

PART V

INDIGENOUS RESPONSE TO ARCTIC DEVELOPMENT

13. A Rights-Based Approach

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The Arctic and its people have experienced the greatest environmental impacts of globalization. From persistent organic pollutants (POPs) making their way through weather patterns to our food chain to the weakening of the ozone layer, and more recently the huge changes in our land and ice resulting from climate change, we have borne the brunt of development occurring far from our home. The world has become increasingly aware of these impacts, and the Arctic remains in the forefront of public consciousness as both an area of great environmental concern and now as a place with both great economic and geopolitical interest and tension and a need for renewed political cooperation.

All this has confirmed the Arctic as an area of utmost importance in the minds of global policy makers, economic decision makers, and researchers. But this interest needs to be better informed by an awareness of what is happening to the largely Indigenous and subsistence-oriented communities that provide the human face of the Arctic.

I was born in Kuujjuaq, Nunavik (Northern Quebec). All my life, I have been concerned with the health and welfare of people living in these Arctic communities. Even when I became active at the international level, as a leader in the fight against persistent organic pollutants (POPs) that led to the 2001 Stockholm Convention and then as chair of the Inuit Circumpolar Council, I continued to think about Arctic issues from a community perspective.

These communities are small. They do not have great political power or economic influence at the national and international levels. But they are the heart and soul of the Arctic. That is why I believe we must reframe the current debate, adopting a rights-based approach to Arctic development. Let me tell you how I came to this conclusion and what it means for those interested in exploiting the natural resources of an increasingly accessible Arctic.

At home, in the Arctic, we are now facing an incredible growth of interest in developing the geological and ecological riches we have inherited. While we reach out to connect with the rest of the world to ask that they

change their behavior so we do not suffer the consequences in the Arctic, we should also be thinking of recognizing the many interconnections that exist today and will soon exist around the use of our own Arctic regions, including the ocean as well as the land.

As Inuit, we place great value on the ice and snow. It is, after all, the stable platform that has allowed our people to hunt, train our children, and live our lives for untold millennia. There is no price you could pay many of us for the loss of our ice. The whole world will soon learn to place a great value on Arctic cold as well. We are learning more and more just how expensive it is to be losing the “cooling system,” the “air conditioner,” if you will, of the planet.

For us Inuit, these issues are not only environmental, but first and foremost matters of health. The health of individuals, families, communities, our environment and our wildlife are all important to the cultural survival of an entire people.

Realizing there are many people around the world who have yet to hear about the challenges of the peoples of the Arctic, I feel it is important in this short article to outline some of the key challenges and opportunities we face in the Arctic, to put them into the right context at the community level, and to show how they relate to the larger context of resource development.

We Inuit and other Indigenous peoples of the Arctic were once highly independent. We had our own education, justice, health, and social systems based upon Indigenous knowledge, wisdom, and long-established social practices. We prepared our young people for the challenges and opportunities of life in an holistic way.

Then, changes happened quickly, and these changes are in large part at the root of the challenges and dependencies on substances, institutions, and processes facing Arctic peoples today. The tumultuous change in my own lifetime, along with historical traumas occurring over many decades, have eroded our sense of identity and self-esteem and reduced our ability to think and act for ourselves. These in turn have translated into the monumental health and social challenges facing Arctic Indigenous peoples today, which all too often are misunderstood as an inability to adapt to the modern world. We should realize that the substance abuse, health problems, and, most distressing, loss of so many of our people (especially our youth) to suicide are not the natural condition of our peoples. Through all these tumultuous changes, we have had our land, our predictable environment and climate, and the wisdom our hunters and elders have gained over

millennia to help us adapt.

However, things are not so predictable today. Dramatic climate change caused by greenhouse gases has left no feature of our landscape or our way of life untouched. Climate change now threatens our very culture, our ability to live off the land and eat our country foods, including the animals we hunt. Nowhere else in the world is ice and snow essential to transportation and mobility. When we can no longer count on mobility, it immediately becomes an issue of safety and security on several levels.

In all four countries where we Inuit live (Canada, Alaska in the USA, Greenland, and Chukotka in Russia), virtually every community is now struggling to cope with extreme coastal erosion, melting permafrost, and rapid runoff. Some communities face the prospect of being forced to relocate to unfamiliar settings.

Despite cold winters here and there, our sea ice is in rapid decline. Glaciers long relied on for drinking water are now unpredictable. Invasive species are moving much further north than ever before. While the size and type of each change varies across the North, the trends are consistent.

The health impacts of these changes on Inuit communities are profound. Most Inuit continue to rely on our traditional subsistence foods. Already though, climate change has affected the migration routes and quality of our animals, making them harder to hunt and less safe to eat.

Hunting and gathering itself has been similarly affected by shortened periods of safe frozen ice and snow that limit travelling in some areas. These unsafe conditions, together with less-predictable weather, cause more devastating accidents and losses among our hunters. More and more hunters have second thoughts about heading out at all. Many hunters have to be rescued when ice breaks off, taking with it hunters who were hunting close to the floe edge. With less traditional food arriving, many families are stressed by the high cost of imported southern foods. All this leads to an ever-quickenening shift away from our traditional foods and to more southern diets, which are far less healthy for us. In Canada, our communities already have rapidly rising rates of diabetes and other food-related illnesses, trends that will continue as we shift from a country food diet.

Reliance on expensive southern imports only deepens the dependence of our communities on the government. This runs counter to building thriving local economies that build on major elements of our traditional culture.

Our children will enjoy a healthier way of life if they are able to remain

connected to the principles, values, and wisdom of our hunting culture.

We are a uniquely adaptable people. We have weathered the storm of modernization remarkably well, going from dog teams and igloos to snowmobiles, jumbo jets, permanent homes, and even supermarkets within a few decades. But these enormous changes to our communities have not been without consequences.

We have suffered a loss of control over our lives and destinies. Multiple historical traumas in a short period of time, including forced relocations, children uprooted from their families and culture to be deprogrammed and reprogrammed, dog slaughters, sexual abuse by those in positions of authority, the collapse of the seal skin market, and monumental changes in our environment and climate, have all come together to create deep wounds and “collective pain” in our communities.

Through all this, we have had our land, our predictable environment and climate, and the wisdom that our hunters and elders have gained from our way of life to help us adapt. This predictability is now in question due to the climatic change and the loss of food security it brings. All these issues of climate change, food security, and the well-being of our communities cannot be considered separately. Together, they constitute a systemic challenge from the South.

We remain a hunting people intimately connected to the land, ice, and snow. The loss of food security is not the only loss we suffer when there are fewer hunters on the land. Learning to hunt teaches our young people to be patient, courageous, bold under pressure, reflective, and focused. They learn to become natural conservationists, to control their impulses, to withstand stress, to have sound judgment, and ultimately to acquire wisdom. This is why climate change is not only an issue of our land and environment, but also an issue of our health, our rights, and our very ability to exist as an Indigenous people. It is precisely these human rights that are being challenged and eroded by the unpredictability of our climate. As travelling and hunting on the land becomes more dangerous, fewer continue to lead a traditional, subsistence way of life. As a result, far less of our culture is passed down to our young people.

We have been working hard to cope with the stressors arising from the first wave of tumultuous change. We now understand how these stressors translate into what we witness today regarding social and health challenges in our communities. But the more unexpected stressors that come with these climatic changes, together with the acceleration of development

following the melting of ice, will only add to the vulnerability of our communities.

