. The content does not represent an endorsement or approval by the Government of the United States or any representative agency.

⁶ Dixie Dayo and Gary Kofinas, "Institutional Innovation in Less than Ideal Conditions: Management of Commons by an Alaska Native Village Corporation," *International Journal of the Commons* 4, no. 1 (2009): 142–59, doi: 10.18352/ijc.146.

⁷ Jack Kruse et al., "Modeling Sustainability of Arctic Communities: An Interdisciplinary Collaboration of Researchers and Local Knowledge Holders," *Ecosystems* 7, no. 8 (2004): 815–28, doi: 10.1007/s10021-004-0008-z.

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Part 2: Implementing

Renewing Indigenous Relations through Renewable Energy: Lessons from Northern Saskatchewan

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SUMMARY

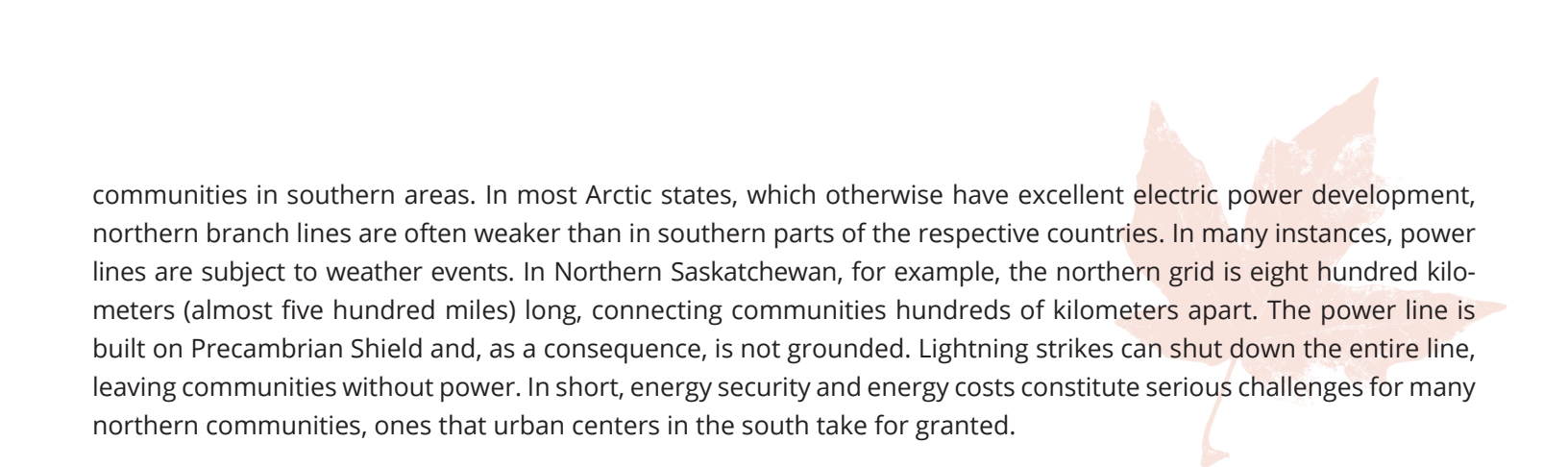
Climate change is a global problem; however, it presents significant and well-documented particular challenges to many Arctic and sub-Arctic communities. Recognizing the significance of these challenges, Canada committed to a policy goal of taking steps to restrict global warming to 1.5 degrees Celsius, not the traditional target of 2 degrees, at the 2015 Paris meetings on climate change – UN COP21. In parallel timing, one week prior to COP21, the premier of Saskatchewan – the Canadian province that is the largest per capita emitter of CO₂ in Canada – outlined his government’s goal to increase the province’s use of renewable energy to 50 percent and reduce greenhouse emissions by 40 percent within 15 years. These initiatives to mitigate the impacts of climate change may provide one of the most important opportunities to improve Indigenous well-being in Canada and provide important mechanisms to address pressing social and economic challenges in many Indigenous communities. The development of renewable energy has the potential to make important contributions in at least two ways: (1) to provide energy security to the community, with the potential to address, concomitantly, broader social issues, including food security; and (2) to support sustainable economic development, including employment and own-source revenue streams. This paper examines Northern Saskatchewan experiences in initiating new initiatives based on local solutions, and identifies important lessons that provide potential pathways forward.

CAVEAT: GREEN DOES NOT ALWAYS MEAN GOOD

Given the global imperative to tackle climate change by moving towards a carbon-neutral world, it is no surprise that many governments and societies see renewable energy deployment as the planet-friendly solution. We sometimes forget, however, that the development of renewable energy production facilities and transmission lines often have proven to be a source of considerable tension and conflict between Indigenous communities and government authorities. In Canada, James Bay in Northern Quebec stands out as a prime example, as does the more recent example of the Site C Dam in northeastern British Columbia. Renewable energy production and transmission does not have to be a source of conflict. However, if we assume that renewable energy is wholly benign and do not consult and engage with Indigenous communities as equal partners and in new and bold ways, we run the risk of repeating past mistakes.

ENERGY CHALLENGES

It is impossible to overstate the crucial role that energy plays in contemporary northern communities – electric power generation is literally a lifeline. Electric power is crucial for basic lighting for business, and small and large industry machinery and equipment; operating hospitals and schools; food storage for household consumption and export; and, in many communities, heating homes, schools, and community buildings during harsh winters. Many communities continue to be dependent on costly diesel plants for power production. These communities are subject to extremely high fuel transportation costs, as well as the volatility of global markets for fuel prices. While communities in Northern Saskatchewan are not traditionally defined as “remote” because they are connected on a main grid, these communities do not have natural gas and are dependent on electricity for heating. This translates into higher costs for businesses and households. Moreover, grid-tied northern communities are often more vulnerable compared to



communities in southern areas. In most Arctic states, which otherwise have excellent electric power development, northern branch lines are often weaker than in southern parts of the respective countries. In many instances, power lines are subject to weather events. In Northern Saskatchewan, for example, the northern grid is eight hundred kilometers (almost five hundred miles) long, connecting communities hundreds of kilometers apart. The power line is built on Precambrian Shield and, as a consequence, is not grounded. Lightning strikes can shut down the entire line, leaving communities without power. In short, energy security and energy costs constitute serious challenges for many northern communities, ones that urban centers in the south take for granted.

