

# Merging Two Worlds: Using Indigenous Knowledge in Arctic Policy

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Published on 16 November 2022

## Abstract

The Arctic is a region of the world that is becoming increasingly affected by climate change. As a result, the original inhabitants of this land, Indigenous people, are at the frontlines of this climate crisis. Over thousands of years, Indigenous people have developed an unmatched understanding of the natural environments that surround them. This knowledge, or Indigenous knowledge, can serve as an indispensable resource for policy development. When combined with Western knowledge, the two knowledge systems can create Arctic policy that is truly sustainable, in both a scientific and Indigenous sense. This paper will closely examine the benefits of using Indigenous knowledge in policy, existing case studies which incorporate Indigenous knowledge in innovative ways, gaps surrounding the use of Indigenous knowledge in Arctic policy, and lastly, recommendations to further ingrain Indigenous knowledge as a central tenet of sustainable Arctic policy.

Keywords: Indigenous Knowledge, Arctic Policy, Indigenous

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## I. Introduction

The Arctic is emerging as one of the most affected regions in the world with the effects of climate change becoming increasingly present in our everyday lives. Sea ice is melting at an unprecedented rate and it is expected that by 2035, it will completely disappear during summer.<sup>1</sup> Due to melting ice, a positive feedback loop is created in which its reduction creates an increasingly unreflective earth surface. This causes more heat to be absorbed and therefore the earth warms quicker. This climate catastrophe will also carry many devastating

effects for those who rely on healthy and balanced Arctic ecosystems, specifically Indigenous people who have lived in the Arctic since time immemorial. On the other hand, a changing Arctic also presents many economic benefits. Around 25% of all the world's untouched natural gas and oil reserves are hidden below the Arctic Ocean and newly exposed strips of ocean will cut off weeks from shipping routes. These vast economic opportunities that are arising from a changing Arctic underline the importance of creating municipal, national, and international Arctic policies that will appropriately balance economic interests with human and environmental security.

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<sup>1</sup> Borunda, Alejandra. "Arctic summer sea ice could disappear as early as 2035."

Most current research and media are dominated by the role that powerful Arctic nations, such as Russia, Canada, and the US, are playing in the development of Arctic policy, yet little research is focused on the role and place of the original stewards of this land, Indigenous people. The Arctic is home to a rich diversity of Indigenous groups stretching from the Gwich'in and Inuit in Alaska, Northern Canada, and Greenland; to the Saami people in Northern Scandinavia; to the over 40 distinct Indigenous groups living in Russia's Arctic.<sup>2</sup> Not only do these groups have a rich history and deep roots in the Arctic, but they also hold vast networks of indispensable Indigenous knowledge. **This paper will examine how Arctic Nations have and can use this rich diversity of Indigenous knowledge to develop sustainable Arctic policies that will balance economic, environmental, and human interests.** Generally, Arctic policy has been developed without much space for or emphasis on Indigenous knowledge. Yet, considering that around one million Indigenous people call the Arctic home, their Indigenous knowledge can prove essential at ensuring the resilience of Indigenous cultures and the sustainability of the Arctic at large.<sup>3</sup>

Specifically, this paper will first examine the distinction between Indigenous and Western knowledge and the implications this carries in policy. Afterwards, it will analyse existing institutions and government

programs that enshrine Indigenous people and their knowledge as central tenets of Arctic policy. Using the implications of Indigenous knowledge in policy and examples of case studies, **this paper will show how Indigenous knowledge can be an effective tool in Arctic policy.** Lastly, it will examine any gaps that exist among Arctic nations' policies and their Indigenous people. From this, the paper will provide recommendations to Arctic Nations on how to better incorporate Indigenous knowledge into their respective Arctic policies.