My work both on POPs and on the connections between human rights and climate change has focused on seeing the issue holistically and on ensuring that the human face of this issue is in the minds of researchers, policy makers, and industry leaders when we consider how to address the issue.

We must reframe the terms of the debate regarding the implications of environmental degradation and resource development in the Arctic. This debate must move beyond relying on the language of economics and technology. What is needed is a debate emphasizing human and cultural rights. Focusing only on economics and technology separates the issues from one another, as opposed to recognizing the close connections among rights, environmental change, health, economic development, and society. Ultimately, addressing climate change in the language of human rights and building the protection of human rights into our global climate agreements is not just a matter of strategy. It is a moral and ethical imperative that requires the world to take a principled and courageous path to solve this great challenge.

The situation we face across the Arctic is now quite different from the one just a few years ago as the extractive industries move to exploit the riches that are now becoming more accessible beneath the melting permafrost and sea ice. The hunger for jobs in our communities makes this approach of digging up the land that we have long held sacred a strangely appealing prospect. Just a few years ago in my own Arctic world, we Inuit stood solidly together on high moral ground to defend a way of life. But with the lure of quick fixes as a means to alleviate poverty in our Arctic communities, this high ground, where we collectively stood so strongly not so long ago, is fracturing as quickly as the ice is melting. As more leaders lose sight of the larger picture, staying on the principled path will become increasingly difficult for many. This, I believe, is the test of our time.

A few years ago, I delivered a lecture in Iqaluit, Nunavut in an attempt to signal to our communities and to Canada as a whole the imperative to stay focused on a sustainable path.

I said: "As wise stewards of our land, I would urge my own people to refuse the dangerous compromises between our principles and development that might diminish our own moral standing and claim to high ground as Indigenous peoples. As we call on the world to change its ecologically

degrading practices, we must not accept those practices at home no matter how desperate our needs are for economic development.

Economic gain must not override the existence and well-being of a whole people whose way of life is already being severely taxed. We must not let the prospect of development in the Arctic diminish our ability and our region's ability to teach the 'life-centered sustainability' that Arctic peoples have practiced for millennia.

The people whose lives depend on the ice and snow for cultural survival must be a central component of all our plans. We must not permit the discussion of northern development to be conducted only in terms of sovereignty, resources and economies. The focus must be on the human dimension, human communities and protection of human and cultural rights. We cannot separate political and economic development in our communities from the education, health and well-being of individuals and families."

There is a real worry here. If we put all our eggs into the basket of resource extraction and/or oil and gas development, while the rest of the world seeks to wean itself off this unsustainable way of life, we will be left in the dust, and in this case, "in the mess." When the rest of the world is well on its way to a new way of life in 20-30 years, we will be starting once again the perpetual cleanup which we are still left with from past development and military activities.

We must resist the urge to compromise our values and lose our high moral ground by adopting quick fixes to our economic and social problems. Our influence springs from our moral authority. Once we've lost our moral high ground and our sense of responsibility for a sustainable Arctic, it will be hard to regain our balance and sense of purpose.

Many of the institutions that have replaced the control and wisdom of our culture, including our newly formed governance structures (e.g., the government of Nunavut), have had trouble addressing the escalating challenges that our communities face. What most Inuit regard as highly intrusive companies (e.g., mining and oil and gas companies) will need to become more serious and committed to reinventing themselves if they want to play a role in empowering strong, healthy, resilient, and sustainable communities in the Arctic. They must demonstrate a great deal of respect for and understanding of our situation at a human level. What Arctic communities need to pay attention to is reversing trends toward "dependency-producing" institutions and supporting "dependency-

liberating” institutions that inspire our youth to embrace a life-sustaining connection to jobs and careers of choice that are meaningful and have a connection to their culture as well as to global society and our role as citizens of the world. If resource extraction is the only carrot dangling in front of our people, they will lose out on other creative and innovative options that are more compatible with our culture in the sense that they align with the principles and values of a hunting culture founded on sustainable practices.

We are now part of the modern world. But we still remain a hunting people connected to the land, ice and snow. Changes that affect our environment, including many forms of resource extraction, affect the food we bring to our families’ tables.

We are cautious, and we want to learn from experiences around the world regarding the impacts of these highly intrusive extractive industries. In Arctic communities, we must ask ourselves why it would be any different for us. We are being asked to believe it would be different for us in the absence of convincing evidence.

It is ironic that the governments of both Nunavut and Greenland are now moving strongly in the direction of development, including oil and gas extraction, when the impacts of such development were the very issues that led to the creation almost 40 years ago of the Inuit Circumpolar Council, the international body that represents Inuit globally. Our people have made headway in many areas. But it remains evident that after all this time we are still facing poverty and social and health problems because we have all but given up our own Indigenous wisdom about sustainability and because our governments have not found ways to empower our communities and to join forces to form regions that are prosperous and sustainable.

There is a great irony in trying to solve our social and health problems by granting to extractive industries that bear so much responsibility for social and environmental problems throughout the world access to our already struggling Arctic communities. In my opinion, this is not, and cannot be, the be-all and end-all solution.

The policies and programs of governments and businesses are driven mainly by global markets and the bottom line. They are not made for what is right or good for our Arctic communities. In any case, it is what is happening at the community level that will count in telling if there is actual success at the grassroots. Despite the poverty levels of many of our Arctic communities, is it possible that we can leave these resources

underground as a signal to the world that we who suffer from the negative impacts of globalization on so many levels have decided to reject the attractions of resource development? Is there hope that the existing leaders or, alternatively, the younger generation of leaders can turn around this already fast-moving development and call for a more inclusive process that will engage all voices, especially those at the grassroots?

This challenge is great. A case in point concerns a new report prepared for the Nunavut Planning Commission that calls on Nunavut's communities to build their own capacity to deal with potential oil spills. The Oil Spill Detection and Modeling Report was commissioned to respond to concerns in Nunavut about seismic testing and potential offshore oil and gas development along the coast of Baffin Bay. Issues of food security have come up time and time again as we Inuit want to know what would happen to the sea mammals we depend on for food if an oil spill were to occur.

This report found that little is known about how oil behaves in marine environments where ice and snow are factors. It found that research done over the last few decades elsewhere in the world does not consider sea ice in oil spill models. The main recommendations include training local people to respond to oil spills, enhancing awareness along with shoreline protection, gathering more data, and improving remote sensing. In this specific case, one of the stronger recommendations states that "In order to facilitate effective shoreline cleanup in the event of a spill, the Hudson and Davis Straits should be mapped to identify environmentally sensitive shoreline areas, as defined by Environment Canada criteria, traditional knowledge and community importance."

According to an article in Nunatsiaq News on July 10, 2014, "The Nunavut Marine Council, in which the Nunavut Planning Commission is a member, advised the National Energy Board and Minister of Aboriginal Affairs and Northern Development Canada of the public concern and limitations in industry knowledge of how to react to oil spills when sea ice is present."

This report was released just as the National Energy Board of Canada approved a five-year seismic testing program in Baffin Bay and Davis Strait, which many Baffin residents had opposed. It led the Nunavut Planning Commission to state that the National Energy Board is not paying much attention to the residents' concerns.