TOWARD INDEPENDENT INDIGENOUS POWER PRODUCERS

In Saskatchewan the provincial target to double renewable energy production in the production fleet of SaskPower, the Crown- (government-) owned electric power utility, by 2030 creates an enormous opportunity for First Nations to become independent power producers and for First Nations business development, employment, and own-source revenue. In contrast to mining, there is much greater opportunity for Indigenous participation in the development of renewable energy projects.

In Saskatchewan several initiatives have been undertaken to facilitate engagement of First Nations in the renewable energy sector. First, to help build First Nations industry knowledge in the renewable energy sector and to help facilitate power purchase agreements, the Federation of Sovereign Indigenous Nations and the Government of Saskatchewan created the First Nations Power Authority (FNPA). The FNPA is a not-for-profit organization that aims to create a landscape favorable to Indigenous inclusion in the power sector. FNPA was awarded the contract to install two solar power generation systems at Father Megret Elementary School in Hatchet Lake Denesuline First Nation and Father Gamache Memorial School in Fond du Lac Denesuline First Nation. The goals of these projects are designed to offset power consumption and reduce the high cost of keeping the schools operating. FNPA has ambitions to pursue larger projects to enable First Nations to development for-profit power facilities.

Another initiative is the conclusion of a power purchase agreement between SaskPower and the business arm of Meadow Lake Tribal Council (MLTC) in northwestern Saskatchewan. MLTC plans to build a biomass power plant that would use waste product from its forestry operations to fuel the biomass plant. The electricity sold to SaskPower would be an important source of own-source revenue as well as employment. Importantly, it would also provide a complementary industry to modulate the ups and downs of the forestry sector. In addition, the timber harvest licenses in the area are held by MLTC. This enables member First Nations of MLTC to manage forest resources in accordance with member community priorities and values. The development of a biomass plant would help meet the province's renewable energy goals and would create a more virtuous and sustainable circle of economic development and environmental management.

A third major initiative is the development of hydroelectric production at Black Lake First Nation, called the Tazi Twé Hydroelectric Project. Once built, this will be the first hydroelectric facility on a reserve in Canada and will produce about 50MW. There are other First Nations – owned small hydro facilities on traditional territories, but this would be the first on-reserve. The hydro facility will be “run-of-the-river,” or a type of hydroelectric plant that contains little to no water storage and only harvests the energy from flowing water. Moreover, the proposal was initiated by Black Lake First Nation, not SaskPower. The project has gone through numerous assessments and evaluations, a community referendum, and negotiations with the federal government because of waterways and the federal role in reserve lands. Importantly, Black Lake First Nation will have 30 percent equity ownership in the project, which is quite significant given

that the population is about 2,000 people, with 1,500 living on-reserve. The employment, training, and own-source revenue opportunities will be meaningful, sustainable, and very long-term.

CONCLUDING THOUGHTS

With Prime Minister Justin Trudeau's recent commitment to renew the nation-to-nation relationship with First Nations peoples, an investment in the development and operation of green energy presents an opportunity to concomitantly increase the quality of life for communities in Northern Saskatchewan and other parts of Northern Canada, actualize Canada's action on climate change and environmental protection, and assist Canada in becoming a global leader in the development and operation of green energy.

ACKNOWLEDGMENTS

I would like to thank the Fulbright Arctic Initiative, the UAA Institute of Social and Economic Research, the International Centre for Northern Governance and Development at the University of Saskatchewan, the Alaska Center for Energy and Power, and SaskPower.

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Exporting Knowledge from the Arctic: Lessons Learned from Iceland's Geothermal Energy Industry

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SUMMARY

How can small economies harness specialized Indigenous know-how to create business opportunities abroad? This paper describes key attributes of Iceland's "recipe" for the development of a successful knowledge export industry, based on experience gained through domestic geothermal resource development. These attributes include (1) targeted knowledge creation; (2) investment in projects domestically; (3) strategic foreign aid investments; (4) culture of entrepreneurship and innovation; (5) investment in education; (6) government advocacy; and (7) marketing and promotion. Very few of Iceland's programs and policies were designed specifically to create or support a knowledge export industry, but these seven factors have combined to create an environment conducive to the natural emergence of this sector. None are technology-specific, and most could be adopted by similarly small-market economies with niche expertise as discussed in the final section.

BACKGROUND: CHARACTERIZING ICELAND'S GEOTHERMAL KNOWLEDGE INDUSTRY

No other country on earth relies on geothermal energy to the extent that Iceland does. Approximately 85.3 percent of Iceland's primary energy is derived from geothermal resources, including heat and power (see Figure 1 and 2).¹ This investment has resulted in an estimated savings of over US\$14 billion for heating alone between 1970 and 2009, compared to fuel oil.² Organized development of geothermal resources began in 1930; however, the oil crises of the 1970s spurred the Icelandic government to make a conscious decision to proactively invest in renewable energy to replace imported fossil fuels.³ The policies enacted as a result set this tiny Arctic nation on a path to learn how to use geothermal energy years before most other countries considered its widespread application.

