Arctic Policies and Strategies — Analysis, Synthesis, and Trends

Lassi Heininen, Karen Everett, Barbora Padrtova, Anni Reissell

International Institute for Applied Systems Analysis
Schlossplatz 1, A-2361 Laxenburg, Austria

The International Institute for Applied Systems Analysis (IIASA) is an independent, international research institute with National Member Organizations in Africa, the Americas, Asia, and Europe. Through its research programs and initiatives, the Institute conducts policy-oriented research into issues that are too large or complex to be solved by a single country or academic discipline. This includes pressing concerns that affect the future of all of humanity, such as climate change, energy security, population aging, and sustainable development. The results of IIASA research and the expertise of its researchers are made available to policymakers in countries around the world to help them produce effective, science-based policies that will enable them to face challenges such as these.

Arctic Policies and Strategies — Analysis, Synthesis, and Trends

by Lassi Heininen, Karen Everett, Barbora Padrtova, and Anni Reissell

Preface

In recent years the world has been awakening to the realities of the Arctic region. The Arctic is facing challenges which, unless properly mitigated, will have an impact on the entire globe. The realities in the Arctic are changing, and changing fast. Governments and other actors must keep up with this pace.

It is our responsibility to take action to curb the negative developments in the region and take advantage of the new opportunities.

Many governments, both in the Arctic and beyond, have recently adopted Arctic strategies or updated existing ones. Many more will develop strategies in the near future. This is also the case in Finland which in fall 2019 will begin work on elaborating a new Arctic strategy.

The wheel does not need to be reinvented anywhere, but it is useful to know what makes all the wheels turn. For that, this study will provide a useful contribution.

I am confident that this publication will become a topical and useful reference book for all those involved in the drafting of Arctic strategies. I am very pleased that the Ministry for Foreign Affairs of Finland has been in a position to financially contribute to the publication of this study.

Helsinki 23 September 2019

Petteri Vuorimäki

Ambassador for Arctic and Antarctic Affairs
Ministry for Foreign Affairs
Finland

Arctic Policies and Strategies —
Analysis, Synthesis, and Trends

by Lassi Heininen, Karen Everett, Barbora Padrtova, and Anni Reissell

Abstract

The scientific report *Arctic Policies and Strategies – Analysis, Synthesis and Trends* delivers a holistic analysis of the policies, strategies, and declarations of the relevant Arctic stakeholders. It also includes new and/or emerging trends of Arctic governance and geopolitics in the early 21st century. The analysis, using quantitative and qualitative methods, is based on a coding of the text of 56 policy documents (in 1996-2019), namely: i) the strategies and policies of the Arctic States and the Arctic Council Observer States; ii) the policies and declarations of the Arctic Indigenous peoples' organizations (Permanent Participants); and iii) the main Arctic Council chairmanship programs and ministerial declarations. It considers how different Arctic actors define and address issues around the following: the human dimension, governance, international cooperation, environmental protection, pollution, climate change, security, safety, economy, tourism, infrastructure, and science & education. Each document was read and analyzed thoroughly; quotes were selected and coded and then used to compare and contrast (percentage-wise) how the different documents address the above issues. For each category of stakeholder, the findings are compared within the category and then discussed with each other category-wise. Our study shows that the most-coded quotes of the Arctic States' policy documents relate to the Governance, Economy, International Cooperation, and Human Dimension indicators, as well as to a new Environmental Protection indicator (composed of Environmental Protection coupled with Pollution and Climate Change). The policy documents of the four Indigenous peoples' organizations explicitly address issues surrounding Indigenous rights, although in different contexts, and also those related to the Governance indicator, both broadly and in detail. Unsurprisingly, all these documents emphasize the importance of 'Traditional knowledge.' The most-quoted indicator in the Arctic policies/strategies of the nine Arctic Council Observer states is the Science and Education indicator, followed by the International Cooperation and Economy indicators. The fourth most-quoted is the new Environmental Protection indicator (composed of Environmental Protection coupled with Pollution and Climate Change).

The analyses generated a separate list of new/emerging trends for each stakeholder, summarizing the current main themes and concluding trends. Based on these, there here follows a short list of the overall new and/or emerging trends of the future of Arctic governance and geopolitics: i) Ambivalence of Arctic development, including 'political inability,' whenever a balance is sought between environmental protection and economic activities; ii) The domination of States within the Arctic territory due to geopolitical stability and sovereignty vis-à-vis internationalization/globalization, and due to international treaties and self-determination; iii) Focus on science, with all Arctic stakeholders being dependent on scientific research and international cooperation in science for problem-solving due to climate change; and iv) Close interrelationship between the Arctic and Space (e.g., digital security, satellites, meteorology) due to globalization and rapidly advancing climate change in the Arctic.

About the Authors

Dr. Lassi Heininen is Research Director at the Institute for Atmospheric and Earth System Research (INAR) at the University of Helsinki, and Emeritus Professor at the Faculty of Social Sciences, University of Lapland, Finland. Among his other academic positions are Editor of the Arctic Yearbook, Head of the UArctic Thematic Network on Geopolitics and Security, member of the Advisory Board of the Arctic Circle, and chair of its Global Arctic Mission Council. Dr. Heininen's research fields include International Relations, Geopolitics, Security Studies, Environmental Politics, and Arctic Studies. He lectures regularly abroad, supervises MA students and PhD candidates, and actively publishes in international academic publications. His recent scientific publications include *Climate Change and Arctic Security. Searching for a Paradigm Shift* (co-edited, Palgrave Macmillan 2019); *The Global Arctic Handbook* (co-edited, Springer 2018); The Arctic, Baltic and North-Atlantic 'cooperative regions' in 'Wider Northern Europe', *Journal of Baltic Studies*, 48-4/2017.

Dr. Karen Everett is a Postdoctoral Fellow with the Canada Research Chair on Comparative Aboriginal Condition at Université Laval (Québec City, Canada). Prior to this, she was a Research Scholar with the Arctic Futures Initiative at the International Institute for Applied Systems Analysis (IIASA, Laxenburg, Austria) (2018–2019). During her time with the Arctic Futures Initiative, Dr. Everett worked as part of a team that analyzed and synthesized key Arctic strategies, policies, and other governance documents to better understand regional trends. She completed her PhD at the Frost Centre for Canadian Studies and Indigenous Studies at Trent University, Ontario, where she studied border management in the Canadian North. She is also a Fellow of the Polar Research and Policy Initiative (PRPI) and a member of the UArctic Thematic Network on Geopolitics and Security. Her research interests include Arctic governance, security, and economy.

Dr. Barbora Padrtova is an Assistant Professor at the Department of International Relations and European Studies at the Faculty of Social Studies at Masaryk University in Brno, Czech Republic. In 2018–2019, she also worked as a Research Scholar affiliated with the Arctic Futures Initiative at the International Institute for Applied Systems Analysis (IIASA), based in Laxenburg, Austria. At IIASA, Dr. Padrtova, together with the research team, focused on a comparative study, analysis, and synthesis of Arctic states' national policies and strategies regarding the Arctic, as well as key documents of the Arctic Council. Previously, she led a research group at the Institute of International Relations in Prague. Dr. Padrtova regularly cooperates with the Ministry of Foreign Affairs of the Czech Republic. She is a Czech delegate to the Social & Human Working Group of the International Arctic Science Committee (IASC). Her research interests focus on geopolitics and security in the Arctic region, securitization theory, US–Russia relations, and NATO–Russia relations.

Dr. Anni Reissell is Research Coordinator at the Institute for Atmospheric and Earth System Research (INAR) of the University of Helsinki, Finland. She was a Guest Research Scholar at IIASA with the Arctic Futures Initiative (AFI). Dr. Reissell holds a PhD in chemistry: her thesis was on ambient air and chamber studies on biogenic volatile organic compounds linking emissions, chemistry, meteorology and topography in the Los Angeles Basin area. Previous positions include research chemist with the Finnish Meteorological Institute and the Air Pollution Research Center, University of California, Riverside, and Executive Director of the Integrated Land Ecosystem–Atmosphere Processes Study (iLEAPS). Dr. Reissell has over 20 years' experience in global change research, international global change research programs and policies. During her career, she has brought together scientific communities to work on new lines of thinking, across disciplinary and community boundaries. Her recent interests include integrative and participatory approaches among natural and social sciences, as well as humanities.

Acknowledgments

Table of Contents

Acronyms

AAC	Arctic Athabaskan Council
AC	Arctic Council
ACS	Arctic Council Secretariat
ACAP	Arctic Contaminants Action Program
ACIA	Arctic Climate Impact Assessment
AEC	Arctic Economic Council
AEPS	Arctic Environmental Protection Strategy
AHDR	Arctic Human Development Report
AIA	Aleut International Association
AIS	Automatic Identification System
AIV	Advisory Council on International Affairs
AMAP	Arctic Monitoring and Assessment Programme
AMSA	Arctic Marine Shipping Assessment
ARHC	Arctic Regional Hydrographic Commission
ASSW	Arctic Science Summit Week
AWI	Alfred Wegener Institute
AWPPA	Arctic Waters Pollution Prevention Act
BAS	British Antarctic Survey
BASREC	Baltic Sea Region Energy Cooperation
BEAC	Barents European-Arctic Council
BMP	Bureau of Minerals and Petroleum (Greenland, called Mineral Licence and Safety Authority since 2013)
BRI	Belt and Road Initiative
BSTF	Task Force on Organised Crime in the Baltic Sea Region
CAC	U.S. Chairmanship of the Arctic Council
CAFF	Conservation of Arctic Flora and Fauna (Arctic Council working group)
CAN	Canada
CC	Canadian Chairmanship
CFS	Canadian Forces Station
CHARS	Canadian High Arctic Research Station
CITES	Convention on the International Trade of Endangered Species
CIWN	Circumpolar Inuit Wildlife Network
CLCS	Commission on the Limits of the Continental Shelf
CNARC	China–Nordic Arctic Research Center
CNR	National Research Centre
COP	Conference of the Parties
DCAC	Danish Chairmanship of the Arctic Council
DFAIT	Department of Foreign Affairs and International Trade (Canada, now called Global Affairs Canada)
DNK	The Kingdom of Denmark
EBM	Ecosystem Based Management
EEA	European Economic Area
EEZ	Exclusive Economic Zone
EFTA	European Free Trade Association
EIA	Environmental Impact Assessment
EIB	European Investment Bank
EPB	European Polar Board
EMEC	European Marine Energy Centre
ENEA	National Agency for New Technologies, Energy and Sustainable Development
EPPR	Emergency Prevention, Preparedness and Response
ESP	Spain
EU	European Union
FAO	Food and Agriculture Organization
FFO	Federal Foreign Office
FC	Finnish Chairmanship
FIN	Finland
FRA	France
G8	Group of 8
G20	Group of 20
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GER	Germany
GCI	Gwich'in Council International
GLONASS	GLObal NAvigation Satellite System
GOS	Government Offices of Sweden
HABITAT III	United Nations Conference on Housing and Sustainable Urban Development
HFC	Hydrofluorocarbons
HFO	Heavy Fuel Oil
HNS	Hazardous and Noxious Substances
IASSA	International Arctic Social Sciences Association
IASC	International Arctic Science Committee
IBA	Impact Benefit Agreement
ICC	Inuit Circumpolar Council
ICCPR	International Covenant on Civil and Political Rights
ICESCR	International Covenants of 1966 on Economic, Social and Cultural Rights
ICT	Information and Communication Technology
IGO	Intergovernmental Organization
IHO	International Hydrographic Organization
IIASA	International Institute for Applied Systems Analysis
ILO	International Labour Organization
IMO	International Maritime Organization
INAC	Indigenous and Northern Affairs Canada (now divided into Crown-Indigenous Relations and Northern Affairs Canada, and Indigenous Services Canada)
INALCO	National Institute of Oriental Languages and Civilizations
INGV	National Institute for Geophysics and Volcanology
IPCAP	Indigenous Peoples Contaminant Action Program
IPCC	Intergovernmental Panel of Climate Change
IPEV	Paul-Emile Victor Polar Institute
IPO	Indigenous Peoples Organization
IPY	International Polar Year
ISL	Iceland
IUCN	International Union for Conservation of Nature
ITA	Italy
IWC	International Whaling Commission
JOGMEC	Japan Oil, Gas, and Metals National Corporation
JPN	Japan
KMA	Korea Meteorological Administration
KMI	Korea Maritime Institute
KOFA	Korea Overseas Fisheries Association
KOPRI	Korea Polar Research Institute
LNG	Liquefied natural gas

LTRAP	(UN Convention on) Long-range Transboundary Air Pollution
LRIT	Long Range Identification and Tracking
MARPOL	International Convention for the Prevention of Pollution from Ships
MEPC	Marine Environment Protection Committee
MFA	Ministry of/for Foreign Affairs
MFAIC	Ministry of Foreign Affairs and International Cooperation
MOE	Ministry of Environment
MOF	Ministry of Oceans and Fisheries
MOFA	Ministry of Foreign Affairs
MOLIT	Ministry of Land, Infrastructure and Transport
MOTIE	Ministry of Trade, Industry and Energy
MoU	Memorandum of Understanding
MSIP	Ministry of Science
NAFTA	North American Free Trade Agreement
NAMMCO	North Atlantic Marine Mammal Commission
NATO	North Atlantic Treaty Organization
ND	Northern Dimension
NCM	Nordic Council of Ministers
NDPHS	Northern Dimension Partnership in Public Health and Social Well-being
NEAFC	North East Atlantic Fisheries Commission
NGO	Non-governmental Organization
NLD	The Netherlands
NERC	Natural Environment Research Council
NFRDI	National Fisheries Research and Development Institute
NMMT	National Master Plan for Maritime Technologies
NOR	Norway
NORAD	North American Aerospace Defense Command
NORDREG	Northern Canada Vessel Traffic Services Zone Regulations
NPP	Netherlands Polar Programme
NSR	Northern Sea Route
NWO	Netherlands Organisation for Scientific Research
NWT	Northwest Territories
OGS	National Institute of Oceanography and Experimental Geophysics
OSCE	Organization for Security and Cooperation in Europe
OSPAR	Protection of the Marine Environment of the North-East Atlantic
PAME	Protection of the Arctic Marine Environment
PBTs	Persistent, Bioaccumulative Toxic Chemicals
PCBs	Polychlorinated Biphenyls
PICES	North Pacific Marine Science Organization
PNRA	National Antarctic Research Programme
PMO	Prime Minister's Office
POPs	Persistent Organic Pollutants
PPs	Permanent Participants
PRC	People's Republic of China
PTS	Persistent Toxic Substances
RAIPON	Russian Association of Indigenous Peoples of the North

ROK	Republic of Korea
RUS	Russian Federation
SAO	Senior Arctic Official
SAON	Sustaining Arctic Observing Networks
SAR	Search and Rescue
SARiNOR	Search and Rescue in the High North
SC	Saami Council
SDGs	Sustainable Development Goals
SDI	Spatial Data Infrastructure
SDWG	Sustainable Development Working Group
SINED	Strategic Investments in Northern Economic Development
SLCF	Short Lived Climate Forcers
SOLAS	Safety of Life at Sea
SPC	Sámi Parliamentary Council
STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
SWE	Sweden
SWIPA	Snow, Water, Ice and Permafrost
TAC	Total Allowable Catch
TRG	The Russian Government
TWH	The White House
UN	United Nations
UNCBD/CBD	United Nations Convention on Biodiversity
UNCED	United Nations Conference on Environment and Development
UNCLOS	United Nations Convention of the Law of the Sea
UNDP	United Nations Development Programme
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNECE	United Nations Economic Commission for Europe
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNEP	United Nations Environment Programme
UNPFII	United Nations Permanent Forum on Indigenous Issues
USSR	Union of Soviet Socialist Republics
UK	United Kingdom
USC	United States Chairmanship
USA	United States of America
WHO	World Health Organization
WIPO	World Intellectual Property Organization
WTO	World Trade Organization
WW	World Wildlife Fund

Figures

Tables

Arctic Policies and Strategies — Analysis, Synthesis, and Trends

by Lassi Heininen, Karen Everett, Barbora Padrtova, and Anni Reissell

Executive Summary

The scientific report *Arctic Policies and Strategies – Analysis, Synthesis and Trends* delivers a holistic analysis of the policies, strategies, and declarations of relevant Arctic stakeholders. It also includes new and/or emerging trends of Arctic governance and geopolitics in the early 21st century.

Using quantitative and qualitative methods, the study delivers a holistic and systematic analysis and synthesis of the existing policies and strategies of the Arctic states (Member States), Arctic Indigenous peoples' organizations (Permanent Participants), and non-Arctic countries (Observer States), as well as Arctic Council chairmanship programs and ministerial declarations.

The analysis is based on coding the text of 56 policy documents: the strategies and policies of the Arctic States in 2008/10–2017; the relevant Arctic Council chairmanship programs and ministerial declarations in 1996–2019; the policies and declarations of the Arctic Indigenous peoples' organizations (Permanent Participants) in 2010–2019; and the strategies and policies of the Arctic Council Observer states in 2013–2018.

Fourteen indicators, or themes, were selected at the beginning of the work to look at a broad range of governance issues that would or could be addressed by the Arctic states, Permanent Participants, Arctic Council Observer States, and other (Arctic) stakeholders. The purpose was twofold: to illuminate the different or similar priorities of these stakeholders, and to assess from a holistic standpoint how different states and Indigenous peoples' organizations define and address issues concerning the Arctic.

A description and understanding of how perceptions and (re)mapping of the Arctic have changed over time is the first indicator, and implementation of policies the last. In between are the following 12 indicators, which were coded: the human dimension; governance; international cooperation; environmental protection; pollution; climate change; security; safety; economy; tourism; infrastructure; and science & education.

Each document was carefully read and the quotes were added to columns in a spreadsheet. The quotes were then coded, and used to compare and contrast (percentage-wise) how the different documents address these issues. For each category of stakeholder, the findings are: i) compared within the category, and ii) discussed with each other category-wise. Then, based on all the analyses, new and emerging trends are recognized and formulated, as a final synthesis, to describe and define the state of the Arctic in the 2020s.

All the Arctic states, except the United States of America, clearly state that the economy, or (socio)economic development, is a priority, and have climate change or environmental protection as another priority, which is striking. All countries, except Canada and Sweden, state that international cooperation is a priority, which is relevant. As an overall conclusion, a comparison of the current official national strategies and policies shows economy/economic development, international cooperation, and environmental protection to be the overarching priorities of the Arctic states. While according to our coding of different indicators, the most-coded quotes are ordered as follows: Governance, the new Environmental Protection indicator (composed of Environmental Protection coupled with Pollution and Climate Change), Economy, International Cooperation, and Human Dimension.

The Arctic Council chairmanship programs tend to focus on issues pertaining to the Environmental Protection indicator. In the past few years, there has also been a focus on pollutants, which contribute to climate change. As for the social aspect, there is an overall focus on health and wellbeing, and also on culture and/or language protection. Gender equality shows up on the agenda every few years or so. Maritime safety, as a part of the Safety & SAR (search and rescue) indicator has also emerged as a safety concern over the past few Arctic Council chairmanship programs.

The content of the ministerial declarations of the Arctic Council tends to prioritize issues around the International Cooperation, Governance, Human Dimension and Environmental Protection indicators, showing these to be the most-quoted indicators over time. They all mainly deal—directly or indirectly—with the two main functions of the Arctic Council: environmental protection and sustainable development. Under the Human Dimension indicator there is also a focus on ensuring issues relating to the health

and wellbeing of Northerners. Issues related to the Economy and Infrastructure indicators are also discussed, although not to the same extent as the others.

The policy documents of the four Indigenous peoples' organizations, which are Permanent Participants of the Arctic Council, are somewhat fragmented. They do not cover all the indicator fields in full detail, as their focus varies. There is a striking similarity in that all policy documents explicitly address issues surrounding Indigenous (individual and collective) rights as a part of the Human Dimension indicator (although in different contexts), and also those related to the Governance indicator, both broadly and in detail. Moreover, the importance of the International Cooperation (and treaties) indicator is highlighted. Unlike environmental protection, pollution and/or climate change is not explicitly covered by all documents. Unsurprisingly, all the documents emphasize the rights of Arctic Indigenous peoples to use/utilize the resources of their homelands and also the importance of 'Traditional knowledge.'

Based on the quantitative measuring carried out in this study, the indicator most-quoted by the national Arctic policies and strategies of the nine observer states of the Arctic Council is the Science & Education indicator, followed by the International Cooperation and Economy indicators. The fourth is the new Environmental Protection indicator (composed of Environmental Protection coupled with Pollution and Climate Change). These top four indicators accord more or less with the official priorities, or policy goals/aims/principles, of these states' national policies.

Finally, there is a separate list of new/emerging trends for each stakeholder: the Arctic States; the Arctic Council chairmanship programs; the Arctic Council ministerial declarations; the Permanent Participants; and the Observer States. These five lists summarize the current main themes and conclude with new and emerging trends of each category of these Arctic actors. Based on these, a brief list has been compiled of overall new and emerging trends of the future of Arctic governance and geopolitics, as identified by the present scientific report, which follows here:

1) Ambivalence of Arctic development, including 'political inability,' whenever a balance is sought between environmental protection and (new) economic activities;
2) The domination of States within the Arctic territory due to geopolitical stability and sovereignty vis-à-vis internationalization/globalization based on international maritime law & the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) and on self-determination;
3) Focus on science, with all Arctic stakeholders being dependent on scientific research and international cooperation in science for problem-solving because of climate change;
4) Close interrelationship between the Arctic and Space (e.g., digital security, satellites, and meteorology as a new priority area) due to globalization and rapidly advancing climate change in the Arctic.

Introduction and Methods

In the national strategies of the Arctic states, the 'Arctic' is described as being remote, scattered, and having a sparse population. Its ecosystem is considered as vulnerable, fragile, or unique. While there is no strict definition of the (Arctic) region, there is broad agreement that if there is a southern border to the region, it is the 60th parallel north.

The 'Arctic States' today are group of states located in the circumpolar Arctic around the Arctic Ocean. The countries in the far North, whose territories go beyond the Arctic Circle, are: Canada, Finland, Iceland, Kingdom of Denmark (Greenland),

Norway, Russian Federation, Sweden, and the United States of America (Alaska) (see Figure 1. The Arctic States, Permanent Participants, Arctic Council Observer States). These states first came together at ministerial level in June 1991 to sign the Arctic Environmental Protection Strategy (AEPS 1991). Since then, they have continued their intensive, mainly functional, cooperation on environmental protection in the Arctic region, as well as working together for sustainable development of the northernmost regions and communities of the globe. (see Figure 1)

Arctic Member States:

Canada, Finland, Iceland, the Kingdom of Denmark (including Greenland and the Faroe Islands), Norway, Russian Federation, Sweden, United States of America.

Permanent Participants:

Aleut International Association (**AIA**) – USA, RUS
Arctic Athabaskan Council (**AAC**) – CAN, USA
Gwich'in Council International (**GCI**) – CAN, USA
Inuit Circumpolar Council (**ICC**) – CAN, Greenland/DNK, RUS, USA
Russian Association of Indigenous Peoples of the North (**RAIPON**) – RUS
Saami Council (**SC**) – FIN, NOR, RUS, SWE

Arctic Council Observer States:

France, Germany, Italy, Japan, The Netherlands, People's Republic of China, Poland, Republic of India, Republic of Korea, Republic of Singapore, Spain, Switzerland, United Kingdom.

Figure 1. Map of the Arctic States, Permanent Participants, and the Arctic Council Observer States Credit: Daniel R. Strebe for the base map (July 17th 2019) and IIASA for all edits.

Initiated by the first gathering of Parliamentarians of the Arctic Region in 1993 (Reykjavik Final Document 1993) and supported by Arctic Indigenous peoples' organizations, the eight Arctic states established the Arctic Council (AC) in 1996 as a high-level forum for multilateral cooperation on the Arctic, in particular, for environmental protection. The Arctic Eight (A8) became the members of the Council. It is important to recognize that the Arctic Environment Protection Strategy (AEPS) preceded the Arctic Council, and that four declarations were produced under its auspices between 1991 (in Rovaniemi) and 1997 (in Alta).

The Arctic Council has a rotating chairmanship whereby each state serves as chair for two years. At the start of each chair, a program is produced by the government of the chairmanship country outlining its agenda. Each chairmanship then concludes with a Ministerial meeting and a declaration that provides guidance for the following chair (Arctic Council 2015d) based on a consensus of the eight member states. Since the Ottawa Declaration (1996) which provides the foundation for the work of the Arctic Council, there have been eleven Ministerial Declarations from Iqaluit in 1998 to Rovaniemi in 2019, although the latter Ministerial, for the first time, failed to produce a signed declaration, as consensus could not be reached on the issue of climate change.

When establishing the Arctic Council, the Arctic states unanimously agreed to recognize six Indigenous Peoples Organizations (IPOs) as 'Permanent Participants' (PPs) in the Council. While, in principle, a PP position is equally open to other Arctic organizations of Indigenous peoples with a majority Arctic Indigenous constituency, six Indigenous Peoples Organizations have, so far, obtained PP status. These are: the Aleut International Association, the Arctic Athabaskan Council, the Gwich'in Council International, the Inuit Circumpolar Council, the Russian Association of Indigenous Peoples of the North, and the Saami Council.

While no more categories of the Arctic Council structure have been created, in their Joint Communiqué on its Establishment (1996), the Arctic states' governments recognized the need to provide an opportunity to non-Arctic countries, governmental, and non-governmental organizations with Arctic interests to participate actively in the work of the Council. Following this, the Declaration of the First Ministerial Meeting of the Arctic Council in 1998 (Iqaluit Declaration 1998) approved Observer status for several committed intergovernmental and international non-governmental organizations and non-Arctic states. Although there are certain criteria for admitting observers, as well as restrictions to their rights, the position of a (permanent) observership at the Arctic Council has become attractive among several non-Arctic states, in particular, those with scientific interest in the polar regions, and those with global economic interests. By the 11th Ministerial of the Arctic Council in May 2019 altogether 39 states and organizations—13 non-Arctic states, 14 intergovernmental and inter-parliamentary organizations, and 12 international non-governmental organizations—have been approved as Observers of the Arctic Council. The non-Arctic states with an observer status are France, Germany, Italy, Japan, Netherlands, People's Republic of China, Poland, Republic of India, Republic of Korea, Republic of Singapore, Spain, Switzerland, and United Kingdom.

Policies, strategies, and other policy documents of the Arctic states, the Permanent Participants, and the AC Observer states, as well as those of the Arctic Council ministerial meetings, are all the focus of this comprehensive study. Just as none of the entities and actors in the Arctic sphere live in a vacuum, but are cooperating with each other, and integrated with several organizations as members, as well as signatories of several international agreements (see Figure 2. International Organizations and Treaties, p.19). So this study is also not conducted in a vacuum.

The present scientific report has been produced by the Arctic Futures Initiative (AFI)—a new-generation research project coordinated by the International Institute for Applied Systems Analysis (IIASA). It is supported by the Arctic Circle Assembly, and the Institute for Atmospheric Earth System Research (INAR) at the University of Helsinki as the major partners, and co-funded by the Finnish Ministry for Foreign Affairs and IIASA. Its aim is to map, compare, and analyze the existing Arctic policies and strategies, and the chairmanship programs and declarations of the Arctic Council with a view to supporting public and private policymaking in Arctic and non-Arctic countries, Arctic residents, and civil society.

The scientific report will begin with a brief overview of the state of Arctic governance and geopolitics.

Overview Of Arctic Governance And Geopolitics

Even against a background of the general uncertainties in world politics and continuing rhetoric on 'Great Power rivalries,' the post-Cold War Arctic has high geopolitical stability. This can be stated quite objectively, in spite of different perceptions, discourses, and certain mis-/disinformation about the Arctic and arctic affairs disseminated in the media and by policy makers. This stability is based on the constructive cooperation affirmed by the Arctic states and Indigenous peoples' organizations. Indeed, the first preamble of the recent joint ministerial meeting declarations and statements of the Arctic Council reaffirms "the commitment to maintain peace, stability and constructive cooperation in the Arctic" (e.g., Fairbanks Declaration 2017; Rovaniemi Joint Ministerial Statement 2019). Moreover, after the confusion as to how to interpret the first-ever crewed descent to the ocean bottom at the North Pole by a Russian expedition in 2007, the five Arctic littoral states declared that cooperation over the Arctic Ocean, "which is based on mutual trust and transparency" (Ilulissat Declaration 2008), would be strengthened.