As a result of this chain of events, Mayor Jerry Natanine and Niore Iqalukjuak of Clyde River, one of the communities that clearly has potential

to be impacted by this seismic testing, have reached out to Ecojustice to help determine whether their rights are being violated. An important precedent in this regard is the recent Supreme Court ruling which not only recognized the land rights of the First Nation Tsilhqot'in of British Columbia but also found that the province had breached its duty to consult with the land owners before approving a logging license on their lands. This historic court ruling has inspired the mayor of Clyde River to explore similar rights as he reaches out to Ecojustice for advice about stopping a bid by a consortium of companies that intend to conduct seismic testing off the east coast of Baffin Island, the results of which could well lead to oil and gas development in the area. These community leaders argue that the National Energy Board did not apply due diligence when consulting with the local communities about the project.

In addition to reaching out to Ecojustice, Inuit leaders may pursue their case as a matter of Aboriginal rights at the United Nations, since Canada is a signatory to the United Nations Declaration on the Rights of Indigenous Peoples. Article 32 of the Declaration states that "States must cooperate in good faith with Indigenous peoples" and "obtain their free and informed consent prior to the approval of any project affecting their land or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources." Niore Iqalukjuak, who is spearheading this movement together with the mayor, suggests that Inuit have been neither informed nor asked for their consent regarding this project.

I use this example to expose the challenge we Inuit face when it comes to exercising our rights in the face of resource development driven by outside (private and public) players. There will be many more challenges similar to this one in Nunavut and other regions of our Inuit homelands where the voices and concerns of affected communities are dismissed by their own governments, who see the Arctic as the next super energy "feeder" for the world and dismiss the small number of Inuit feeding their families as unimportant matters as they exploit the land and sea of the surrounding communities. Many local people feel abandoned by their own government. I regret to say that I feel this is a sign of what is yet to come as bigger challenges confront our own national governments and the Arctic Council, which I can say from personal experience has its own shortcomings in reaching a consensus regarding issues affecting Arctic communities and their peoples. As someone who led the pioneering work on connecting

climate change to human rights, I am convinced that the escalating pressures we now face regarding resource development will deepen the need for all parties to adopt a rights-based approach in the search for solutions to these problems. I believe the approach the community of Clyde River is taking exemplifies what I have spoken of as a “reframing” of the issue in terms of fundamental human rights and the connection between environmental change, cultural rights, and the development of the Inuit homelands.

Commentary

Ellen Inga Turi

While climate change is generally perceived as a threat in southern latitudes, in the North it is often viewed simultaneously as an opportunity. Climate change is making Arctic areas increasingly accessible for human activities such as resource extraction, tourism and shipping. For the Indigenous peoples of the Arctic, however, these developments represent a dual challenge. On the one hand, Indigenous peoples are witnessing the direct effects of climate change, and the impacts of these effects on their traditional livelihoods and subsistence activities. Simultaneously, increased human and economic activity in the Arctic represents a concurrent change that Indigenous people must adapt to.

The Arctic is a region of political and socioeconomic diversity. While Arctic areas are geographically, physically and climatically linked, there is no coherent Arctic political region. Rather, the Arctic is composed of territories located within the boundaries of eight nation states, where only Iceland lies fully within the area defined as the Arctic by, for instance, the Arctic Council (Keskitalo et al., 2013). Apart from Iceland, the Arctic comprises the remote peripheries of seven nation states, where policy matters have traditionally involved interactions with policy centers located in the south (Young, 2005). Consequently, governance structures around the Arctic are not uniform. The Arctic is rather a collection of states with great variations in local governing structures, formal or informal. There is considerable difference between governance structures even in neighboring countries such as those in Scandinavia, as well as in the local effects of governance structures. Similarly, Arctic Indigenous peoples are not uniform. There is great diversity in the cultures, languages, livelihoods and histories of Indigenous populations in the North. This diversity represents the starting point for any discussion of Arctic change from the Indigenous perspective.

As part of the North Pacific Arctic Conference on international cooperation in a changing Arctic, Sheila Watt-Cloutier has presented a view of Arctic development from the perspective of Indigenous peoples, calling for a rights-based approach to Arctic development. Watt-Cloutier emphasizes the connection between climate change and human rights, and

calls for a focus on the human face of this issue, i.e., the communities on the ground. She eloquently concludes: “We must not permit the discussion of northern development to be conducted only in terms of sovereignty, resources and economy. The focus must be on the human dimension, human communities and protection of human and cultural rights. We cannot separate political and economic development in our communities from the education, health and well-being of individuals and families” (Watt-Cloutier 2014, 16). This article presents a short commentary on Watt-Cloutier’s keynote presentation. I fully concur with her main argument that the discussion of Arctic development needs to incorporate the human dimension, i.e., the lived experience of the populations of the North. Such an approach needs to be rooted in human rights, the lived experience and human needs of the populations of the North. To complement Watt-Cloutier’s discussion, I draw attention to the knowledge dimension. In particular, I want to highlight the value of the traditional knowledge of Arctic Indigenous peoples in relation to understanding the effects of and planning for development in the Arctic. I argue that a rights-based approach needs to incorporate and emphasize Indigenous traditional knowledge as a basis for decision making and as a basis for understanding the needs of Indigenous populations in the North. Such an approach will not only benefit Indigenous populations but also improve our collective human understanding of environmental change in the Arctic.

To elaborate my argument, I draw from a specific Arctic Indigenous livelihood, nomadic reindeer pastoralism, to illustrate the opportunities and challenges of incorporating traditional knowledge into broader governance practices. Reindeer pastoralism is the most extensive form of animal husbandry in the Arctic and subarctic (McCarthy et al., 2005). It is primarily an Indigenous livelihood involving more than 20 different Indigenous peoples in an area stretching from the North Sea to the Pacific Ocean and covering around 5 million km² (i.e., 10-15% of the entire land area of the world). This livelihood involves approximately 100,000 people and 2.5 million reindeer. Reindeer pastoralism is thus, on the one hand, a spatially-extensive livelihood, while on the other hand it is demographically and economically marginal. In my home country, Norway, around 40% of the land area is used as reindeer pasture involving around 200,000 reindeer and 3,000 Indigenous Sámi reindeer herders.

This extensive land use is primarily a result of the nomadic strategy. As a nomadic livelihood, reindeer pastoralism is characterized by the

strategy of securing forage for animals primarily through the use of natural pastures. Sámi reindeer herders in northern Scandinavia, for instance, migrate up to 350 km, following the reindeer from summer pastures in coastal grassland areas to winter pastures in lichen-covered inland areas. This extensive and nature-based character of reindeer pastoralism implies that reindeer herding is sensitive to changes in climate, land-use, and related socioeconomic transformations.

In terms of land-use change, the following quote from a study conducted by the United Nations Environment Program (UNEP) elaborates the challenge:

“Northern Scandinavia and parts of Russia are examples of areas where the current growth of infrastructure related to transportation, oil, gas and mineral extraction is increasingly incompatible with land requirements for reindeer husbandry. In these areas infrastructure growth is associated with the loss of traditional lands, and conditions forcing indigenous people to abandon nomadic herding patterns for more sedentary lifestyles. Infrastructure development is often concurrent with changes in regional economic activity inviting southern-based resource extraction companies interested in short-term economic gains. Such socio-economic changes not only affect cultural practices directly related to traditional reindeer husbandry, but also conflict with the use of traditional homelands for hunting, fishing and gathering.” (Nellemann et al., 2001, 16–17)

This study showed that 25% of reindeer pastures in Northern Norway are “strongly disturbed” by development, including 35% of the coastal summer pastures and calving grounds (which are of particular importance for nomadic reindeer herding) (Vistnes et al., 2009). Scenarios for 2050 estimate that the figure will increase to as much as 78% unless changes are made in national and regional plans (ibid).