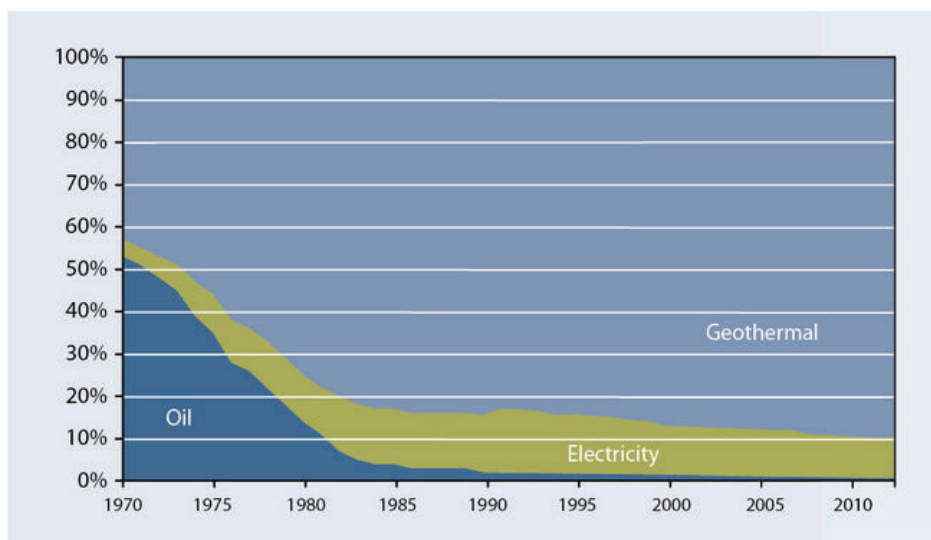


Figure 1 Space heating, 1970–2013
Source: Iceland's National Energy Agency

¹ Orkustofnun, "OS-2016-T002-01: Primary Energy Use in Iceland 1940–2015" (data file), 2016, <http://www.os.is/gogn/Talnaefni/OS-2016-T002-01.pdf>.

² Orkustofnun, "OS-2015-T009-01: Economic Benefits of Using Geothermal Energy Instead of Oil for Space Heating" (data file), 2015, <http://www.os.is/gogn/Talnaefni/OS-2015-T009-03.pdf>.

³ Björnsson Sveinbjörn, ed., *Geothermal Development and Research in Iceland* (Reykjavik: Orkustofnun, 2010), http://www.nea.is/media/utgafa/GD_loka.pdf.

As a tiny country with small economy, Iceland is limited in its ability to realize economic growth through sheer volume of capital spending. It is additionally hampered by a near total lack of exportable natural resources such as fossil fuels or minerals, fish being the primary exception. As a result, Iceland has had to rely more on other drivers of growth: human capital and knowledge. Geothermal energy has been a cornerstone for most sectors of Iceland's economy. Access to abundant, cheap, and reliably priced energy has been a boom to traditional industries such as agriculture, and has attracted offshore energy intensive industries, most notably aluminum smelting.

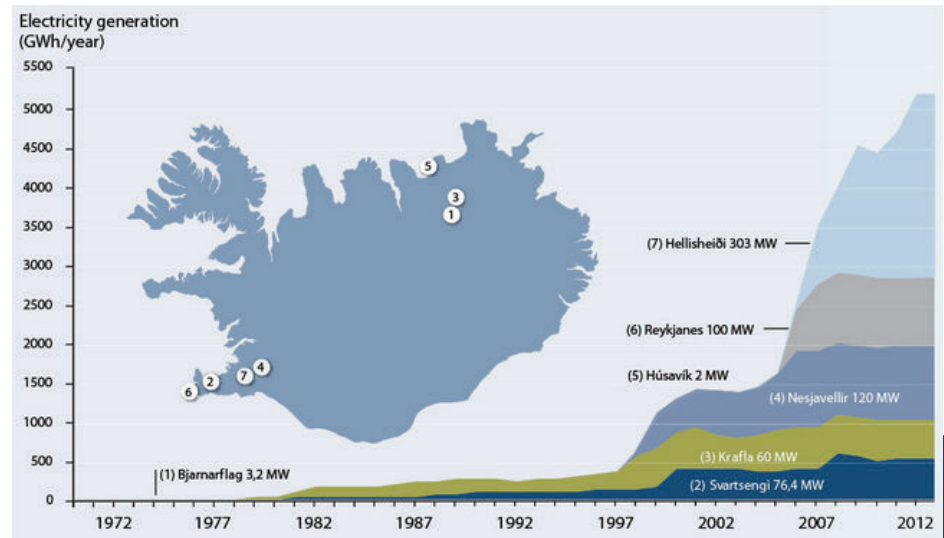


Figure 2 Generation of electricity from geothermal resources, 1970–2013
Source: Iceland's National Energy Agency

The creation of a geothermal knowledge industry has largely been a byproduct of Iceland's emphasis on renewable energy development, rather than a specific goal unto itself. Nonetheless, over time this sector has become a self-supporting – albeit small – industry in its own right. Understanding the specific drivers and policy implements that allowed this sector to emerge and thrive could be relevant to other small economies aspiring to a higher level of economic performance based on knowledge export.

There appears to be a specific constellation of seven primary factors that have contributed to success in Iceland's geothermal knowledge export economy. Future policies and strategies may seek to replicate these factors in other similarly small markets, especially since these factors are not technology-specific and could easily apply to other types of niche expertise.

First, Iceland invested in targeted knowledge creation that has resulted in world-recognized expertise in key subsets of the geothermal industry. Early in Iceland's organized expansion of geothermal development, the government invested in the creation of key knowledge centers that were necessary for successful project implementation. These include geophysics and geosciences through the Iceland Geosurvey, and drilling competency through the Icelandic Drilling Company. Both have since been privatized, although Iceland Geosurvey – the largest geothermal-oriented geosciences company in the world – is still wholly owned by the Icelandic government.

Second, investment in projects domestically. Demonstrated competence through world-class reference projects was identified as crucial by companies interviewed for this study for establishing their reputation in other markets. Because many of these projects are also located close to the capital of Reykjavik, they are easily accessible for visits by prospective customers. A specific example is the Geothermal Resource Park on the Reykjanes Peninsula, which is an industry park that showcases many of the creative and cascaded uses of geothermal energy employed in Iceland.



Third, strategic foreign aid investments. Many of Iceland's international aid programs, such as the Icelandic International Development Agency, have leveraged Iceland's expertise by supporting overseas geothermal projects. Another prominent example is Iceland's United Nations University Geothermal Training Program (UNU-GTP). The UNU-GTP is a cornerstone for Icelandic engagement in the developing world, and enjoys strong domestic support. One added benefit of Iceland's foreign aid program is intimate knowledge of resource data from beneficiary countries, which could present an advantage when bidding on projects.