## **2. Indigenous People in the Arctic and Indigenous Knowledge**

In general, the Arctic is viewed as a barren region of the world with little biological or cultural diversity, however, this statement could not be farther from the truth. The Arctic is one of the world's most nutrient rich regions, especially during summer months when the sun is above the horizon twenty-four hours of the day. Not only does this help to sustain a wide range of flora and fauna, but over ten million humans as well. Out of this number, 10%, or around one million people, can be classified as Indigenous. Indigenous people in the Arctic are very culturally diverse with over 40 different ethnic groups which speak over 20 distinct languages.<sup>4</sup> In some regions of the Arctic such as Nunavut and Greenland, over 75% of the population belongs to an Indigenous group.<sup>5</sup>

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<sup>2</sup> "Arctic Peoples" Arctic Council

<sup>3</sup> "Indigenous Population in the Arctic" Nordregio

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<sup>4</sup> "Indigenous Peoples" University of Lapland

<sup>5</sup> "Indigenous Population in the Arctic" Nordregio

Indigenous people have inhabited almost every corner of the Arctic for thousands of years. Over the course of their long histories, Arctic Indigenous people have developed their own sophisticated societal structures, laws, and systems of governments. In contrast with dominant Western political and legal doctrines, which primarily revolve around philosophical notions of the self and one's inherent right to be free, the Indigenous philosophies that informed their societal structures were inextricably linked to the land in which they call home. **During pre-colonial times, practically every facet of Indigenous life was tied to the land: they survived off the land, created religions based off the land, and passed down knowledge of the land through generations and generations.** This passing down of knowledge informed and educated future generations of Indigenous people who continuously added to this bank of knowledge based on the changing environmental characteristics of the land. For example, an Arctic Indigenous group called the Vuntut Gwitchin have developed Indigenous knowledge systems over hundreds of years surrounding caribou migration patterns based on the warmth of a given winter. If a winter was relatively warmer, Vuntut Gwich'in people knew that snow would melt then refreeze, creating a layer of ice right above the ground. This makes it harder for caribou to reach ground food, and therefore, caribou would be more likely to migrate in higher altitudes

where it is colder.<sup>6</sup> This is a prime example of *Indigenous Knowledge*. Generally speaking, Indigenous knowledge “refers to knowledge systems, creations, innovations and cultural expressions which have generally been transmitted from generation to generation; are generally regarded as pertaining to a particular people or its territory; and, are constantly evolving in response to a changing environment.”<sup>7</sup>

Eventually, after Europeans settled on Indigenous lands and brought their own knowledge systems and societal structures, it became clear that *Indigenous Knowledge* systems were very distinct from *Western Knowledge* systems. During the colonial era, there was a concentrated effort across Arctic States to assimilate Indigenous people into the dominant colonial culture and Western knowledge systems, and by doing so, Indigenous people were alienated from their Indigenous knowledge systems. There were many government policies tasked with doing this around the Arctic, from residential school and boarding school in Alaska and Northern Canada to the forced religious conversion of the Saami people in Northern Scandinavia to the forced relocation of Indigenous groups in Northern Russia.<sup>8</sup>

Despite the detrimental effects of these policies on Indigenous identity and culture, many remote Arctic Indigenous communities still utilise Indigenous

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<sup>6</sup> CBC. “Climate Change in the North”

<sup>7</sup> “Genetic Resources, Indigenous Knowledge and Indigenous Cultural Expressions.” World Intellectual Property Organization.

<sup>8</sup> Pikkarainen, Heidi, “Discrimination of the Sami”; Diatchkova, Galina. “Indigenous Peoples of Russia and Political History”

knowledge as a main driver behind their everyday lives and local policy decisions. Nonetheless, the implications of using Indigenous knowledge can be expanded beyond local communities. In fact, the use of Indigenous knowledge in ecological conservation has been proven to greatly enhance and protect biodiversity worldwide.<sup>9</sup> For example, 80% of global biodiversity thrives in the 22% of land inhabited by Indigenous people.<sup>10</sup> Both the pervasiveness and effectiveness of Indigenous knowledge makes it an extremely useful tool for policy-making, yet despite this, there still remains many questions on how to usefully combine Indigenous knowledge and Western knowledge into impactful policy. One of the main questions concerning the combination of the two knowledge systems is one of place. For example, what respective places in policy-making should Western and Indigenous knowledge occupy? As emphasised before, Western and Indigenous knowledge systems are built upon very different foundations, and therefore, they approach issues from different angles. Western knowledge typically views humans as separate from the natural world, yet it has also been extraordinarily successful in furthering human understanding on isolated biological and chemical processes at play in ecosystems.<sup>11</sup> Western knowledge can, for example, be credited with finding the causes of climate change or the