This high stability seems to be resilient, having been maintained despite recent, turbulent international politics (e.g., Clifford 2017) (see Figure 3. Arctic Events – International

Events, p. 20). It is due, on the one hand, to the common interest the Arctic states have in decreasing military tension and increasing political stability in the region by transforming the Cold War period into an era of functional environmental cooperation. It is due, too, to certain features of Arctic geopolitics in the 1990s: the fact that the original militarization of the Arctic was based on achieving a balance of global nuclear deterrence; the high degree of legal certainty in land claim agreements involving Indigenous peoples; and the 'Home Rule' model and other applications of the 'Nordic devolution' of power (Heininen 2018).

It has been in the common interest of the member states of the Arctic Council—the leading policy-shaping body for Arctic cooperation (e.g., Arctic Yearbook 2016)—and also of mutual benefit to them to cooperate across borders and maintain good (formal and informal) bilateral and multilateral dialogues among themselves and the other Arctic actors, namely, the Arctic Indigenous peoples, the committed non-Arctic states, the

scientific community, and non-governmental organizations (NGOs). The post–Cold War Arctic is probably exceptional in international politics and relations in being more politicized than ever before but lacking armed conflicts or serious disputes over national borders. Instead, there is functional cooperation in several fields and dialogue between the Arctic states, Indigenous peoples, and AC observer states, as well as between them and other Arctic actors and those from outside the region. This is clearly indicated in the policy documents that have been coded and analyzed in this study.

While there is increasing uncertainty related to the scale of global warming, the estimation of the International Panel on Climate Change (IPCC 2018) is that the Arctic will warm, on average, at a faster overall rate than the Earth itself. Moreover, for decades the region and its communities has been heavily influenced by long-range air and water pollution, persistent organic pollutants (POPs), heavy metals, and radioactivity (e.g.,

Figure 2. International Organizations and Treaties

Arctic Events

International Events

2018
Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean (signed)

Agreement on Enhancing International Arctic Scientific Cooperation (signed)

2017
IMO Polar Code (in force)

2016
Crystal Serenity voyage through the Northwest Passage

2014
Arctic Economic Council established

Ice extent on the Arctic Ocean at its annual minimum, again

2013
Olympic flame on the North Pole

Agreement on Cooperation on Marine Oil Pollution in the Arctic (signed)

Permanent Arctic Council Secretariat established

First Arctic Circle Assembly

2011
Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic (signed)

2008
Ilulissat Ministerial of the Arctic Ocean littoral states

2007
Russian expedition to the bottom of the North Pole

2004
Arctic Climate Impact Assessment & Arctic Human Development Report I launched

1996
Arctic Council established

1993
First Arctic Parliamentarians Conference

1991
Arctic Environment Protection Strategy (signed)

1987
Murmansk speech by President Gorbachev

2018
IPCC Special Report on Global Warming of 1.5°C

2016
Paris Agreement (COP21) (in force)

2015
Sustainable Development Goals (adopted)

Migration crisis in Europe

2014
Annexation of Crimea

Ocean plastics reach 269,000 tons

2011
World population reaches 7 billion

Fukushima nuclear disaster

Arab Spring

2010
Deep Water Horizon oil spill

2008
Global economic crisis

2007
UN Declaration on the Rights of Indigenous Peoples (adopted)

2006
China becomes biggest carbon dioxide polluter

2005
Kyoto Protocol (in force)

2004
Largest EU expansion & NATO enlargement

2001
9/11 Terrorist attacks

1992
Rio Declaration on Environment and Development (signed)

1989
Fall of the Berlin Wall

Arctic Events

International Events

■ Agreements   ■ Events

Figure 3. Arctic Events – International Events

Timeline axis years: 2019, 2015, 2010, 2005, 1995, 1990, 1987

AMAP 1997), and more recently micro-plastics. The well-known natural resources of the Arctic (e.g., fishes and marine mammals, timber/wood & pulp, hydrocarbons and other minerals) have been exploited for the benefit of the global economy. Intangible Arctic values are also useful as examples, if not models, in world politics—knowledge of Indigenous/traditional konwledge, devolution of power, geopolitical stability (based on transboundary cooperation), confidence-building (based on the interplay between science, politics, and business), and productive dialogue among diverse stakeholders.

In the present study, this unique space with its harsh conditions and resource-richness is analyzed as a functionally and multidimensionally 'changing Arctic.'

The current state of the Arctic—and the entire circumpolar North—is distinctive in that it is much more susceptible to climate change than most other parts of the Earth system. That said, in the sparsely populated Arctic region itself, the human responses to those changes are, by definition, very limited. The warming Arctic ecosystem is becoming simultaneously more fragile and vulnerable at a time when the region is rapidly opening up to new, possibly mass-scale, economic and societal activities. The changes taking place will materialize as a complex mixture of direct climate impacts and indirect socio-economic and political impacts, with the related uncertainty greatly affecting the populations and communities of the region. Changes in the Arctic will have multiple feedbacks in the Earth system.

From the perspective of global climate change mitigation, increased access to new hydrocarbon sources, with their associated CO_2 and other emissions, represents a serious drawback for the Arctic. New and shorter global shipping routes through the region offer significant economic and emission savings, but increasing transportation brings severe environmental risks, causing an 'Arctic Paradox' and decreasing societal security. From a nation state perspective, the Arctic states face an array of multidimensional challenges and risks in reacting and adapting to accelerating climate change, as do non-arctic countries shaping their national policies and strategies on the Arctic. With their sovereign status, the Arctic states have quite different footholds in the region than the observer states further south in Europe (e.g., France and Germany), and Asia (e.g., China and Japan) whose increasing interest in Arctic research, marine transport and other economic activities, and in the environment and climate change, is actively involving them in international Arctic cooperation.

From the regional perspective, and that of Indigenous populations and other local communities of the circumpolar North, increasing economic activity, based on the neoliberal and neorealist approach, is tending to outweigh the environment and environment concerns and geopolitics is a double-edged sword: Increased economic activity, together with a growing need for new expertise on the environment and climate, may lead to a more diversified and robust economy if, for example, climate change itself, and climate research, create new employment opportunities. However, emerging influence from southern latitudes due to better access to Arctic resources, without proper

and more strict environmental regulations, emerging influence of powerful international actors from outside of the region could not only impair traditional livelihoods, values, and culture, but also cause environmental, health, and other social problems.

This situation could all too easily increase uncertainty among Arctic populations, making it more difficult to create functioning local communities and sustainable livelihoods, and to achieve a higher level of self-determination.

In fact, in addition to regional development problems, the Arctic has been facing other significant and fundamental changes in its geopolitical and security dynamics since the end of the Cold War due to globalization and global ('wicked') problems, including climate change (e.g. Globalization and the Circumpolar North 2010; The Fast-Changing Arctic 2013; Durfee and Johnstone 2019).

Although climate change is interpreted as the most severe trigger it is neither the only nor first one. Before climate change, there were other problems mostly from lower latitudes, such as long-range pollution from radioactive contaminants, Arctic haze, and heavy metals, all of which were sources of concern to Indigenous and other local peoples, NGOs, and the research community. Nuclear safety was defined as the main environmental problem and trigger (e.g., AMAP Report 1997). This concern was transformed first into pressure on the Arctic states' governments and then into functional cooperation among them (Climate Change and Arctic Security 2019).

A 'globalized Arctic' is being interpreted as a new geopolitical context and as part and parcel of the overall Earth and ocean systems, bringing with it global political, economic, technological, cultural, and environmental changes (see, e.g., The Global Arctic Handbook 2018).

Although the Arctic as a region is the product of global processes and impacted by them, it also has global significance due to immaterial issues, such as cultural diversity, biodiversity, knowledge about the environment and climate, stemming from both Indigenous peoples and scientific research and expertise, regional and international and cooperation, and the broader issues of political stability and peace.

In the influential global studies discourse on 'interdependence,' the Arctic is a perfect case in point: not only in terms of the impacts of global changes within the region, but also in how the region affects the rest of the planet and the feedbacks it causes to the global changes themselves. It is possible to argue that the 'wicked' problem of combined pollution and climate change puts pressure on the Arctic states and other Arctic actors to accelerate their cooperation as well as reconstructing their reality and going beyond traditional power and hegemony game by redefined environmental protection as the ultimate aim, implemented discursive devolution of power (based on knowledge) and soft-law, and applied the interplay between science, politics and business into a dialogue across sectors (Heininen 2018; also AHDR 2004).

This can also be inferred from the above-mentioned commitment of the Arctic states "to maintain peace, stability and constructive cooperation," as will be discussed later in this report. Following from this, there are twelve coded indicators in this Report, in addition to (Re)defining and (Re)mapping the Arctic and Implementation. These are: Human Dimension, Governance, International Cooperation and Treaties, Environmental Protection, Pollution, Climate Change, Security, Safety and Search and Rescue, Economy, Tourism, Infrastructure, Science and Education. They were selected to represent the most current, relevant, and important features of Arctic governance and geopolitics so that a holistic picture of a state of the governance and geopolitics of the region could be drawn up.

Earlier Studies And Aim Of This Study

The existing social sciences literature on the Arctic has two focuses. The first, inspired by national policies and intergovernmental cooperation, is on geopolitics, security, institutions, the resource potential, (e.g., Young 1992; Heininen 1992; International Relations and the Arctic 2014) and on climate change, human security, Arctic governance, and Indigenous peoples (e.g., Yearbook of Polar Law 2013). The second focus is covered by a few multidisciplinary studies and publications on global-related issues and the globalized Arctic as a part of global dynamics in the environmental, societal, political, and economic spheres (e.g., Globalization and the Circumpolar North 2010; Nordic Council of Ministers 2011; The Global Arctic Handbook 2018). This study considers the global significance and implications of this changing geopolitical context.

In the 2010s, the first comparative studies and analysis of Arctic strategies, mainly on the five littoral states of the Arctic Ocean, were published. Brosnan et al. (2011) discuss how cooperation and conflict appear in the Arctic strategies of these states. Summers (2010) studies the littoral states and their relations, with a focus on energy and the environment and on China and the European Union as new players in the Arctic. The first comprehensive inventory and comparative study, including eleven indicators, on the national policies and strategies of the eight Arctic states and the European Union (Heininen 2011) is the basis for this deeper analysis and synthesis.[1]

However, there have been no in-depth analyses of any of the national strategies and policies of the Arctic states. There have been only a couple of brief overviews on the priority areas of the strategies (e.g., Schulze 2017) of the Arctic Council observer countries. There has been no analysis of the Arctic policies

of the Permanent Participants and declarations of the conferences of the Arctic Indigenous peoples organizations. There are no studies on connections between the contents of the Arctic Council chairmanships and national strategies, and between the national strategies and the AC ministerial declarations. These various gaps in research related to Arctic policies and strategies were seen an opportunity for the the Arctic Futures Initiative to examine all these policy documents to define the points of similarity and difference among them, analyze interesting research findings, and, based on those, identify the potential and emerging trends of Arctic governance and geopolitics.

Furthermore, the ultimate aim of this research is thus to deliver a systematic analysis and synthesis of existing policies and strategies of the Arctic states, the Permanent Participants, and the observer states. This, in turn, will allow a synthesis to be made of the entire set of Arctic policies and strategies and a holistic approach to Arctic governance and geopolitics to be drawn up.

The work for the study has been organized and carried out from a broad range of regional, national and international perspectives, as follows:

1. All material relevant to the aims of the projects was systematically collected, inventoried, mapped, and analyzed: findings were studied to elicit points of similarity and difference;
2. A determination was made of the priorities and common interests of the Arctic states (Arctic Council members), Arctic Indigenous peoples' organizations (Permanent Participants), and non-Arctic states (AC observer countries) to understand the stance of these entities in terms of the future development of the Arctic region and their understanding of the high level of political stability of the region;
3. The relevant themes/titles, main objectives and recommendations of the Arctic Council declarations and chairmanship programs were recognized, coded and analyzed;
4. Based on this work, a synthesis was made of the entire body of Arctic policies and strategies—this allowed a holistic approach to be taken to clarifying the current, new and emergingtrends in Arctic governance and geopolitics.

The Documents

The policy documents used as a foundation for the analysis and synthesis on national strategies and policies, and declarations and chairmanship programs, from 1996 to 2019, are as follows:

- The national strategies and policies of the Arctic states, and their priorities/priority areas, objectives/goals, as well as implementation, organizational bodies and possible budgets;
- The policies, agendas and declarations of the Permanent Participants of the Arctic Council (Arctic Indigenous peoples'

---

1   See also Bailes and Heininen (2012). A more detailed inventory and comparative (unpublished) study on the national strategies and policies of the Arctic states (Heininen and Lempinen, 2012) was made for the 'Kiruna Statement' on the Vision for the Arctic (Arctic Council Secretariat 2013) at Arctic Council Ministerial Meeting in May 2013 ordered by Foreign Ministry of Sweden.

organizations), and their priorities/priority areas, objectives/goals, as well as implementation, organizational bodies;

- The national strategies and policies of the observer states of the Arctic Council (non-Arctic states), and their priorities/priority areas, objectives/goals, as well as implementation, organizational bodies, possible budgets;
- The Arctic Council chairmanship programs, and the declarations of the Council's Ministerial meetings (1996–2019).

Arctic States

The main Arctic actors are the eight Arctic states: Canada, Finland, Iceland, Kingdom of Denmark, Norway, Russian Federation, Sweden, and United States of America. Table 1 lists the documents analyzed for each state in reverse chronological order. Note, for Canada the 2009 document is the primary Strategy, as the 2010 foreign Policy deals with developing the domestic priorities internationally. For the Kingdom of Denmark, even though the Faroes Island document is the most recent, it is not a primary state document, and thus not analyzed here.

Arctic State	Strategies
Canada	• Canada's Northern Strategy: Our North, Our Heritage, Our Future (2009) • Statement on Canada's Arctic Foreign Policy: Exercising Sovereignty and Promoting Canada's NORTHERN STRATEGY Abroad (2010)
Finland	• Finland's Strategy for the Arctic Region 2013 (2013) • Finland's Strategy for the Arctic Region (2010)
Iceland	• A Parliamentary Resolution on Iceland's Arctic Policy (2011) • Iceland's Position in the Arctic. Report of the Ministry for Foreign Affairs in Iceland on Sustainable Development in the Arctic (2009)
Kingdom of Denmark	• Kingdom of Denmark Strategy for the Arctic 2011–2020 (2011) • The Arctic at a Time of Transition: Draft Strategy for Activities in the Arctic Region (2008)
Norway	• Norway's Arctic Strategy: Between Geopolitics and Social Development (2017) • Norway's Arctic Policy: Creating Value, Managing Resources, Confronting Climate Change and Fostering Knowledge (2014)
Russian Federation	• Strategy for the Development of the Arctic Zone of the Russian Federation and National Security Efforts for the Period up to 2020 (2013) • Foundations of the State Policy of the Russian Federation in the Arctic until 2020 and Beyond (2009)
Sweden	• Sweden's Strategy for the Arctic Region (2011)
United States of America	• National Strategy for the Arctic Region (2013) • National Security Presidential Directive/NSPD-66 and Homeland Security Presidential Directive-25 (2009)

Table 1. Arctic State Strategies

Permanent Participants

There are six Indigenous Peoples' Organizations as Permanent Participants (PPs) in the Arctic Council: the Aleut International Association, the Arctic Athabaskan Council, the Gwich'in Council International, the Inuit Circumpolar Council, the Russian Association of Indigenous Peoples of the North (RAIPON), and the Saami Council. The PPs play an important role in the Arctic Council and "have full consultation rights in connection with the Council's negotiations and decisions" (Arctic Council 2015a, para. 1). That is why they are included in this analysis.

Not all of the Arctic Indigenous Peoples' Organizations have produced governance documents. Only the four PPs that have—Arctic Athabaskan Council (AAC), Gwich'in Council International, Inuit Circumpolar Council (ICC) and Saami Council — are discussed in this report. Table 2 provides a list of the PPs and their documents. Unlike the Arctic states, the documents of the PPs are a combination of strategies, declarations, and reports.

Permanent Participant	Documents
Arctic Athabaskan Council	• Arctic Athabaskan Council Arctic Policy (2017) • Europe and the Arctic: A View from the Arctic Athabaskan Council (2008)
Gwich'in Council International	• Impact Assessment in the Arctic: Emerging Practices of Indigenous-Led Review (2018)
Inuit Circumpolar Council	• Inuit Arctic Policy of ICC (2010) • Utqiagvik Declaration (2018)
Saami Council	• Sami Arctic Strategy (2019) • Tråante Declaration (2017)

Table 2. Permanent Participant Documents

Observer States

The Arctic Council offers Observer status to "non-arctic states," "inter-governmental and inter-parliamentary organizations, global and regional," and "non-governmental organizations" (Arctic Council 2015b, para 1). There are currently 13 Observer states in the Arctic Council: France, Germany, Italy, Japan, Netherlands, People's Republic of China, Poland, Republic of India, Republic of Korea, Republic of Singapore, Spain, Switzerland, and United Kingdom (Arctic Council 2015b). However, not all the Observers have produced Arctic policies or strategies. This analysis is concerned only with the policy documents on/for/towards the Arctic produced by states, as they have the capacity to create and implement national policies, namely those non-arctic states which have the status of (permanent) observes of the Arctic Council.

Table 3 provides a list of the Observer States that do have strategies, and only these states will be referenced in the analysis.

Observer States	Documents
France	The Great Challenge of the Arctic: National Roadmap for the Arctic (2015)
Italy	Towards an Italian Strategy for the Arctic: National Guidelines (2015, updated 2016)
Germany	Guidelines of the Germany Arctic Policy: Assume Responsibility, Seize Opportunities (2013)
Japan	Japan's Arctic Policy (2015)
The Netherlands	Pole Position – NL 2.0: Strategy for the Netherlands Polar Programme 2016-2020 (2014)
People's Republic of China (PRC)	China's Arctic Policy (2018)
Republic of Korea (ROK)	Arctic Policy of the Republic of Korea (2013)
Spain (ESP)	Guidelines for a Spanish Polar Strategy (2016)
United Kingdom (UK)	Beyond the Ice: UK Policy Towards the Arctic (2018) Adapting to Change: UK Policy Towards the Arctic (2013)

Table 3. Observer State Documents

Arctic Council Documents

The eight Arctic States are members of the Arctic Council (see, Ottawa Declaration 1996). As members they all participate in the governance of the Arctic Council, and each of them act as a chair of the Council, taking on two-year chairmanships (Arctic Council 2015c). The AC Chairmanship is rotated in alphabetic order. Before, or at the latest, at the start of each chairmanship, the state produces a program (with a brochure) that outlines their two-year agenda and in most cases the priorities/priority areas of the chairmanship. At the end of the chairmanship, there is a Ministerial meeting where the Senior Arctic Officials (SAOs) from each state meet and create a declaration that concludes the chairmanship and details its major outcomes, as well as describing the state of the Arctic Council.

Table 4 lists the chairmanships and the subsequent ministerial declarations. Note: the first Canadian chairmanship program is not available and was thus not included in this analysis. All other documents were publically available on the Arctic Council website.

Arctic Council Chairmanship Program	Arctic Council Ministerial Declaration
-	Declaration on the Establishment of the Arctic Council (1996), Ottawa Declaration (1996)
Canada 1996–1998	Iqaluit Declaration (1998)
United States of America 1998–2000	Barrow Declaration (2000)
Finland 2000–2002	Inari Declaration (2002)
Iceland 2002–2004	Reykjavík Declaration (2004)
Russian Federation 2004–2006	Salekhard Declaration (2006)
Norway 2006–2009	Tromsø Declaration (2009)
The Kingdom of Denmark 2009–2011	Nuuk Declaration (2011)
Sweden 2011–2013	Kiruna Declaration (2013)
Canada 2013–2015	Iqaluit Declaration (2015)
United States of America 2015–2017	Fairbanks Declaration (2017)
Finland 2017–2019	Statement by the Chair (2019) Rovaniemi Joint Ministerial Statement (2019)
Iceland 2019–2021	-

Table 4. Arctic Council Documents

In total, 56 documents were read, coded, and analyzed. The large time span over which the documents were produced (1996-2019) allows for a comprehensive overview of Arctic governance priorities and how these priorities change over time.

The Procedure

Even considering the breadth and depth of information available and the large number of documents to be coded and analyzed, a holistic approach and systematic analysis were deemed feasible. Both quantitative and qualitative methods were used in the examination of the information to perform the different types of analyses required.

The methods used were as follows:

i) Select certain variables as indicators (with sub-indicators) to measure each strategy/policy, and declaration, emphasizing the priorities/priority areas of each strategy/policy (either explicitly mentioned, referred to or discussed, or implicit);

ii) Code the indicators in each document of an actor (member states, PPs, observer states, AC chairmanship programs and ministerial declarations) and based on that compare the two documents of each actor between each other, if there is more than one document, compare them between each other, searching for points of similarity and difference, as well as priority areas. And analyse the current strategy/policy of each actor using applied systems analysis;

iii) Compare and discuss the strategies/policies of each actor (member states, PPs, observer countries, AC chairmanship programs and declarations) with each other, and on that basis analyze and conclude each category;

iv) Based on the coding, comparative studies, and analyses, recognize and identify new and emerging main themes;

v) Based on the document analysis and the priorities, synthesize the current state of Arctic governance and of Arctic geopolitics, as well as new and emerging trends of Arctic development for the near future.

The Indicators

Fourteen indicators, or themes, were selected by the research team when beginning work to address a broad range of governance issues and interests that would or could be addressed by the Arctic tates, Permanent Participants, Arctic Council observer states and other (Arctic) stakeholders. The purpose was i) to illuminate the different (or similar) priorities of the stakeholders, and ii) to have as holistic an approach as possible to national policies. Table 5 provides an overview of the main indicators and sub-indicators to provide a more nuanced understanding of the topic.

Indicator	Sub-indicators	
(Re)defining and (Re)mapping the Arctic	• Which state(s) were the first to create an Arctic policy or strategy, and in what order did the other states follow? • How is the Arctic defined as a geographical location? • How is the Arctic described (e.g., High North, Arctic, etc.) and how has this changed over time?	• Who are the Arctic stakeholders? Which national government ministries are responsible for the region and and what are the names of the ministers?
Human Dimension	• Indigenous Peoples • Other inhabitants/residents • Equality • Culture and Languages	• Demography • Human rights • Migration • Health and Wellbeing
Governance	• What are the existing governance structures globally, internationally, nationally, regionally, and locally? • Self-governance and self-determination. • Involvement in international and transboundary cooperation. • Role of Arctic Council and its working groups, and related procedures.	• Governance of natural resources (including fish), the blue economy, and the licensing process. • Public consultations, environmental impact assessments. • Conflict of interest between stakeholders. • Decision-making processes.
International Cooperation and International Treaties	• What is the role of international cooperation and how important is it? • What are the major Arctic-related agreements or fora? • What are the global perspectives (globalization)?	• What countries are members (or observers) of EU, NATO, UN, BEAC? • UN Sustainable Development Goals and how much are they considered in relation to the Arctic?
Environmental Protection	• How the Arctic is defined (e.g., fragile, unique, etc.) • What are the priorities, how are they defined, what sectors? • Does using the term 'environmental' mean environmental protection? • What agencies are in charge of implementation, and how much budget is allocated? • Are protected areas discussed?	• Flora and fauna, invasive species, north–south movements of species (e.g., migrating fish, polar bears etc.), and what topics are taken seriously? • Biodiversity. • Assessment/monitoring sea for pollutants.
Pollution	• Within and outside of the region and which is more important? • What are the pollutants in the Arctic? • How many times is a pollutant mentioned before there is action; what needs to happen before the pollutant is taken seriously?	• Who are the polluters? • What international treaties are mentioned and what are the problem-solving tactics at the different levels?
Climate Change	• Mitigation vis-a-vis adaptation. • What agreements and frameworks are mentioned? • If Asia is mentioned there? • Are the voices of the scientific community heard, and if so, how?	• What are the consequences, both positive and negative? • What is the societal impact? • Environmental refugees. • Climate change as a security factor.
Security	• How is security defined, and what are the security priorities? • Is sovereignty mentioned, and if so, how is it defined? • How are borders defined? • Is (high) stability/stability-building mentioned, and how is it defined and possibly linked to security? • How has the interpretation of security changed over time? • Role of armed forces.	• What measures are implemented/needed to increase security? • Is NATO mentioned, and if so, what kind of role does NATO play? • Is it addressed that the Arctic Council does not include military security? • Is military spending mentioned? • Military capabilities. • Is the role of the Coast Guard mentioned, and if so, what is it?
Safety and Search and Rescue (SAR)	• How is safety defined and what terms are used? • Is safety in tourism addressed? • When did safety become a concern? • How are SAR agreements defined and is implementation mentioned, is the Polar Code mentioned? • Are national safety systems integrated?	• What kind of infrastructure or capabilities do the countries have for safety? • Is there mapping and monitoring of sea ice, depth, etc.? • Who are the different authorities (e.g., levels of government) involved and what role do they have? • Is Coast Guard cooperation discussed?

Indicator	Sub-indicators	
Economy	• How are resources utilized, including fisheries? • Energy. • Sustainable development. • What kind of economic activities are mentioned and what is prioritized? • Who are the actors (e.g., State, state-owned businesses, transnational, local entrepreneurs, Indigenous, etc.)? • What are the economic volumes in terms of dollar amounts and number of businesses?	• How much does the North contribute to the national economy? • How is the economy/business prioritized in the national strategies? • Are economic activities are regulated and, if so, how? • Is there recognition of the Arctic Economic Council? • Are sanctions and counter sanctions addressed and, if so, how? • Trade, imports and exports.
Tourism	• How are safety and security defined in this context? • How tourism is defined (e.g., industry, adventure, etc.)? • Who runs tourism and how is it organized? • Who are the actors (e.g., foreign businesses, Indigenous businesses, etc.)? • What is the scale of the industry (e.g., income generation), the volumes, and where do the tourists come from?	• In the cruise industry, what are the different types of activities (e.g., transit vs. destination)? • What is the impact of tourism with regard to the environment, society, economy, culture? • How much does the state support tourism? • What are the possible side-effects (e.g., cultural conflicts) and how can they be mitigated (e.g., sustainability)?
Infrastructure	• Transportation. • Icebreakers. • Telecommunications and ICT. • Housing.	• Innovation and technology. • Shipping. • Energy.
Science and Education	• What does the science infrastructure consist of (e.g., research stations)? • What are the purpose and aims of science (e.g., having a presence in the region)? • What are the drivers of science (e.g., pollution, climate change, etc)? • How big are the research budgets? • How is knowledge defined, what is the role of traditional knowledge, and what is the interplay between the two?	• What is access to higher education like; is there an education gap? • What are the educational attainment levels? • Is the UArctic mentioned, what importance is it given, and how are courses used? • Are there options for distance learning? • How are innovation and technology addressed? • Is space factored into these agendas?
Implementation	• Does the strategy have a list of action items for implementation? • Is there a budget for the different action items, or for the strategy overall?	• Is there follow-up? • Is there evaluation?

Table 5. Indicator and Sub-indicator Overview

(Re)defining and (Re)mapping the Arctic relates to understanding how the different actors define and describe the Arctic region. Do they self-identify as Arctic actors/stakeholders and/or redefine their country/state related to the Arctic, and if so how? It also seeks to understand who the different stakeholders are and which government ministries have regional responsibilities.

The **Human Dimension** indicator addresses the different aspects of human life in the Arctic. It focuses on: the role of Indigenous peoples and how culture and language are preserved and protected; how other inhabitants/residents are noted and identified; the demographics of the different states and whether there is regional migration; if and how equality and human rights are addressed; and health and wellbeing.