Fourth, a culture of entrepreneurship and innovation. Iceland has a strongly entrepreneurial culture, rooted in Iceland's historically remote location, harsh climate, sparse population, non-class based society, and agrarian heritage. Historic expenditures on R&D compared to GDP are high in both the public and private sector, with most business R&D activities concentrated in knowledge-intensive services and high-technology manufacturing. In addition, Iceland's per capita academic publications in high-impact journals are at the top of the OECD area.⁴ An estimated 60 percent of journal articles include foreign co-authors, indicative of the strong global network Icelandic practitioners and researchers have developed.⁵

Fifth, support for tertiary education. The Icelandic education system is considered to be very good. Tertiary education is free in Iceland, including for international students. An exception is Reykjavik University, which is organized as a not-for-profit corporation, charges tuition, and attracts many foreign students. Reykjavik University's School of Energy has graduate programs in sustainable energy centered on Iceland's competencies in geothermal energy and hydropower, and whose explicit mission is to "provide each new generation with trained experts in the field of clean energy for a sustainable world."⁶

Sixth, government advocacy. Iceland's National Energy Authority (NEA) has a significant presence in international energy conferences and forums, with geothermal energy as a major focus. While the NEA's primary mission is domestic, it frequently serves the Ministry of Foreign Affairs as a subject matter expert, and manages the UNU-GTP on behalf of the ministry. The NEA's activities are a major factor in the widespread perception of Iceland as an honest broker and trusted partner in establishing a policy framework for geothermal development in emerging markets.

Seventh, targeted marketing and promotion. To the extent that marketing has occurred in the private sector, it was not strategically organized until the recent formation of the Icelandic Geothermal Cluster Initiative, which was formed in 2011 to "promote Iceland as the land of geothermal energy and geothermal utilization."⁷ However, former Icelandic President Ólafur Ragnar Grímsson, whose term in office ended in August 2016, was an unabashed advocate for Iceland's geothermal industry, and as a charismatic and sought-after speaker, he did much to increase awareness of Iceland's unique capabilities during his twenty-year tenure.

CONCLUDING THOUGHTS

It is difficult to appreciate how small Iceland is: fifty-eight US cities are larger in population than the entire country of Iceland.⁸ Nonetheless, small economies such as Iceland are not necessarily at a disadvantage if they maximize the

⁴ OECD, "Iceland," in *OECD Science, Technology and Industry Outlook 2014* (Paris: OECD Publishing, 2014), doi: 10.1787/sti_outlook-2014-en.

⁵ Ibid.

⁶ "Iceland School of Energy," Reykjavik University, <http://en.ru.is/ise/ise/>, accessed August 25, 2016.

⁷ Iceland Geothermal, *Iceland Geothermal Annual Report 2013* (Reykjavik: Iceland Geothermal, 2014), <http://www.icelandgeothermal.is/files/iceland-geothermal-annual-report-2013.pdf>.

⁸ *American FactFinder*, United States Census Bureau, Population Division, accessed May 21, 2016.

mileage they can gain from investment in physical assets and such as energy infrastructure, and fully leverage the potential of their human capital.⁹

With limited new opportunities for large geothermal projects domestically on the horizon, Iceland must not become complacent about its natural first-mover advantage. The geothermal industry is far from static and Iceland must work to maintain its leadership position. Nonetheless, current initiatives give reason for optimism that Iceland will continue to be a key player in the global geothermal industry for some time, and possibly even expand its influence in coming years. The future will depend in large part on the priorities of the new government, the success of initiatives such as the Iceland Geothermal Cluster Initiative, and continued support for some of Iceland's most successful tools of engagement, such as the UNU-GTP.

ACKNOWLEDGMENTS

I would like to thank the wonderful staff at Orkustofnun (Iceland's National Energy Authority) for hosting me during my Arctic Fulbright Initiative exchange, especially Director Gudni Jóhannesson who went above and beyond in facilitating my visit and making me feel at home.



A record 35 fellows representing 16 countries participate in the 2016 UNU-GTP.

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⁹ Shahid Yusuf and Karou Nabeshima, *Some Small Countries Do It Better: Rapid Growth and Its Causes in Singapore, Finland, and Ireland* (Washington, DC: World Bank, 2012), http://siteresources.worldbank.org/INTWBEUROPE/Resources/Some_small_countries_do_it_better.pdf.

Use of Forest Biomass for Climate Change Mitigation in the Arctic

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SUMMARY

During the 2015 United Nations Framework Convention on Climate Change conference held in Paris, the participating states agreed to aim to limit global warming to below 1.5 degrees Celsius above pre-industrialized levels. The target is extremely ambitious and its achievement will first and foremost require rapid replacement of fossil fuels with renewable energy carriers. The states of the Arctic region have vast forest resources, and boreal and tundra forests provide an essential source of raw materials both for the Arctic communities and for those states as a whole. Particularly in Finland and Sweden, most of the renewable energy use will stem from biofuels, most notably forest biomass. For the bioenergy use to be truly sustainable, it needs to be consolidated with other needs for the biomass. On the other hand, several studies have shown that the utilization of forest biomass, particularly for energy, is not always beneficial for climate change mitigation. Comprehensive studies are therefore needed to evaluate the different needs and impacts of forest biomass use in the Arctic.

BACKGROUND

The global climate is projected to warm by 3 to 4.5 degrees Celsius during this century if no new climate change mitigation measures are introduced.¹ Climate projections further indicate that the warming is going to be amplified in the Arctic region.² Rapid changes in climate imply changes in socioeconomic conditions as well. In the Arctic the physical and socioeconomic impacts of climate change are taking place in a situation of interconnected factors where the changes in climate are compounded by the existing vulnerabilities of the people in the region.³ For example, food insecurity of many Indigenous people is expected to increase with climate change.⁴ To efficiently mitigate climate change, renewable energy sources will need to become the primary energy sources in the future. The Arctic states have vast forest resources, and boreal and tundra forests provide an essential source of raw materials both for the Arctic communities and for the states as a whole (Table 1). Although only part of the forests in the Arctic countries is situated in areas north of the Arctic Circle, they are important contributors to

Table 1. Total forest area in the Arctic nations in 2010

Total forest area (1,000 ha)	
Canada	347,300
Denmark	587.1
Finland	22,220
Iceland	42.7
Norway	12,102
Russian Federation	815,140
Sweden	28,070
United States	52,206 ¹

Source: Food and Agricultural Organization (FAO), FAOSTAT, <http://faostat3.fao.org/download/G2/GF/E>

¹ Data for Alaska: Alaska Forest Association, 2015

¹ Ottmar Edenhofer et al., eds. *Climate Change 2014: Mitigation of Climate Change: Working Group III Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (New York: Cambridge University Press, 2014).