workings of photosynthesis. Nonetheless, Western knowledge is lacking in its ability to transform understanding of isolated biological processes into a wider understanding of complex ecological systems. In many instances, processes creating and maintaining complex ecological systems are oversimplified in Western knowledge, and as a result, this has led to many malinformed decisions resulting in overall environmental degradation.<sup>12</sup> Indigenous knowledge systems, on the other hand, are more tailored to understanding complex ecological systems, and this follows logically from the fact that individual Indigenous knowledge systems were developed through hundreds of years of qualitative observations of a specific area of land. Furthermore, Indigenous knowledge systems also rest on the fact that humans are a natural part of a given ecological system, and therefore, human actions are inextricably linked into an understanding of the operation of an ecological system.<sup>13</sup>

The contrast between Western and Indigenous knowledge systems is stark, yet it also highlights that each knowledge system can occupy its own respective place in policy-making while working together mutually to create the best possible outcome. Especially in the Arctic, it is crucial that policy responds to the volatile nature of climate change while making sure that it also responds to those that it will affect. For this, the

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<sup>9</sup> Gadgil, Madhav. "Indigenous Knowledge for Biodiversity Conservation"

<sup>10</sup> Corn tassel, Jeff. "Toward Sustainable Self-Determination: Rethinking the Contemporary Indigenous Rights Discourse"

<sup>11</sup> Gadgil, Madhav. "Indigenous Knowledge for Biodiversity Conservation"

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<sup>12</sup> Ibid

<sup>13</sup> Ibid

scientific approach of Western knowledge can deliver on technical aspects such as environmental impact assessments, data collection, and ecosystem monitoring, while Indigenous knowledge can deliver on more qualitative aspects such as human-flora/fauna relationships, regional natural history, and first-hand experiences.

### **3. Arctic States Obligations Towards Indigenous Knowledge**

Before examining several case studies that demonstrate the merging of Western and Indigenous knowledge in Arctic policy, it is useful to first explain existing frameworks which codify state's obligations towards the Indigenous knowledge of their Indigenous peoples. The most comprehensive and overarching document relating to state obligations as a whole towards Indigenous people is the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). UNDRIP "establishes a universal framework of minimum standards for the survival, dignity and well-being of the indigenous peoples of the world."<sup>14</sup> This declaration was adopted by the General Assembly in 2007, and despite being a non-binding declaration, every Arctic state, with the exception of Russia who abstained, eventually voted in favour of adopting the declaration. Certain states, such as Canada,

have gone further by ratifying UNDRIP into domestic law.<sup>15</sup>

Within UNDRIP, there are various articles which, either implicitly or explicitly, lay out state's obligations towards safeguarding and collaborating with the Indigenous knowledge systems of Indigenous people. For example, Article 13 states that "Indigenous peoples have the right to revitalise, use, develop, and transmit to future generations their histories, languages, oral traditions, philosophies, writing systems and literatures", or simply put, their knowledge systems.<sup>16</sup> Furthermore, the Article states that "States shall take effective measures to ensure that this right is protected."<sup>17</sup> Article 31 states that Indigenous people "have the right to maintain, control, protect, and develop their intellectual property over such cultural heritage, Indigenous knowledge, and Indigenous cultural expressions" and that "States shall take effective measures to recognize and protect the exercise of these rights."<sup>18</sup> For Canada, these Articles are now binding under Canadian law and for the rest of the Arctic states they act as non-binding recommendations. Nonetheless, UNDRIP does demonstrate that respect for Indigenous knowledge systems is a fundamental part of basic Indigenous rights, and that at the least, it is a moral obligation of Arctic states to respect, protect, and

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<sup>14</sup> "United Nations Declaration on the Rights of Indigenous Peoples" United Nations

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<sup>15</sup> Government of Canada, Department of Justice.

"Implementing the United Nations Declaration on the Rights of Indigenous Peoples Act"

<sup>16</sup> UNDRIP, UN

<sup>17</sup> Ibid

<sup>18</sup> Ibid

consult with their Indigenous people's knowledge systems. In reality, moral obligations of states hold little sway over their actual policy decisions, yet despite this fact, Arctic states from Canada to Russia have enshrined the Indigenous knowledge of their Indigenous people into parts of their Arctic policies.