In addition to loss of pastures, climate change is now evident in the Arctic. Climatic projections for inland winter grazing areas in my home area, Guovdageaidnu in Finnmark, anticipate winter temperature increases of 7°-8°C over the next 100 years, accompanied by increased precipitation (Benestad, 2008). Yet, considering the enormous pressure on land use, it is perhaps not surprising that reindeer herders express greater concern for industrial development than climate change (Kumpula et al., 2012; Degteva et al., 2009; Eira et al., 2009). Reindeer herders in the European Arctic

have expressed the need for more autonomy over herding decisions, e.g., herd structure, castration, and migration, in order to preserve options to meet climate change (Degteva et al., 2009; Eira et al., 2009). It has also been suggested that undermining such autonomy erodes the very resilience of the reindeer herding socio-ecological system (O'Brien et al., 2009). Herders' perceptions are supported by studies indicating that compared to socioeconomic change, the vulnerability of reindeer herding to climate change is comparably small (Rees et al., 2008). In other words, it is not the direct ecological and weather effects of climate change that indigenous reindeer herders find most alarming, but rather the combination of increased human activity and climate change. Yet, indirect effects of climate change such as increasing human activity following increased accessibility of the Arctic from developments like the opening of the Northern Sea Route or offshore oil and gas exploration in the High North will likely accelerate the rate of fragmentation of pastures. As such, the issue of climate change is a central one for reindeer herding peoples but is inevitably linked—even inseparable—from socioeconomic changes in the North.

The most pressing challenge associated with increased human activity in the North from the perspective of reindeer herding is the reduction of spatial flexibility. In relation to climate change, spatial flexibility, or simply mobility, is a core tool used by reindeer herders to adapt to climatic variations. One direct effect of climate change in reindeer herding areas is the increased occurrence of “goavvi,” a northern Sámi term describing locked pastures resulting from rain-on-snow (Eira, 2012). Goavvi happens when rain during the winter produces an impenetrable layer of ice on top of the snow, making it difficult for the animals to reach the fodder underneath. A well-known and frequently-applied strategy for handling such conditions has been either to move the herds to different areas or, in extreme cases, to completely release control over the herds, and allow animals to search for the marginal scatterings of penetrable and available grazing areas. This type of response strategy, however, is being challenged increasingly by the fragmentation of pastures.

Reindeer herders have developed management strategies for the protection of pastures and monitoring of changes, owing to their long-term accumulated experience and skills, transferred from generation to generation. From my research on governance processes in Northern Norway, I was surprised to discover that the reindeer herding “siida” (the basic unit of social organization in Sámi reindeer herding) is currently

the only institution in Norway, monitoring and analyzing all the different types of changes spanning its customary pasture areas, as such changes may directly affect the practice of their livelihood, no matter whether it is a single tourist cabin, a major power line, or exploring prospects for mining (Turi and Keskitalo, in press). The accumulated collective knowledge of the *siida* includes detailed and long-term observation of land-use changes spanning several centuries over areas covering several administrative divisions. Formal governance structures, on the other hand, tend to be characterized by spatial and sectoral fragmentation in planning and decision making, meaning that land-use changes of different character such as tourism, resource extraction or infrastructure building are divided among different sectoral authorities and administrative divisions (municipal, regional or national authorities), while multiple stressors such as climatic change and socioeconomic change are treated only in passing or completely left out of the picture. Such administrative fragmentation complicates the task of decision making based on an holistic consideration of cumulative effects.

An opportunity, albeit a challenging one, thus lies in including and incorporating the *siida*'s and other indigenous groups' knowledge and understanding of land-use change for better governance of these areas. Conventional tools for planning, e.g., environmental impact assessments, even in the rare cases where authors pay due diligence to include reindeer herders' knowledge into the assessment (see, for example, Nellemann and Vistnes, 2011), are not sufficient to ensure that long-term and cumulative effects of land-use change for reindeer herding are duly assessed in decision-making processes. Typical flaws of conventional planning tools include the tendency of assessing only single projects and short-term effects and a lack of ongoing assessments throughout the project period (Fjellheim, 2006).

While this is primarily a governance issue, the solutions are not located only with the government. Industrial interests and other land uses also need to focus on the local level, i.e., the community level, in order to avoid the trap of "one size fits all" leading to solutions that have so often created additional challenges for local adaptation by indigenous communities. A community-level focus is central, as even neighboring communities often have different dynamics, needs and challenges. The impacts of opening a mine, building windmills, or building a new shipping port will have different impacts depending on where, when and how installations are placed. In order to understand such impacts, there is a need for

mutually respectful communication between the local-level land users and potential developers aimed at developing real understanding and mutually satisfactory solutions (rather than just achieving permission to start the development).

A major challenge of Arctic transformation is thus finding effective governance solutions that utilize the best knowledge available for land-use planning. For Indigenous reindeer herding populations, the main challenge remains finding governance solutions that do not undermine the adaptive capacity arising from traditional knowledge and intimate familiarity of the land and climate. One way of doing this is through a focus on human and Indigenous peoples' rights. A rights-based approach emphasizes the human dimensions of Arctic development, as duly noted by Watt-Cloutier. Further, a rights-based approach diverts attention from a focus exclusively on economic gain and directs attention toward the realities of human societies in the North. The rights-based approach needs, however, to be complemented and nuanced with a focus on the knowledge and practices of people on the land.

While my home country, Norway, is often noted as being one of the more advanced countries regarding the issue of Indigenous rights, reindeer herders in Norway and Scandinavia more generally are constantly struggling to meet the challenge of Arctic change. While there is potential for development in relation to Indigenous rights in governance, a rights-based approach also needs to be developed to incorporate a more nuanced view of the complexity of Indigenous land uses. Reindeer herding, fishing, hunting, farming and other natural resource harvesting systems often coexist in the same area, yet experience different impacts from socioeconomic developments. The reality for most of the Indigenous population in the North is a complex web of land use where no single group has exclusive rights to land use, raising the question "whose rights?" While a rights-based approach is important for highlighting local land uses, such an approach needs to be complemented by a traditional knowledge-based approach in order to incorporate an understanding of the potential impacts of Arctic development on local Indigenous communities.

In conclusion, I applaud Watt-Cloutier's presentation for directing attention to the human impacts of Arctic development, and specifically for directing attention to the Indigenous people in the Arctic. I do want to emphasize, however, that Indigenous peoples must not only be seen as rights holders, but also knowledge holders. Indigenous and local peoples

possess unique, valid and tested knowledge about the diverse ecosystems and environments in the North.