² J.N. Larsen et al., "Polar Regions," in *Climate Change 2014: Impacts, Adaptation and Vulnerability. Part B: Regional Aspects: Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, ed. V.R. Barros et al. (New York: Cambridge University Press, 2014), 1567–1612; James D. Ford, Graham McDowell, and Julie Jones, "The State of Climate Change Adaptation in the Arctic," *Environmental Research Letters* 9, no. 10 (2014): 104005, <http://iopscience.iop.org/1748-9326/9/10/104005>.

³ Larsen et al., "Polar Regions."

⁴ Brenda Parlee and Chris Furgal, "Well-Being and Environmental Change in the Arctic: A Synthesis of Selected Research from Canada's International Polar Year Program," *Climatic Change* 115, no. 1 (2012): 13–34.

national economies in many of the Arctic countries. In addition, climate scenarios predict that the boreal forest line is going to move north during the next century.⁵ According to the latest IPCC Assessment Report, boreal forests are expected to displace 11 to 50 percent of the tundra within hundred years.⁶ Many of these countries already utilize forest biomass in considerable quantities or have plans for increasing their use in the future. Bioenergy, originating to a large extent from forest biomass, is an important source of energy, particularly in Sweden and Finland (Table 2). Increased demand for bioenergy and bioeconomy mean increased competition for these forest resources and threaten their availability to the Indigenous people and local communities in the Arctic. To utilize the forest resources sustainably, more information is needed on which options provide the most climate benefits while simultaneously serving the social and economic needs of the Arctic people.

Table 2. Total electricity and heat production, and production from biomass in the Arctic countries in 2013 (data for Russia 2012)

	Total electricity	From biomass	Total heat	From biomass
Canada	651,920	5,230	7,470	11
Denmark	34,750	3,460	3,850	12,290
Finland	71,250	11,600	51,520	19,580
Iceland	18,120	0	6,620	0
Norway	134,240	210	7,140	997
Sweden	153,170	9,750	52,820	28,670
United States	4,306,160	58,520	125,950	7,880
Russia	1,070,730	0	1,779,880	40,150

Sources: IEA, "Energy Statistics of OECD Countries, 2015 Edition," http://www.oecd-ilibrary.org/energy/energy-statistics-of-oecd-countries-2015_energy_stats_oecd-2015-en; IEA, "Energy Statistics of Non-OECD Countries, 2015 Edition," http://www.oecd-ilibrary.org/energy/energy-statistics-of-non-oecd-countries-2015_energy_non-oecd-2015-en

Despite identifying forest biomass as a central measure in climate change mitigation, many studies in recent years have pointed out that the climate impacts of boreal forest biomass use for energy generation are not always low.⁷ The so-called climate debt or carbon debt from the utilization of forest biomass for energy stems from the following: when biomass is taken from the forest, an unavoidable reduction in forest carbon stock results, compared to a situation where biomass is not taken.⁸ Boreal forests have relatively long rotation periods (typically eighty to one hundred years), and thus it takes decades for temporal carbon neutrality to be achieved.⁹ This relative carbon loss due to forest harvesting may last for decades or even centuries compared to a scenario where the forest is not harvested. Forests also have an important role as carbon sinks in the mitigation of climate change. Increased mobilization of forest biomass for energy decreases the growth of this sink and may in some cases even turn it into a carbon source. These multiple roles for forest biomass require comprehensive assessments. When identifying the most sustainable pathways for forest bioenergy use amongst Arctic states, the multiple demands and needs for the boreal and tundra forests in the Arctic need to be taken into account. There are several different actors using forest resources who are being affected by energy and climate policies in the Arctic. There are those focused on forestry, those on reindeer

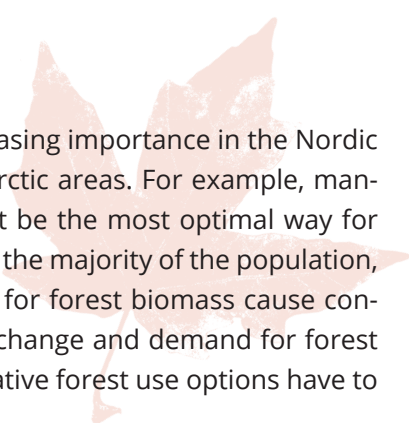
⁵ Larsen et al., "Polar Regions."

⁶ Ibid.

⁷ E.-D. Schulze, C. Körner, B.E. Law, H. Haberl, and S. Luyssaert, "Large-Scale Bioenergy from Additional Harvest of Forest Biomass Is Neither Sustainable Nor Greenhouse Gas Neutral," *GCB Bioenergy* 4 (2012): 611–16; T. Searchinger et al., "Fixing a Critical Climate Accounting Error," *Science* 326, no. 5952 (2009): 527–28; Manomet Center for Conservation Sciences, *Natural Capital Initiative at Manomet Report: Biomass Sustainability and Carbon Policy Study*, Prepared for Commonwealth of Massachusetts (Brunswick, ME: Manomet Center for Conservation Studies, 2010), <http://www.mass.gov/eea/docs/doer/renewables/biomass/manomet-biomass-report-full-hirez.pdf>.

⁸ Schulze, Körner, Law, Haberl, and Luyssaert, "Large-Scale Bioenergy."

⁹ A.M.I. Kallio, O. Salminen, and R. Sievänen, "Sequester or Substitute: Consequences of Increased Production of Wood-Based Energy on the Carbon Balance in Finland," *Journal of Forest Economics* 19 (2013): 402–15.



husbandry, and those on tourism among others.¹⁰ Moreover, mining has gained increasing importance in the Nordic countries. Forest management has impacts on the other activities practiced in the Arctic areas. For example, managing forests in a way that best represents the needs of the forest industry may not be the most optimal way for reindeer herding or tourism. Furthermore, the actors can be local people representing the majority of the population, Indigenous people, industrial actors, and the public sector. These multiple demands for forest biomass cause conflicts over the multi-use of forests in the Arctic.¹¹ Increasing pressure due to climate change and demand for forest biomass as an energy source are likely to increase these conflicts. Decisions on alternative forest use options have to be made under complex and uncertain conditions.