#### **4. Case Studies**

##### *4.1 Arctic Council*

Perhaps one of the most significant examples of Indigenous knowledge being used in Arctic policy is one that involves the multilateral cooperation of all Arctic states and their Indigenous people in the form of an intergovernmental organisation. In 1996, all eight Arctic states (Canada, USA, Russia, Denmark, Norway, Sweden, Finland, Iceland) signed the Ottawa Declaration, the founding document of the Arctic Council, the sole intergovernmental organisation devoted exclusively to the development of international Arctic policy and cooperation.<sup>19</sup> What is significant about the Arctic Council is that it enshrined Indigenous knowledge within its operations, with the Ottawa Declaration stating that the Council recognizes "the Indigenous knowledge of the indigenous people of the Arctic and their communities and taking note of its importance and that of Arctic science and research to the collective understanding of the circumpolar Arctic."<sup>20</sup> In order to further institutionalise this commitment to Indigenous knowledge, the Arctic

Council is also occupied by six permanent members representing Indigenous groups around the Arctic. The six permanent members represented in the Council are the Aleut International Association (AIA), the Arctic Athabaskan Council (AAC), Gwich'in Council International (GCI), Inuit Circumpolar Council (ICC), Russian Association of Indigenous People of the North (RAIPON), and the Saami Council.<sup>21</sup>

While the permanent members do not hold voting rights in final decisions, they are still vital to the operation of the Council in many ways. First, the permanent participants have full consultation rights in connection to negotiations and decisions made in the Council. Second, they are essential members within the Arctic Council's six working groups, which conduct research and give recommendations to the Council on subjects such as environmental conservation, emergency response, assessments and monitoring, and sustainable development. Third, they legitimise the operations of the Arctic Council by representing those who will be most affected by Arctic policy. Lastly, the permanent members bring indispensable expertise to the Council through on-the-ground experience and Indigenous knowledge. At any given time, the Arctic Council and its subsidiary groups are engaged in over one hundred different projects and initiatives, many of which use Indigenous knowledge as a central tenet of their research design. On its website, the Council states that "The inclusion of Indigenous knowledge and local knowledge

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<sup>19</sup> Arctic Council. "Ottawa Declaration (1996)"

<sup>20</sup> Ibid

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<sup>21</sup> "Permanent Participants." Arctic Council

is vital for exploring solutions to emerging challenges in the Arctic and to provide the best available knowledge as a basis for decision-making.”<sup>22</sup>

As an example, the Arctic Council’s Arctic Monitoring and Assessment Programme (AMAP) working group releases an annual report on the effects of climate change in the Arctic. A large part of this report involves monitoring and assessing the level of toxic chemicals in Arctic wildlife. This research heavily relies on the Indigenous knowledge of Indigenous people across the Arctic in order to collect samples from different Arctic species. Indigenous knowledge on the migration patterns, harvesting practices, and behaviour of Arctic wildlife is crucial in providing a consistent source of samples to analyse trends in levels of toxic chemicals. AMAP says that without the participation of Indigenous people, “these long term contaminant studies would not be feasible.”<sup>23</sup> This example also highlights the balancing roles that Indigenous and Western knowledge can play in Arctic policy, as Indigenous knowledge is useful in more qualitative aspects of policy development while Western knowledge is more useful in quantitative aspects. Together, the two types of knowledge build a strong foundation of research that can be used to best inform Arctic policy that will ultimately affect those who rely on healthy and uncontaminated Arctic wildlife, Indigenous people. This study represents one of many current and past

studies spearheaded by the Arctic Council that have utilised the indispensable bank of knowledge held by Arctic Indigenous people.