As a final note, I want to emphasize that it is important to avoid the trap of thinking of Indigenous populations as ancient (or outdated) people. Reindeer herders, for instance, are constantly searching for economic opportunities to develop their livelihood. Fostering economic security through exploring wider markets for reindeer products, for example, could be one way to foster resilient Indigenous reindeer herding communities. Economic interest in the Arctic thus also represents an opportunity for Indigenous communities and could potentially contribute to fostering economic independence and self-sustaining communities in the North. This opportunity can only be realized, however, if the planning of Arctic development incorporates both the rights and the knowledge of Arctic's Indigenous people.

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Commentary

Denise L. Michels

One of the questions posed to Alaska's leaders is, how will large-scale development in the Arctic affect nearby communities? The answer is that any new development in the Arctic will impact nearby Alaskan rural communities by straining infrastructure and local resources. Most coastal communities in rural Alaska, except for hub and sub-hub communities, have a population of less than 1,000 and have only basic infrastructure in place to sustain the existing population (e.g., five of our villages in the Bering Strait region do not have piped water and sewers). In the spring, some villages have to manage water usage so they will not run out of water, possibly creating health and sanitation concerns. At times, communities have run out of heating fuel before the first barge arrives in June, and need to have fuel flown in, costing more than the community can afford. Many of our villages do not have a port or barge landing and use the beach to land and launch landing crafts and skiffs.

Alaska is already experiencing impacts from the increase in Arctic shipping on the Outer Continent Shelf (OCS) with exploration activities that involve more vessels traveling through the Bering Straits to access leased tracts. With the opening of the Arctic Ocean, the shipping industry is now using the Northern Sea Route. While there were more than 82 vessels operating on August 10, 2014, in 2009 there were none. The Northern Sea Route Administration has approved 519 applications to date. There is an increase in vessels traversing the Northwest Passage, and at least 10 vessels have stopped at the Port of Nome over the last four years. The City of Nome is still experiencing a gold rush and gold exploration in state waters, and the change is that there are larger barge-type vessels operating in this area. This year to date there have been a total of 87 dredge vessels with 21 support craft, while in 1990 there was an average of four to five dredging vessels. All this traffic happens in a short timeframe when marine mammals and birds are migrating through the Bering Strait from June to November.

Climate change is impacting ice formation (thinner ice, ocean freezing later in the winter, and frequent fall storms causing coastal erosion due to having no shore-fast ice to protect the coast) and the migration patterns of marine mammals that depend on the ice.¹ Two villages in the Bering Strait

region have experienced a decline in hunting opportunities - ice has blocked hunters' ability to launch boats and bad weather did not allow access to the ice, causing the State of Alaska to declare an economic disaster on St. Lawrence Island.² The village of Diomedede located in the Bering Strait has experienced a decline in opportunities for walrus hunting due to the change in weather and ice conditions.³ The walrus rest on Big Diomedede in Russian territory, where the Alaska Native hunters are not allowed to harvest them.

There are benefits of resource development, and there are opportunities for communities that have the Arctic infrastructure in place, such as ports and harbors. The Red Dog Mine hires NANA shareholders, creating jobs, and NANA receives mineral royalties for shareholder dividends. The Ports of Unalaska and Nome have seen an increase in dockings with the opening of the OCS for oil & gas development leading to staging vessels at both ports. In Nome, ocean mining has created seasonal jobs.

One major opportunity for resource development is the construction of an Arctic deep draft port in Western Alaska, as identified by the U.S. Army Corps of Engineers and the State of Alaska.⁴ Extending Nome's causeway and onshore infrastructure at Port Clarence will meet the increased demands for ocean-going commerce, scientific research and economic and resource development activities. Most importantly, it will provide a strategic location to position assets to strengthen homeland security and national defense and increase a presence for enforcement as well as Arctic stewardship and environmental response. Investment in Nome's port will allow industry to see savings immediately and improve logistics. The City of Nome is a strategic transportation hub due to its location on the Bering Strait and Norton Sound. The city provides transportation, health and governmental services to residents of the region, where the population is over 9,000. Nome is also a mining community with resource and economic development activities happening since 1899, when the original gold rush started. Rural residents, especially Indigenous Alaskans, are dependent on the wildlife around then and have developed a mixed culture.

Many of Alaska Natives bear the most risk, with no benefits arising from the opening of the Arctic for shipping and resource development. Unfortunately, communities in the Bering Strait such as Gambell, Savoonga, Wales, and Diomedede will not see much economic benefit due to a lack of infrastructure in place for ocean vessels to use them for protection from bad weather and a lack of lay-down areas to place assets for search and rescue and environmental protection (spill containers). Unlike states along

the Gulf of Mexico, which receive OCS revenue sharing, the communities impacted by OCS activities in Alaska do not receive any revenue sharing from the U.S. Federal Government. Many communities are not adapted to address the social ills that accompany economic and resource development, including the introduction of drugs in local communities where Alaska Natives have a high rate of suicide and substance abuse.⁵

At times, our community members and villages feel helpless due to fear of the unknown and the impacts on marine mammals and migratory birds with the increase in Arctic shipping and resource development. They encourage the gathering of baseline data using traditional knowledge as well as western science to aid in policy creation for the Arctic.⁶ The most unknown event is a Spill of National Significance (SONS) in the Arctic sea ice and rough waters, putting our marine mammals and sea birds at risk, along with Alaska Natives who depend on the wildlife for cultural as well as nutritional needs. A SONS event would strain the community's water and fuel supply and landfills; the stock of local stores would be bought out. Our outlying communities are not prepared for a huge influx of people with no hotels and are in dire need of housing. The disruption of normal, everyday business also would be hampered if all rental space was taken, leaving no room for service providers such as doctors, dentists, social service and law enforcement personnel. Communications would be more difficult. In Nome during the month of Iditarod (March), for example, more than 800 visitors are in town and cell service almost comes to a halt.

Alaska's Inuit are Permanent Participants in the Arctic Council through their participation in the Inuit Circumpolar Council (ICC). ICC-Alaska continues to advocate for the protection of the Arctic environment within the Arctic Council. The 2014 Kitigaaryuit Declaration was adopted in July at the ICC General Assembly in Inuvik, Canada. The United States is poised to take the chairmanship of the Arctic Council in 2015, and the region has made recommendations to the State Department requesting that all Arctic Council meetings be held in Alaska.⁷ Admiral Robert J. Papp was named the U.S. Arctic Representative, and former Alaska Lt. Gov. Fran Ulmer was named Special Advisor on Arctic issues. We look forward to working with both of them, as they are familiar with Alaska and the Arctic. Kawerak has made a recommendation to the State Department that an Alaska Native who lives in the Arctic be added to this team for the development of Arctic policies. For Alaska Natives, this would give us access to policy advisors to provide recommendations and allow the U.S.

administration to reach out to Alaska Natives in meaningful consultation and engagement. The Governmental Accountability Office (GAO) made the following recommendations for the United States: “In collaboration with other relevant agencies, develop a joint strategy for U.S. participation that outlines a clear direction for agencies and identifies resources needed to sustain collaborative efforts and consistent participation in the Council. Develop a process to review and track U.S. progress in implementing existing and future recommendations. Work with other Arctic states to develop guidelines for producing clear recommendations with measurable actions and prioritizing recommendations.”⁸

Indigenous engagement should be a principle for any government in the creation of policies, rules and regulations being considered for the Arctic. Businesses working in the Arctic should have ethical corporate values and make it a priority to engage with communities that will be impacted directly by resource development in the Arctic.