The relevant actors involved in decisions on forest resource management will likely differ across the Scandinavian, the North American (Canada and Alaska), or Russian Arctic. Scandinavian countries are much smaller than the other Arctic nations, and the actors and structures involved in decision making are also fewer in number. In all cases, engagement of the local people in decision making is essential in order to implement climate change mitigation in forest management planning.¹² Moreover, as there are conflicting uses of forest biomass, management strategies that take into account the multiple values and uses have been found to be the most effective.¹³ As well, land use and ecosystem fragmentation in Lapland, compared with much of the boreal zone in Russia and North America, is much more extensive and often also more intensive. In addition to forestry, there are other overlapping land use forms taking place, such as infrastructure development, mining, hydropower, and recreation.¹⁴

CONCLUDING THOUGHTS

Comprehensive studies that consider the conflicting and contrasting needs for the forest biomass amongst Arctic states are needed. Uses that effectively result in minimal climate impact should be preferred particularly when decisions on forest biomass use are made with the aim of mitigating climate change. Within the Fulbright Arctic Initiative, different pathways for the use of forest biomass are being studied.¹⁵ Previous studies and preliminary results from the ongoing research indicate that the question is very challenging and has no easy solutions.¹⁶ A key aspect is to take into account the various views of the different the stakeholders, not forgetting the needs of the Indigenous people of the Arctic. The work conducted so far indicates that from a climate change mitigation perspective, such pathways are likely to be those that increase rotation periods, combine both material and energy uses of the biomass, and promote cascading use of the wood. Such pathways may be compatible with other uses as well, such as reindeer herding and recreational uses.

¹⁰ E.C.H. Keskitalo, "Climate Change, Vulnerability and Adaptive Capacity in a Multi-Use Forest Municipality in Northern Sweden," in *Community Adaptation and Vulnerability in Arctic Regions*, ed. Grete Hovelstrud and Barry Smit (Dordrecht: Springer, 2010), 285–311, doi: 10.1007/978-90-481-9174-1_12.

¹¹ Ibid.

¹² A.E. Ogden and J.L. Innes, "Adapting to Climate Change in the Southwest Yukon: Locally Identified Research and Monitoring Needs to Support Decision Making in Sustainable Forest Management," *Arctic* 62, no. 2 (2009): 159–74.

¹³ P.O. Waeber, C.R. Nitschke, A. Le Ferrec, H.W. Harshaw, and J.L. Innes, "Evaluating Alternative Forest Management Strategies for the Champagne and Aishihik Traditional Territory, Southwest Yukon," *Journal of Environmental Management* 120 (2013): 148–56.

¹⁴ R. Pape and J. Löffler, "Climate Change, Land Use Conflicts, Predation and Ecological Degradation as Challenges for Reindeer Husbandry in Northern Europe: What Do We Really Know after Half a Century of Research?" *Ambio* 41 (2012): 421–34.

¹⁵ L. Sokka, "Wood-Based Energy as a Strategy for Climate Change Mitigation in the Arctic: Assessment of Climate Impacts and Resource Efficiency with Life Cycle Assessment (LCA)," in *Proceedings of the UArctic Congress 2016, September 12th to 16th 2016, St. Petersburg, Russia*, ed. O. Moilanen (Oulu, Finland: UArctic, 2016), 45.

¹⁶ K. Koponen et al., *Sustainability of Forest Energy in Northern Europe* (Espoo, Finland: VTT Technology 237, 2015), <http://www.vtt.fi/inf/pdf/technology/2015/T237.pdf>; T. Helin, L. Sokka, S. Soimakallio, K. Pingoud, and T. Pajula, "Approaches for Inclusion of Forest Carbon Cycle in Life Cycle Assessment: A Review," *GCB Bioenergy* 5, no. 5 (2013): 475–86.

ACKNOWLEDGMENTS

The financial support received through Fulbright Arctic Initiative is gratefully acknowledged.

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Part 3: Broadening the Picture

Can the United States Establish the Outer Limits of Its Extended Continental Shelf under International Law?

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SUMMARY

The United States is the only maritime power that is not a party to the United Nations Convention on the Law of the Sea (UNCLOS). Although most provisions of the Convention are regarded as customary international law and the United States views the provisions of the Convention as such, the outsider status of the United States causes problems in some areas of the international law of the sea, especially concerning the continental shelf beyond two hundred nautical miles (nm). Subsequently, the question must be asked whether it is possible for the United States to establish the outer limits of its continental shelf beyond 200 nm without becoming a state party to the Convention. The conclusion is reached that the United States has sound arguments for establishing the outer limits of its continental shelf beyond 200 nm under international law. It would, however, be wiser to establish the outer limits as a state party to the Convention to minimize the possibility of negative reactions from other states.

BACKGROUND

The United States is the only maritime power that is not a party to the UNCLOS.¹ While most provisions of the Convention are regarded as customary international law, and the United States views the provisions of the Convention as such, the outsider status of the United States causes problems in some areas of the international law of the sea, especially concerning the continental shelf beyond 200 nm (extended continental shelf). This issue is of special importance in the Arctic Ocean, as the 2013 White House National Strategy for the Arctic Region states:

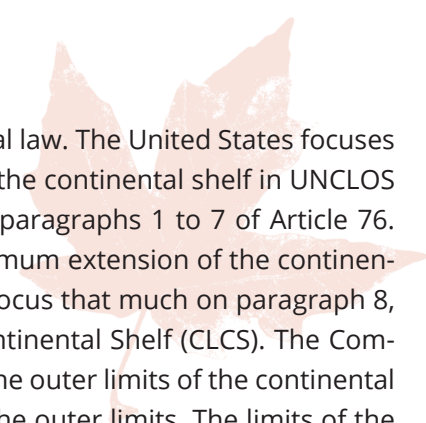
Only by joining the Convention can we maximize legal certainty and best secure international recognition of our sovereign rights with respect to the U.S. extended continental shelf in the Arctic and elsewhere, which may hold vast oil, gas, and other resources. Our extended continental shelf claim in the Arctic region could extend more than 600 nautical miles from the north coast of Alaska.²

Even if all accession attempts have failed in the Senate, the accession of UNCLOS is still on the task list of the US Government. Given the deadlock in the Senate, there is little chance that the United States will accede to UNCLOS in the near future. Consequently, the question must be asked: is possible for the United States to establish the outer limits of the extended continental shelf without becoming a state party to UNCLOS?