The **Governance** indicator looks at the different ways the Arctic is governed. This identifies what structures are currently in place, how much cooperation takes place, and in what context(s); it looks, in particular, at the Arctic Council and its procedures. It examines how self-governance and self-determination are addressed and supported by state actors, what mechanisms are in place for natural resources utilization, the extent to which public consultations and environmental impact assessments are encouraged, how decisions are made, and if there are any conflicts of interest among the different stakeholders.

The **International Cooperation and International Treaties** indicator reflects the role and importance of international cooperation. It also includes the major agreements and/or forums. The indicator attempts to address the global perspectives—globalization— in the strategies. Moreover, this indicator highlights whether the particular state is a member (or observers) to EU, NATO, UN, BEAC and/or potentially other international organizations. The indicator also considers the UN Sustainable Development Goals and if (and how much) they are reflected in the strategies.

The **Environmental Protection** indicator assesses the extent to which the strategy actually advocates for environmental protection and how this work is prioritized. It also addresses the amount of discussion on protected areas, flora and fauna (including invasive species and migration),the importance of biodiversity, and if there are plans for monitoring the sea for pollutants. This indicator also looks for a description of the Arctic from an environmental perspective (e.g., fragile, etc.).

The **Pollution** indicator seeks to elicit how the different strategies recognize various pollutants, where they come from, and who are polluters. What is being done to address pollution through either international treaties or other problem solving actions? Additionally, how long does it take for a state to take action against pollution?

The **Climate Change** indicator identifies the consequences, both positive and negative, of climate change on the region and how this may impact Arctic societies. Similarly, has climate change affected maritime safety, become a security factor, decreased access to freshwater, or created environmental refugees? It also asks what states are doing with regard to mitigation vis-a-vis adaptation, what climate agreement or frameworks are identified, and if and how the scientific community is being heard.

Due to Environmental Protection, Pollution and Climate Change often being written about together as single issues in the documents, these three indicators will be later interpreted and discussed as a new meta-indicator.

The **Security** indicator addresses how security is defined, and what the security priorities are. It also covers if/and how sovereignty is mentioned and defined by individual states. It includes reflection on borders and how they are addressed/defined. The indicator tries to capture if (high) stability and stability-building are mentioned. One of the key phenomena is how the interpretation of security has changed over time. It also enquires into the role of armed forces and what the listed military capabilities are, including the Coast Guard (in some states, this is outside the armed forces). The indicator also reflects measures being taken to increase security. Last, but not least, the indicator focuses on whether NATO is mentioned, and if so, what kind of role it plays in the Arctic.

The **Safety and Search and Rescue (SAR)** indicator captures the different safety and emergency issues identified in the documents. It also seeks to better understand what safety and SAR agreements are in place (or being developed), what capabilities the different states have, whether integration of safety at a regional level is desired, and what authorities are involved in safety and SAR, including the role of the Coast Guard.

The **Economy** indicator seeks to identify various economic activities in/concerning the Arctic region of the different states, including resources, energy, transport and trade. It also looks at what contributions these activities make to the national economy. Other important economic considerations are the role of sustainable development, how economic activities are regulated, if sanctions are addressed, what economic actors are involved, and additionally, how economic activities are prioritized in the documents.

The **Tourism** indicator seeks to understand how tourism is defined in the Arctic context, who the tourism actors are and how tourism is organized. The indicator looks at whether and how safety is defined in connection to tourism. It aims to capture the scale and volume of the industry. In the cruise industry, it looks at the different types of activities and how much the state supports tourism. Importantly, the indicator targets the impact of tourism with regard to the environment, society, economy, and culture— what the possible side-effects are and how to mitigate them.

The **Infrastructure** indicator identifies the different agendas and priorities for infrastructure projects, including transportation, icebreakers, telecommunications and ICT, housing, shipping, and projects to ensure northerners have access to energy. This indicator also addresses how innovation and technology can help facilitate investments in these areas.

The **Science and Education** indicator addresses science and education separately. For science, the indicator asks what sort of science infrastructure exists or is being planned (this includes material goods and networks); what drives science and what purpose or aims science serves; how research budgets are addressed; how knowledge and traditional/Indigenous knowledge are discussed and if there is any interplay between the two; the role of innovation and technology; and if space (not satellites) is a factor in any of these agendas. The education component looks for discussion on access to education, education attainment levels, and if the UArctic and other forms of distance learning are mentioned.

The **Implementation** indicator identifies the different ways the state plans to implement the strategy. This includes the provision of recommendations or action items, if any additional budgets have been created, if and how the state will follow-up on the strategy, and if there will be any evaluation processes.

Coding and Analysis

As there were many documents and indicators/sub-indicators and to be analyzed, a spreadsheet was used to organize the information by document type and country. For the Arctic states, for example, each country had its own tab with a table to capture the coding by document and by (sub)indicator. Figure 4 provides an example of a blank sheet for the human dimension indicator that provides for the capture of quantitative and qualitative data.

Figure 4. Coding the Documents

Each document was carefully read and the quotes were added to the middle column and any thoughts or comments about the quote were added to the comments column. The quotes were then used to compare and contrast how the different documents address these issues.

The column on the left for 'scale' was used to calculate how many quotes were assigned to each sub-indicator and totaled for each indicator. Figure 5 provides an example of the scaling for Canada's 2009 and Finland's 2013 national strategies. The table shows both the total number of quotes for each indicator and docu-

ment, and the percentage of total quotes for each indicator. The percentage is the important number. For example, if only the total number of quotes is compared, it shows that Finland speaks to the Human Dimension more than Canada does. However, as the Finnish document is longer than the Canadian one and has more than twice as many quotes coded for the entire document, this kind of comparison is misleading. For a more accurate comparison, the focus must be on the percentage of quotes.

	A	B	C	D	E
		Canada 2009		Finland 2013	
		# Quotes	% Quotes	# Quotes	% Quotes
3	Human Dimension	25	15%	46	9%
4	Governance	23	14%	64	13%
5	International Cooperation	18	11%	40	8%
6	Environmental Protection	15	9%	30	6%
7	Pollution	7	4%	12	2%
8	Climate Change	7	4%	22	4%
9	Security	17	10%	37	7%
10	Safety & SAR	8	5%	33	6%
11	Economy	18	11%	103	20%
12	Tourism	2	1%	33	6%
13	Infrastructure	13	8%	45	9%
14	Science & Education	14	8%	45	9%
15	Total	167	100%	510	100%

Figure 5. Scaling the Indicators

Note: the percentages have been rounded to the closest full number and may thus not equal exactly 100 % due to a rounding error.

The total number of quotes paints a different picture. Figure 5 shows that Canada actually spoke more to the Human Dimension (15 %) than Finland (9 %). As all the documents are different lengths, turning the actual number of quotes into percentages allows for a comparison between documents to more accurately identify which document prioritizes certain indicators and which do not. These numbers are then turned into bar graphs for easy comparison to show trends over time and across countries.

Four factors must be taken into consideration for this analysis:

First, one quote may be used in more than one indicator based on its complexity. For example, the current strategy for Finland states that

> "For the Arctic regions, it is vital to be able to reconcile traditional livelihoods with the modern industrial-scale exploitation of natural resources. For example, reindeer husbandry is of deep-seated social and cultural significance while at the same being a source of income. For the Saami, reindeer husbandry is an integral part of the Indigenous language and culture. Yet the area designated for reindeer husbandry in Finland is much larger than the Saami region extending far south of the Polar Circle." (Finland. Prime Minister's Office [PMO]. 2013, 12)

This quote was assigned to both the Human Dimension and the Economy indicators and would thus be counted twice.

Second, not all (sub)indicators can provide quantitative analysis. In particular, the (Re)mapping and (Re)defining the Arctic and the Implementation indicators are qualitative in nature, as they seek to capture only descriptive information. They provide better insights into how the region is defined and understood, what actors are involved, and the different approaches to strategy implementation.

Third, many of the strategies provide recommendations or 'action items' throughout the document, such as that of the Kingdom of Denmark. These quotes were usually applied to the most relevant (sub)indicator(s) and are accounted for in the scaling and indicator percentage for each document. In contrast, both the Finnish and Russian documents provide more detailed implementation plans at the end of their strategies than most of the other documents. As such, this information was accounted for in the comments section of the coding sheets and not counted in the total number of quotes; it will, however, be discussed in the Implementation indicator discussion.

Fourth, note that although we use U.S. spelling, in quotes the spelling reflects the original text.

As a conclusion, several rounds of coding, description, comparative study (points of similarity and difference), analysis and conclusion have been carried out for each category of Arctic States' policies and strategies, Permanent Participants' policies and declarations, Arctic Council Observer States' policies and strategies, and Arctic Council chairmanship programs and ministerial declarations. Based on these analyses there is a synthesis and conclusion, as well as a list of main themes in each category that can be seen and interpreted as new and emerging trends of the state of Arctic governance and geopolitics at the early 21st century.

Part I:
Strategies and Policies of the Arctic States

The Arctic States are a group of countries located in the entire North, at the top of the world. Territories extending into the Arctic Circle, as the main criteria of an Arctic country, are Canada, Finland, Iceland, the Kingdom of Denmark (including Greenland and the Faroe Islands), Norway, the Russian Federation, Sweden, and the United States of America (due to Alaska).

These states first came together at the government ministerial level in June 1991 in Rovaniemi, Finland, to sign the Declaration on the Protection of the Arctic Environment (Rovaniemi Declaration 1991) and the Arctic Environmental Protection Strategy (AEPS 1991). Since then, they have cooperated intensively to protect the Arctic environment and to promote the sustainable development of the northernmost regions of the globe. In 1996, supported by Arctic Indigenous peoples' organizations, they established the Arctic Council, a high-level forum for multilateral cooperation. The eight Arctic states, also called the Arctic Eight (A8), are the members of the Arctic Council.

The first section of this scientific report deals with the national strategies and policies of the eight Arctic states with respect to Arctic regions and Arctic affairs. It provides a holistic, multi-dimensional understanding of current Arctic governance and geopolitics through an examination of the national strategies and policies of the Arctic States. Each state is analyzed individually—indicator by indicator—so that a comparison can be made between states' strategies and policies and how these have evolved over time. This detailed comparison helps to elicit the similarities and differences between the current governance priorities of the policies of the Arctic Council members, first indicator by indicator, and then more generally.

As all eight Arctic states are primary actors in the Arctic Council and ultimately responsible for governing the Arctic region, a deep holistic analysis of this kind is essential information for decision-makers, politicians, civil servants, businesses, researchers, and planners, not just in the Arctic community but worldwide. The analysis also contains data that will be of value and interest from the scientific and educational point of view—both 'lessons learned' to date and lessons to-be-learned for the future.

Canada

The Arctic has long been a political priority for the Canadian government (see, e.g., Cavell and Kropf 2016). In 2000, the Canadian Department of Foreign Affairs and International Trade (DFAIT) published a paper entitled *The Northern Dimension of Canada's Foreign Policy* which was to form an important part of Canada's foreign policy (Canada DFAIT 2000). The guiding principles of the paper are: "to enhance the security and prosperity of Canadians, especially northerners and Aboriginal peoples [and] to assert and ensure the preservation of Canada's sovereignty in the North", as well as "to establish the circumpolar Region as a vibrant geopolitical entity" and "promote the human security of northerners and the sustainable development of the Arctic (2000, 2).

However, it was not until 2009 that Canada created its first Arctic strategy, *Canada's Northern Strategy: Our North, Our Heritage, Our Future* (Canada INAC 2009) with 41 pages, including maps and pictures. In 2010, the government released its Arctic foreign policy with the *Statement on Canada's Arctic Foreign Policy: Exercising Sovereignty and Promoting Canada's Northern Strategy Abroad,* with 27 pages, no maps or pictures (Canada DFAIT 2010).

Canada began the process of updating its Arctic policy in 2017 with the release of the *Arctic Policy Framework Discussion Guide* (Canada INAC 2017). This was used as the foundation for a series of public consultations that would inform the final policy document. The new policy is also partly influenced by *A New Shared Arctic Leadership Model* (Simon 2017). Canada's Arctic and Northern Policy Framework, with eight emphasized pillars, was finally published in September 2019. Thus, due to this late release, the 2009 and 2010 documents remain the most current and are the focus of the analysis here.

The 2009 northern strategy (here the 2009 Strategy) is taken as Canada's primary strategy document as the 2010 foreign policy (here the 2010 Policy) was designed to facilitate the same overarching themes, but at an international level (2010, 4). The four priority areas outlined in the 2009 Strategy are: "exercising our Arctic sovereignty; promoting social and economic development; protecting the North's environmental heritage; and improving and devolving northern governance" (2009, paragraph 3 of Minister's message).

The 2010 Policy repeats these priorities, but also states that "in pursuing each of these pillars in our Arctic foreign policy, Canada is committed to exercising the full extent of its sovereignty,

sovereign rights and jurisdiction in the region" (2010, 4), suggesting that sovereignty is of the utmost importance in the global arena. The 2010 Policy lists 13 additional items to facilitate Canada's Arctic agenda that cover issues including improving the living conditions and wellbeing of northerners, trade, addressing environmental concerns, and a range of international governance issues.

Comparison by Indicator

The quotes in the **(Re)defining and (Re)mapping the Arctic** indicator provide insights into how the federal government understands the region and what it means for Canada's identity. For example, the 2009 Strategy states that "Canada's far North is a fundamental part of Canada – it is part of our heritage, our future and our identity as a country" (2009, 1). Similarly, the 2010 Policy states that "the Arctic is fundamental to Canada's national identity…The Arctic is embedded in Canadian history and culture, and in the Canadian soul. The Arctic also represents tremendous potential for Canada's future" (2010, 3). This suggests that the government sees the Arctic as more than just an economic opportunity and that there should be interest in all aspects of Canada's northern governance actions (see Berger 1977).

Both documents use the terms the "Arctic" and the "North" to describe the region in question. This is not surprising as the 2009 Strategy primarily focuses on the three northern territories (Yukon, Northwest Territories, Nunavut) which generally start at or around the 60th parallel. At the same time, the document acknowledges that many of Canada's northern Indigenous communities are not found solely within political boundaries and that "the lands just south of the Arctic Circle have been occupied for thousands of years by the ancestors of today's Aboriginal peoples including the Dene, Gwich'in, Cree and Métis. Today, these Aboriginal peoples live in communities across the Yukon, southern Northwest Territories and northern border regions of mainland provinces" (2009, 3). The map on page 29 of the 2009 Strategy also shows that Inuit land treaties have been settled not only in Nunavut and parts of the Northwest Territories, but in northern Quebec and Labrador. This broader definition of the North is found in the 2010 Policy as the region "is home to many Canadians, including Indigenous peoples, across the Yukon, the Northwest Territories and Nunavut, and the northern parts of many Canadian provinces" (2010, 3). There are also other "small populations" (2009, 31). The documents recognize other descriptors that are used for the region, such as "fragile and unique ecosystems" (2009, 24), "unique and fragile environment" and "magnificent ecological region" (2010, 16, 17).

Both documents identify some of the federal ministries with regional responsibilities, but there are differences as to how these are discussed in the two documents. The 2009 (northern) Strategy identifies Transport Canada, Fisheries and Oceans Canada, and Indian Affairs and Northern Development Canada as ministries with Arctic responsibilities, along with the Canadian Coast Guard, and Defence Research, and Development Canada as other government bodies playing a role (2009). In contrast, the 2010 (Arctic foreign) Policy states: "we are taking a whole-of-gov-

ernment approach. Since taking office, the Prime Minister and many federal cabinet ministers have made regular visits to Canada's North" (2010, 6), although there is no mention of which cabinet ministers were included in these visits.

To understand where the Canadian government places its priorities, Figure 6 provides a comparison of how many quotes were assigned to the different indicators, given as a percentage of the total number of coded quotes in the document (rounded to the nearest whole number), thus allowing for the identification of priority changes.
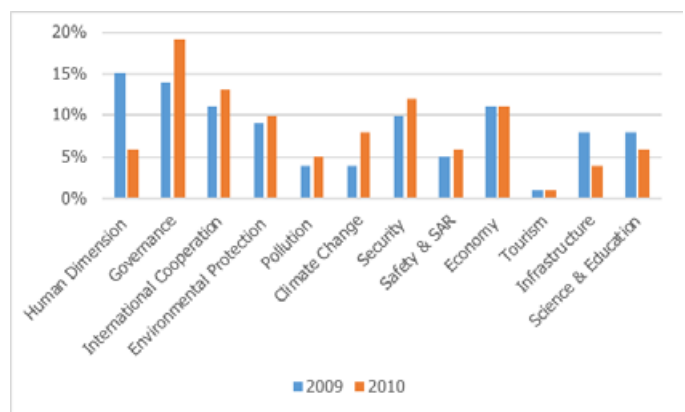
Figure 6. Comparing Canada's 2009 Strategy and 2010 Policy Documents
Note: The percentages in each indicator are rounded to the closest whole number and represent the percent of the total number of quotes coded for each document.

The **Human Dimension** indicator, which accounts for 15 % of the total coded quotes of the 2009 Strategy and 6 % for the 2010 Policy (see Figure 6), has three major themes: i) demographic issues and their effect on regional equality; ii) Indigenous culture and language; and iii) health and wellbeing.

With respect to Canada's northern demographics and equality in the 2009 Strategy, the federal government states that there is "a small population in communities spread over vast distances" (2009, 31). There are also inequalities between the Canadian territories and between northern and southern Canada, generally. These three northern territories "have very different economies and very different infrastructure requirements, which is why Canada is working closely with the territorial governments to develop tailored responses to local needs" (2009, 17). It is also why the federal government is "continuing to ensure Northerners in remote and isolated communities have access to good quality, nutritious food at affordable prices" (2009, 22). In contrast, efforts to address regional inequalities of the North, compared to southern Canada, is not addressed in the 2010 Policy.

The 2009 Strategy discusses the land claim process for Indigenous peoples, stating that "Aboriginal people throughout the North have negotiated land claim and self-government agreements that give them the institutions and resources to achieve greater self-sufficiency" (2009, 4).

The 2009 Strategy further comments on the economic opportunity provided to Indigenous peoples through northern mining projects, especially through the Mackenzie Gas Project (2009, 15). The document also acknowledges that "Canada works closely with the six international Indigenous peoples groups that have Permanent Participant status—three of which have strong roots in Canada: the Arctic Athabaskan Council, the Gwich'in Council International, and the Inuit Circumpolar Council" (2009, 13).

The 2009 Strategy also addresses Indigenous culture and recognizes that "long before the arrival of Europeans, Inuit hunters, fishers and their families moved with the seasons and developed a unique culture and way of life deeply rooted in the vast land" (2009, 3). Furthermore, "the Government of Canada recognizes its responsibility to preserve and protect Canada's rich Northern heritage in the face of new challenges and opportunities" (2009, 39). Interesting here is the lack of discussion around current cultural practices and how the Indigenous peoples themselves would identify.

Similarly, the 2010 Policy acknowledges the importance of land claims as "Indigenous communities are developing made-in-the-North policies and strategies to address their unique economic and social challenges and opportunities" (2010, 22). Unlike the 2009 Strategy, the 2010 Policy recognizes the importance of language preservation, stating that "the 2008 Arctic Indigenous Languages Symposium … underlined the importance of preserving and strengthening Indigenous languages" (2010, 15). However, the majority of quotes about Indigenous peoples in the 2010 Policy were in the context of supporting the Permanent Participants at the Arctic Council. For example, the document states that "Canada will encourage other Arctic Council states to support the participation of their Permanent Participant organizations" and that "as interest by non-Arctic players in the work of the Council grows, Canada will work to ensure that the central role of the Permanent Participants is not diminished or diluted" (2010, 23).

The 2010 Policy differs from the 2009 Strategy in its discussions around protecting the human rights of Indigenous peoples. For instance, the document recognizes that "Canada is taking steps to endorse the United Nations Declaration on the Rights of Indigenous Peoples in a manner fully consistent with Canada's Constitution and laws" (2010, 22), although Canada did not actually support the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) until 2016 (INAC 2017). The Policy stresses, too, that "Canada is committed to defend sealing on the international stage" (DFAIT 2010, 16), presumably in response to the 2009 European Seal ban that came into effect in 2010 (see: European Commission 2019).

Health and wellbeing are addressed in both documents. In the 2009 Strategy, it relates to increased access to health services, especially through funding transfers from the federal government to the territories. For example, the Strategy states that "in order to support healthy and vibrant communities, the Government of Canada today provides annual unconditional funding of almost $2.5 billion … which enables territorial governments to fund programs and services such as hospitals, schools, infrastructure and

social services" (2009, 19). The federal government will also "continue to work collaboratively with Northerners on issues such as health promotion and disease prevention" (2009, 22). Wellbeing is also linked to economic prosperity; among other things, "the territories also receive federal support for targeted initiatives to address specific challenges in the North, such as for labour market training" (2009, 21).

The 2010 Policy also discusses the health and wellbeing of northerners and on the role the Arctic Council. For instance, it stresses that "Canada has been supporting efforts through the Arctic Council and International Polar Year research to better understand the issues and then develop and implement appropriate health policies" (2010, 15). Additionally, "Canada will continue to encourage a greater understanding of the human dimension of the Arctic to improve the lives of Northerners, particularly through the Arctic Council. The Arctic Council's Arctic Human Development Report was the first comprehensive assessment of human well-being to address the entire Arctic region" (2010, 15).

The quotes in the **Governance** indicator, which accounts for 14 % of the total coded quotes for the 2009 Strategy and 19 % for the 2010 Policy (see Figure 6, p. 30) capture the existing governance structures mentioned in the two documents, including forms of self-governance/determination, approaches to natural resources and blue economy governance, and the extent to which international and transboundary cooperation is depicted.

The 2009 Strategy mentions a few of the existing governance structures. These include the Ilulissat Declaration, the International Maritime Organization (IMO), the United Nations, the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Convention on the Law of the Sea (UNCLOS), and the Arctic Council (2009, 36, 37). Considering Canada's role in the formation of the Arctic Council, the Strategy states, not surprisingly, that "the Arctic Council is an important venue for deepening global understanding of the Arctic and has played a key role in developing a common agenda among Arctic states" (2009, 35). This statement indicates Canada's continued support for the Council and the value it has for the region.

The 2010 Policy mentions a few more governance structures than the northern Strategy does, in particular, the Arctic Council, the Standing Committee of Parliamentarians for the Arctic Region, Northern Forum, IMO, United Nations Framework Convention on Climate Change, UNCLOS, United Nations Convention on Biological Diversity, the Inuit Circumpolar Council, the Stockholm Convention on Persistent Organic Pollutants, the Copenhagen Accord, the Migratory Bird Treaty (Canada–USA), and the Agreement on the Conservation of Polar Bears (Canada–Kingdom of Denmark–Norway–Russia–USA) (2010, 8, 13, 18, 19, 20, 26).

The Policy also recognizes that in general, more and more actors are becoming involved in the region, which will inevitably have governance implications. At the same time, it makes clear: "While many of these players could have a contribution to make in the development of the North, Canada does not accept the

premise that the Arctic requires a fundamentally new governance structure or legal framework. Nor does Canada accept that the Arctic nation states are unable to appropriately manage the North as it undergoes fundamental change" (2010, 9).

Both documents have a section on 'Improving and Devolving Northern Governance' which addresses the increasing role of the territorial governments and Canada's northern Indigenous peoples. The 2009 Strategy explains that "in the past few decades Northern governments have taken on greater responsibility for many aspects of their region's affairs. One exception was control over lands and resource management, which stayed with the federal government" (2009, 28). This means that the Northern governments do not yet have full economic self-responsibility. Similarly, the 2010 Policy states: "In recent decades, Canada's Northern governments have taken on greater responsibility for many aspects of their region's affairs" (2010, 22).

On Indigenous self-governance, both documents make similar statements that land-claim settlements are leading to increased autonomy for Indigenous peoples (2009, 30; 2010, 22). In the context of land claims, the 2009 Strategy notes that progress has been made in all three Territories as "11 of 14 Yukon First Nations have signed self-government agreements. A majority of the Northwest Territories is covered by Comprehensive Land Claims Agreements that give Aboriginal people the authority to manage their lands and resources. The Nunavut Land Claims Agreement led to the creation of Canada's newest territory in 1999, providing Inuit of the Eastern Arctic with some 350,000 square kilometers in the largest Aboriginal land claim settlement in Canadian history" (2009, 30); it also mentions land claims in Labrador.

Natural resources and the blue economy are also subject to different governance practices. However, neither document pays much attention to this. The 2009 Strategy only addresses the continental shelf extension and notes that "research will ensure Canada secures recognition for the maximum extent of its continental shelf in both the Arctic and Atlantic oceans when we present our submission to the United Nations Commission on the Limits of the Continental Shelf by the end of 2013" (2009, 12). The 2010 Policy also mentions the continental shelf and possible changes to oil extraction processes. In particular, it states that "in the wake of the oil spill in the Gulf of Mexico, we are furthering our collaboration at the appropriate levels, in particular with the United States and Denmark/Greenland in light of our common interests in the Arctic marine environment" (2010, 13). Governance of resources, therefore, includes control over access and environmental protection.

Both documents address the need for public consultations and/or environmental impact assessments in some capacity. The 2009 Strategy states that "any company now undertaking industrial development in the North must undertake a rigorous environmental assessment, establish a site closure and remediation plan, meet standards for operational and environmental safety and satisfy the requirements of various laws including the *Fisheries Act*" (2009, 28). It also covers the creation of a new northern research station, stating that "extensive consultations at home and abroad about the role of this new research facility and a feasibility study is being conducted to determine where the facility will be located" (2009, 25–6). However, for the latter, the extent to which the public (i.e., local residents) was engaged is unclear.

The 2010 Policy makes clear the importance of consultations and states that "the Government of Canada is moving forward in consultation with communities and industry to add nearly 70,000 square kilometres to Canada's Northern protected areas network…The creation of the majority of existing national parks in the Arctic proceeded hand-in-hand with land claim negotiations, as are all of the new national park proposals" (2010, 19). The document mentions increasing consultations with the Arctic Council's Permanent Participants, stating that "Canada will engage with Northerners on Canada's Arctic foreign policy. Through the Canadian Arctic Council Advisory Committee, Northern governments and Indigenous Permanent Participant organizations in Canada will have the opportunity to actively participate in shaping Canadian policy on Arctic issues" (2010, 23). Additionally, the document states that "Canada will engage with Northern governments and Permanent Participants to ensure that the Arctic Council continues to respond to the region's challenges and opportunities, thus furthering our national interests" (2010, 25). The decision to use the word 'engage' in the first and third quotes is interesting because engagement is suggestive of greater collaboration (see: Open University n.d.).

Despite the previous statements on consultation and increased self-governance capabilities for Indigenous peoples, these groups may not have much influence in federal-level decision making. For example, the 2009 Strategy and the 2010 Policy state that science is integral to the decision-making process (2009, 24; 2010, 22). That said, the 2010 Policy notes that "Canada recognizes and values the important role Northern governments, Arctic Indigenous organizations at the Arctic Council … and other Northerners have played, and will continue to play, in shaping Canada's international actions" (2010, 23). Thus, at a domestic level, at least, the territories and Indigenous peoples are gaining the ability to make their own decisions. However, they may not be able to affect federal-level decisions. Thus, cooperation is a key factor in Arctic regional governance.

The **International Cooperation and International Treaties** indicator, accounting for 11 % of the total coded quotes of the 2009 Strategy and 13 % of the 2010 Policy (see Figure 6, p. 30), demonstrates the importance of international cooperation to Canada's Arctic efforts. Indeed, both documents state that "cooperation, diplomacy and international law have always been Canada's preferred approach in the Arctic" (2009, 33; 2010, 27). The 2009 Strategy also remarks that "Canada has a strong history of working with our northern neighbours to promote Canadian interests internationally and advance our role as a responsible Arctic nation" (2009, 33), yet at the same time, "as international interest in the region increases, effective Canadian stewardship of our sovereign territory and the active promotion of Canadian interests internationally are more important than ever before" (2009, 33). Similarly, the 2010 Policy states

that "the rapid pace of change and growing importance of the Arctic requires that we enhance our capacity to deliver on Canada's priorities on the international scene" (2010, 24).