#### *4.2 The Nunavut Land Use Plan*

Making up 86% of the territory’s population, Nunavut is home to Canada’s largest concentration of Indigenous people (known as Inuit in the region).<sup>24</sup> Nunavut is also Canada’s largest territory/province, taking up one-fifth of the country’s land mass. Most of Canada’s untouched wilderness lies in Nunavut and large amounts of natural resources lie across the territory. Nunavut represents a unique mixture of a majoritively Indigenous population who have relied on healthy ecosystems for thousands of years and extensive economic opportunities that could potentially damage the environment, and by extension, also threaten the well-being of Nunavut’s Indigenous people. This creates a situation in which environmental, human, and economic interest must be appropriately balanced, and this is what the Nunavut Land-Use Plan (NLUP) sets out to achieve. The NLUP created a framework for “determining which types of development can happen and where, and outlining where environmental protection is a priority above all.”<sup>25</sup> The NLUP was developed between the Canadian Government, the Nunavut Territorial Government, and Nunavut Tunngavik, the representative body of the territory’s

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<sup>22</sup>“Generating Data and Knowledge.” Arctic Council

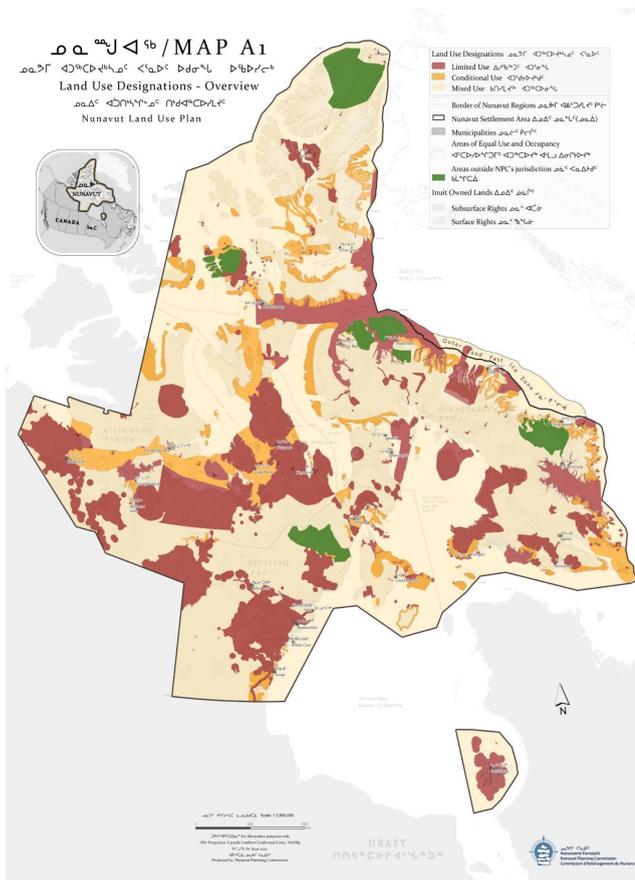
<sup>23</sup>“AMAP Assessment 2020.” AMAP

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<sup>24</sup>“Indigenous Population in the Arctic” Nordregio

<sup>25</sup> Russell, Rhiannon. “The biggest land use plan in the world.”

Indigenous population.<sup>26</sup> What is revolutionary about the three parties' collaboration is the amount of emphasis on and role played by Indigenous knowledge in the NLUP.



The NLUP divides over 2 million square kilometres of land into three different categories: Limited use (red) which entails year-round prohibitions on one or more types of development, making up 22%; conditional use (orange) which entails certain special requirements on development, making up 9%; and mixed use, which entails no prohibitions nor special requirements for

development, making up 65%. The delineation of these three zones relied on a balance of both Indigenous and Western knowledge. The NLUP describes its use of Indigenous knowledge as an “overarching focus of the Commission throughout the planning process.”<sup>27</sup> Most pertinent to the development of Arctic policy, the NLUP used Indigenous knowledge for “use and occupancy mapping, a long-running program that involves community visits and in-depth interviews with Inuit on current use of the land.”<sup>28</sup>

For example, certain limited and conditional use areas would only apply to certain parts of the year. In many cases, these designations were made based on the Indigenous seasonal calendar of the Inuit, which has six seasons instead of four and is based on the amount of snow and sun there is at a given period of the year. The adaptation of this land use plan to the Indigenous knowledge of the Inuit ensures that policy will be better suited to on-the-ground implementation and will better respond to the characteristics of the land through which Indigenous knowledge has been absorbed over thousands of years. The NLUP also relied heavily on Indigenous knowledge when establishing land zones based on caribou, a keystone species vital to the well-being of the Inuit. The NLUP states that it “received detailed technical information and Indigenous Inuit knowledge on the types of caribou in Nunavut, their seasonal ranges, and herds. This

<sup>26</sup> Ibid

<sup>27</sup> Nunavut Planning Commission. “Nunavut Land Use Plan”

<sup>28</sup> Ibid

information was vital in informing the Plan and establishing land use designations.”<sup>29</sup> This included Indigenous knowledge on the typical habits of caribou, their breeding grounds, and their migration corridors. In turn, these areas were designated as protected areas under the NLUP.