The following policies and strategies of the United States and the State of Alaska are in place: The President’s National Strategy for the Arctic; Implementation Plan for the National Strategy for the Arctic Region; the Department of Defense’s Arctic Strategy; the USCG Arctic Strategy; NOAA’s Arctic Action Plan; the Navy’s Arctic Strategy; the Committee on Marine Transportation’s U.S. Arctic Vision and Strategy; the Alaska Arctic Policy Commission’s draft report, and the Arctic Marine Assessment Report’s 2009 Recommendation for Arctic infrastructure to comply with tribal consultation with Alaska Natives and American Indians per Executive Order 13175. The next step is for congress and the president to implement and fund these priorities.

Watt-Cloutier’s discussion of a rights-based approach to Arctic development should gain momentum, and this approach should be discussed with policy makers. The United States has been a leader through our Declaration of Independence and voicing concern for human rights at the international and national levels on issues such as religious freedom, labor rights, democracy, and freedom of expression. Many Lower 48 citizens do not believe that climate change is happening and are not aware of any Arctic issues that are important to Alaska Natives. In fact, many people think Alaska is a sovereign nation and that the State of Alaska is located below Hawaii, based on maps.

Conservation groups and federal agencies react to changes in the Arctic by seeking tighter regulations on the ability of Alaska Natives to subsist

and by interrupting a process toward a rights-based approach that regions have used for sustainable resource development.⁹

Title VII of the State of Alaska's Constitution establishes the basic principles for wildlife management in Alaska and grants broad powers to the Alaska legislature to provide for the "utilization, development, and conservation" of Alaska's natural resources "for the maximum benefit of its people."¹⁰ Under Title VIII of the Alaska National Interest Lands Conversation Act (ANILCA), subsistence is a priority for rural residents and is allowed when resources are scarce. The State of Alaska chose not to comply with the federal law, citing our state constitution, which says all resources belong to all Alaskans and does not give priority to rural residents for subsistence activities. An Alaska Native Federation (AFN) report emphasized the fact that Title VIII, with its priority on subsistence, is federal law that must be administered under federal standards without improper deference to state law and state management issues and objectives. AFN joined the Native American Rights Fund to support Katie John's litigation. The U.S. Supreme Court "rejected the State of Alaska's petition for certiorari review of the decision of the Ninth Circuit Court of Appeals upholding the 1999 Final Rules promulgated by the Secretary of the Interior and the Secretary of Agriculture to implement part of ANILCA concerning subsistence fishing and hunting rights in federal waters."¹¹ The state continues to limit federal jurisdiction over fishing while it aggressively prosecutes native subsistence users in waters currently under state control.¹² Regulatory action can lead to food shortages and create fear and insecurity in our communities, and for the last couple of years Alaska Natives were arrested for taking fish from closed state rivers for subsistence, while commercial fishing was allowed in federal waters.

There are opportunities to work with the State of Alaska through other forums such as fish and game boards for a rights-based approach to policy creation to solve conflicts among users. One example is through the permit process of the Department of Natural Resources for suction dredge mining. The permits state that dredgers must maintain a certain distance from subsistence fishing nets in the ocean.

The Marine Mammal Protection Act, which grants only Alaska Natives the right to hunt marine mammals calls for an ecosystem approach to management and conservation, should be considered as a rights-based approach. Alaska Natives are using other processes for a rights-based approach within the federal and state co-management agreements. One

successful example is the Alaska Eskimo Whaling Commission. The major exploration companies such as ExxonMobil, PB Exploration and Shell created a programmatic conflict avoidance agreement in 2012 for those who operate barges or transit vessels in the Beaufort and Chukchi Seas engaged in oil and gas operations, including avoidance guidelines and mitigation measures in the area of active subsistence hunts for bowhead whales.

An opportunity to use a rights-based approach is the creation of a harbor safety committee. The coalition of the Alaska Eskimo Whaling, Walrus, Beluga, Nanuuq and Ice Seal Committee came together to start on the creation of the Arctic Water Safety Committee with the increase in Arctic shipping during marine mammal migratory season and the impacts on our way of life and subsistence activities. With regional observers from the North Slope Borough (NSB) and Northwest Arctic Borough (NWAB) and Kawerak and the Alaska ICC, this effort was successful in adding areas of subsistence use to the 2013 Coast Pilot. The Arctic Waters Safety Committee will provide a forum to meet with shippers and operators to work out voluntary measures for sharing the waterway. Last month, NSB Mayor Charlotte Brower sent a letter to NWAB Mayor Reggie Joule and myself asking that we meet to form the same type of committee. We have since reached out to the U.S. Coast Guard District 17 (USCG) to host a meeting to explain the process of creating and implementing its goals and mission. The meeting was held in Anchorage on August 28 with all stakeholders at the table.

The Bering Strait, a natural choke point, is an international strait with rights of innocent passage, and many of our coastal communities' subsistence hunters and commercial fisherman are worried about the lack of a vessel traffic scheme and the prospects of conflicts with large vessels colliding with subsistence boats and smaller sailboats, along with possible ship strikes on migrating whales. The region provided recommendations to the USCG D17 Bering Strait Port Access Study, based on traditional knowledge, and identified areas to be avoided to protect marine mammals and sea birds. Alaska Natives will continue to advocate for volunteer measures to be put in place until the IMO Polar Code is completed and entered into force. There is support from NGOs such as the Pew Foundation for such voluntary measures to be in place.

Many communities partner with companies that have strong records of corporate social responsibility (e.g., Norway's Statoil along with Norway's

government) and an open and transparent process for development and have identified areas where no new resource development will occur to protect fishery interests, etc. The Arctic Slope Regional Corporation and several village corporations now have an opportunity to purchase offshore drilling operations in the Chukchi Sea under an agreement with Shell Oil for a sustainable economy.

The industry needs to be patient, realizing that the work timeline will be longer to respect our subsistence rights, which may cost more in R&D and exploration. The most successful collaboration is when industry, communities, and regulatory agencies work together to keep dialog and communication open by holding community meetings and follow up via teleconferences. Many of the resource developers are global industries working with various sovereign nations and are excellent in community engagement.

I applaud Watt-Cloutier's presentation for continuing to advocate a human rights-based approach to development in the Arctic. In closing, I want to remind the audience that we will continue to live in the Arctic, as we have for thousands of years, whereas nonrenewable resources will be depleted and those businesses will leave the Arctic. Our mission is to ensure that those resources we depend on for our nutrition and culture are there for our future, while nonrenewable resources are developed sustainably. The question to ask yourself is: What does the vision of the Arctic look like to you? My vision is of one where the environment is pristine, marine mammals are bountiful, fish and migrating birds coincide with sustainable resource development, and there are healthy people and healthy communities.