International cooperation is important as Canada has "common interests with, and things to learn from, our other Arctic neighbours – Norway, Denmark, Sweden, Finland and Iceland" (2009, 35). For example, the 2009 Strategy discusses different forms of cooperation with Arctic partners, such as Canada's "long history of effective collaboration and cooperation with the United States and [will] continue to deepen cooperation on emerging Arctic issues, bilaterally and through the Arctic Council and other multilateral institutions" (2009, 34). The document also mentions cooperation with "non-Arctic states on Arctic issues. For example, Canada and the United Kingdom signed a Memorandum of Understanding for cooperation in polar research" (2009, 35). Cooperation, therefore, is an important aspect of regional governance.

The 2010 foreign Policy addresses cooperation with the USA in military terms through Operation Nanook and through polar bear management (2010, 7, 18). This relationship is important because "the United States is our premier partner in the Arctic and our goal is a more strategic engagement on Arctic issues" (2010, 24). Canada is also working on the continental shelf delimitation (2010, 9) and the government is "working with Russia, Norway, Denmark, Sweden, Finland and Iceland to advance shared interests such as trade and transportation, environmental protection, natural resource development, the role of Indigenous peoples, oceans management, climate change adaptation and scientific cooperation" (2010, 24). Canada also wishes to work with its Arctic Council partners on organizational change. In particular, "Canada will work with other member states to address the structural needs of the organization. While the current informal nature of the body has served Canada well for many years, the growing demands on the organization may require changes to make it more robust" (2010, 26).

As discussed in the governance indicator, a number of international agreements or forums in which Canada partakes, such as the Arctic Council, the IMO, UNCLOS, the UNFCCC, are identified by both documents. Canada also works bilaterally with other states on shared issues; for example, the 2009 Strategy stresses that "the United States remains an exceptionally valuable partner in the Arctic. Canada and the United States share a number of common interests in the Arctic, such as environmental stewardship, sustainable resource development and safety and security" (2009, 34). There is also cooperation at the government ministry level between countries, with the Strategy specifically mentioning that "the Memorandum of Understanding signed between the Department of Indian Affairs and Northern Development Canada and the Russian Ministry of Regional Development to examine cooperative projects with Indigenous Peoples is a recent example of Canada's bilateral efforts with Russia, which include new trading relationships and transportation routes, environmental protection and Indigenous issues" (2009, 34).

The 2010 Policy also recognizes the importance of cooperation at all levels. For example, the document states that "facing the challenges and seizing the opportunities that we face often require finding ways to work with others: through bilateral relations with our neighbours in the Arctic, through regional mechanisms like the Arctic Council, and through other multilateral institutions" (2010, 24).

The **Environment Protection** indicator, which accounts for 9 % of the total coded quotes for the 2009 Strategy and 10 % of the 2010 Policy (see Figure 6, p. 30). Both documents position the Arctic environment and ecosystems as "fragile" and "unique" (2009, 24; 2010, 16), while the 2010 Policy also recognizes the Arctic as a "magnificent and unspoiled region" (2010, 17). It is not surprising, therefore, that both documents make statements about prioritizing environmental protection. For example, the 2009 Strategy states that "Canada is committed to helping ensure these ecosystems are safeguarded for future generations" and that "the Northern tradition of respect for the land and the environment is paramount and the principles of responsible and sustainable development anchor all decision-making and action" (2009, 24, 1). The 2010 foreign Policy stresses that "Canada is committed to planning and managing Arctic Ocean and land-based activities domestically and internationally in an integrated and comprehensive manner that balances conservation, sustainable use and economic development—ensuring benefits for users and the ecosystem as a whole" (2010, 17). Furthermore, the 2009 northern Strategy states that "the Government of Canada is introducing measures to ensure that regulatory systems across the North protect the environment in a predictable, effective and efficient manner" (2009, 15). The 2010 foreign Policy stresses Canada's history of maritime pollution prevention through the Arctic Waters Pollution Prevention Act (AWPPA). Its continuing protection efforts through meteorological monitoring "will also enhance environmental protection of the Arctic marine environment, support Northern residents in their maritime activities, and provide necessary services for coastal and marine-based resource development" (2010, 14). Additionally, the 2010 Policy recognizes that "as part of its mandate, the Arctic Council has been playing a lead role in identifying large marine ecosystems in the region and determining best practices in ocean management" (2010, 18).

The commitment to environmental protection is further addressed through recognition of Canada's efforts to develop protected areas. The 2009 Strategy states that "Canada is taking a comprehensive approach to the protection of environmentally sensitive lands and waters in our North, ensuring conservation is keeping pace with development" (2009, 26); this includes collaboration with Indigenous peoples in Labrador and Nunavut. Furthermore, "in the Northwest Territories, Canada has protected large areas from development through land withdrawals and work is underway on a number of conservation initiatives" (2009, 26). The 2010 Policy recognizes Canada's domestic commitment to environmental protection, stating that "Canada has made significant progress in establishing protected areas in over 10 percent of our North, designating 80 protected areas covering nearly 400,000 square kilometres" (2010, 19).

Initiatives also include animal protection. The 2010 Policy states that "Canada has signed a Memorandum of Understanding with the United States for the conservation and management of a shared polar bear population. In addition, Canada has developed agreements with other Arctic nations to jointly manage polar bears, narwhals and belugas" (2010, 18). Further to this, "the Council has recently developed the Arctic Species Trend Index, which provides decision-makers with a valuable tool for managing and predicting Arctic wildlife populations. Tracking the index over time will facilitate this prediction of trends and identify species and groups experiencing rapid change" (2010, 18).

The topic of biodiversity is a point of difference between the two documents as the term 'biodiversity' is not mentioned in the 2009 Strategy. The 2010 foreign Policy mentions that "Canada will continue to lead the Arctic Council's Circumpolar Biodiversity Monitoring Program to ensure information on population status and trends for Arctic species and ecosystems is available and supports initiatives such as the Arctic Biodiversity Assessment" (2010, 18).

The **Pollution** indicator, which accounts for 4 % of the total coded quotes for the 2009 Strategy and 5 % for the 2010 Policy (see Figure 6, p. 30), provides insights into Canada's understanding of, and approach to, pollution in the Arctic, although to different extents. For example, the 2009 Strategy identifies mining waste and pathogens (2009, 28, 11), whereas the 2010 Policy recognizes oil, black carbon, carbon dioxide, mercury, greenhouse gases, and Persistent Organic Pollutants (POPs) (2010, 12, 20, 21). Both documents recognize that some pollutants come from outside of the region. The 2009 Strategy recognizes the harm from ballast waters and has "also amended the Arctic Waters Pollution Prevention Act to extend the application of the Act from 100 to 200 nautical miles from our coastline...This amendment gives us pollution prevention enforcement jurisdiction over an additional half million square kilometres of our waters" (2009, 11-12). The 2010 Policy further recognizes that the "persistent organic pollutants and mercury, released far from the Arctic, have had serious impacts on Arctic peoples" (2010, 21).

Both documents name the extractive resources industry as the source of pollutants. The 2009 Strategy states that "new development projects may increase the number of pollutants, threatening Northerners' health and the region's fragile ecosystems" and that "just as important are our clean-up programs to repair or remediate environmental damage at abandoned mines and other contaminated sites throughout the North" (2009, 8, 28). The 2010 Policy notes that mercury and greenhouse gases often come "from coal-fired electricity generating plants" (2010, 21), but does not say if these are from Canada, other Arctic states, or from other parts of the world.

Both documents also identify different approaches to addressing Arctic pollution. For instance, the 2009 Strategy identifies various different domestic efforts, such as the previously mentioned AWPPA extension, "Canada's Health of the Oceans initiative, which strengthens the ability of Northern communities to respond to pollution and fosters greater cooperation with do-

mestic and global partners" (2009, 27), and also the introduction of "new ballast water control regulations that will reduce the risk of vessels releasing harmful aquatic species and pathogens into our waters" (2009, 11).

The 2010 Policy recognizes both domestic and international efforts, such as the role of AWPPA (2010, 16), and by "providing $3.5 billion over 15 years to address federal contaminated sites, with the majority of resources directed to contaminated sites in the North" (2010, 21) as part of the Federal Contaminated Sites Action Plan. Canada's international effort is "committed to contributing to the global effort by taking action to reduce Canada's greenhouse gas emissions through sustained action domestically to build a low-carbon economy, working with our North American partners and constructively engaging with our international partners to negotiate a fair, environmentally effective and comprehensive international climate change regime based on the Copenhagen Accord" (2010, 20). The 2010 Policy also states that "Canada and the Inuit Circumpolar Council played an important role in the negotiation of the Stockholm Convention on Persistent Organic Pollutants" (2010, 21).

For the **Climate Change** indicator, which accounts for 4 % of the total coded quotes for the 2009 Strategy and 8 % of the 2010 foreign Policy (see Figure 6, p. 30), both documents recognize different consequences of climate change. For example, the 2009 Strategy states that "the North also has fragile and unique ecosystems which are being negatively affected by the impacts of climate change" (2009, 24) and that "the effects of environmental change, such as shifting and melting permafrost, melting glaciers, shrinking ocean ice and a shortened season for ice roads could have significant cultural and economic consequences for the people of the North, and the entire nation" (2009, 8). Similarly, the 2010 Policy states that "the resulting rapid reduction in Arctic multi-year sea ice has had, and will continue to have, profound consequences for the peoples and communities of the Arctic. What happens in the Arctic will have global repercussions on accelerating climate change elsewhere" (2010, 16). Furthermore, "decreasing ice cover will lead, over time, to increases in shipping, tourism and economic development in the Arctic Ocean region." Therefore, "Canada and other Arctic Ocean coastal states must begin to prepare for greater traffic into the region, with sometimes negative effects" (2010, 9, 10). To this end, the 2010 Policy also acknowledges the security consequences of an increasingly accessible Arctic Ocean.

Both documents recognize the need for mitigation vis-à-vis adaptation. In the 2009 Strategy, the federal government states that this may include learning from other Arctic states, and also come through scientific contributions like the 2007–2008 International Polar Year (IPY) that "focused on two key priorities: climate change impacts and adaptation; and the health and well-being of Northerners and Northern communities" (2009, 24). The 2010 Policy also recognizes some of Canada's domestic efforts, for example: "over 60 projects have been funded in the Canadian Arctic that have led to the development of community and regional adaptation plans, increasing knowledge and understanding of climate-related implications and the develop-

ment of strong partnerships essential to implementing adaptation action" (2010, 21).

More formal international climate action structures are also mentioned in both documents. For instance, the 2009 Strategy states that "there are other forums that provide opportunities to raise Arctic issues. These include … discussions and negotiations at the United Nations Framework Convention on Climate Change" (2009, 36). The 2010 Policy recognizes the Copenhagen Accord, the "Arctic Council's recent Vulnerability and Adaptation to Climate Change in the Arctic project," and "the International Maritime Organization and the United Nations Framework Convention on Climate Change [which are working] towards global solutions to issues like polar shipping regulations and climate change" (2010, 20, 26).

Finally, both documents recognize the importance of scientific research. Indeed, the 2009 Strategy, as mentioned above, acknowledges the contributions made to climate change knowledge through the IPY, and the 2010 Policy also mentions that "the Arctic Council's 2004 Arctic Climate Impact Assessment heightened global awareness of the problem" (2010, 19).

The **Security** indicator accounts for 10 % of the total coded quotes for the 2009 Strategy and 12 % of the 2010 Policy (see Figure 6, p. 30) and shows that security is very much linked to sovereignty; both documents define regional security in this context. Indeed, rather than having a section on security, the first section of both documents is about sovereignty. To this end, the 2009 Strategy states that "we patrol and protect our territory through enhanced presence on the land, in the sea and over the skies of the Arctic" (2009, 2); similarly, the 2010 Policy states that "since 2007, the Government of Canada has announced a number of initiatives to enhance our capacity in the North and to exercise, responsibly, our sovereignty there" (2010, 6). To facilitate these efforts, "Canadian Forces will also take advantage of new technologies to enhance surveillance capacity of our territory and its approaches" (2010, 7).

As sovereignty is a significant component of both documents, they further explain how sovereignty is practiced. The 2009 Strategy explains that "Canada's Arctic sovereignty is long-standing, well-established and based on historic title, founded in part on the presence of Inuit and other Aboriginal peoples since time immemorial," and that "in a dynamic and changing Arctic, exercising our sovereignty includes maintaining a strong presence in the North, enhancing our stewardship of the region, defining our domain and advancing our knowledge of the region" (2009, 9). The document also recognizes the boundary disputes over Hans Island and the Lincoln Sea with Denmark and in the Beaufort Sea with the USA, but explains that "all of these disagreements are well-managed and pose no sovereignty or defence challenges for Canada In fact, they have had no impact on Canada's ability to work collaboratively and cooperatively with the United States, Denmark or other Arctic neighbours on issues of real significance and importance" (2009, 13). The 2010 Policy also stresses the importance of sovereignty, stating that "protecting national sovereignty, and

the integrity of our borders, is the first and foremost responsibility of a national government. We are resolved to protect Canadian sovereignty throughout our Arctic" (2010, 10). It is therefore not surprising that the document makes similar statements about Canada's sovereignty: "Canada's sovereignty is the foundation for realizing the full potential of Canada's North, including its human dimension. This foundation is solid: Canada's Arctic sovereignty is long-standing, well established and based on historic title, founded in part on the presence of Inuit and other Indigenous peoples since time immemorial" (2010, 5). Furthermore, "Canada exercises its sovereignty daily through good governance and responsible stewardship. It does so through the broad range of actions it undertakes as a government—whether related to social and economic development, Arctic science and research, environmental protection, the operations of the Canadian Forces or the activities of the Canadian Coast Guard and Royal Canadian Mounted Police" (2010, 6). The document also recognizes the well managed boundary disputes and reasserts Canada's sovereignty, stating that "through our Arctic foreign policy, we are also sending a clear message: Canada is in control of its Arctic lands and waters and takes its stewardship role and responsibilities seriously" (2010, 27).

There is a heavy focus on the role of the Canadian Forces for security and sovereignty purposes. For example, the 2009 Strategy states that "the Canadian Forces, in cooperation with other federal departments and agencies, will continue to undertake operations in the North, such as Operation NANOOK, conduct regular patrols for surveillance and security purposes, monitor and control Northern airspace as part of North American Aerospace Defense Command (NORAD), and maintain the signals intelligence receiving facility at CFS Alert, the most northern permanently inhabited settlement in the world" (2009, 11). Additionally, "significant investments in new capabilities on the land include establishing an Army Training Centre in Resolute Bay on the shore of the Northwest Passage, and expanding and modernizing the Canadian rangers – a reserve Force responsible for providing military presence and surveillance and for assisting with search and rescue in remote, isolated and coastal communities of Northern Canada" (2009, 10).

Correspondingly, the 2010 Policy states that "the *Canada First* Defence Strategy will give the Canadian Forces the tools it needs to provide an increased presence in the Arctic" and that "Canada and the United States work together to better monitor and control Northern airspace through our cooperation in NORAD, the North American Aerospace Defence Command" (2010, 6, 7). Investments are also being made to increase operational capabilities, for example, "Canada is investing in new patrol ships that will be capable of sustained operation in first-year ice to ensure we can closely monitor our waters as they gradually open up and maritime activity increases" (2010, 6) Furthermore, "Canada is also expanding the size and capabilities of the Canadian Rangers, drawn primarily from Indigenous communities, that provide a military presence and Canada's "eyes and ears" in remote parts of Canada" and that

"a new Canadian Forces Arctic Training Centre is also being established in Resolute Bay" (2010, 7).

Unlike the 2009 Strategy, the 2010 Policy also addresses the role of NATO and expresses that "the increasing accessibility of the Arctic has led to a widespread perception that the region could become a source of conflict. This has led to heightened interest in the Arctic in a number of international organizations including NATO and the Organization for Security and Co-operation in Europe" (2010, 26). It also recognizes that "Canada does not anticipate any military challenges in the Arctic and believes that the region is well managed through existing institutions, particularly the Arctic Council" (2010, 26).

Finally, the foreign Policy is different from the northern Strategy, in recognizing the civilian aspect of security: as mentioned earlier, the government "will need to consider how to respond to issues such as emergency response and search and rescue capability and potential future problems related to emergencies (including environmental), organized crime, and illegal trafficking in drugs and people" (2010, 10).

The **Safety and SAR** indicator accounts for 5 % of the total coded quotes of the 2009 Strategy and 6 % of the 2010 Policy (see Figure 6, p. 30). The documents show that safety is understood in different ways: they mention search and rescue (SAR), as well as maritime and environmental safety, including marine pollution. For SAR, the 2009 Strategy states that "Canada is working with Northern communities and governments to ensure that its search and rescue capacity meets the needs of an ever-changing North" (2009, 12). In the 2010 Policy, SAR is mentioned in the context of other safety issues, which will be addressed shortly.

Regarding the environment, the 2009 Strategy explains that "any company now undertaking industrial development in the North must undertake a rigorous environmental assessment, establish a site closure and remediation plan, meet standards for operational and environmental safety and satisfy the requirements of various laws including the *Fisheries Act*" (2009, 28). It also explains that "Transport Canada continues to assess Canada's capacity to respond to marine pollution in the Arctic and ensure that the Canadian Coast Guard and communities have the necessary equipment and response systems in place for emergencies" (2009, 27–28). The 2010 Policy mentions environmental safety in a longer list of other safety issues (also addressed shortly) and that "in August 2009, the application of the AWPPA was extended from 100 to 200 nautical miles. In addition, regulations requiring vessels to report when entering and operating within Canadian Arctic waters have been finalized and are in force from July 1, 2010" (2010, 16).

Shipping safety is mentioned in the 2009 Strategy: "we are establishing new regulations under the *Canada Shipping Act, 2001* to require all vessels entering Canadian Arctic waters to report to the Canadian Coast Guard's NORDREG reporting system" (2009, 12) which applies to vessels over 300 tonnes or "carrying as cargo a pollutant or dangerous good" (*Northern Canada Vessel Traffic Services Zone Regulations* 2010, s.3(c)) through Cana-

da's northern waters. Yet "although the Northwest Passage is not expected to become a safe or reliable transportation route in the near future, reduced ice coverage and longer periods of navigability may result in an increased number of ships undertaking destination travel for tourism, natural resource exploration or development" (2009, 5).

The 2010 Policy, as part of the Canadian sovereignty agenda addresses "Arctic governance and related emerging issues, such as public safety" (2010, 9), which can have a broad meaning. The document also mentions that increased maritime activity can lead to "an increase in environmental threats, search and rescue incidents, civil emergencies and potential illegal activities" (2010, 3) which the government will need to take into consideration, as mentioned earlier (2010, 10).

Only the 2010 Policy addresses formalized safety and search-and-rescue agreements. In particular, it states that "the current negotiation of a regional search and rescue agreement (the first ever attempt at a binding instrument under the rubric of the Arctic Council) will serve as an important test case and will inform the scope for future policy endeavours" (2010, 25). It also mentions that "the 2009 Arctic Council Ministerial supported the development of a mandatory polar code for shipping by the International Maritime Organization (IMO)" (2010, 13). Within the circumpolar context, Canada appears to support co-operation and collaboration rather than large-scale integrated safety efforts. Indeed, the Policy states that "regional solutions, supported by robust domestic legislation in Arctic states, will be critical. Canada will work in concert with other Arctic nations through the Arctic Council ... with the five Arctic Ocean coastal states on issues of particular relevance to the Arctic Ocean, and bilaterally with key Arctic partners" (2010, 10).

Finally, both documents address Canada's safety capabilities. The 2009 Strategy, for example, comments that "Transport Canada continues to assess Canada's capacity to respond to marine pollution in the Arctic and ensure that the Canadian Coast Guard and communities have the necessary equipment and response systems in place for emergencies" (2009, 27–28). As for the 2010 Policy, "within the IMO context, Canada has also assumed responsibility for providing navigational warning and meteorological services to facilitate the safe management of marine traffic in two Arctic areas …. Through this initiative, Canada will deliver services that help mitigate the risks associated with increased Arctic shipping" (2010, 14). Furthermore, "Canada is playing a key role in the creation of the Arctic Regional Hydrographic Commission to improve our understanding of the features of the Arctic Ocean and its coastal areas [which is] essential knowledge for safe navigation" (2010, 14). There is no mention of the Coast Guard in the context of safety.

The **Economy** indicator, which accounts for 11 % of the total coded quotes in the 2009 Strategy and 11 % of the 2010 Policy (see Figure 6, p. 30) provides insights into Canada's northern economy. That said, the 2009 Strategy gives more information on the breadth of economic activities in the region. Notably, it states that "from the development of world-class diamond mines

and massive oil and gas reserves, to the growth of commercial fisheries, to a thriving tourism industry that attracts visitors from around the globe, the enormous economic potential of the North is being unlocked" and that "the North is also home to vast renewable and cultural resources that make important contributions to its economy and society" (2009, 5, 16). Canada is also working on developing "new trading relationships" (2009, 34) with Russia. The 2010 Policy mentions, too, the importance of "resource development," including the "responsible and sustainable development of oil and gas in the North" (2010, 3, 12). Other economic activities also include "living marine resources such as fisheries," ecotourism, and other "trade and investment opportunities" (2010, 11, 14, 19).

Resources and energy are important economic activities in both documents. The 2009 Strategy notes that "mining activities and major projects such as the Mackenzie Gas Project are the cornerstones of sustained economic activity in the North" (2009, 15). Moreover, the Strategy recognizes that "the full extent of the natural resources potential in the Arctic is still unknown" and because of this, "the Government of Canada announced a significant new geo-mapping effort – Geo-Mapping for energy and Minerals – that will combine the latest technology and geoscientific analysis methods to build our understanding of the geology of Canada's North" (2009, 16). The 2010 Strategy also discusses the importance of resource development, but also notes that "Canadians and our Arctic neighbours can be assured that no drilling will occur in Canada's deep Beaufort Sea until at least 2014," apparently for "safety and environmental" (2010, 12) reasons. The 2010 Policy also recognizes that the "seal hunt is an economic mainstay for numerous rural communities in many parts of Canada including the North" (2010, 16).

Despite this diverse range of economic activities, there is little discussion about how the regional economy contributes to Canada's national economy. Only the 2009 Strategy broaches this topic and only in relation to the mining and gas industries. In particular, the document explains that "diamond mining in the North is now a $2-billion-per-year industry, which is about half of the economy of the Northwest Territories. The Mackenzie Gas Project – now estimated at over $16 billion – will provide direct benefits to Aboriginal communities through the development of a new model for Aboriginal participation" (2009, 15).

Both documents address the importance of sustainable development. The northern Strategy wishes "the vast potential of the Arctic region is realized in a sustainable way" and states that in terms of offshore oil and gas activities, "Canada will continue to support the sustainable development of these strategic resource endowments" (2009, 14, 16). Similarly, the 2010 Policy mentions the importance of sustainable development of natural resources, but focuses on how sustainable development will be practiced. Indeed, it states that "ensuring sustainable development in the Arctic involves working closely with territorial governments and Northerners and through key international institutions like the Arctic Council to build self-sufficient, vibrant and healthy communities" (2010, 12), and that "Canada will play a leadership role in the Arctic Council's Arctic Ocean Review which

aims to strengthen and ensure the sustainable development of the Arctic Ocean" (2010, 18).

The 2009 Strategy prioritizes Canada's interests in two different ways. First, the Canadian government seeks to support increased employment opportunities through skills development and has "invested in a range of supportive programs … to create sustainable employment for Aboriginal people across Canada in major industries like mining, oil and gas, and hydro-electricity" (2009, 19–21). Second, "a new economic development agency for the North is being established. A core activity for this agency will be delivering the renewed Strategic Investments in Northern Economic Development Program" (2009, 14). At the international level, the 2010 Policy seeks to improve northern Canada's trade opportunities, stating, for example, that "Canada will enhance its trading ties with other Arctic states. We have recently implemented a free trade agreement with the European Free Trade Association (EFTA) member countries, which include Iceland and Norway" (2010, 14). Additionally, "these Northern commercial relationships can serve as conduits to expand trade and investment relations not only with our immediate Northern neighbours but also with other states such as those in central Asia and Eastern Europe" (2010, 15).

Economic activities are not without regulation. The 2009 Strategy recognizes existing regulatory practices and mechanisms like "the Northern Regulatory Improvement Initiative" that is "helping resolve the complex approval process for development projects, to ensure new projects can get up and running quickly and efficiently" (2009, 15). The Strategy also notes efforts made to "improve the regulatory environment under which development can occur" (2009, 14). The 2010 Policy recognizes Canada's regulatory efforts. It stresses the need for regulation in the energy and resources sectors (2010, 12). One such example is that "the Arctic Council, with significant Canadian participation, updated its Arctic Offshore Oil and Gas Guidelines in 2009. These guidelines recommend standards, technical and environmental best practices, management policy and regulatory controls for Arctic offshore oil and gas operations" (2010, 13).

The **Tourism** indicator accounts for 1% of the total coded quotes for the 2009 Strategy and 1% of the 2010 Policy (see Figure 6, p. 30). Although much of this discussion is generally mentioned in passing, the 2009 Strategy notes that there may be some safety concerns associated with cruise ship tourism. It also appears that its primary focus is on supporting Indigenous cultural tourism. For instance, "the Government is providing increased funding for tourism promotion and for local and community cultural and heritage institutions" (2009, 16).

The 2010 foreign Policy states that "Canada will continue to establish terrestrial and marine protected areas in the Arctic and monitor biodiversity and ecological integrity" and that "they also provide significant ecotourism opportunities to an expanding market of Canadians and international visitors" (2010, 19). In this case, the focus is on ecotourism, whereas the 2009 Strategy mentions cruise ship and cultural tourism.

The **Infrastructure** indicator accounts for 8 % of the total coded quotes for the 2009 Strategy and 4 % of the 2010 Policy (see Figure 6, p. 30). The two documents identify multiple areas where improvements could be made. For transportation infrastructure, the 2009 Strategy stresses that "modern public infrastructure will contribute to a stronger economy, a cleaner environment, and safer and more prosperous communities in the North. Northerners also need crucial infrastructure to move their goods to markets in southern Canada and other parts of the globe" (2009, 17), especially with the "opening of new transportation routes" (2009, 5) in the Arctic. The economic aspect of transportation infrastructure is further emphasized in a joint report by Fisheries and Oceans Canada and the Government of Nunavut, according to which, "a commercial fisheries harbour is being constructed in Pangnirtung to help support the development of fisheries in the territory" (2009, 17). The 2010 Policy also recognizes the economic aspect of transportation in that "improving air and sea transportation links to create enhanced access across the polar region can help encourage Arctic trade and investment opportunities. For instance, investments have been made to upgrade the Port of Churchill, Manitoba" (2010, 15). Both documents also mention that investments are being made for a "berthing and fueling facility in Nanisivik" (2009, 10; see also: 2010, 6), although this appears to be primarily in the context of security.

Shipping is another aspect of transportation infrastructure. The 2009 Strategy recognizes this, stating, for instance, that "reduced ice coverage and longer periods of navigability may result in an increased number of ships undertaking destination travel for tourism, natural resource exploration or development" and that structures like "the International Maritime Organization [are] where guidelines are being developed for Ships Operating in Arctic Ice-covered Waters" (2009, 5, 36). The 2010 Policy recognizes the Arctic Marine Shipping Assessment which notes "that Arctic shipping has increased significantly, with more voyages to the Arctic and between Arctic destinations" (2010, 13).

Despite the Northwest Passage becoming more accessible and shipping needs growing, icebreakers are only mentioned once in each document in the sections on security and sovereignty. The 2009 Strategy states that "in the sea we are establishing a deep-water berthing and fueling facility in Nanisivik and procuring a new polar icebreaker, the largest and most powerful icebreaker ever in the Canadian Coast Guard fleet" (2009, 10). The 2010 Policy similarly states that "within the next decade, Canada will launch a new polar icebreaker. This will be the largest and most powerful icebreaker ever in the Canadian Coast Guard fleet" (2010, 6).