#### *4.3 Russia and Indigenous Knowledge*

Historically, Russia is an Arctic state that has centred a large part of its Arctic policy around military and industrial expansion over collaboration with its Indigenous people. Furthermore, Indigenous groups in Russia have little rights and control over their own land. Nonetheless, Russia has still embraced the Indigenous knowledge of its Indigenous populations in Arctic policy.<sup>30</sup> Over the past years, there are even examples of Indigenous knowledge being used to inform decision-making in Russia’s oil and gas industry, which is significant considering the importance of this industry to the Russian economy. In 2012, a project called “Supporting democratic participation of northern peoples in the Russian Federation” aimed to connect Indigenous people and the private sector in the Kamchatka Peninsula. This project used the Indigenous knowledge of Indigenous people to determine which areas were vital to their Indigenous harvesting, sustenance, and cultural practices with the goal of

collaborating with the private sector and industry.<sup>31</sup> The project developed maps of the Peninsula showing the overlays of Indigenous land use and industrial activity and fostered dialogue between the state, the private sector, and Indigenous people. This project will prove useful for any future development or industrial projects as it utilises Indigenous knowledge to create a framework for beneficial coexistence between industry and Indigenous people.

Another similar project in Russia called “Monitoring of development of Indigenous land use areas of the Nenets Autonomous Okrug,” was completed by the Association of Nenets People of Yasavey.<sup>32</sup> This project was conducted in Northern Russia’s most oil-rich region, yet the region is also home to nomadic reindeer herders. As a result, industry development in the region was threatening the nomadic practices of Indigenous people, therefore, dialogue between the two parties was needed. The goal of this project was to bring together the state, industry, and Indigenous people in order to determine a mutually beneficial separation of industrial activity and Indigenous land use.<sup>33</sup> This project relied extensively on the Indigenous knowledge of Indigenous people in order to determine areas most crucial for Indigenous harvesting, sustenance, and cultural practices. Similar to the previous project, maps were created showing areas essential to Indigenous

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<sup>29</sup> Ibid

<sup>30</sup> Johnson, Noor. “Community-Based Monitoring and Indigenous Knowledge in a Changing Arctic”

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<sup>31</sup> Ibid

<sup>32</sup> Ibid

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people in order to inform future decision making in the oil and gas industry.

#### *4.4 Overview of Indigenous Knowledge Use in the Arctic*

The use of Indigenous knowledge in the development of Arctic policy is actually quite prevalent. For example, researchers found that out of eighty-one recent programs that span across the Arctic, fifty-six engaged Indigenous knowledge to a certain extent.<sup>34</sup> Forty-one of these programs used Indigenous knowledge during consultation through interviews, focus groups, and participatory exercises. Twenty-three of these programs used Indigenous knowledge and Western science for the purpose of supporting decision-making in policy. Lastly, fifteen of these programs used Indigenous knowledge in both a consultation and decision-making capacity.<sup>35</sup> Projects using Indigenous knowledge were also spread fairly evenly across Arctic states with Canada hosting thirteen, USA eleven, Norway ten, Russia nine, Sweden eight, Finland six, and Denmark one.<sup>36</sup> Iceland does not have an Indigenous population, therefore, this piece does not apply to them.