Notes

1. "Seal and Walrus Harvest and Habitat Areas for Nine Bering Strait Region Communities," Ice Seal and Walrus Project, November 2013, Kawerak, Inc., Social Service Program, Natural Resource Division.
2. August 29, 2013 Letter from Gov. Parnell to Alaska Legislature Declaring Economic Disaster.
3. "Data Source U.S. Fish & Wildlife, Marine Mammals Management, Marking, Tagging, and Reporting Program," Department of the Army, U.S. Army Engineer

- District, JBER, Alaska, "Navigation Improvements Little Diomedes, Alaska," Alternative Formulation Briefing Meeting Report, April 2013.
4. U.S. Army Corps of Engineers, Alaska District and the State of Alaska Department of Transportation, "Arctic Deep Draft Port System Study," March 2013.
 5. State of Alaska Statewide Suicide Prevention Council, Suicide Statistics. Substance Abuse Prevention Program.
 6. "Meaningful Collaboration and Environmental Governance with Alaska Natives: the case of increase maritime traffic in the Bering Strait Region, Fieldwork Report 2014," George Stetson, PHD Center for Maritime Policy and Strategy, United States Coast Guard Academy.
 7. City Answers to GAOHQ-#6373414 Study on Maritime Infrastructure, 2013.
 8. GAO-14-435 Report to Congress, "Arctic Issues, Better Direction and Management of Voluntary Recommendations Could Enhance U.S. Arctic Council Participation." May 2014.
 9. "CD-5 Project in NPR-A Lawsuit Ignores Hard-Won Compromise" by Edward Itta, Resource Development Council Newsletter, September 2013.
-Canadian Inuit Leaders Reject Environmentalist Campaign Pitting Indigenous People Against Arctic Resource Development, Press Release, May 14, 2013.
 10. *Alaska Natives and American Indian Laws*, 2nd Edition, David S. Case, David A. Voluck, University of Alaska Press 2002.
 11. Native American Rights Fund, March 31, 2014. <http://narfnews.blogspot.com/2014/03/united-states-supreme-court-rejects.html>
 12. AFN 2010 Conference Subsistence Report.

Commentary

Nancy G. Maynard

INTRODUCTION

This commentary on the presentation by Sheila Watt-Cloutier highlights the fact that, more than at any other time in history, the concerns of the Indigenous peoples of the Arctic have been validated in detail by the scientific findings of two recent prestigious national and international climate assessments, underscoring the importance of ensuring that Indigenous peoples are regarded as a part of the Arctic and have a strong voice in determining its future. The discussion in this commentary provides examples of the scientific findings of the 2014 Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) and the U.S. National Climate Assessment (NCA) that support many of the points put forth in the Watt-Cloutier's presentation on, "A Rights-based Approach to Arctic Development." Her presentation provides an insightful and detailed summary of the current and future challenges to Arctic Indigenous peoples from the increasing industrial development of the North resulting from climate changes and the opening of the Northern Sea Route. Watt-Cloutier's presentation is a direct, firsthand account of these impacts on Arctic Inuit communities to date as well as a statement of serious concerns about future challenges facing them in the rapid transformation of the Arctic and the race to exploit the region's natural resources. She provides a strong voice for the Indigenous peoples of the North, as she sets forth her concerns about whether or not it will be possible to ensure that Indigenous peoples will be part of and have a strong voice in the future of the Arctic.

This commentary describes scientific evidence from the IPCC and the NCA released in 2014 that strongly supports her descriptions of the impacts on Indigenous peoples, as well as her concerns for the future—all findings fully documented by both the scientific literature and Indigenous written and oral reports. It is hoped that this increasing body of supportive scientific evidence will serve as a tangible reminder to governments, industry and other Arctic players of the validity and importance of listening to the voices of Indigenous peoples in the upcoming discussions among Arctic and non-Arctic players regarding this rapid transformation of the Arctic.

BACKGROUND

In 2011, during the first in the series of the North Pacific Arctic Conferences, I presented a commentary on issues facing the Indigenous peoples of the region (Maynard, 2013), which outlined the growing concern by many that Indigenous peoples would be pushed aside or even eliminated in the rush by Arctic and non-Arctic states and industries to exploit the region's resources. In fact, the Conference Note for the 2011 NPAC conference provided an especially insightful summary of the challenges for Indigenous peoples:

"...The shrinking of the Arctic's ice cap increases environmental fragility and threatens the traditional way of life for Indigenous Peoples. Climate change in the circumpolar region is already affecting Indigenous Peoples who consider the region to be their homeland. Arctic Indigenous Peoples are trying to protect their traditional ways of life from colonizers who seek to take advantage of new opportunities to exploit the region for oil, mineral, and forestry resources with adverse effects on their communities..."

That initial commentary provided background information to help increase understanding of the issue, a few key questions, examples of impacts on indigenous communities occurring today, and some proposed solutions (see Maynard, 2013). The piece presented detailed information on questions such as "Who are the Indigenous peoples?" and "What are the primary stresses on Arctic Indigenous peoples?" A detailed summary was provided on the impacts on Indigenous peoples in the Arctic of changes in ecosystems (the strong connection to the environment for culture, well-being and nutrition), food and food security, extreme weather, and water. In fact, the entire paper was intended as a background brief to help enrich discussions for conference attendees with limited or no experience or knowledge of Arctic Indigenous peoples and their challenges resulting from climate and development.

Since that first 2011 NPAC conference—only three years later—a startling amount of scientific information has been published and compiled about the issues facing Indigenous peoples in the Arctic in several key climate change assessments, all of which support the major points in Watt-Cloutier's presentation. This 2014 commentary will provide a summary

of the key messages regarding Indigenous peoples from the IPCC and the NCA, and show how these climate assessments corroborate the statements made in Watt-Cloutier's presentation.

THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)¹

The IPCC was established in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) to assess the scientific, technical and socioeconomic information relevant for understanding the risk of human-induced climate change. Its purpose is “to provide policymakers with regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation.” There are three working groups, each of which prepares a report: (1) Working Group 1 (WG1): The Physical Science Basis, (2) Working Group 2 (WG2): Impacts, Adaptation, & Vulnerability, and (3) Working Group 3 (WG3): Mitigation of Climate Change. The IPCC assessments provide a scientific basis for governments at all levels to develop climate-related policies, and they underlie negotiations under the auspices of the UNFCCC. The IPCC assessments, which are prepared on a volunteer basis by hundreds of leading scientists and reviewed by teams of hundreds of others, are policy-relevant but not policy-prescriptive. The IPCC is committed to the highest standards of scientific excellence, balance and clarity, and seeks to cover full scientific, technical and socioeconomic assessments of climate change. The emphasis of the assessment process is on evaluation of all cited literature and its sources, including scientific, technological, and socioeconomic literature as well as material not necessarily widely available (e.g., conference proceedings, reports, local reports), but which is made available to reviewers upon request. What is different from past years is that the 2014 assessment—in particular, the “Polar Regions” chapter—devotes a significantly increased amount of attention to the impacts of climate and development on Indigenous peoples.

IPCC SUPPORT: HOW DO THE SCIENTIFIC FINDINGS FROM THE 2014 IPCC REPORT SUPPORT THE INDIGENOUS RESPONSES TO ARCTIC DEVELOPMENT?²

To begin with, the 2014 IPCC “Polar Regions” chapter is different from previous assessments for Indigenous peoples in several different ways. In the first place, the “Polar Regions” chapter has—more than in any prior assessments—increased the amount of scientific detail documenting the serious consequences of climate change and development presently impacting the health and well-being of Arctic residents, especially Indigenous peoples. While the chapter itself is roughly twice as long as it was in 2007, the number of articles by or about Indigenous peoples tripled and the associated discussions in the chapter greatly expanded. This is reflective of the fact that there is now a significantly larger body of literature by and about the Indigenous peoples of the North. This increase in Indigenous literature, in turn, may be a result of the International Polar Year (IPY) activities that actively encouraged collaborative science-Indigenous studies during 2007-2009. In addition, at least seven of the chapter authors were familiar with Indigenous issues, and the chapter includes one Indigenous lead author.