Technology, specifically telecommunications and ICT services, are only addressed in the 2009 Strategy, which states: "Territorial governments and communities in the North are benefitting greatly from investments in a range of infrastructure programs, including Broadband, recreational and Green infrastructure, to lay a much-needed foundation for a growing North" (2009, 17). It appears that broadband is connected to economic growth.

Housing infrastructure is also addressed in both documents. The 2009 Strategy stresses the importance of housing, stating that "working with the territories, significant investments have been made to improve the quality and availability of housing, particularly in Nunavut where core housing need is the greatest. These investments are helping reduce the problems of overcrowding and substandard housing and improving the health and well-being of Northerners" (2009, 19). The document also connects housing (and other forms of infrastructure) to economic opportunities (2009, 5). The 2010 Policy links housing to the economy, stating that "the Government of Canada has made a wide variety of recent commitments related to promoting Northern social and economic development. These include measures to … address infrastructure needs including housing" (2010, 11).

Neither document addresses energy infrastructure.

The **Science and Education** indicator accounts for 8 % of the total coded quotes for the 2009 Strategy and 6 % of the 2010 Policy (see Figure 6, p. 30). Quotes can generally be divided by topic—science or education. For *science*, in the 2009 Strategy, the drivers behind Canada's scientific activity appear to be related to health and climate. For instance, the Strategy states that "increasing our understanding of and attention to Arctic human health issues continues to be an emerging priority among circumpolar countries. Canada has been at the forefront of these issues and will continue to support domestic and international research on Arctic human health" (2009, 22). Further, as part of the IPY 2007–2008, Canada financed "the largest-ever global program dedicated to polar research... focused on two key priorities: climate change impacts and adaptation; and the health and well-being of Northerners and Northern communities" (2009, 24). The 2010 Policy also mentions health research through the IPY (2010, 15), as well as research about the environment and animal management. In terms of the environment and animals, the document states that "these activities fall under international conventions and agreements such as the United Nations Convention on Biological Diversity, the Migratory Bird Treaty, and the Agreement on the Conservation of Polar Bears. International collaborative Arctic science and research is a fundamental aspect of the Government of Canada's participation in such agreements" (2010, 18).

Research can also have different purposes. The 2009 Strategy suggests that science can contribute to Canada's regional sovereignty through "scientific studies to determine the full extent of our continental shelf as defined under UNCLOS. This research will ensure Canada secures recognition for the maximum extent of its continental shelf in both the Arctic and Atlantic oceans" (2009, 12). Additionally, the document suggests that science is useful for building relationships. Indeed, "through scientific collaboration with organizations such as the United Nations, World Meteorological Organization, International Maritime Organization and the Arctic Council, Canada is building the baseline of knowledge on the Arctic environment and forming important partnerships around the world" (2009, 25). In the 2010 Policy, research is used to support economic decisions.

For example, "Canada will take steps to create the appropriate international conditions for sustainable development" as Arctic research and traditional knowledge have indicated (2010, 12). Moreover, the document recognizes the importance of research to the Arctic Council, stating that "Canada will also work to ensure that the research activities of the Council continue to focus on key emerging issues to ensure that solid knowledge underpins the policy work of the Council" (2010, 25). Regarding policy development, both documents make almost identical statements about the outcomes of science being used for "the knowledge necessary for sound policy and decision-making" (2009, 24; see also: 2010, 22).

To support this work, both documents briefly mention developing science infrastructure. In particular, the future of the Canadian High Arctic Research Station (Government of Canada Polar Knowledge Canada, n.d.). The 2009 Strategy states: "our vision is that the new Arctic research station will serve as the hub for scientific activity in our vast and diverse Arctic," and therefore "there have been extensive consultations at home and abroad about the role of this new research facility" (2009, 26). The 2010 Policy states that "to ensure that Canada remains a global leader in Arctic science, the Government of Canada has committed to establishing a new world-class research station in the High Arctic that will serve Canada and the world" (2010, 22). Both documents also mention other kinds of support for science infrastructure. For example, the 2009 Strategy mentions "an Arctic Research Infrastructure Fund" (2009, 26) and the 2010 Policy notes that "Canada has also invested in upgrading existing research facilities in over 30 sites across the Arctic" (2010, 22). The 2010 Policy further mentions that "Arctic-specific organizations such as the Standing Committee of Parliamentarians for the Arctic Region, the Northern Forum, and the University of the Arctic are important partners on a variety of issues" (2010, 26), which suggests that networks are a form of infrastructure as well.

Technology and innovation are an important aspect of science. For example, the 2009 Strategy states that geo-mapping will be used "to build our understanding of the geology of Canada's North, including in the Canadian Arctic Archipelago" (2009, 16). The 2010 Policy notes that "autonomous underwater vehicles—with Canadian technology at their heart—are being used to collect some of the needed data" (2010, 8).

As mentioned above, science, and thus knowledge, is used to help inform decision-making. Both documents recognize the importance of Indigenous knowledge in scientific practice. The 2009 Strategy remarks that "Aboriginal people and Northerners played a significant role in the planning, coordination and implementation of IPY and were actively engaged in science and research activities" (2009, 24–25). The 2010 Policy recognizes the importance of Indigenous knowledge, stating that "Canada's commitment to Northern economic and social development includes a deep respect for Indigenous traditional knowledge, work and cultural activities" and "recognizes the importance of Indigenous knowledge and the need to use it in tandem with Western science in our efforts to better understand polar bears and their habitat" (2010, 16, 18).

In terms of *education*, only the 2009 Strategy addresses issues of educational attainment and access to education. With regard to attainment, the document does not discuss actual educational attainment levels. Rather, the focus is on ensuring people have skills training.

As for access to education, in a statement about federal transfers to the territories, education is mentioned in passing. Indeed, the 2009 Strategy states that "The Canada Social Transfer provides territories with substantial on-going and growing funding in support of social programs, including programs for children and for post-secondary education" (2009, 21). The 2009 Strategy also mentions that the government is "establishing graduate student fellowships on Canada's role in the circumpolar World" (2009, 22), although there is no mention of whether the fellowships are specifically for students from Northern Canada.

It is not surprising that the 2010 Policy does not address education, as this is a national and provincial/territorial issue. However, it does recognize the University of the Arctic, in passing, in the context of cooperation and partnership (2010, 26).

Both documents cover much ground, as seen. However, where they are lacking is in **Implementation**. The 2009 Strategy states only that "Canada's Northern Strategy sets out a clear action plan for the North that will leave a lasting legacy and enrich the lives of Canadians for generations to come" (2009, 39); yet, it does not provide any clear recommendations or courses of action the government should take to achieve its goals. There is, however, a statement about funding tourism (2009, 16), but it is not clear if this funding is a result of a tourism strategy or other funding priorities. Similarly, the 2010 foreign Policy says nothing about how such measures would be implemented.

To sum up

Figure 6 at the beginning of the Canada section also shows that between the 2009 Strategy and 2010 Policy, discussions declined on the Human Dimension and increased on Governance. The figure also shows that in 2009 Human Dimension and Governance were the two most coded indicators, with International Cooperation tying with Economy in third place. In 2010 the three most-coded indicators are Governance, International Cooperation, and Economy. This is not very surprising, as the 2009 Strategy focuses on domestic issues and the 2010 Policy on international issues. Figure 6 also shows that the three least-coded indicators in 2009 are Tourism, Pollution and Climate Change, and Safety and SAR, while the three least-coded in 2010 are Tourism, Infrastructure, and Pollution.

The documents show that the North is a vital part of Canada's national identity and that asserting and maintaining sovereignty is a key aspect of Canada's domestic strategy and foreign policy. Yet, the most important theme for the Canadian government in the 2009 Strategy is the Human Dimension which includes discussions on Indigenous peoples. This is followed by the Governance, International Cooperation and Economy, and then Security indicators (see Appendix). This suggests that

the priorities of "social and economic governance" are met, although the economic governance discussion primarily focuses on the extractive resource industry. The priority of "improving and devolving governance" is reflected in the Governance indicator through quotes on land-claim agreements. It is, however, difficult to determine the extent to which devolving northern governance is addressed in relation to other governance topics because the indicator is not analyzed by percentages of sub-indicators. Nevertheless, the strategy provides a detailed description of the then current state of Canada's land claims and explains how land-claim settlement can provide greater autonomy for Canada's northern Indigenous peoples. "Exercising our Arctic sovereignty" is another priority of the 2009 Strategy and is addressed in the Security indicator. Although analysis is not performed at the sub-indicator level and security is not one of the top three quoted indicators, it does come a close fourth in the 2009 Strategy and, as previously mentioned, sovereignty is clearly of utmost importance to the Canadian government.

At the other end of the spectrum, Tourism is the least discussed theme in the 2009 Strategy, followed by Climate Change and Pollution. As the Economy indicator focuses on resource development, it is not surprising that tourism is overlooked. It is surprising, however, that climate change and pollution are not discussed in more detail, especially as Canada demonstrated environmental leadership through the creation of the Arctic Council. That said, the Strategy does demonstrate a commitment to protected areas, and when the percentage of quotes in the Environmental Protection, Pollution, and Climate Change indicators are added together, and quoted as a percentage of the total coded quotes, they come higher than the Human Dimension, indicating that the priority of "protecting the North's environmental heritage" is also met. There could, however, have been more discussion around pollution and Canada's plans for climate change action.

There are also some connections between the different indicators and themes. For example, positive consequences of economic activity, such as improved wellbeing and infrastructure development are found in the Human Dimension and Infrastructure indicators, while negative consequences of increased activity are addressed in the Pollution, Climate Change, and Safety Indicators. There are also less obvious connections, such as between the Human Dimension and Security and between Indigenous peoples and Canada's Arctic sovereignty. The Science and Education indicator is also connected to the Governance and International Cooperation indicators, as research is used to build relationships and inform governance activities. These examples show that different issues are not found in a vacuum and that decisions made in one area can affect those in another.

To further compare the documents, the two most relevant similarities and the three most relevant differences are discussed.

The two **similarities** are now discussed. *First,* neither the Strategy nor the Policy provides information on how they will be implemented. Although the 2009 Strategy claims that the document itself "sets out a clear action plan for the North" (2009, 39) and mentions a handful of government ministries, it speaks more to issues rather than providing concrete steps to achieve Canada's regional priorities. As mentioned, the 2010 Policy does not mention anything in this regard. This could be problematic for Canada when it comes to actually achieving its priorities and goals, especially as there is no clear plan for action or accountability. *Second,* both documents address a variety of infrastructure needs, but fail to address an energy infrastructure to better serve northern residents. This is a surprising omission because at the time these two documents were produced, regional energy infrastructure needed improvement due to the high cost of energy for northerners (National Energy Board 2011; Canadian Polar Commission 2014).

There are also some **differences** between the two documents, and three examples are discussed here. *First,* the 2010 Policy makes clear statements about Canada's support for UNDRIP at the international level, but UNDRIP was omitted from the 2009 Strategy. Although the government of Canada did not formally support UNDRIP at the time, support for it at the international level sends different and conflicting messages as to how Canada supports Indigenous peoples domestically and internationally. Moreover, the omission of UNDRIP from the 2009 Strategy could have implications for the Strategy's support for self-governance and the recognition of land-claims agreements. *Second,* the 2010 Policy's approach to understanding pollution is more comprehensive than the 2009 Strategy. While the 2009 Strategy mentions only two pollutants, the 2010 Strategy names six. It is almost as if the 2009 Strategy is removing Canada from the larger circumpolar context in this regard. *Third,* both documents recognize similar safety issues and the importance of maritime regulation, albeit in different ways. Although both documents recognize the importance of AWPPA, the 2009 Strategy focuses on the role of the domestic NORDREG program while the 2010 Policy discusses the IMO and the development of the Polar Code. While this division is not surprising based on the domestic/international nature of the two documents, it reads as if the domestic and international safety structures are each in a vacuum and do not affect one another.

Overall, the two documents provide a consistent message with regard to Canada's Arctic priorities, even if the priorities are to be achieved differently at the domestic and international levels. However, as previously mentioned, Canada only recently released their new policy. Further analysis is required to determine if, and how much, priorities have changed over the past decade, as the "new Arctic Policy Framework [was] co-developed in collaboration with Indigenous, territorial and provincial partners" (Canada Crown-Indigenous Relations and Northern Affairs n.d.), or, when the new priorities will be implemented.

Finland

Finland has produced two national Arctic strategies. The first, *Finland's Strategy for the Arctic Region,* was released in 2010 (Finland PMO 2010). This was followed in 2013 by *Finland's Strategy for the Arctic Region 2013* (Finland PMO 2013). Both documents are considered in this analysis. In addition, the Government of Finland in an evening session in October 2012 adopted the main principles for Arctic policy—Finland as an active, responsible, and capable Arctic actor that respects sustainable development principles and the environment, and is active in international Arctic cooperation (Finnish Government Tiedote 309/2012—10.10.2012 17.51; also, Finland PMO 2013, 17). In 2017 Finland also released the *Action Plan for the Update of the Arctic Strategy* that "concerns the following priorities in the update: Finland's foreign and EU policy in the Arctic region, Finland's arctic expertise, sustainable tourism, and infrastructure solutions that support these" (Finland PMO 2017, 1). However, because this is not yet a strategy, it is not considered in this analysis.

The two strategies take somewhat different approaches to Finland's Arctic. According to the 2010 Strategy (94 pages including maps and appendices), "the purpose of the policy concerning the Arctic Region is to focus mainly on the aspect of external relations in Arctic policy" (2010, 57). The 2013 Strategy (67 pages including maps and appendices) is based on the above-mentioned main principles of Arctic policy, and differs in that "the new strategy is more wide-reaching in scope" (2013, 7). As its priorities, the 2013 Strategy "examines the possibilities for bolstering Finland's position regarding the Arctic region; the creation of new business opportunities; the Arctic environment and the region's security and stability; the position of the northern parts of Finland; international cooperation; and Arctic expertise in the widest sense of the term" (2013, 7). This lines up with the "four pillars of policy outlined by the Government: *an Arctic country, Arctic expertise, Sustainable development and environmental considerations and International cooperation*" and "it is Finland's objective to promote growth and actions to enhance competitiveness in the region with due regard to its environment" (2013, 7).

The table of contents for the 2010 document identifies the following section headings: "Fragile Arctic Nature, Economic Activities and Know-How, Transport and Infrastructure, Indigenous Peoples, Arctic Policy Tools, The EU and the Arctic Region" (2010, 5)—these can also be taken to be Finnish priorities. The 2013 Strategy identifies the following section headings: "Vision for Arctic Finland, Finland's Arctic population, Education and research, Finland's business operations in the Arctic, Environment and stability, International cooperation in the Arctic" (2013, 5). As the 2013 Strategy is an update of the 2010 Strategy, similar issues are addressed in both documents. The analysis that follows, however, will uncover the similarities and differences between the two policy documents.

Comparison by Indicator

The **(Re)mapping and (Re)defining the Arctic** indicator explains how Finland defines the region in both documents. The 2013 Strategy, for example, recognizes that "there are various definitions of the Arctic region in different contexts, one being the area demarcated by the Polar Circle. Although Finland has no coastline on the Arctic Ocean, much of its territory lies north of the Polar Circle" (2013, 8). Here, both the Arctic Ocean and the Polar Circle could be used to define the region. Yet, the Strategy also states that the Arctic can have multiple definitions depending on the context, although smaller communities are typically found in Lapland (2013, 10, 19). Despite recognizing Lapland as the most northerly part of Finland, the Strategy's flexibility in defining the region allows Finland to suggest that the entirety of Finland is situated in the Arctic. The document states that "Finland as a whole is a truly Arctic country: after all, one third of all the people living north of the 60th parallel are Finns" (2013, 17). This is a shift from the 2010 Strategy which differentiates between the Arctic and subarctic parts of the country (2010, 8). In other words, the 2013 Strategy considers almost all of Finland to be in the Arctic, whereas the 2010 Strategy narrows this down to the northern parts of the country.

In terms of how the region is referred to, both strategies use the "Arctic" and "circumpolar" when discussing more than one Arctic state (2013, 14; 2010, 9). Additionally, the 2013 Strategy uses the "North," and the "High North" that originally used in the Norwegian terminology (2013, 19, 35). The 2013 Strategy goes on to describe that the Arctic environment as "one of the purest and best preserved in the world" and "highly exceptional" (2013, 8, 38). It also remarks that the region is "strategic" for economic and security reasons (2013, 8, 19, 38). Similarly, the 2010 Strategy recognizes the strategic and economic value of the region, but considers the Arctic environment to be "fragile", a term that is not used in the newer strategy (2010, 8, 9).

A similar process was used to prepare each strategy: "the strategic review was prepared by a working group appointed by the Prime Minister ... in which all the ministries were represented" (2013, 17; see also: 2010, 7). In addition to a representative from the Prime Minister's Office, the working group comprised representation from the eleven ministries, among others

- Ministry for Foreign Affairs
- Ministry of Justice
- Ministry of the Interior
- Ministry of Defence
- Ministry of Finance
- Ministry of Education and Culture
- Ministry of Agriculture and Forestry
- Ministry of Transport and Communications
- Ministry of Employment and the Economy
- Ministry of Social Affairs and Health (2013 only)
- Ministry of the Environment (2013, 64; 2010, 58)

Certainly, Finland appears to take a whole-of-government approach to the Arctic. One interesting observation is that that

Ministry of Defence was not initially a part of the 2010 working group and the representative was appointed after work had commenced (2013, 64; 2010, 58, 64).

To begin the analysis of the Finnish strategies, Figure 7 provides a comparison of how many quotes are assigned to the different indicators, as a percentage of the total number of coded quotes (rounded to the nearest whole number) in the document.
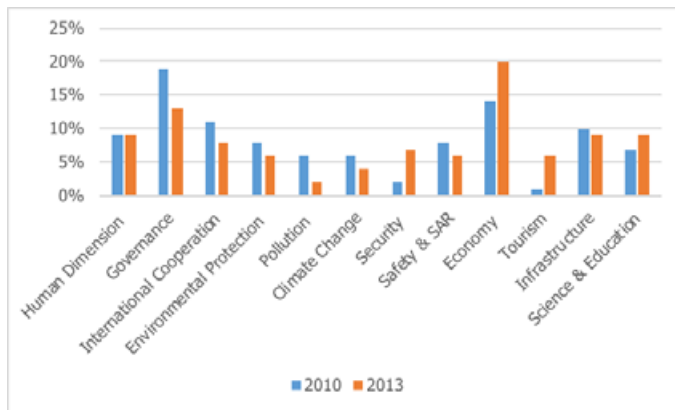
Figure 7. Comparing Finland's 2010 Strategy and 2013 Strategy
Note: The percentages in each indicator are rounded to the closest whole number and represent the percent of the total number of quotes coded for each document.

The **Human Dimension** indicator, which accounts for 9 % of the total coded quotes for the 2013 Strategy and 9 % for the 2010 Strategy (see Figure 7), provides information on the Arctic and the Finnish Arctic's demography. The numbers they provide are similar. The 2013 Strategy recognizes that "the Arctic region has a total population of about four million, of whom Indigenous peoples account for about 10 per cent. There are over 180,000 inhabitants in Finnish Lapland," approximately 5,000 of whom are Saami (2013, 20, 23; 2010, 30). Considering the regional demographics, it is not surprising that both strategies address topics related to Indigenous peoples.

Protecting Indigenous culture and language is raised in both strategies. For instance, both documents stress that preserving the different Saami languages and cultures through revival programs is considered a right (2013, 22; 2010, 32). The 2013 Strategy further states that efforts to do this are under way as "in March 2012, a working group appointed by the Ministry of Education and Culture submitted its proposals for a programme to revive the Saami language. Efforts to reinforce the Saami language and culture need to be continued" (2013, 23). The 2010 Strategy also addresses preservation efforts across borders. For instance, "for 16 years, Finland's Kindred Peoples Programme has supported the languages and cultures of Finno-Ugric peoples living in Russia by means of grassroots-level cooperation projects in the target areas" (2010, 31). Both documents also recognize the need to protect Indigenous culture and livelihoods in the wake of a growing natural resources industry (2013, 12; 2010 15). The 2010 Strategy notes that this balance is, in part, assisted through the EU. In particular, "the Treaty on the accession of Finland to the European Union includes Protocol

3 on the Sámi, which recognises the obligations and commitments of Finland and Sweden with regard to the Sámi under national and international law and considers that traditional Sámi culture and livelihood are dependent on natural sources of livelihood, such as reindeer husbandry in the traditional areas of Sámi settlement" (2010, 32–33).

Both documents address different ways in which the Indigenous rights are protected. For instance, the strategies comment that the Finnish Constitution guarantees the rights of the Saami, and mention the desire to ratify ILO Convention No. 169 (2013, 11, 22, 23; 2010, 8, 32). Furthermore, both strategies recognize that government consultation with Indigenous peoples is of the utmost importance, and they support Indigenous involvement in the Arctic Council and the Barents Euro-Arctic council (2013, 22; 2010, 30, 31). International cooperation is important for rights protection, and the 2010 Strategy remarks that "Finland participated actively in the drafting process of the Declaration on the Rights of Indigenous Peoples, adopted by the UN General Assembly in September 2007" (2010, 31; 2013, 10).

The issue of health and wellbeing is also addressed in both documents. The 2013 Strategy acknowledges that with "global warming and increased economic activity, the conditions in the Arctic have changed in a way that will have implications for health, well-being and the living environment" (2013, 20). To address this, the government uses the term 'welfare,' which according to the 2013 Strategy "encompasses mental and material well-being, access to work, efficient basic services, equality, security and education" and must be "tailored for northern conditions" (2013, 11). The document also recognizes that "the Partnership in Public Health and Social Well-being has made a great contribution towards limiting epidemics (HIV, TB) and promoting healthy lifestyles" (2013, 45-46). The 2010 Strategy also recognizes the consequences of pollution and climate change, especially in relation to the wellbeing of Indigenous peoples, and that "the Northern Dimension Partnership in Public Health and Social Well-being (NDPHS) has been supplemented with an expert group promoting the health and well-being of Indigenous peoples" (2010, 49, 30).

Only the 2013 Strategy addresses equality in the context of regional differences (e.g., north vs south Finland), and connects this to migration. The Strategy states that "life in northern Finland is complicated by long distances, an ageing population, labour market issues and the inadequacy of the resources necessary for providing government services" (2013, 20). The solution, it seems, is that increased economic opportunities in the North may help reduce some of these challenges. Thus, labour migration seems to be a solution (Finland. PMO 2013, 20). To this end, the Strategy suggests that "as neighbouring countries, Finland, Sweden and Norway can advance in many areas important to the Arctic by facilitating the movement of experts and employees proficient in languages across the national borders" (2013, 21). The possibility of an increased labor force also comes from "potential visa-free travel between the EU and Russia, the intensifying economic activity in the Arctic and the growing population" (2013, 36).

The **Governance** indicator accounts for 13 % of the total coded quotes for the 2013 Strategy and 19 % for the 2010 Strategy (see Figure 7, p. 42). The indicator focuses on the existing structures, as well as to support decision-making institutions and procedures. "The recommendations given by the Arctic Council provide a sound basis for political decision making" (2013, 44). As, "it is vital for society as a whole, including the policy makers, to understand what this transition in the Arctic is all about", here, "research plays a key role in the area of planning, licensing procedures and evaluation of risks and threats in connection with the various activities." (2013, 13, 24).

As, "one of Finland's key objectives is to bolster its position as an Arctic country and to reinforce international Arctic cooperation", the country is actively involved in "multilateral cooperation at the global and regional levels to achieve its own Arctic goals and to pre-empt global threats" (2013, 43). Furthermore, since the "treaty system is fragmented" which may "lead to ambiguities regarding liability for damages", Finland aims for consistent regulation and action based on "cooperation outlined in international conventions". Therefore, "it is advisable to review the adequacy of the existing conventions regarding the region. Finland plays an active role in drafting supplementary regulations" (2013, 43, 44). Furthermore, on the national level "a more active dialogue is required between the parties representing the research community, business and industry, local communities and the civic society - internally and with the public sector" (2013, 12) to support decision making.

For Finland, foundations of preparedness lie on "a comprehensive concept of security, which consists in securing the vital functions of society through close cooperation between the authorities, industry, NGOs and citizens" (2013, 14, 40). The 2013 Strategy further highlights that "aside from cooperation in the context of the Barents region, regions and municipalities are not truly represented in Arctic cooperation" (2013 10). Therefore, Finland advocates for a policy that would support their position as regional actors. Further, the Strategy recognizes "the Northern Dimension Partnership on Transport and Logistics [which] provides a useful platform for the development of northern transport services" (2013, 10). The 2013 Strategy also refers to the Coastnet which is "a government communications network primarily intended for border authorities but [that] can also be used for non-urgent sea rescue operations and the prevention of environmental damage" (2013, 41).

A considerable part of the governance indicator is dedicated to the issue of protection of Indigenous peoples' rights, especially, "the rights of the Saami [which shall] be promoted through active participation in the international cooperation geared to enhance the legal and actual protection of Indigenous peoples." In terms of human rights, Finland strongly supports the rights of Indigenous peoples. Domestically, "the duties related to autonomy are managed by the Saami Parliament elected by public ballot. Finland seeks to improve the living conditions of Indigenous peoples so as to allow communities and cultures to survive and evolve on their own terms" (2013, 10, 22, 23). At the international level, "Finland seeks to ensure the participation of Indig-

enous peoples when issues affecting their status are addressed." Therefore, "Finland finds it important to guarantee that the organisations of the Indigenous people represented in the Arctic Council are able to participate in the work of the Council at the various levels" (2013, 11). Finland also highlights "the need to consult Indigenous peoples and to offer them adequate opportunities to be involved in various actions, particularly when they have a direct impact on their living conditions" (2013, 22). At global level, Finland takes part in cooperation concerning Indigenous peoples especially within the United Nations Permanent Forum on Indigenous Issues (PFII), which "promotes the status of Indigenous peoples in cooperation with governments." Additionally, "The Permanent Forum is an advisory body to the UN Economic and Social Council" (2010, 31, 37).

The **International Treaties and International Cooperation** indicator, which accounts for 8 % of the total coded quotes for the 2013 Strategy and 11 % of the 2010 Strategy (see Figure 7, p. 42), highlights the priority of bilateral and multilateral cooperation as "an essential element of Finnish foreign policy" as well as being one of the four pillars of Finland's Arctic policy. Here the objectives of "Finland's Arctic policy are associated with its general policies regarding the promotion of stability, cooperation and sustainable development. At the same time, they are linked to the interests of Finnish business and research communities" (2013, 8, 14; 2010, 52). One of those key objectives, as well as a "foundation for Finland's activities in the Arctic" is "to bolster its position as an Arctic country and to reinforce international Arctic cooperation" (2013, 14, 43). Finland underlines, that "pending issues and any disputes need to be settled in accordance with international law". At the same time, "all claims concerning continental shelves [need to be dealt with] in accordance with the international law of the sea" (2013, 19, 44; 2010, 10, 11). By focusing on international organisations and agreements dealing with the Arctic in which Finland is a member, the 2010 Strategy also "emphasizes external relations", in particular on the forms, "that, either directly or indirectly, apply to Finland's northern regions and population, as well as their environment, climate, business, culture, social relations, security and stability" (2010, 7).