### **5. Gaps Surrounding Indigenous Knowledge in the Arctic**

#### *5.1 Conflicting Arctic Policies*

Despite a wide embrace of Indigenous knowledge in Arctic policy, its scope and effect is still relatively small compared to the national policies of the biggest players in the Arctic. The Arctic is the region most affected by climate change, yet the US, Russia, and Canada rank second, fourth, and tenth in greenhouse gas emissions, respectively.<sup>37</sup> While Arctic policies using Indigenous knowledge can have a beneficial impact at a local or regional scale, these impacts are overshadowed and contradicted by the larger economic policies of Arctic States which contribute to large amounts of greenhouse gas emissions and greatly impact the Arctic at a national and global scale. The push to expand oil and gas exploration in the Arctic is also increasing, and if allowed to expand unabated, this will contribute even more to greenhouse gas emissions. For example, major oil and gas companies such as Shell and Exxon have drawn up Arctic oil and gas exploration plans. This is despite the fact that the US Department of the Interior calculated a 75% chance of a major oil spill if widespread oil drilling was permitted in the Arctic due to the rough conditions of the Arctic Ocean<sup>38</sup>

Canada and the US have been relatively restrictive with Arctic oil and gas exploration, however, under Russia 2035 Arctic strategy, their oil production in the Arctic would grow by 66% between 2018 and 2035.<sup>39</sup> This would greatly increase the risk of a catastrophic oil

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<sup>34</sup> Ibid

<sup>35</sup> Ibid

<sup>36</sup> Ibid

<sup>37</sup> "Biggest Polluters in the World." Statista

<sup>38</sup> "Arctic Oil Drilling." Greenpeace USA

<sup>39</sup> Farand, Chloe. "Mega oil project in Russia's far north threatens Arctic indigenous communities"

spill and in fact, Russia has already been responsible for multiple devastating oil spills in the Arctic. Namely, in May of 2020, the mining company Norilsk Nickel spilled 21,000 tonnes of diesel into the Ambarbaya River causing detrimental consequences to Arctic ecosystems and Indigenous communities.<sup>40</sup> Even if an Arctic policy using Indigenous knowledge is extremely successful at a local or regional level, its long-term success is contingent on a streamlining of national Arctic policies to match the needs of local communities. In other words, it could only take one disastrous oil spill to compromise years of effective policy work if national Arctic policies conflict directly with local or regional Arctic policies.

### *5.2 Lack of UNDRIP's Ratification in Arctic States*

Despite Arctic states' general acceptance of Indigenous knowledge as a part of their Arctic policies, every state (with the exception of Canada) has not ratified UNDRIP, and therefore, Arctic states have no legal obligation to include Indigenous knowledge in their Arctic policies. As was mentioned previously, there are provisions in UNDRIP that describe respect for Indigenous knowledge as a minimum right for Indigenous people and a state's obligation to protect this right. Since almost every Arctic state has not ratified UNDRIP, there is no institutionalised framework for accountability if a state fails to consult with the

knowledge of their Indigenous people. Also, the ratification of UNDRIP within domestic law acts as a minimum guarantee for Indigenous rights and shields these rights from the internal political volatility.

### *5.3 Minimal Role of Indigenous Knowledge in Arctic Policy*

As was mentioned previously, out of eighty-one recent Arctic programs, fifty-six of them included Indigenous knowledge in some way. Despite this significant amount, it is also important to examine the capacity to which Indigenous knowledge is used. For example, Indigenous knowledge is most commonly used in only a consultational capacity while very few programs actually used Indigenous knowledge to inform decision-making alongside Western knowledge.<sup>41</sup> This can hold some notable implications for Arctic policy. For example, if Indigenous knowledge is only used in the beginning/consultation stages of policy development, then the development process runs the risk of overshadowing, or even completely omitting Indigenous knowledge with Western knowledge by the time the policy development is complete. In order to ensure the inclusion of Indigenous knowledge in Arctic policy, Indigenous and Western knowledge must work in tandem throughout the development process. This means not only using Indigenous knowledge to *inform* research and decision-making, but to make Indigenous

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<sup>40</sup> "Norilsk Nickel: Mining firm pays record \$2bn fine over Arctic oil spill." BBC.

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<sup>41</sup> Johnson, Noor. "Community-Based Monitoring and Indigenous Knowledge in a Changing Arctic"

knowledge *an equal part* of research and decision making.