Secondly, to help show the degree to which Indigenous peoples’ issues have been enhanced in this assessment, this commentary summarizes in the following section some of the major points of the chapter that support Indigenous concerns by having more in-depth analyses and specific examples of impacts from climate and development issues (such as the executive summary and sections on health and well-being, informal, subsistence-based economy, economic sectors, human adaptation, research and data gaps and special sections on Indigenous peoples and traditional knowledge).

IPCC SUPPORT: “POLAR REGIONS” CHAPTER EXECUTIVE SUMMARY AND INDIGENOUS COMMUNITIES³

In the executive summary, where the chapter authors summarize the points considered most important, almost all of the new scientific findings that

have emerged since the last IPCC assessment in 2007 address impacts affect Indigenous peoples—either directly or indirectly—and mirror many of the same concerns raised by Watt-Cloutier.

For example, the executive summary states that “the physical, biological and socio-economic impacts of climate change in the Arctic have to be seen in the context of often interconnected factors ... For example, food security for many indigenous and rural residents in the Arctic is being impacted by climate change, and in combination with globalization and resource development is projected to increase significantly in the future.”

In another example, the executive summary notes that “the rapid rate at which climate is changing in the Polar Regions will impact natural and social systems and may exceed the rate at which some of their components can successfully adapt.... Already, accelerated rates of change in permafrost thaw, loss of coastal sea ice, sea level rise and increased weather intensity are forcing relocation of some indigenous communities in Alaska” (Larsen et al., 2014).

One of the strongest statements in the executive summary pertaining to Indigenous issues was that the “impacts on the health and well-being of Arctic residents from climate change are significant and projected to increase—especially for many indigenous people” (Larsen et al., 2014).

It also states that “these are expected to vary among the diverse settlements that range from small, remote, predominantly indigenous communities to large cities and industrial settlements, especially those located in highly vulnerable locations along ocean and river shorelines.”

These statements all directly support a number of the major concerns raised in the presentation by Watt-Cloutier.

IPCC SUPPORT: “POLAR REGIONS” CHAPTER AND INDIGENOUS COMMUNITIES⁴

One of the key sections of the IPCC “Polar Regions” chapter, “Health and Well-being of Arctic Residents,” was written with a strong emphasis on Indigenous communities, and many of the issues discussed in that section correlate closely with the individual impacts summarized by Watt-Cloutier.

The health and well-being section, (and the reason for the emphasis on the Indigenous communities), in the words of the authors, “...focuses more on health impacts of climate change on indigenous, isolated, and rural

populations because they are especially vulnerable to climate change due to a strong dependence on the environment for food, culture and way of life; their political and economic marginalization; existing social, health, poverty disparities; as well as their frequent close proximity to exposed locations along ocean, lake, or river shorelines” (Larsen et al., 2014).

Some examples of health issues that the “Polar Regions” chapter discusses in detail that parallel those addressed by Watt-Cloutier are as follows:

- Injuries and risks from extreme weather events and temperatures, rapid onset of storms, accidents, unsafe conditions for hunting, travel and subsistence gathering, and loss of services to isolated villages
- Changes in ice and snow state, with resulting changes in animal and plant populations, loss of forage, food, sites for habitats for subsistence species, migration routes, and grazing
- Damage to the built environment impacting already limited housing, breakage of sanitation infrastructure, water supply systems for clean water, sickness from contaminants (local and long-range), and infectious disease
- Food insecurity brought on by changes in climate and development in the region, decreased opportunities for successful hunting, fishing, some subsistence species displaced, and forced reliance on (less healthy) store-bought foods
- Impacts to cultures, families, and community residents due to necessity for relocation of villages damaged by permafrost thaw and erosion, which (along with other changes) are causing stress within Indigenous and isolated communities leading to increased numbers of suicides especially among young people.

U.S. NATIONAL CLIMATE ASSESSMENT (NCA)⁵

Of particular interest for this commentary is one of the 12 key findings of the entire NCA: “Climate change poses particular threats to Indigenous Peoples’ health, well-being, and ways of life” (<http://ncadac.globalchange.gov/>). The evidence and literature supporting this statement are presented in one of the chapters in particular, “Indigenous Peoples, Lands and Resources” (see Bennett et al., 2014). This is the first time a chapter in a U.S.

NCA has been devoted specifically to indigenous peoples, and is a strong signal that this country is seriously addressing the issues related to climate and environmental change relative to Indigenous peoples.

As in the IPCC assessment, many of the points laid out by Watt-Cloutier are similar in nature to those outlined in this Indigenous chapter, and the literature sources underpinning this assessment fully support her statements. Of course, this assessment addresses American Indian and Alaska Native concerns across the board, so not every part of this chapter is necessarily applicable to the Arctic. But three of the five key messages apply directly to the Alaskan Arctic, and many of the impacts within the other two messages also apply to Alaska.

The five key messages from the “Indigenous Peoples, Lands and Resources” chapter of the NCA are:

1. “Observed and future impacts from climate change threaten Native Peoples’ access to traditional foods such as fish, game, and wild and cultivated crops, which have provided sustenance as well as cultural, economic, medicinal, and community health for generations.”
2. “A significant decrease in water quality and quantity due to a variety of factors, including climate change, is affecting drinking water, food and cultures. Native communities’ vulnerabilities and limited capacity to adapt to water-related challenges are exacerbated by historical and contemporary government policies and poor socioeconomic conditions.”
3. “Declining sea ice in Alaska is causing significant impacts to Native communities, including increasingly risky travel and hunting conditions, damage and loss to settlements, food insecurity, and socioeconomic and health impacts from loss of cultures, traditional knowledge, and homelands.”
4. “Alaska Native communities are increasingly exposed to health and livelihood hazards from increasing temperatures and thawing permafrost, which are damaging critical infrastructure, adding to other stressors on traditional lifestyles.”
5. “Climate change-related impacts are forcing relocation of tribal and indigenous communities, especially in coastal locations. These relocations, and the lack of governance mechanisms or funding to support them, are causing loss of community and culture, health impacts, and economic decline, further exacerbating tribal

impoverishment” (from Bennett et al., 2014).

In summary, more than at any other time in history, the concerns of Indigenous peoples of the Arctic regarding climate, environment and development, as described by Watt-Cloutier in her keynote presentation are shown to be supported and validated by a significant amount of scientific evidence. In fact, the evidence was presented in the extensive literature evaluated in the two highly regarded national and international climate assessments published in 2014 (IPCC and the U.S. NCA), and underscores the importance of ensuring that Indigenous peoples must be a part of and have a strong voice in the future of the Arctic.

Notes

1. The sources of information in this section can be found at: www.ipcc-wg2.gov/ and www.ipcc-wg2.gov/AR5/
2. Information in this section is based on Larsen et al. 2014.
3. Sources of information in this section are in Larsen et al. 2014.
4. Sources of information for this section are in Larsen et al. 2014.
5. Source for information in this section: <http://ncadac.globalchange.gov/>

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