Finland participates in several international fora (e.g. Arctic Council, Barents Euro-Arctic Council, European Union, United Nations and its sub-organisations), scientific and other expert networks, as well as in bilateral relations. Here, Finland considers "the Arctic Council as the primary cooperation forum for addressing Arctic matters". For this reason, "Finland supports the plan to establish the Council as an international treaty-based organisation". The Council also provides equal representation of the Arctic Indigenous peoples (2013, 8, 14, 19, 44; 2010, 9, 34, 37, 38, 39). The 2013 Strategy recognizes that "Finland has been an active member of the Arctic community for a long time. It played a key part in calling the first ever minister-level meeting for Arctic countries (1991), which marked the beginning of international environmental cooperation in the region, to be followed by the 'Rovaniemi process' which eventually led to the establishment of the Arctic Council" (2013, 8), as mentioned earlier. Hence, "Finland will build on this foundation and continue to pursue a proactive and responsible role in the context

of international cooperation in the Arctic" (2013, 15). Further, in 1997, Finland also initiated the Northern Dimension policy, "subsequently adopted by the European Union", and is "based on an equal partnership between the EU, Russia, Norway and Iceland. In Nordic cooperation, it remains the only forum for a coordinated formulation of EU policies" (2013, 8, 45, 48). Followed from this, Finland "pursues a proactive role in fostering Northern Dimension Partnerships" (2013, 15), as "the Northern Dimension and related partnerships offer a forum for addressing collaborative issues regarding the northern parts of Europe and creating a forum for hands-on cooperation" (2013, 47).

"The European Union plays a key role in Finland's Arctic policy." Therefore, "it is important to support the formulation of the EU's policy towards the Arctic and the reinforcement of its role in the region" (2013, 15, 47; 2010, 7, 9, 11, 44), as well as to support the EU to be "approved as an observer member of the Arctic Council, and [that] the EU establishes an Arctic Information Centre in conjunction with the Arctic Centre of the University of Lapland" (2010, 44).

The ultimate objective of the Barents Euro-Arctic Region is to build cross-border "cooperation between Russia and the Nordic countries" (2013, 45). International cooperation is crucial for securing "the stability and prosperity of the northernmost" parts of Europe, as "climate change and other environmental hazards are not contained by national borders, international cooperation … Russia's active participation in measures contributing to common goals is of special importance for Finland" (2010, 14, 42, 45). "The Barents Regional Council is often referred to as the 'engine' of the Barents Euro-Arctic Council, sustained by local expertise and traditions." This Council introduces "a regional perspective to the more general Arctic policies" and has "played a part in establishing permanent networks for cross-border cooperation" (2013, 15, 19, 45; 2010, 9, 34). Finland is further "considering other bilateral Arctic partnerships as well as multilateral partnerships with Norway and Sweden" (2013, 15, 45).

Both strategies also highlight the intensified cooperation in foreign, security and defence policy in the Nordic and Baltic regions, as well as include cooperation "for crime prevention and the fight against organised crime." In order to assess and prevent security threats it is necessary to enhance "cooperation between the authorities in the region and internationallly" (2013, 14, 15, 41; 2010, 11). In regard to rescue operations, "the cooperation carried out within the framework of the Council of the Baltic Sea States does not address [these] operations." Nevertheless, for the achievement of shared objectives, it is instrumental to "implement joint projects and assess the risks all the parties are exposed to" (2013, 41).

Finland further recognizes the importance of the United Nations and its various bodies that "promote international cooperation in several areas important to the Arctic region" (2013, 19), including "maritime law, human rights, sustainable development, research, education, climate change and the status of Indigenous peoples" (2013, 46). Among them is the UNCLOS, which "regulates all the resources and uses of the seas, and seeks

to conciliate the sometimes conflicting interests." The UNCLOS also regulates shipping and "sets out the general principles and provides a framework for supplementary regulation at the global, regional or national level based on the division of legal competencies." Additionally, "of special relevance to the Arctic region in this respect are the Commission on the Limits of the Continental Shelf (CLCS) and the International Seabed Authority (ISA), both organisations formed under UNCLOS" (2013, 44; 2010, 10, 28, 34, 35). The 2013 Strategy also "addresses the resolutions adopted by the UN Rio+20 Conference," by which "the UNCLOS is to be provided with additional tools for protecting biodiversity" (2013, 44).

Furthermore, both strategies address the role of the International Maritime Organization (IMO), which prepares regulations and "instructions for vessels operating in ice-covered Arctic seas" (2013, 37), as well as handling "maritime regulation, including the maritime security, environmental concerns, technical cooperation and legal matters" (2010, 36). Both strategies also refer to the Nordic Council of Ministers (NCMs), which "creates a basis for cooperation between other key multi-partner actors, principally the Arctic Council and the Barents Euro-Arctic Council" (2013, 19, 37, 46; 2010, 9, 28, 34, 35, 41). In addition, there are a few other important cooperative organizations, such as "the North Calotte Council, funded by the Nordic Council of Ministers and comprising Finland, Sweden and Norway." This Council "operates by initiating and funding various regional cooperation projects … as such, the Council can be characterised as a cross-border partnership between the authorities and the economy" (2010, 41). The 2010 Strategy further recognizes the work of NATO and "its willingness to cooperate with Russia and to avoid measures that might give rise to confrontation" (2010, 11).

The **Environmental Protection** indicator accounts for 6 % of the total coded quotes for the 2013 Strategy and 8 % of the 2010 Strategy (see Figure 7, p. 42) and addresses Finland's environmental priorities. According to the 2013 Strategy, "Finland's Arctic policy focuses on understanding the effects of climate change and transboundary pollutants; the sustainable use of Arctic natural resources; the identification of the constraints imposed by the environment; and environmental protection in all areas of activity" (2013, 38), which suggests tension between the environment and the economy. The 2010 Strategy makes similar statements about the cause of environmental damage and stresses that, if this is left unchecked, there will be negative consequences for those living in the region. The need to balance the environment with the economy is also addressed in the 2010 Strategy because "the protection of Arctic land and sea areas and ecologically sustainable economic and social development are in Finland's interests…Environmental issues are not just a separate sector of their own; instead, they are an important element of a wider whole" (2010, 13–14).

While both strategies agree on the causes of environmental damage, they propose somewhat different solutions for environmental protection. For example, the 2013 Strategy stresses these sustainable economic practices must occur in all aspects of

extractive resource development, and that "an ecosystem-based approach makes it possible to assess the impact of the use of natural resources and the effects of operations from a wider perspective. By doing so, it is possible to consider the reciprocal impacts of the economic activities and their combined effect on the environment" as well as on Indigenous peoples (2013, 39). The 2010 Strategy also mentions using an ecosystem approach and stresses that "*the environmental perspective must be taken into account in all activities in the region*" and includes efforts such as working with international partners, "community and regional planning, as well as land use planning," nuclear safety, and maritime monitoring (2010, 16, 13, 27). Despite the differences, the overarching approach appears to be rooted in ecosystem-based management, meaning that environmental protection is actually about ensuring environmental protection, regardless of how it is performed.

Both documents also suggest that protected areas and biodiversity are an important part of Finland's environmental program, while simultaneously linking them to economic activities. In terms of protected areas, the 2010 Strategy makes the above-mentioned linkage between protection and "ecologically sustainable economic and social development" as being in the interest of Finland (2010, 13). This linkage is also expressed at least twice in the 2013 Strategy. For example, the document states that "further development of the network of nature conservation areas in the Arctic region is a pragmatic way of improving the protection of the Arctic environment and clarifying the framework for economic activity" (2013, 31). Presumably, this balance would be achieved through ecosystem-based management.

As for biodiversity, both documents recognize the importance of the Arctic for difference species, but especially birds. In particular, the Arctic is part of a migration route and "offers a nesting place for the bulk of the world's geese and for more than half of the world's waders and it contains unique species, such as the polar bear" (2010, 17; 2013, 31). Both documents caution that economic activity can negatively affect biodiversity. For example, the 2013 Strategy states that "biodiversity and the preservation of the ecosystem services based on this diversity must be secured through the careful planning of the use of natural resources and land areas," while the 2010 Strategy mentions that "the use of living natural resources entails risks endangering biological diversity, such as overly intensive fishing. Besides the fish species being caught, this may also have an effect on the functioning of the entire marine ecosystem" (2010, 17). The 2010 Strategy also recognizes the legal obligation to include Indigenous peoples in the protection of biodiversity, as "Article 8 (j) of the UN Convention on Biological Diversity obligates the contracting parties to respect the traditional knowledge of Indigenous peoples" (2010, 17).

The **Pollution** indicator accounts for 2 % of the total coded quotes for the 2013 Strategy and 6 % of the 2010 Strategy (see Figure 7, p. 42). Both documents recognize that pollution comes from within and outside the region (2013, 39; 2010, 13, 15). A broad range of pollutants are identified in both documents, in-

cluding greenhouse gases, black carbon, methane, carbon dioxide, oil, military waste, and nuclear or radioactive waste (2013, 13, 34, 39; 2010, 14, 15, 16, 28). In terms of nuclear waste, the 2010 Strategy suggests that it comes from Russia because "the Kola Peninsula has the world's greatest concentration of nuclear reactors" (2010, 16). Additionally, the 2013 Strategy mentions mining waste and community waste, while the 2010 Strategy mentions nitrogen oxides, and "heavy metals and organic hazardous substances" (2013, 39; 2010, 14, 15). It is not surprising, therefore, that the two strategies identify similar sources of pollution. Indeed, these include human activities, including those associated with the military, the mining and resource industry, and the shipping industry (2013, 34, 39; 2010, 15, 16).

To address this issue, the two strategies have identified different approaches to solving these problems, although to varying degrees. The 2013 Strategy, for example, mentions the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic and notes that "increased attention should be paid to contingency planning and the prevention of oil spills" (2013, 10). Along similar lines, the contribution of economic activities to pollution must be considered, while "Arctic countries must shoulder their responsibility for reducing emissions of greenhouse gases and short-lived climate pollutants" (2013, 39). Pollution cannot be addressed by one state alone and "a tangible example of cooperation in the Arctic region is provided by the nuclear safety projects implemented in the Arctic Water and wastewater projects [which] arecarried out under the partnership programmes in Arkhangelsk, Murmansk and Petrozavodsk" (2013, 45).

Although the 2010 Strategy also refers to the nuclear safety and wastewater cooperation with Russia (2010, 49), the document pays more attention to the issue of Russian nuclear waste and safety, as mentioned earlier. Notably, these efforts include "preventing the spread of nuclear weapons and taking the environment into consideration [which] requires not only the dismantlement of vessels but also the safe disposal and handling of radioactive waste and spent nuclear fuel." They also include supporting the work of the G8 Global Partnership program that, in part, seeks "nuclear safety in the area of the former Soviet Union" (2010, 16). The 2010 Strategy also mentions the Convention on Long-range Transboundary Air Pollution (2010, 36) and the EU's potential contribution to this issue. For example, "the Union's strength in chemical policy must be utilised to reinforce the control and monitoring of chemicals in the Arctic Region and to support international cooperation aiming at diminished long-range transportation and use of hazardous substances" (2010, 46). Additionally, new technologies can also be used to limit pollution (2010, 15).

The **Climate Change** indicator accounts for 4 % of the total coded quotes for the 2013 Strategy and 6 % of the 2010 Strategy (see Figure 7, p. 42), and both documents discuss the negative consequences of climate change. Both documents stress that climate change is having negative and increasing consequences for sea ice and that within five years, two record lows have been reached. The 2010 Strategy notes that "the surface area of Arctic

sea ice reached its minimum in 2007" while the 2013 Strategy states that in 2012 sea ice again "reached an all-time low since the start of satellite monitoring" (2013, 8; 2010, 10). In addition to ice, permafrost is also melting and contributing to warming temperatures at a global level (2013, 39; 2010, 14). The 2010 Strategy also positions climate change as a safety issue. For instance, in the context of adaptation, the Strategy states that "another priority is the use and management of water resources, including the risks arising from more frequent floods" (2010, 15). However, by the time the 2013 Strategy was released, Finland had repositioned climate change as a problem for regional security. Indeed, the Strategy states that "combating climate change and mitigating its impact are vital for the stability and security of the Arctic region and serve as the central point of departure for the activities being carried out there" (2013, 7). Moreover, human security can be affected because "the conditions in the Arctic have changed in a way that will have implications for health, well-being and the living environment" (2013, 20).

Mitigation and adaptation are addressed in both documents. While "ecosystems in the region have poor adaptability" (2010, 14), the 2010 Strategy has one sentence that sums up the Finnish perspective on mitigation and adaptation, namely, that "the Finnish policy for adapting to climate change must pay special attention to measures that would support the adaptation of livelihoods dependent on the Arctic environment" (2010, 15). The 2013 Strategy also addresses mitigation and adaptation in the context of economic development, and stresses that "economic activity and transport operations are increasing in the region... This makes it necessary to pay increased attention to actions to mitigate climate change; conserve and protect the natural environment; promote the well-being of the local population; and secure the viability of the traditional cultures of the Indigenous people" (2013, 8). Interestingly, the 2013 Strategy also addresses the effects of climate change on freshwater, stating that "the necessary prerequisites for the use and management of water resources must also be secured" (2013, 39).

In terms of strategies to address climate change, the 2010 Strategy recognizes different climate change agreements and forums. In particular, it mentions the Copenhagen Accord, "the United Nations Framework Convention on Climate Change (UNFCCC), the Intergovernmental Panel on Climate Change (IPCC), the Vienna Convention for the Protection of the Ozone Layer" (2010, 15, 36–37). The Strategy also argues that more research is needed on climate change—"the estimates of the progress and impacts of climate change are based on climate models; their regional accuracy needs to be developed so that they would be better suited for identifying Arctic changes as well" (2010, 14). In contrast, the 2013 document does not provide too much information on Finland's commitment to the different frameworks. Instead of re-committing Finland to agreements and frameworks of which they are a part, the document states that "in global climate negotiations, Finland advocates ambitious emission reduction targets by highlighting issues related to climate change in the region" (2013, 13). There is, however, support for the scientific community and the role it should play in addressing climate change. For example, "it is imperative to intensify the

dialogue between governments and the scientific community regarding the numerous links to other global trends" (2013, 39).

The **Security** indicator accounts for 7% of the total coded quotes for the 2013 Strategy and 2% of the 2010 Strategy (see Figure 7, p. 42). It is confirmed in both strategies that "stability and security in the region" are the most important priorities for Finland as these are "in line with its foreign and security policies." They are also "vital for any activities conducted there" (2013, 14), including efforts to develop the Arctic economy. When responding to security challenges Finland's policy is to "keeping with its comprehensive concept of security. This means a high level of overall preparedness to be achieved through close collaboration between the authorities, industry and NGOs as well as through international cooperation". Here "a safe and stable living environment is also instrumental to improving the welfare of the local populations. Dialogue on Arctic security policy is being conducted at different levels to identify ways of guaranteeing stability and security in the region that meet with general acceptance" (2013, 14, 40).

The 2010 Strategy comments that "in the future, the Arctic may become a major energy reserve and transport channel for Europe" (2010, 9). As a result, "This has heightened the security policy importance of the region. Increased shipping and human activity increase the risk of serious environmental accidents in the Arctic Ocean" (2010, 9). The 2013 Strategy refers to "the economic potential of the Arctic (extraction of natural resources) and the foreseen new transport routes which underline the strategic importance of the region in a way that will also have implications for security policy" (2013, 19). "As the challenges are complex (increasingly multidimensional security threats) and closely linked with comprehensive security considerations, it is vital to improve the situation awareness of the region and monitor developments." Finland therefore, "must pay close attention to security developments in the Arctic" (2013, 40). In addition, "raising awareness of the Arctic Region and its potential and making provision for changes promote safety in the wide sense" (2010, 10).

According to the 2013 Strategy "a military conflict in the Arctic is improbable – the Arctic States have declared that any disputes will be settled peacefully and in accordance with international law" (2013, 40). Followed from this, "Finland actively supports the peaceful resolution of pending issues and potential disputes in the Arctic region in accordance with international law" (2013, 14). For the Arctic, "probably the most significant aspects" and recommendations concerning the Arctic region of the Stoltenberg Report (on "closer cooperation in Nordic foreign and security policy") "include air and maritime surveillance and closer cooperation for the utilisation of satellite services and for improving the efficiency of rescue service cooperation" (2010, 12). Here, Finland offers "its Arctic exercise and training to its international partners, which also contributes to its own forces' interoperability" (2013, 41). In addition, among "the priorities of Nordic Defence Cooperation, Nordefco, … is the enhanced cooperation in defence capability development. It also covers cooperation and expertise

in Arctic conditions, prime examples of which are Nordic air forces' cross-border exercises and the participation of Finland and Sweden in Iceland's air-surveillance exercises, together with Norway" (2013, 41).

Finland also emphasizes "the importance of its expertise on international rescue operations and the management of such operations that could be exported to other Arctic areas" (2013, 41). In the sphere of internal security Finland presents three main objectives in the 2013 Strategy: "i) Develop international rescue cooperation in the Arctic region and improve the efficiency of cross-border assistance; ii) Establish efficient cross-border cooperation between local, regional and national authorities and actors; iii) Develop cross-border cooperation in crime prevision in order to evaluate and ward off threats to Arctic shipping and security risks" (2013, 59). The 2010 Strategy emphasizes that "for Finland, it is positive that cross-border cooperation has gained new political weight in the EU. Creation of security, stability and well-being on the EU's external borders is considered to be a common interest for the Union" (2010, 51). Finland is also "closely involved in preparing the EU's integrated maritime policy and developing the EU-wide system for the exchange of maritime information", as well as "the existing best practices developed in the course of sea surveillance cooperation". Furthermore, in order to assess and prevent security threats it is vital to enhance "cooperation between the authorities in the region and internationally" (2013, 41).

The 2013 Strategy also addresses the interoperability of Finnish armed forces. Behind is that "all service branches of Finland's Defence Forces have considerable cold climate expertise, capabilities" and the "materiel suited for northern conditions." Moreover, Finland has several "Arctic training and exercise areas in Rovajärvi, Sodankylä, Kajaani", and that for sea operations there are "areas on the Quark, the Gulf of Bothnia and Gulf of Finland" (2013, 14, 40, 41). Finnish Defence Forces play a crucial part "in supporting civilian safety and rescue authorities in such duties as search and rescue operations and the mitigation of the effects of potential natural catastrophes and environmental damage" (2013, 40). As a result, "Finland is well-placed to offer cold climate training and exercise to its international partners, which in turn serves to improve Finnish forces' own interoperability" (2013, 14, 40, 41).

Finally, "Finland offers solid experience from inter-Nordic cooperation. Finland, Sweden and Norway are engaged in close local cooperation in crime prevention in the Circumpolar Region." The "Nordic PTN crime prevention framework" could serve as an example of "readily employable mechanisms for preparing threat scenarios and cooperating in crime prevention". Furthermore, "the Task Force on Organised Crime in the Baltic Sea Region (BSTF) has created a model for inter-disciplinary crime prevention that could possibly be applied in the Arctic as well" (2013, 41).

The **Safety and SAR** indicator accounts for 6 % of the total coded quotes in the 2013 Strategy and 8 % of the 2010 Strategy (see Figure 7, p. 42). The two strategies address some similar safety issues,

especially in the context of maritime-based economic activity. For instance, the 2010 Strategy states that "increased shipping and human activity increase the risk of serious environmental accidents in the Arctic Ocean," while the 2013 Strategy explains that "oil spills represent the greatest risks associated with Arctic shipping and oil drilling" (2013, 34; 2010, 9). The two documents also speak to different aspects of occupational safety. For example, the 2013 Strategy mentions the physical conditions that can impact safety, such as "low temperatures, harsh weather and the seasonal variations in the amount of daylight" (2013, 21). The 2010 Strategy looks more towards IMO regulations that "concern the technical and structural properties of vessels operating in the Arctic, as well as the training and competence of the crew serving on these vessels" (2010, 28). The 2010 Strategy also explains that maritime safety issues are connected to flooding and growing maritime traffic (2010, 15, 28). Additionally, NATO contributes to addressing other regional safety such as "in search and rescue operations, in the containment of environmental and natural disasters, and in raising situational awareness," to which NATO surprisingly contributes (2010, 11).

As mentioned in the pollution indicator, there is also a point of difference between the two documents on the topic of nuclear safety. Passing reference is made to "nuclear safety projects implemented in the Arctic" (2013, 45) as one area for regional cooperation in the 2013 Strategy. In contrast, the 2010 Strategy provides a more detailed discussion, and to this end "Finland supports the development of the safety of nuclear power plants located in Finland's neighbouring areas through bilateral cooperation" (2010, 13).

Although neither of the strategies mention the development of the Polar Code (2013, 37; 2010, 36), there is a progression shown between the two documents regarding growth in Finland's capabilities. The 2010 Strategy remarks that the 2009 Arctic Marine Shipping Assessment (AMSA) "includes a number of important recommendations for improving logistics in the Arctic Ocean, such as the launching of measures to negotiate an Arctic search and rescue instrument" (2010, 28–29). Additionally, the strategy states that while "Finland also has solid expertise in the charting of seas" that "at present, the region's monitoring, surveillance and rescue systems and research infrastructure are still underdeveloped" (2010, 28, 45). This means that, overall, regional capabilities, need to be improved.

The 2013 Strategy suggests that the AMSA recommendation has been completed; it mentions the Arctic Council's SAR agreement which "requires Finland to allocate funding to rescue resources north of the Polar Circle and also to international rescue cooperation," and other agreements such as "the Nordred and Barents Euro-Arctic agreements on rescue services, under which the Barents Rescue exercises are held every two years" (2013, 41). The Strategy also recognizes Finland's capabilities with respect to maritime safety issues, from, interestingly, an economic perspective. For example, Finland can offer satellite monitoring services, "in addition to ship design, construction and operation capabilities, environmental and oil spill prevention, and control technologies, Finland is in a position to offer a

range of off-the-shelf export products based on the best practices developed on the Baltic Sea" (2013, 30). Additionally, Finland has developed solutions to occupational safety issues, although this knowledge was gained through cooperation and does not appear to be commoditized (2013, 21).

Neither strategy advocates for integration of national safety services, but when the two strategies are read together, they stress the importance of cooperation at different levels. At the circumpolar level, and in addition to the Arctic Council's SAR agreement, "cooperation between national coast guards, in particular, could combine a number of security and law enforcement components while securing and promoting Arctic actions on a broad front" (2013, 42). However, circumpolar cooperation "takes place primarily through the International Maritime Organization (IMO) and the agreements, recommendations and standards drawn up under its auspices" (2010, 28). Cooperation also takes place at the regional level, specifically in search and rescue efforts within the Barents region (2013, 14, 41). Finland also cooperates bilaterally with "the United States and Canada in enhancing the capabilities to perform under Arctic conditions and securing fast response times in the event of impending accidents" (2013, 30). Finland also cooperates bilaterally with Russia and Canada on different satellite projects, such as GLONASS and Radarsat-C, respectively (2010, 29). Finally, within Finland, "preparedness is based on a comprehensive concept of security, which consists in securing the vital functions of society through close cooperation between the authorities, industry, NGOs and citizens" (2013, 40). The two strategies demonstrate that safety is a complex issue which cannot be handled by one entity alone.

The **Economy** indicator, which accounts for 20 % of the total coded quotes in the 2013 Strategy and 14 % in the 2010 Strategy (see Figure 7, p. 42), dedicates a fair amount of space to economic development issues. The 2013 Strategy acknowledges the diversity of Finland's northern economy, while also recognizing national strengths. For example, "Finland is in a position to assume a key role, open up new opportunities and innovate in areas such as Arctic and cold climate expertise, construction, technology, product development, business operations, research as well as in value-added products drawing upon the northern environment" (2013, 9), and also through services for the shipping industry (2013, 9, 30). The cold climate creates opportunities in cloud services, which is already "valued at EUR 1 billion annually and is expected to grow substantially" (2013, 37). Other activities include "small-scale, nature-based businesses, crafts and local food production" (2013, 12), and tourism (2013, 30). Additionally, Finland exports "maritime technology" (2013, 29) such as icebreakers (2013, 9), and other forms of "environmental expertise" (2013, 26).

The 2013 Strategy also discusses more 'conventional' Arctic economic activities in the natural resources and energy sectors. Indeed, "mining in the Arctic region is expanding in Finland as well as in other Arctic countries" (2013, 9). Mining is important for employment as "it is estimated that up to 5,000 new jobs will be created in the mining industry over the next few years" (2013, 32). Forestry is also important because it "plays a crucial role as

a driver of the low-carbon bioeconomy in providing a basis for new products, materials, services and forms of energy" (2013, 12); it added an "estimated […] EUR 1.4 billion" to the economy in 2010 (2013, 31) and "employed directly a total of 3,200 people in Lapland" in 2013 (2013, 12). Certainly, this industry is important to the Finnish economy. Reindeer husbandry is also important as "some one thousand families in Finland earn all or part of their livelihood from reindeer husbandry" (2013, 30).

The 2010 Strategy also identifies a number of different economic activities. The document at a more general level states that "the region plays a key role especially in terms of energy generation, fishery, other livelihoods based on natural resources, and tourism" (2010, 20), but also focuses on areas of Finnish expertise. A footnote identifies the following sectors of expertise: for example, "offshore industries, shipping industries, forest expertise, mining industry, metals industry, tourism, knowledge of traditional trades, low-temperature expertise, winter testing, measurement technology, power and heat generation and distribution, energy conservation and energy efficiency, Arctic wind power technology, Arctic building and infrastructure, environmental engineering and management of environmental impacts, sustainable social concepts, northern environmental expertise, northern health and well-being, waste management technology, information technology and public e-services, innovation-oriented development, cold climate research, bio and nanosciences, risk analyses, oil spill prevention and response, materials engineering" (2010, 20).

With this list in mind, the Strategy also addresses trade, stating that "Finnish companies … must focus their export efforts on the areas of competence they have selected" (2010, 21), such as "environmental technology" (2010, 21), and capabilities in the areas of forestry, mining, oil/gas, and shipbuilding (2010, 22), for example.

Similar to the 2013 Strategy, the 2010 Strategy states that "the oil and gas reserves in the Arctic Region play a key role for European energy supply" (2010, 19), although access to "the Norwegian Snohvit gas field was restricted to a limited number of subcontracts" (2010, 22). Other important natural resource sectors are mining and reindeer husbandry (2010, 19, 20).

Sustainable development is similarly addressed in both strategies. The 2013 Strategy summarizes the sentiment in both documents, explaining that in the context of sustainable development and economic growth "these two goals are not mutually contradictory or exclusive, as long as the economic development in the vulnerable Arctic regions takes into account the limitations imposed by the natural environment and is sustainable in terms of the local communities" (2013, 8), although the 2010 Strategy includes cultural responsibility as well (2010, 9).

Generally speaking, economic activities that speak to Finland's strengths will be prioritized; however, environmental protection and sustainable development will also be adhered to, and "the status and rights of Indigenous peoples [will be] respected" (2010, 18; see also: 2013, 26, 39). In more specific terms,

the 2013 Strategy seems to prioritize green resource extraction as it is "Finland's ambition is to become a global pioneer in an eco-efficient mineral industry by 2020, an objective supported by the 2011–2016 Green Mining Programme launched by Tekes, the Finnish Funding Agency for Technology and Innovation" (2013, 32). The 2010 Strategy also looks at logistical issues needed to help prioritize economic activities. The document states that Finland will also "improve business opportunities in the Arctic by developing transport, communications and logistics networks and border crossings" (2010, 24).

To support this vast range of economic activities, both strategies refer to a variety of economic actors. For example, the 2013 Strategy recognizes that "the public sector's role may consist of creating networks, launching and supporting reference projects or organising visits by corporate delegations" (2013, 27), while the private sector can also build their own international networks (2013, 10, 26). Moreover, "partnerships are being established between research institutes, technology centres and private companies" and "it is necessary to make use of the opportunities offered by international financing institutions" (2013, 28). Other actors identified in the strategy include Nord-Min to provide best practices for the mining industry, and even other states, possibly including some from Asia (2013, 26, 31). In contrast, the 2010 Strategy does not identify the federal level public sector, but at a more local level "Northern Finland's regions, central cities, universities and sub-regions for cooperation with the East, founded Barents Centre Finland Company to promote the communication of information to companies that are interested in business opportunities in the Barents Region" (2010, 41). The document also recognizes the importance of other states, like Russia, to the maritime industry, and the role of Finnvera for financing and Finpro for trade consulting (2010, 21).