According to UNCLOS, the continental shelf extends at least to a distance of 200 nm from a coastal state. If a coastal State fulfills a rather complex criterion, it is entitled to the continental shelf beyond the 200 nm limit. Some are of the opinion that non-parties to the Convention do not enjoy such entitlement. One of the reasons for this opinion is that the Convention is a package deal with no option for cherry picking.

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

² The White House, "National Strategy for the Arctic Region," May 10, 2013, 9, https://www.whitehouse.gov/sites/default/files/docs/nat_arctic_strategy.pdf.



We must keep in mind, however, that treaty law is not the only source of international law. The United States focuses on customary international law in this context. It argues that the main provision on the continental shelf in UNCLOS reflects customary international law. More precisely, the United States focuses on paragraphs 1 to 7 of Article 76. These paragraphs define the continental shelf and contain rules regarding the maximum extension of the continental shelf beyond 200 nm. It is interesting, however, that the United States does not focus that much on paragraph 8, which is the main provision on the role of the Commission on the Limits of the Continental Shelf (CLCS). The Commission's primary task is to examine submissions containing information regarding the outer limits of the continental shelf beyond 200 nm from coastal states and make recommendations concerning the outer limits. The limits of the shelf established by a coastal state on the basis of these recommendations shall be final and binding. One reason why paragraph 8 is not mentioned in the US policy could be that submissions to the CLCS are linked to the date of entry into force of UNCLOS for the relevant submitting state. This link is a strong indicator that only state parties can submit information to the CLCS. Saying so, it must be noted that it could make sense, from a political point of view, for a non-state party to make a submission to the CLCS to show its commitment to the principles and legal framework of UNCLOS and present its entitlement to the continental shelf in a format that is well established.

While it would be the easiest way for the United States to become a state party to UNCLOS to create certainty for its extended continental shelf claims and clearly be able to participate in the CLCS process, there exist compelling arguments for the entitlement of the United States under international law without being a state party to UNCLOS. First, in a 2012 case between Nicaragua and Colombia, the International Court of Justice decided that the definition of the continental shelf concept in UNCLOS is a part of customary international law.³ Second, UNCLOS clearly states that the rights of coastal states do not depend on occupation, effective or notional, or on any express proclamation. Third, the United States has noted that article 76 of UNCLOS reflects customary international law and that it will use these rules when delineating its continental shelf.⁴ Fourth, the United States and its neighbors have engaged in maritime boundary delimitations that involve the extended continental shelf. Fifth, the United States has made the donut hole in the western Gulf of Mexico (that is, the area beyond 200 nm) available for hydrocarbon development since August 2001. In short, the United States has exercised sovereign rights beyond 200 nm in the Gulf of Mexico without any protest from other states.

To sum up, the United States has sound arguments for establishing the outer limits of its extended continental shelf. It is not a farfetched idea that the United States can establish the outer limits of its extended continental shelf under international law. It would, however, be wiser to establish them as a state party to UNCLOS to minimize the possibility of negative reactions from other states.

CONCLUDING THOUGHTS

Domestic politics hampers the United States from becoming a state party to UNCLOS, a treaty that was largely negotiated in line with US interests. From an outsider's point of view, it is difficult to understand why propaganda and irrationality has so much influence on the accession discussion in the United States. It is essential for US interests and the international legal framework for the oceans that the most powerful coastal state acts within the legal framework as much as possible, which is what the US Government seems to be trying to do. Subsequently, in the case of the extended continental shelf, it is suggested that the United States make a submission to the Commission on the Limits of

³ *Territorial and Maritime Dispute between Nicaragua and Colombia (Nicaragua v. Colombia)* (Judgment) [2012] I.C.J. Rep. 624, 666, para. 118.

⁴ Memorandum from Assistant Secretary John D. Negroponte to Deputy Legal Adviser Elizabeth Verville, November 17, 1987, State Dep't File No. P89 0140-0428, II Cumulative Digest 1878.

the Continental Shelf, although it is unlikely that the Commission will consider it, because a submission would show a certain commitment to the principles and legal framework of UNCLOS and would present the US entitlement to the extended continental shelf in a format that is well established.

ACKNOWLEDGMENTS

I would like to thank my research assistants, Christine Berg and Svava Pétursdóttir, for an excellent job.

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Security in the Arctic: A Focus on Energy and People

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SUMMARY

The concept of security has always been present in Arctic politics. More often than not, “security” has been reduced to a core consideration in the traditional geopolitics of the region, not least pitting American and Russian interests against one another, extending Cold War rhetoric long after the fall of the Soviet Union. Versions of Cold War rhetoric still exist, not least exacerbated by tensions around the Ukraine and Crimea crises, but it is clear that Arctic life and experiences present a far more complex and nuanced security picture, including the important interrelated connections between energy, environment, people, and security. Building upon connections between human and environmental security in the Arctic,¹ I explore how the priorities and values associated with energy and energy resources are constructed in the Arctic context, and how these further feed into, or conflict with, perceptions of security at the global, state, community, and individual, levels. The project has focused upon the ways in which security concepts have been employed in policy in relation to energy issues (which most often has excluded local perspectives), making explicit the important links between environmental (climate change particularly), human (local communities), and energy security, with the intention of better informing a more community inclusive future policy.