#### *5.4 Continued Alienation of Indigenous People from their Indigenous Knowledge*

All the above information rests on a large and sometimes unrealistic assumption: that Indigenous people are able to pass on and be aware of their Indigenous knowledge. While this assumption is true for a large part of the Arctic Indigenous population, it is also untrue for a significant portion of the population. This is due to the fact that many Arctic Indigenous people still suffer from systemic racism and modern-day manifestations of historical oppression. In Canada for instance, due to intergenerational trauma stemming from residential schools, Indigenous people are more prone to suicide, more likely to develop health issues, overrepresented in prison populations, undergo fewer years of schooling, are more prone to addiction, and are more unemployed.<sup>42</sup> In Alaska, also due to intergenerational trauma from historical oppression, Indigenous people are more prone to alcohol abuse and violence.<sup>43</sup> These problems and more plague Indigenous populations not just across the Arctic, but around the world. One of the biggest consequences of these social issues is loss of culture and knowledge since victims will

likely also have a compromised ability to learn and pass down Indigenous knowledge.<sup>44</sup>

## **6. Recommendations**

### *6.1 Building Capacity*

The process of developing Arctic policies with Indigenous knowledge will be futile if Indigenous communities do have the capacity to effectively contribute to the development process. This includes ensuring that Indigenous communities have enough funding to hire and train staff, acquire tools needed for data collection and research, and have the skills for program administration and management. Not only does capacity building apply to Indigenous communities themselves, but to any outside researchers, scientists, and policy developers that may come into an Indigenous community to partner in the policy development process. It is important that outsiders have the capacity to work with Indigenous communities by knowing how to be culturally sensitive and how to integrate Western knowledge with Indigenous knowledge in a mutually beneficial way.

### *6.2 Further Engagement of Indigenous Knowledge*

There is always room to improve the engagement of Indigenous knowledge holders in Arctic policy development. First, policy development leaders should ensure that Indigenous knowledge holders are centrally

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<sup>42</sup> Sawchuk, Joe. "Social Conditions of Indigenous Peoples in Canada"

<sup>43</sup> Schaeffer, Pete. "Alaska Natives' Loss of Social and Cultural Integrity"

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<sup>44</sup> Whitbeck, Les. "Depressed Affect and Historical Loss Among North American Indigenous Adolescents."

involved in all stages of policy development. This means their inclusion in consultation, goal-setting, research, decision-making, and monitoring/assessment. Second, program leaders should determine how Indigenous knowledge can fit effectively into each of these stages. Third, Indigenous communities across the Arctic should continuously be empowered to share their Indigenous knowledge in policy development processes. This involves active seeking-out of Indigenous knowledge holders and the recognition that their knowledge is an indispensable part of effective Arctic policy.

#### *6.3 Further Pan-Arctic Knowledge Exchange*

More funding should be put towards knowledge exchange programs between Arctic Indigenous communities both within and between Arctic states. In order to facilitate this, there should be manners to standardise and quantify certain aspects of Indigenous knowledge so knowledge can be easily shared and understood by all parties.

#### *6.4 Development of Indigenous Knowledge Management Systems and Protocols*

For many Indigenous communities, their Indigenous knowledge could be a sacred part of their culture, and therefore, it is useful that Indigenous knowledge holders and outsiders agree to a set of terms on how to handle, use, and disseminate Indigenous knowledge. Within these terms, Indigenous knowledge holders should also

have the ability to revisit any agreements for further discussion. This also involves creating ethical frameworks for outsiders when working with Indigenous communities

#### *6.5 Ensuring the Long-term Sustainability of Arctic Policies Using Indigenous Knowledge*

It is vital that any Arctic policy using Indigenous knowledge is not only effective in the short term but also effective in the long term. In order to foster this sustainability, policy development processes should ensure that Indigenous knowledge holders are adequately compensated for their contributions. There should also be mechanisms in place to easily revisit aspects that may have become outdated or ineffective due to any given changes in a community or the natural ecosystem. Policy development leaders should also regularly consult with Indigenous knowledge holders and Indigenous communities in order to ensure that a given policy is still meeting their needs. Any funding that is given to support an Arctic policy using Indigenous knowledge should be given on a regular basis so as to not stall the implementation, monitoring, and assessments of a policy. Lastly, it should be ensured that Indigenous communities have the capacity and resources to continue the intergenerational transfer of Indigenous knowledge to younger generations, as they will be the ones to ensure the long-term sustainability of an Arctic policy.

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