The **Tourism** indicator, which accounts for 6 % of the total coded quotes in the 2013 Strategy and 1 % in the 2010 Strategy (see Figure 7, p. 42), is reflected in both documents. The 2010 Strategy provides brief notes about tourism in general, while the newest 2013 Strategy looks into more details on the tourism industry.

The 2010 Strategy recalls that "higher temperatures and changes in precipitation have resulted in alterations in snow cover and vegetation and species, thus affecting the environment and livelihoods (e.g., reindeer husbandry and tourism)" (2010, 14). The Strategy further declares that "tourism is also expected to increase in the Barents Region" as "tourist centres have become hubs for diverse activities; besides providing services for tourists, they offer a wide range of private and public services for both permanent residents and holiday home owners in their areas" (2010, 19). Since "most Finnish tourist centres are located in Northern Finland, […] they play an important industrial policy role, as concerns both the creation of jobs and the regional economy" (2010, 19). If the 2010 Strategy recognizes that "in Lapland the strategic objectives are related to tourism" (2010, 10, 11, 12, 19), the 2013 document continues by stating that "the growth in adventure and nature tourism is reflected in Lapland's position as a leading Arctic tourist destination" (2013, 11).

Correspondingly according to the 2013 Strategy, Finland's objective is to "increase and renew the tourist industry to bring well-being to the region in accordance with the principles of sustainability" (2013, 55). In particular, the Finnish forest "offers opportunities for a range of activities from game hunting and picking berries and mushrooms to extensive tourism. Lapland's annual berry harvest is estimated at 350 million kilograms" (2013, 31). Furthermore, "the changing of seasons, untouched wilderness, cultural contrast and other unique features offer great potential for expanding tourism in northern Finland." Among other factors that contribute to growth is "the uncertainty of snow in central Europe and the proximity of Russia" (2013, 34). In order to "succeed in developing and increasing tourism, it is necessary to cherish the natural scenery, environment and the uniqueness of the local culture." Since "the infrastructure, level of service, research and training related to tourism should be of the highest standard" Finland is also striving to "ensure access to sufficient data on the industry" (2013, 11, 31).

The 2013 Strategy emphasizes that the "growth of the mining, energy, tourist and adventure industries" and consequently the growing "number of people working in the Arctic" "will increase the volume of traffic and the provision of ancillary services." Finnish Lapland offers the highest standart of "the infrastructure, level of service, international orientation as well as tourism research and education" (2013, 21, 34). Additionally, in Finland "tourism ensures a wider range of better services for the local population and helps maintain the basic infrastructure which, in turn, enables the development of other businesses." Nevertheless, "tourism will remain a labour-intensive field of activity in which jobs cannot be relocated." Therefore, cooperation with Arctic neighbours, such as Norway, could be benefitial for tourism, especially for "seasonal work and career development" (2013, 21, 34). All this makes "it possible for tourism to grow and transform in a responsible manner, steps must be taken to ensure the availability of labour, a high level of skills and competence, and a sufficient resource base" (2013, 34).

Finland offers "the unspoilt landscapes, peace and quiet, well-managed game and wildlife stocks and unique cultural features." However, "the interests of the various activities—mining, forestry and investments in tourism – are to a certain extent contradictory". Therefore, "a balanced evolution of regional livelihoods calls for sustainable cooperation between the individual fields and a close control of the environmental and social repercussions. All livelihoods need to be perceived as a whole in relation to one another." Additionally, "nature conservation areas and the outdoor and recreation services organised by the state increase the appeal of nature tourism in the region." It is not a surprising world trend that "nature-based tourism is generally regarded as the fastest growing sector in the tourist industry" (2013, 31, 34).

The 2013 Strategy further lists government actions that Finland should undertakes in the field of tourism: 1) "Recognise the importance of tourism as a major industry and an international export growth sector in the Arctic region, and support it

through goal-oriented preparation, land use planning, investments and the allocation of sufficient development resources"; Here 2) "Improve access to Finnish Lapland (air, rail and feeder traffic services) in response to the needs of the tourism industry"; As well as 3) "Develop a model for a sustainable concentration of tourist services to foster economically viable, customer-oriented local communities and cultures as well as resorts of international standard respectful of the Arctic environment"; At the same time, 4) "Make use of the tourist safety network model developed in Finland to improve safety performance throughout the Arctic region"; Furthermore, 5) "Develop local planning for use in the assessment, comparison and reconciliation of the interests of the various business sectors and other values… so as to maintain the attractiveness of sustainable tourism and the operating environment of the sector"; Then, 6) "Support and encourage a responsible tourism business through projects that take due account of the special features of the sector… and through efforts to develop the operating environment"; Further, 7) "Ensure the increased provision of tourism-related foresighting data, applied research and expertise pertaining to the specific characteristics of the Arctic"; Finally, 8) "Promote culturally sustainable tourism through culture partnerships and cooperation with creative industries" (2013, 55, 56).

The **Infrastructure** indicator, which accounts for 9 % of the total coded quotes in the 2013 Strategy and 10 % of the 2010 Strategy (see Figure 7, p. 42), addresses different forms of infrastructure. In terms of transportation, both documents link this infrastructure to the economy. For example, the 2013 Strategy explains that "the foreseen growth of the mining industry, tourism, the growing energy industry in the Barents region and the opening of the North-East Passage have highlighted issues such as the need to develop transports and logistics, and establish new transport routes in the Arctic" (2013, 9). According to the 2010 Strategy, this cannot be achieved alone, and regional cooperation is required. The report states that "investments in cross-border infrastructure require that Russia, too, is prepared to develop its east-west transport networks" (2010, 25). Interestingly, border infrastructure is mentioned in the 2013 Strategy as way to facilitate cross-border flows with Russia (2013, 36). The 2013 Strategy also explains that even though building new transportation will be expensive, new infrastructure "creates favourable conditions for securing a high quality of life for the people living in the northern environment" (2013, 11, 10).

Shipping, particularly through the "northern sea routes" (2010, 26) is associated with transportation infrastructure in both strategies. The 2010 Strategy explains that safe shipping through these routes is rather challenging and that "at present, the Northeast Passage is open for navigation for 49 ± 18 days per year. Owing to climate change, the navigation season is estimated to extend to 134 ± 38 days by the end of this century" (2010, 27). In contrast, the 2013 Strategy takes a more optimistic view of the possibilities of shipping through the Arctic. In particular, the document states that "some shipping lines have been operating in the Arctic region for years, for example in Greenland and Spitsbergen and along the North-East Passage" and that "opening the North-East Passage will increase the importance of the

Bering Straits in the future. Similarly, the North-West Passage may be increasingly used for shipping in the long term" (2013, 30). This optimism might stem from Finland's economic aspirations, as "Finland's ambition is to be a leading expert in Arctic maritime industry and shipping – as it is, Finnish companies are already actively involved in projects to develop Arctic sea areas" (2013, 9). Safety is also important as Arctic shipping increases. The Polar Code will contribute to safety (2013, 37; 2010, 36). Meanwhile, "any transport fees that might be collected must not become obstacles to traffic; instead, they should be used to support the safety of shipping" (2010, 27).

Icebreakers are also associated with transportation infrastructure, shipping, Finnish expertise, and are addressed in both documents, although in different ways. The 2013 document mostly discusses icebreakers in an economic context and states that "Finland also manufactures advanced, state-of-the-art Arctic ice-breakers" that are exported to other states such as "Canada, Norway, Russia, the United States and China" (2013, 9). These vessels can also be used for mining and research purposes (2013, 30, 32). In contrast, the 2010 Strategy addresses icebreakers as a way to facilitate Arctic maritime transit. For example, "according to estimates, thinning of the ice cover may enable sailing across the North Pole in a few decades, or perhaps already in the next decade by means of icebreaker-assisted convoys and double-acting ships" (2010, 26). Yet, despite these capabilities, "year-round traffic in these sea routes is not profitable because of icebreaking costs" (2010, 27).

Infrastructure for Telecommunications and ICT is also discussed in both documents. In the 2013 Strategy, the importance is mentioned in three ways: First, in terms of economy, as "aside from efficient transport services, reliable, high-capacity information networks and digital services are instrumental in boosting economic activity in northern Finland as well as improving competitiveness in the country as a whole. The adoption and utilisation of smart solutions drawing upon advanced communications technology need to be promoted in all sectors" (2013, 11). Second, in terms of safety, as "satellite-based communications systems are necessary for the Arctic seas, for example to transmit weather and maritime safety services to sea-going vessels" (2013, 37). Third, in terms of ICT, which is important for society, as "electronic communication networks and digital services are of key importance to the efficiency of society and the welfare of the citizens" (2013, 11, 20). Similarly, the 2010 Strategy recognizes that "mobile communications networks and broadband links improve the operating environment for business and industry and promote the well-being of local residents" (2010, 25).

Energy infrastructure is discussed to different extents in both documents. The 2013 Strategy focuses more on this issue, especially in the context of transmission lines. More specifically, the document states that "the Arctic region needs new electricity transmission lines and decentralised energy production" and that "the existing power transmission lines in and between Norway and Russia need to be upgraded, which offers interesting business opportunities for Finnish expertise" (2013, 10, 28). In

contrast, the 2010 Strategy does not focus on transmission lines but on energy security for the EU as "it is in the EU's interest that energy reserves in the Arctic Region are linked with European energy networks and serve the security of Europe's energy supply" (2010, 46).

Much of the infrastructure requirements mentioned above will need innovative solutions. The 2013 Strategy comments that "solutions conducive to a good quality of life and specifically tailored for northern conditions are called for. One such solution is Arctic design, which refers to design that draws upon an understanding of the Arctic environment and circumstances, while giving due consideration to the peoples' adaptation to Arctic conditions" (2013, 11). The 2010 Strategy makes vague statements, for example, "maintenance and further development of Arctic know-how, research and special expertise require strategic choices and decisions on the part of Finland" (2010, 9).

Finally, housing infrastructure is mentioned in both documents, but only in passing. For example, the 2013 Strategy states in the section, Technological Applications, that "other elements essential to housing, services and government actions are to improve risk management, and to secure sufficient data communications capacity and performance in the sparsely populated northern regions" (2013, 11). Similarly, in the 2010 Strategy, the idea of housing infrastructure is suggested in a sentence that mentions "housing construction" (2010, 9) as part of Finland's Arctic expertise. Neither document provides an assessment of the state of housing and of what, if anything, needs to be improved.

According to the two strategies, the **Science and Education** indicator, which accounts for 9 % of the total coded quotes in the 2013 Strategy and 7% of the 2010 Strategy (see Figure 7, p. 44), notes that regional change and the climate appear to drive much of Finland's research. Both documents recognize that regional change occurs, partly due to climate change, while the 2013 Strategy also recognizes that change can also come from "the exploitation of natural resources and land use. As they affect both the environment and society, an inter-disciplinary approach is required" (2013, 23; 2010, 14). Climate is also discussed in relation to climate change, but also in the context of "cold climate expertise" (2013, 23, 24).

In addition to making scientific contributions, the two strategies outline other purposes, or uses, of Finnish research. For example, the two documents stress that research can also be used for decision making, and economic and social purposes. Indeed, the 2013 Strategy states that "the new knowledge generated by research needs to be actively disseminated to support decision making, expand business opportunities and increase general awareness of the Arctic among the public at large" (2013, 24; 2010, 13, 20), while the 2010 Strategy explains that, in the case of social issues, "a study on the living conditions, values and attitudes of young people helps outline the future of Northern Finland" (2010, 22). The 2013 Strategy also explains that research can be used for gaining and maintain

geopolitical influence in the region because "Finland will be able to consolidate its position and increase its appeal as a leading world-class expert in the Arctic" (2013, 24).

To facilitate its research, Finland has different types of science infrastructure. First, there is physical infrastructure which includes icebreakers and "infrastructure in Sodankylä and Pallas, among other places" (2013, 24; see also: 2010, 22). Second, higher education institutions are also considered infrastructure. Pages 24 through 26 of the 2013 Strategy list the different institutions in Finland and their areas of specialization, while the 2010 Strategy specifically identifies "the University of Lapland and the University of Oulu" because they "have been profiled as experts in Arctic and northern research and education" (2010, 23). Third, scientific networks also serve as infrastructure, such as the National Committee of Arctic and Antarctic Research mentioned in the 2010 Strategy, while the 2013 Strategy notes the proposal "that the EU Arctic Information Centre be established in the form of a network involving 19 European institutions engaged in Arctic research and communications" (2013, 47; see also: 2010, 23).

Finnish knowledge is discussed in both strategies, although with more detail in the 2013 document. One aspect of knowledge is traditional and local knowledge. The 2013 Strategy states that "an important source of Finnish Arctic expertise is familiarity with the local conditions" (2013, 24). To this end, both strategies stress that traditional knowledge is important, especially in the context of biodiversity (2013, 14; 2010, 17). Another aspect is ensuring that research takes a multi- or interdisciplinary approach, especially in relation to the changing nature of the region (2013, 23; 2010, 22–23). Innovation is related to knowledge; space technology in the larger context of the EU, is also mentioned in the 2013 Strategy because "in EU politics, it is important to be able to shape the priorities of the EU's R&D programmes related to the Arctic" (2013, 47).

Neither document focuses on education as much as on science and research. Perhaps, this is because the 2013 Strategy commends the Finnish education system, stating that "Finland's extensive and in-depth Arctic expertise is a result of its highly advanced education system, where its position as an Arctic country is taken into account at all levels" (2013, 13). Certainly, the quality of education also seems to be linked to Finnish expertise. The 2010 Strategy also makes this connection, stating that "Finland possesses top-level Arctic know-how in many sectors. However, maintenance of this know-how requires relevant university-level education, correctly targeted investments, and national and international cooperation" (2010, 20).

Despite the limited focus on education, the two strategies do address access to education in three ways. First, both documents mention joint university programs, such as "the Nordic Mining School, jointly launched by the Universities of Oulu and Luleå" in the 2013 Strategy, and that the Universities of Lapland and Oulu "have a joint research programme and four international Master's programmes together with Universities in Northwest Russia" in the 2010 Strategy (2013, 21; 2010, 23).

Second, both documents refer to the University of the Arctic. However, instead of discussing the range of programs offered or whether this has increased access to higher education, the strategies focus on the administration of the network by the University of Lapland and the University of Oulu (2010 only) (2013, 25; 2010, 23). Finally, the 2010 Strategy mentions the "Saamelaisalueen koulutuskeskus (Training Centre for the Sámi Region), located in Inari, [which] provides vocational basic and further training for the needs of enterprise in the Sámi region" (2010, 23).

For the **Implementation**, both documents provide extensive detail on this process. The final section of both documents is dedicated to strategy implementation. For the 2010 Strategy, this section is called "Conclusions: Objectives And Proposals For Action" and presents "sector-specific objectives and concrete proposals for action" (2010, 52), while also identifying which ministries will take responsibility. There is not a great deal of information on how these objectives will be achieved, nor is there any discussion of follow-up. The implementation section in the 2013 Strategy is called "Objectives And Actions For Attaining Them" (2013, 49). The absence of details from the 2010 document is addressed in the 2013 Strategy, which acknowledges that the "current strategy gives a more comprehensive presentation of the actions necessary for achieving these goals based on revised objectives" (2013, 18). This final section of the strategy thus identifies action items for the different objectives, and specific ministries are assigned for implementation. The ministries will also be responsible for follow-up on their actions, while "the monitoring and implementation of the strategy is overseen by the Arctic Advisory Board" (2013, 49). While the action items are brief and do not offer specifics of how they will be implemented, they do, however, seem to be realistic even if there are no time frames attached to them. Another observation is that the same ministries are mentioned repeatedly, raising questions about their capacity to accomplish their goals.

Implementation budgets are not strongly identified in the 2010 Strategy. For example, the document states that "up until now, the scale of operations has been slightly under 800,000 euros per year, most of which is provided by the Ministry for Foreign Affairs. The rest of the funding comes from the Ministry of the Environment and the Ministry of Education and Culture" (2010, 43). Additionally, funding for regional activities may come from regional bodies like the Northern Dimension (2010, 42). The government also considers other international sources of funding. According to the Strategy, "Finland's Arctic operations can also be enhanced by creating a more well-defined national financing approach. It should be pondered whether the neighbouring area cooperation funds can increasingly be used to finance Finland's participation in regional cooperation, including Arctic cooperation" (2010, 43). For the 2013 Strategy, it does not seem as if new funding is provided either. Instead, "the Strategy for the Arctic Region will be implemented through sector-specific measures in accordance with the central govern-

ment spending limits and budget" and "EU funding will be allocated to the projects subject to EU Programmes and the conditions established for EU support" (2013, 7). Moreover, funding may be sought from private sources (2013, 7). The Strategy also discusses long-term funding and budgeting and states that "the actions to be taken over a longer period of time will be specifically prioritised in connection with future spending limits decisions and central government budgets, and revised to match other developments" (2013, 49).

To sum up

To begin the analysis of the Finnish strategies, Figure 7 at the start of the Finland section shows that for the 2013 Strategy the three most-coded indicators are Economy, followed by Governance, and the Human Dimension. Similarly, for the 2010 Strategy, Governance and the Economy are in the top two, while the third most-coded indicator is International Cooperation. This difference is not surprising, given that the 2010 Strategy focuses on external issues.

The three-least coded indicators in the 2013 Strategy are Pollution, Climate Change, and Environmental Protection. In contrast, the three least-coded indicators in the 2010 Strategy are Tourism, Security, and Climate Change. This shows that tourism and security grew in importance for the Finnish government following the release of the 2010 Strategy.

Now that each indicator has been analyzed, it is easier to determine if the priorities for the 2013 Strategy have been met. The document identifies "the creation of new business opportunities" as a priority, and this would be correlated with the Economy indicator, which is the most-coded indicator for the document. This suggests that the priority has been met, especially as the Strategy identifies a wide range of economic activities and discusses different ways in which the government will prioritize the regional economy. The priority of "environment and the region's security and stability" is addressed in different indicators. As for the environment aspect, the Environmental Protection indicator was one of the least-coded indicators in 2013. However, when Environmental Protection, Pollution, and Climate Change are added together, they become the second most-coded topics (see Appendix), thus showing that environmental concerns are prioritized, especially as the discussions takes environmental concerns seriously. As for the security and stability aspect, the Security indicator is in the middle in terms of the percentage of coded quotes in the 2013 Strategy. However, the percentage of coded security quotes grew from 2010 (see Figure 7, p. 42), suggesting the government is placing more importance in this area, as evidenced by a more detailed discussion of it in the 2013 Strategy.

The International Cooperation indicator falls in the middle with respect to its level of coding. However, cooperation is also partially addressed in the Governance indicator, which is the sec-

ond most-coded indicator for the 2013 Strategy. This suggests that the priority of "international cooperation" is a priority, although the 2013 Strategy does not speak to the issue as much as the 2010 Strategy does (see Figure 7, p. 42). This, however, is not surprising when one considers that the 2010 Strategy is designed to focus more on external concerns. The priority of "Arctic expertise in the widest sense of the term" is connected to the Economy and Science and Education indicators. The Economy has the highest percentage of coded quotes, showing an increase from the 2010 Strategy. The Science and Education indicator is in the middle in terms of the coded quotes. In view of this, it is inferred that the priority of [developing] Arctic expertise has been met. Finally, the priorities of "bolstering Finland's position regarding the Arctic region" and "the position of the northern parts of Finland" can also be accounted for with the International Cooperation, Governance, Science and Education, and Economy indicators, which also suggests these priorities are met.

There are also some connections between the different indicators and themes. For example, the Security indicator identifies the need for international cooperation, especially as new energy developments have the potential to create new security considerations. Additionally, security and stability also contribute to the wellbeing of northerners, as noted in the Human dimension. Another linkage exists between the Economy, Environment, and Pollution indicators as an increase in economy activity can cause pollution and damage the environment. At the same time, tourism growth, in part, depends on the existence of a healthy environment. Governance, too, is connected to the Science and education indicator, as research informs governance decisions, and also to the International cooperation indicator, as governance requires that cooperation takes place at different levels; it is also connected to the Human dimension through discussions on Indigenous governance.

To further compare the documents, the two most relevant similarities and the three most relevant differences are discussed.

There are many **similarities** between the two documents, although two points stand out. *First,* international cooperation is an important aspect of Finland's strategies, and there is continuity between the two documents in relation to the importance of international cooperation and the use of international law to resolve disputes. The two strategies further identify international organizations and structures such as BEAC, the UN, UNCLOS, IMO, and the Arctic Council with respect to how they either promote cooperation and/ or create legal frameworks that can foster cooperation. With regard to the Arctic Council, both strategies remark that it should move towards a treaty-based system, which could give it more authority. *Second,* there are similarities with regard to economic goals. Both documents mention a broad range of economic activities, from energy, to natural resource development, forestry, and reindeer herding, to name a few. At the same time, the two strategies also stress that

Finland will prioritize areas in which they have expertise, such as cold climate services and goods. Sustainable development is also important, especially in connecting the economic, environmental, and social to sustainability. Both documents also highlight the important relationship between the private sector and academia for economic development, as well as the role of financing companies.

There are also three key **differences** between the documents that stand out. *First*, is the issue of nuclear safety and waste. As mentioned above, both documents remark upon this; however, the 2010 Strategy provides a more in-depth look at different approaches to addressing the issue, including through structures like the G8. The reason for this shift in focus away from nuclear waste is unclear and raises questions as to why this issue was dropped from the agenda. *Second*, both documents mention the importance of security and regional stability, especially through international cooperation. However, the 2013 Strategy pays more overall attention to security than the 2010 Strategy does. For instance, the 2013 Strategy provides more information on Finland's security objectives, including soft security issues like safety, and stresses the importance of interoperability. Additionally, the 2013 Strategy also reflects on civilian security issues like crime, thus painting a broader picture of regional security concerns. Moreover, the 2010 Strategy positions climate change as a safety issue while the 2013 Strategy positions it as a security issue. This difference can be subtle, as safety can sometimes be considered soft security. However, the sentiment on climate change did shift between strategies from concerns about floods to maintaining regional stability. *Third*, there is a shift between the two documents in the way that the strategies address the EU. The 2010 Strategy dedicates an entire section to the "THE EU AND THE ARCTIC REGION" with almost eight full pages of text (2010, 44). In contrast, the 2013 Strategy addresses the "EU's role in the Arctic" as the final discussion of the section on "International Cooperation in the Arctic" and dedicates only a little more than one page to this discussion. Both strategies are clear that Finland wants to have influence in the EU's Arctic policy, but, there is one key difference between the documents – the timing of the EU's submission for Observer status in the Arctic Council. The 2010 Strategy explains that this is a goal for Finland (2010, 44); thus, it is not surprising there is much detail regarding the EU's regional activities. The 2013 Strategy, in contrast, was released in August 2013, two-and-a-half months after the Arctic Council decided to delay their decision on the EU's application at the Kiruna Ministerial Meeting in May 2013 (see Arctic Council 2015b).

Overall, the two documents show consistency between Finland's approach to governing their Arctic, while also updating and adapting the country's course of action to meet new regional challenges.

Iceland

There are two main Arctic strategy documents for Iceland: the current *A Parliamentary Resolution on Iceland's Arctic Policy* from 2011, and the 2009 document *Iceland's Position in the Arctic*. The 2009 document, which is in Icelandic and consists of 67 pages including pictures, is analyzed here as an unofficial 2-page English translation. Prior to these documents, the Icelandic government produced two reports on Arctic maritime transportation. The first, in 2006, was a "report of a working group of the Ministry for Foreign Affairs" called *North Meets North: Navigation and the Future of the Arctic* (Iceland MFA 2006, 1). The second document was conference proceedings called *Breaking the Ice. Arctic Development and Maritime Transportation: Prospects of the Transarctic Route - Impact and Opportunity*, "organized by the Icelandic Government" and also a "contribution to the Arctic Council's Arctic Marine Shipping Assessment" (Iceland Government, 2007, cover page). For the purposes of this analysis, only the 2009 and 2011 documents are analyzed.

The 2011 *A Parliamentary Resolution on Iceland's Arctic Policy,* with 13 pages of text, starts by clearly laying out, as a strategy, 12 principles, or priority areas, before exploring them further. Iceland's priorities can be understood based on these 12 principles which include: 1) "promoting and strengthening the Arctic Council"; 2) "securing Iceland's position as a coastal state"; 3) defining the Arctic region' 4) using UNCLOS for dispute resolution; 5) "strengthening and increasing cooperation with the Faroe Islands and Greenland"; 6) "supporting the rights of Indigenous peoples in the Arctic"; 7) "building on agreements and promoting cooperation"; 8) "prevent human-induced climate change"; 9) "safeguarding broadly defined security interests in the Arctic"; 10) "developing further trade relations between States in the Arctic region"; 11) "advancing Icelanders' knowledge of Arctic issues and promoting Iceland abroad"; 120 "increasing consultations and cooperation at the domestic level" (Iceland Althingi 2011, 1–3).

The priorities from the short 2009 document are not as clearly laid out; however, they are implied based on the different section headings including: international cooperation, security, resource development and environmental protection, transportation, people and culture, and science and monitoring (Iceland MFA 2009, 1, 2).

Comparison by Indicator

The **(Re)mapping and (Re)defining the Arctic** indicator provides a good understanding of how Iceland views its position in the Arctic. The 2011 Strategy, for example, explains that Iceland does not put strict boundary limits on the region. For example,

"the Arctic region should therefore be regarded as a single vast area in an ecological, political, economic and security-related sense, but not in a narrow geographical sense with the Arctic Circle, tree line or a temperature of 10 degrees centigrade in July as a reference point" (2011, 7). Yet, the document also seems to justify Iceland's status in the region based on one such definition. It states that "Iceland is geographically located by the Arctic Circle and is therefore within the Arctic" (2011, 6). Regardless of how the Arctic is defined in this strategy, it is a departure from the 2009 document. While we are generally not quoting the unofficial translation, the document is clear in stating that Iceland is "on the periphery of the Arctic in the centre of the North Atlantic Ocean" (2009, 2). At the same time, the document also states that "*Iceland is the only country located entirely within the Arctic region and its prosperity relies heavily on the sustainable utilization of its resources*" (2009, 1).[2]

The Arctic is described similarly in both documents. For example, they both comment about the fragility of the ecosystem, environment, and the region's resources (2011, 2, 6; 2009, 1). The 2011 Strategy also suggests the region has become geopolitically important. According to the Strategy, "the importance of the Arctic region in international affairs has increased considerably in recent years on account of debate about climate change, natural resources, continental shelf claims, social changes and new shipping routes" (2011, 3). The two strategies primarily refer to the region as the "Arctic," although the 2011 Strategy uses the term "North" a couple of times (2011, 4, 6) and the 2009 document refers to the "High North" in the context of resource development near Jan Mayen Ridge (2009, 2).

Neither document provides much information on what ministries are responsible for the Arctic. For example, the 2011 Strategy states that "Althingi [Icelandic Parliament] entrusts the Minister for Foreign Affairs with the implementation and development of the policy in cooperation with other relevant ministries, as well institutions and organisation working on Arctic Affairs, and in consultation with the Foreign Affairs Committee and the Environment Committee of Althingi on the policy design as necessary" (2011, 3). The 2009 document only mentions the Ministry for Foreign Affairs (2009, 2).

Figure 8 shows how many quotes are assigned to the different indicators, as a percentage of the total number of coded quotes (rounded to the nearest whole number) for the 2011 Strategy.

---

2   These two quotes are included because the unofficial translation makes clear Iceland's views on their position in the region.
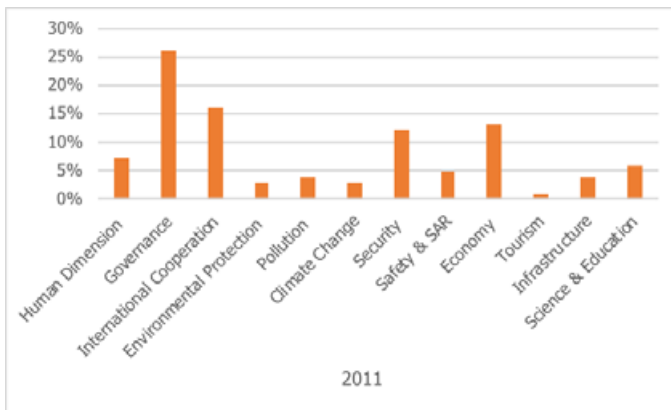
Figure 8. Iceland's 2011 Strategy

Note: The percentages in each indicator are rounded to the closest whole number and represent the percent of the total number of quotes coded for each document. Only the 2011 Strategy is shown here as the 2009 Strategy is a short and unofficial translation and cannot be compared quantitatively.