BACKGROUND

Over centuries Arctic peoples have learned to adapt and thrive in an uncertain, harsh environment. Change, from environmental to economic to political, is occurring in the Arctic at increasing rates, placing great pressure on local peoples’ capacity to cope. Such change can strain the many factors that are necessary for human well-being in the Arctic. These include the health of the environment, the supply of traditional foods, community health, economic opportunities, and political stability. The relationship between the challenges faced by individuals and communities and the ways in which they meet these challenges are not well understood by political institutions, such as the state, that have been traditionally designed for confronting the challenges that can threaten the security of individuals and communities. In fact, the state is not and has never been able to confront all challenges – and yet, the capacities and concerns of individuals and communities are often minimally, if at all, taken into account in security policy – including energy security. Integrating local security perspectives into national security narratives demands a theoretical and practical understanding of security and governance (the operationalization of values and priorities reflecting selected power structures) at multiple levels.

The notions of security and governance have a long and intertwined history, both as concepts that have been theorized throughout the history of Western political thought, as well as been operationalized as different practices in different contexts. Political theorists such as Hobbes, Bentham, and Mill recognized the crucial linkage between security and governance, not least in acknowledging that governance was the primary tool of security and for establishing security, both for states but also for the people constituting those states insofar as local perspectives would be taken into account.² Both governance and security are concepts that reflect relationships of power between the governed and

¹ G. Hoogensen Gjørsv, D.R. Bazely, M. Goloviznina, and A.J. Tanentzap, eds. *Environmental and Human Security in the Arctic* (London: Routledge, 2014).

² G. Hoogensen, *International Relations, Security and Jeremy Bentham* (London: Routledge, 2005).

the governing, though the relevance of this relationship had been minimized (if not eradicated) in recent history in the concept of security. Particularly since the Second World War, the radicalization of the concept of security as a solely state-based, militarized, and threat-oriented has created a schism between the notion of security and governance, polarizing them such that the former represents conflict and threats at the state level (to the exclusion of local actors), while the latter represents cooperation and negotiation across states as well as between states and non-state actors (including populations). This focus on the state has influenced the development of energy security definitions that do little to integrate multiple level (local, regional) and multiple actor perspectives.

Since the end of the Cold War the dominance of this narrow perspective of security in the Arctic has been challenged on a variety of fronts, from Indigenous peoples claiming a stronger voice over management and control of the region, industry's continued interest in extracting resources, states continuing to negotiate spaces, Indigenous and non-Indigenous feminists exposing and unpacking the linkages between local (family) and global power structures, to international agencies and organizations making global claims about environmental concerns. The multitude of actors and voices are represented through competing processes of governance as well as represented as security – human security, energy security, economic security, environmental security, and state or national security. The role of energy resources, both extractive industries as well as renewable resources, is changing the landscape of the Arctic – how this space is understood, defined, governed and by whom.

Taking a departure point from the popularized definition of human security in the 1994 UNDP Human Development Report,³ as well as in a wide body of feminist security studies research, including Indigenous feminist perspectives, we can try to understand a multi-scale and multi-actor, democratic, and context-based definition of security in the following way: Security is achieved when individuals and communities and/or multiple actors have the freedom to identify risks and threats to their well-being and values (negative security), the opportunity to articulate these threats to other actors, and the capacity to determine ways to end, mitigate, or adapt to those risks and threats either individually or in concert with other actors (positive security). In other words, broadly understood, security pertains to the survival of that which we value most, and that this survival is maintained for the foreseeable future. By “actors” I mean individuals and communities, researchers and research communities, governmental and non-governmental organizations, media, business/industry, militaries, and policy makers. Energy security has been defined in different ways to increasingly reflect different actor interests, ranging from securing an energy supply for the state over the long term, to recognizing long-term sustainable energy demands that must also be reconciled with climate change and other environmental security needs at local levels. All of these factors and actors have a role to play in identifying threats and creating security, and to understanding the role of energy security in the complex Arctic context.

CONCLUDING THOUGHTS

The role of energy, both the production of energy resources as well as their consumption, has become increasingly relevant to the Arctic context. Though the importance of energy to community and state survival has long been an issue (not least during the 1973 oil crisis), the emphasis on the Arctic as a source of energy resources has increased the past decade. However, energy security has been largely treated as an isolated issue, at best contributing to state security in general. It is crucial to gain a better understanding of how energy security is intimately linked to multiple levels and scales of political community, whereby local communities that are a part of, and impacted by, energy resources need to be better recognized for their contributions to how energy politics plays out in the Arctic. This energy dynamic

³ United Nations Development Programme, *Human Development Report 1994: New Dimensions of Human Security* (New York: UNDP, 1994).

is equally impacted by local, regional, and national economic security concerns, as well as by environmental security issues ranging from the local to the international, including climate change to environmental toxins affecting food and health.

Some scholars have suggested that energy resources can and have already led to a “race” for securing energy supplies from a presumed wealth of untapped resources in the Arctic. The language surrounding this narrative around energy has fostered an understanding of potential conflict. Energy security has become a process of conflicting tensions between negotiated long-term expectations (not least with regard to environmental security, environmental regimes, Arctic Council Working Groups and resulting environmental research, increasing and necessary recognition for concerns of Indigenous peoples, etc.), and the narratives of near-emergency and exceptionalism with regard to energy (the race for, and protection of, resources) and climate change driving conflict.⁴ It is important to understand the extent to which energy security narratives amongst Arctic nations are reflective of narrow, conflict (and state-exclusive) approaches to security, or are reflective of broader environmental and human security narratives as well, including the ways in which renewable and nonrenewable energy resources are balanced (if at all), and whether civil society and local community concerns are addressed.

ACKNOWLEDGMENTS

The author would like to acknowledge the support of the Fulbright Arctic Initiative, the University of Washington Jackson School of International Studies (Canadian Studies Center), and the UiT The Arctic University of Norway.

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⁴ S. Borgerson, “Arctic Meltdown: The Economic and Security Implications of Global Warming,” *Foreign Affairs* 87, no. 2 (2008): 63; “NATO’s Role in Energy Security,” NATO, last updated June 22, 2016, http://www.nato.int/cps/en/natolive/topics_49208.htm?selectedLocale=en; E.M. Dingman, “Arctic Sustainability: The Predicament of Energy and Environmental Security,” *Connections: The Quarterly Journal* 11, no. 1 (2011): 1–10.



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