The **Human Dimension** indicator accounts for 7 % of the total coded quotes in the 2011 Strategy (see Figure 8). Both documents, and especially the 2011 Strategy, spend some time addressing issues of Indigenous peoples, despite Iceland not having a native Indigenous population. The 2011 Strategy provides some demographic information and recognizes that "it is believed that Arctic Indigenous peoples are at least 375,000 and divided into around 40 distinct peoples who speak different languages" (2011, 9). In terms of human rights, the 2011 Strategy argues that there needs to be more effort to protect Indigenous rights, especially as they are not always taken seriously. Therefore, "as a small nation and an advocate of human rights, Iceland should support the rights of Arctic Indigenous peoples and promote their involvement in decision-making in all issues affecting their communities, whether they entail political, social, cultural, economic or environmental interests" (2011, 8). The 2009 document does not focus on these issues, and instead recognizes that culture should be preserved through technology. It also notes that Indigenous peoples participate in the Arctic Council (2009, 1, 2).

The 2011 Strategy addresses health and wellbeing in two different ways. First, it links health and wellbeing to environmental conditions. Efforts must thus be made to address "human-induced climate change and its effects in order to improve the wellbeing of Arctic residents and their communities" (2011, 2). Second, there is a recognition that economic activities, especially in the extractive resource sector, will affect northerners (2011, 3; 2009, 1). Thus, improving health and wellbeing requires research on different issues such as "economic and social development, gender equality, health care issues" (2011, 11). Additionally, "contracting businesses from Iceland are working in Greenland and cooperation on health care issues has been successful" (2011, 8), suggesting an interest in health and wellbeing outside of Iceland.

Migration is mentioned in the 2011 Strategy, albeit in the context of the Hoyvik Free Trade Agreement with the Faroe Islands. More specifically, it allows for "movement of persons and right of residence" (2011, 8), which is notable, as the Faroe Islands are not a part of the EU.

The **Governance** indicator, which accounts for 26 % of the total coded quotes for the 2011 Strategy (see Figure 8), focuses on "increasing consultations and cooperation at the domestic level on Arctic issues" (including the participation of all ministries, local governments, the academic community, industries, non-governmental organizations) "to ensure increased knowledge of the importance of the Arctic region, democratic discussion and solidarity on the implementation of the Government's Arctic policy" (2011, 3, 11). Behind as an ultimate aim is that "Iceland's legal position in the North needs to be further secured in order to put Iceland on equal footing with the other coastal States in the region, [and] the Government should take the initiative of developing arguments in support of this objective in cooperation with the relevant institutions" (2011, 6).

The 2009 document emphasizes the importance of cooperation in two ways. First, there is discussion about working with Greenland and the Faroe Islands on shared issues. Second, it recognizes that science cooperation contributes to decision making, especially in light of changes occuring in the region.

The 2011 Strategy further states that "emphasis should be placed on Iceland's role in the intensified relationship between Arctic communities and in increasing economic relations" (2011, 10).

The 2011 Strategy also recognizes the importance of the Commission on the Limits of the Continental Shelf (CLCS) which is responsible "to consider submissions by coastal States concerning the outer limits of the continental shelf beyond 200 nautical miles, and to make recommendations related to those limits". The strategy points out that "the outer limits of the continental shelf established by a coastal State on the basis of recommendations by the CLCS shall be final and binding" (2011, 7). Furthermore, the 2011 Strategy addresses IMO and its "established guidelines for ship design and safety equipment for ships operating in ice-covered waters and there is a willingness to make the guidelines legally binding" (2011, 9). Correspondingly, the 2009 Strategy warns that there is a need for IMO to increase maritime safety in icy waters, especially as cruise ships are not always prepared for these condition (2009, 1).

The **International Treaties and International Cooperation** indicator, which accounts for 16 % of the total coded quotes for the 2011 Strategy (see Figure 8), follows up on the governance indicator by emphasizing the importance of cooperation on the part of all eight Arctic states. The 2009 document stresses that regional cooperation is important to Iceland (2009, 1). Furthermore, Iceland argues that "increased cooperation between the West Nordic countries will strengthen their international and

economic position as well as their politico-security dimension" (2011, 8). The 2011 Strategy then highlights "increasing cooperation with the Faroe Islands and Greenland with the aim of promoting the interests and political position of the three countries" (2011, 2).

The 2011 Strategy also refers to the meetings of the five Arctic States (the USA, Canada, Russia, Norway and Kingdom of Denmark) in Ilulissat in 2008 and in Chelsea in 2010, where the rest of the Arctic Council member states (Iceland, Finland, Sweden) and Arctic Indigenous peoples were excluded. Followed from this, it remarks that "if consultation by the five States develops into a formal platform for regional issues, it can be asserted that solidarity between the eight Arctic States will be dissolved and the Arctic Council considerably weakened" (2011, 4, 5, 6). Furthermore, "the Icelandic Government has publicly, as well as in talks with the five States in question, protested their attempts to assume decision-making power in the region" which would be carried out only by the Arctic Five. Therefore, "further efforts that may undermine the Arctic Council and Iceland's interests in the region must be prevented". In addition to that, "it is also necessary to ensure that Indigenous peoples are able to maintain and cultivate their cultural uniqueness, strengthen the infrastructure of their own communities and work towards improving their living standards" (2011, 6, 9).

The 2011 Strategy comments that "as an Arctic state and a founding member of the Arctic Council" Iceland recognizes "the Arctic Council as the most important consultative forum" for regional and international cooperation of all the Arctic states with the participation of Indigenous organizations focusing on sustainable development in the region (2011, 1, 4, 5, 6). Indeed, "Iceland is among the countries that want to increase the Arctic Council's weight and relevance in decisions on the region, where necessary." According to the 2011 Strategy, "the role of the Arctic Council needs to be enhanced." Therefore, it is of "great importance that consensus is reached across the political spectrum on an Arctic policy which aims at positioning Iceland among those countries that have the greatest influence on future development in the region; safeguarding economic, environmental and security-related interests in the North; and working towards closer cooperation with other nations, international organisations, autonomous regions and stakeholders." Importantly, the "individual Member States must be prevented from joining forces to exclude other Member States from important decisions, which would undermine the Arctic Council and other Arctic States, including Iceland" (2011, 4, 5, 6; also: 2009, 1). The Strategy also addresses the "increased international interest in the region" demonstrated by high number of countries and organizations that have "applied for permanent observer status in the Arctic Council" (2011, 5).

In the sphere of international/regional cooperation, Iceland further emphasizes good relations with other states, "within the Nordic cooperation, defence cooperation with the United States, regional defence and security cooperation with Norway, Denmark and Canada, cooperation with the other seven Arctic States in the Arctic Council, relations with the European Union through participation in the so-called Northern Dimension (a cooperative forum including Russia, the EU, Iceland and Norway) and cooperation with Russia in the Arctic Council, through the Barents Euro-Arctic Council and within the Northern Dimension" (2011, 7). The 2009 document further supports the importance of international cooperation within the Barents Euro-Arctic Council (BEAC) (2009, 1).

In addition, "all the Arctic States support the United Nations Convention on the Law of the Sea and have pledged to abide by the Convention". Therefore, "disputes in the field of the law of the sea cannot be ruled out, however, for example over the delimitation of the continental shelf." Both documents further emphasize that "it must be ensured that the United Nations Convention on the Law of the Sea forms the basis for the settlement of possible disputes over jurisdiction and rights in the Arctic region" (2011, 4, 7; 2009, 4).

The **Environmental Protection** indicator accounts for 3 % of the total coded quotes for the 2011 Strategy (see Figure 8, p. 55). Both documents comment on the fragility of the Arctic's environment, and the 2011 Strategy lays out a clear environmental priority. In particular, it states that "Iceland will concentrate its efforts fully on ensuring that increased economic activity in the Arctic region will contribute to sustainable utilisation of resources and observe responsible handling of the fragile ecosystem and the conservation of biota" (2011, 2). The connection between environmental protection and economic activities is also made in the 2009 Strategy, particularly in relation to shipping and resource development (2009, 1). It is not surprising, therefore, that both documents comment on the need to monitor the ocean for pollution (2011, 10; 2009, 1). The 2011 Strategy suggests that environmental protection can, in part, be improved through security cooperation as well as through economic activity (2011, 2).

Wildlife protection, especially of fish, is addressed in both strategies. According to the 2011 Strategy, "the UN Fish Stocks Agreement established a framework for the cooperation between coastal States and States fishing on the high seas within regional fisheries management organisations regarding conservation and management of straddling fish stocks and highly migratory fish stocks" (2011, 9). In contrast to this, the 2009 document seeks to protect fish from the damage caused by oil spills (2009, 1).

The **Pollution** indicator is addressed only in the 2011 Strategy and accounts for 4 % of the total coded quotes in the document (see Figure 8). Only greenhouse gases are mentioned as a pollutant, and the document suggests that the shipping industry is responsible for this pollution (2011, 9, 10). Although there is little mentioned on the sources and types of pollution, the Strategy does identify a number of ways to address the issue. First, it recognizes that frameworks such as UNCLOS, the IMO, and the UNFCCC provide guidance on "pollution prevention" (2011, 2, 3, 9). Second, pollution is also positioned as a security concern. Interestingly, NATO is also recognized for pollution prevention as "a statement [on this] was released in connection with the NATO Conference on Arctic issues in Iceland in January 2009" (2011, 10).

As previously mentioned, only the 2011 Strategy addresses the **Climate Change** indicator, which accounts for 3 % of the total coded quotes (see Figure 8). The Strategy puts forward different approaches related to climate action. This in part includes conducting climate change research and recognizing that "other States and alliances, such as China, Japan and the European Union, have also wanted to have influence on current developments, including various cross-national factors such as climate change" (2011, 4, 11). Additionally, Iceland will work within the UNFCCC framework and follow the sustainable development principles, while "cooperating on efforts to reduce greenhouse gas emissions, including utilisation of renewable energy sources" (2011, 9).

The **Security** indicator is mainly discussed in the 2011 Strategy (12 % of the total coded quotes) (see Figure 8). The document refers to the peaceful cooperation among the Arctic States since the end of the Cold War. At the same time, security relies on cooperation, respect for the law, and environmental protection (2009, 1). The 2011 Strategy follows up on that by stating that "general security must be strengthened in the Arctic region and the militarisation of the area prevented." Furthermore, "cooperation must be strengthened and bilateral agreements sought with individual Arctic countries, similar to agreements made with Denmark, Norway and Canada on specific security issues" (2011, 10). The 2011 Strategy further emphasizes "the importance of the Nordic cooperation, defence cooperation with the United States, regional defence and security cooperation with Norway, Denmark and Canada, cooperation with the other seven Arctic States in the Arctic Council, relations with the European Union through participation in the so-called Northern Dimension (a cooperative forum including Russia, the EU, Iceland and Norway) and cooperation with Russia in the Arctic Council, through the Barents Euro-Arctic Council and within the Northern Dimension" (2011, 7). According to the 2011 Strategy, "there is common willingness among the Arctic States to increase cooperation of this kind". Particularly, "common security interests involve surveillance and the capacity for response to danger, not least on account of environmental accidents, accidents at sea and maritime activity in connection with oil extraction and other resource utilisation" (2011, 10).

Further discussion about improvement of "preparedness and monitoring of the region" is provided in the 2011 document (2011, 10). The Strategy recognizes the "growing international importance of the region which has led to an increasing preparedness on behalf of the Arctic States to guard their sovereign interests, without having led to militarisation." Furthermore, the importance of investment in "developing the capacities of rescue services, the coast guard and the police" is mentioned (2011, 10). The Strategy also refers to the Stoltenberg report, which "addresses Nordic cooperation on foreign and security policy, [and] includes numerous ideas related to the common interests of the Nordic countries in the Arctic" (2011, 10).

Iceland's government also addresses potential conflicts in the 2011 Strategy arising from the Continental shelf claims, stating that these claims by Arctic States "have yet to be settled within the framework of international law, not least the United Nations Convention on the Law of the Sea." Indeed, "all the Arctic States support the United Nations Convention on the Law of the Sea and have pledged to abide by the Convention." The document states that "it must be ensured that the United Nations Convention on the Law of the Sea forms the basis for the settlement of possible disputes over jurisdiction and rights in the Arctic region. Although there are few indications that the Arctic will be an area of conflict in the near future, it cannot be ruled out that disputes arising from continental shelf claims will compromise relations between the Arctic States" (2011, 3,7). The Strategy further mentions "several unresolved issues" in this context connected to stability in the Arctic, including: "i) The United States and Canada are involved in a dispute over the Northwest Passage and a part of the Beaufort Sea which is estimated to hold vast oil deposits. The United States considers the Northwest Passage as an international strait whereas Canada considers the route its internal waters; ii) Denmark and Canada, on the one hand, and Russia, on the other hand, disagree on jurisdiction over the Lomonosov Ridge in the Arctic Ocean; iii) Most nations reject Norway's claim of a 200 nautical miles zone around Svalbard on the basis of conditional sovereignty over the island and have refused to recognise their "fisheries protection zone" around it; iv) A dispute is ongoing between Canada and Denmark over Hans Island, which is located in the strait that separates Ellesmere Island from Northern-Greenland and connects Baffin Bay with the Lincoln Sea" (2011, 4).

The Strategy also emphasizes the importance of "safeguarding broadly defined security interests in the Arctic region through civilian means and working against any kind of militarisation of the Arctic." At the same time, "Iceland's cooperation with other states should be strengthened on the protection of biota, research, observation capabilities, search and rescue, as well as pollution prevention in the Arctic region, inter alia to protect Icelandic interests in the areas of environmental protection, social wellbeing and sustainable use of natural resources" (2011, 2). By increasing the "cooperation between the West Nordic countries" their "international and economic position as well as their politico-security dimension" will be strengthened (2011, 8).

Last, but not least, the 2011 document points to the role of NATO in the Arctic. The Strategy recognizes that NATO is "increasingly directing its attention towards the Arctic region again, even though the alliance has no plans for a military presence". Nevertheless, "the interest in the region is not limited to the Arctic States themselves, since other States and organisations maintain that they have direct or indirect interests at stake" (2011, 4). For example, in the conference on Arctic issues in January 2009 in Iceland "the alliance expressed its willingness to monitor and gather information and intelligence, as well as to strengthen its capabilities for rescue and pollution prevention at sea… It was reiterated that the purpose was not to promote the militarisation of the Arctic but to secure the stability that has been maintained since the Cold War in successful cooperation with Russia and even other nations outside the alliance, such as Finland and Sweden" (2011, 10).

The **Safety and SAR** indicator accounts for 5 % of the total coded quotes in the 2011 Strategy (see Figure 8, p. 55) and identifies regional safety issues. First, the two strategies identify the maritime and environmental safety in relation to economic activity, while the 2011 Strategy securitizes these issues. Indeed, the document states that "common security interests involve surveillance and the capacity for response to danger, not least on account of environmental accidents, accidents at sea and maritime activity in connection with oil extraction and other resource utilisation" (2011, 10; 2009, 1). Second, the 2011 Strategy addresses emergency preparedness by recognizing that "most of the Arctic States have opted to improve civil preparedness and monitoring of the region, *inter alia* by developing the capacities of rescue services, the coast guard and the police" (2011, 10).

The 2011 Strategy also identifies three structures that contribute to Arctic security. First is the Arctic Council and its legally binding SAR agreement. Second, the strategy suggests that NATO could contribute to regional SAR efforts (2011, 5, 10). Third, safety is also addressed with regard to the IMO which "has established guidelines for ship design and safety equipment for ships operating in ice-covered waters and there is a willingness to make the guidelines legally binding" (2011, 9). Based on these comments, it seems that Iceland likes the idea of legally binding safety agreements and/or provisions.

Neither document suggests the integration of national safety measures. Instead, the focus is on cooperation, especially in the context of surveillance. For instance, the 2009 Strategy mentions the possibility of Iceland creating an international capacity to address safety (2009, 1). This idea is further discussed in the 2011 Strategy which states that "the Stoltenberg report, which addresses Nordic cooperation on foreign and security policy, includes numerous ideas related to the common interests of the Nordic countries in the Arctic, such as a joint maritime monitoring and surveillance system that could be developed further to increase preparedness and surveillance in the region" (2011, 10).

The **Economy** indicator, which accounts for 13 % of the total coded quotes in the 2011 Strategy (see Figure 8, p. 55), identifies a variety of economic activities. Both strategies note that Iceland is involved in renewable energy, extractive resource development, fishing, and tourism (2011, 6, 8; 2009, 1, 2). With regard to extractive resources, the 2011 Strategy further explains that "Iceland enjoys continental shelf rights in the joint exploitation area between Iceland and Jan Mayen Island" and that "Iceland may for example be able to provide services in connection with future oil extraction areas in and off the coast of Northeast Greenland" (2011, 6, 8).

The 2011 Strategy identifies two ways to prioritize Iceland's economy. First, Iceland wants to seeks an "intensified relationship between Arctic communities and in increasing economic relations. The idea [of establishing] an Arctic Chamber of Commerce to promote trade cooperation between businesses and industries in the region is an example" (2011, 10–11). Second, Iceland believes it has expertise that will be of benefit

to the Arctic (2011, 10). However, economic activities are also regulated, especially in the case of the oil and gas sector. The fishing industry is also regulated, and in addition to the UN Fish Stocks Agreement, "an agreement between Iceland and the Faroe Islands on fisheries within their respective exclusive economic zones is also in effect" (2011, 8). The 2009 document does not specifically address economic regulation, but it too expresses the need to sustainable development and the protection of fish stocks (2009, 1, 2).

Only the 2011 Strategy refers to different economic actors, mostly in relation to trade. In particular, it mentions that the government creates the political context to facilitate economic relations, especially with Greenland. The government has also negotiated trade agreements, like the Hoyvik Free Trade Agreement with the Faroe Islands (2011, 8, 11). Moreover, "other States and alliances, such as China, Japan and the European Union, have also wanted to have influence on current developments, including various cross-national factors such as climate change, possible utilisation of energy and the opening of new shipping routes" (2011, 4).

The **Tourism** indicator is briefly discussed twice in the 2011 Strategy (1 % of the total coded quotes, see Figure 8, p. 55) stating that "Icelanders, more than other nations, rely on the fragile resources of the Arctic region, for example the industries of fishing, tourism and energy production" (2011, 6). The other time tourism is mentioned is in connection to cooperation, with the Strategy emphasizing that "cooperation should be strengthened with Greenland and the Faroe Islands on Arctic issues regarding trade, energy, resource utilisation, environmental issues and tourism" (2011, 8).

The **Infrastructure** indicator accounts for 4 % of the total coded quotes in the 2011 Strategy (see Figure 8, p. 55). Both documents discuss different types of transportation infrastructure. First, there is a brief mention of air transport to Greenland in the 2011 Strategy as "air services between the countries have increased" (2011, 8), while the 2009 Strategy recognizes the potential for Keflavik International Airport to be a transit hub (2009, 2). Second, shipping is generally linked to transportation and is also discussed in the two strategies. In particular, the 2011 Strategy recognizes that "world trade may be subject to changes as melting sea ice opens up new Arctic shipping routes which connect the North Atlantic, the Arctic Ocean and the Pacific" (2011, 3) and that Iceland could become a hub for this activity (2009, 2). Of course, this will require safety and pollution measures, which have been discussed above in the respective indicators.

The 2009 Strategy also mentions that ICT, and thus communications infrastructure, can play a role of cultural preservation (2009, 2), but does not state if these types of technologies exist or are still needed.

The **Science and Education** indicator accounts for 6 % of the total coded quotes for the 2011 Strategy (see Figure 8, p. 55). The 2011 Strategy provides a long list of topics that research should

cover including "climate change, glacier research, marine biology, international politics and law, security, oil and gas extraction, history and culture, economic and social development, gender equality, health care issues and Arctic shipping" (2011, 11). Additionally, the 2009 Strategy suggests that research should help inform policy (2009, 2).

In terms of facilitating research, both documents recognize the University of the Arctic (2011, 11; 2009, 2), while the 2011 Strategy recognizes Iceland's different research networks and the need to develop them. For example, "there is particular need to promote the involvement of Icelandic scholars and institutions in international cooperation on Arctic science, such as the International Arctic Science Committee and work carried out by the Arctic Council working groups" (2011, 11). Both documents also comment on the possibility of the University of Akureyri housing an Arctic Centre (2011, 11; 2009, 2).

The **Implementation** indicator is addressed only by the 2011 Strategy. There are twelve related points suggestive of action items; the opening sentence of the strategy is that "Althingi resolves to entrust the Government, after consultations with Althingi, with carrying out the following overarching policy on Arctic issues aimed at securing Icelandic interests with regard to the effects of climate change, environmental issues, natural resources, navigation and social development as well as strengthening relations and cooperation with other States and stakeholders on the issues facing the region" (2011, 1). As previously mentioned in the (Re)mapping and (Re)defining the Arctic indicator, the Minister of Foreign affairs has the ultimate responsibility for implementation (2011, 3). However, there is no information on what kind of resources would be allocated to implementation activities, or if there will be any sort of evaluation process.

To sum up

Figure 8 and Appendix show that the top coded indicators for Iceland's 2011 Strategy are Governance, International Cooperation, Economy, and Security. This suggests that the priorities of "promoting and strengthening the Arctic Council"; "strengthening and increasing cooperation with the Faroe Islands and Greenland"; "increasing consultations and cooperation at the domestic level"; "building on agreements and promoting cooperation"; "securing Iceland's position as a coastal state"; using UNCLOS for dispute resolution; "safeguarding broadly defined security interests in the Arctic"; and "developing further trade relations between States in the Arctic region" have likely been met (see: 2011, 1–3). As for the priority of "supporting the rights of Indigenous peoples in the Arctic" and "advancing Icelanders' knowledge of Arctic issues and promoting Iceland abroad" (2011, 1–3), these are accounted for with the Human Dimension and Science and Education indicators, respectively. The priority to "prevent human-induced climate change" is accounted for in the Climate Change indicator, which, however, is the second least-coded indicator. The final priority, defining the Arctic region, is captured in the (Re)mapping and (Re)defining the Arctic indicator, with the Strategy seeking to locate Iceland in the Arctic.

There are also some connections between the different indicators. For example, the Human Dimension is connected to the Climate Change indicator through discussions around the possibility of climate change affecting people's health. The Governance indicator is connected to the Safety indicator through discussions about the IMO and shipping safety. The Environmental Protection and Pollution indicators are also connected to the Economy indicator, as economic activity affects the environment and shipping can cause pollution.

Making comparisons between these two documents can be difficult, especially with regard to the percentage of coded quotes, as the 2009 document is a translated and shortened version of the Icelandic original. Nonetheless, the key ideas are expressed and do allow for comparison, revealing two relevant similarities and three relevant differences between the two documents. In particular, two **similarities** are highly illustrative. *First*, both documents take similar approaches to environmental protection. As economic activities can negatively affect the environment, there needs to be a sustainable economy which also guarantees the protection of the fish stocks. *Second*, both documents address transport infrastructure and shipping. The 2009 Strategy comments that Iceland could be an air transit hub, while the 2011 Strategy comments that air services between Iceland and Greenland have increased. Similarly, the 2009 Strategy suggests the possibility of Iceland becoming a transit hub, while the 2011 Strategy focuses on the possibility of new shipping routes and safety.

There are also some **differences** between the two documents, three of which are discussed here. *First*, despite the fact that both documents address governance through international cooperation, each focuses on different priorities. For example, the 2011 document addresses business cooperation and responsibility, human rights, and delimiting the continental shelf through the CLCS, while the 2009 document mentions research cooperation, and maritime safety through the IMO. In addition, the 2011 document stresses the importance of cooperation with all Arctic states and clearly denounces the fragmentation caused by the Ilulissat Declaration. The document expresses a clear statement of Iceland's displeasure at the Ilulissat Declaration and the harm it could cause to Arctic cooperation. Iceland is not the only state excluded from Ilulissat, but it is the only state to make its displeasure known in such a formal way—neither Finland or Sweden commented on their exclusion in their strategies. *Second*, pollution and climate change are addressed only in the 2011 document. Few pollutants and/or sources of pollution are identified; however, more attention is given to institutional approaches to addressing pollution in general. The climate change discussion then generally focuses on climate collaboration through formal institutions like the UNFCCC or cooperation with other states. *Third*, while both documents recognize that security and stability are achieved through cooperation, security is addressed substantially only in the 2011 Strategy. The document further develops these ideas by discussing the role of security organizations like NATO, and also the Arctic Council as a place to build and maintain relations. In addition, the document refers to NATO as an actor being able to help with pollution.

Overall, the key observation of the Icelandic documents highlights that Iceland is making special efforts to be convincing about its status as an Arctic State, as it definitely is, and even redefining its location as an island state in the Arctic and in the North Atlantic. This is partly due to the fact that Iceland is not among the littoral states of the Arctic Ocean, which became an important geographical and geopolitical factor due to, and after, the above-discussed Ilulissat Ministerial meeting of 2008.

The Kingdom of Denmark

The Kingdom of Denmark has released two strategies for the Arctic. The most current, *Denmark, Greenland and the Faroe Islands: Kingdom of Denmark Strategy for the Arctic 2011–2020,* was released in 2011 and has 58 pages including images and maps. Previously, Denmark also released a draft strategy in 2008 called *Arktis I en brydningstid. Forslag til strategi for aktiviteter I det arktiske område,* with 43 pages in Danish (Denmark NOU 2008). The document used for this analysis is an unofficial translation from 2008, *The Arctic in an Upheaval. Draft Strategy for Activities in the Arctic* (Denmark 2008), consisting of 42 pages with no images and, as such, it will be referred to but not quoted directly. Additionally, the Faroe Islands, in 2013, produced its own strategy called *The Faroe Islands—A Nation in the Arctic: Opportunities and Challenges* (Faroe Islands PMO 2013). However, as this is not a national strategy, it is not considered in the analysis that follows.

The 2011 Strategy (Denmark MFA 2011) makes a clear statement about Danish priorities in the Arctic, mentioning that "in an equal partnership between the three parts of the Danish Realm, the Kingdom will work overall for:
- A peaceful, secure and safe Arctic
- with self-sustaining growth and development
- with respect for the Arctic's fragile climate, environment and nature
- in close cooperation with our international partners" (2011, 10–11).

The purpose of the Strategy is "to focus attention on the Kingdom's strategic priorities for future development in the Arctic towards 2020", and the "aim is to strengthen the Kingdom's status as global player in the Arctic" (2011, 11).

The priorities of the unofficial translation can be gleaned from the section headings in the title page. These are: Home Rule arrangement; Sovereignty; Arctic and Nordic cooperation; Original people of the Arctic; Energy and minerals; Protection and sustainable use of natural; Weather, climate, nature and the environment; Research; Infrastructure; Commerce and industries; Joint Committee; Cultural cooperation in the Arctic; and Greenlandic higher education (2008, 1–3).

Comparison by Indicator

The **(Re)mapping and (Re)defining the Arctic** indicator provides information about how Denmark approaches the region. While neither strategy defines the Arctic outright, page 11 of the 2011 Strategy provides a regional map showing what seems to be the 60th parallel, and suggests that this could be the Arctic's boundaries (2011). If so, both Greenland and the Faroe Islands are included in this definition.

The 2011 Strategy also tends to describe the region in relation to the environment. For example, it states that the Arctic's "climate, environment and nature" are both fragile and vulnerable, and that the region has many "unique ecosystems" (2011, 31). At the same time, it also comments on the "extreme Arctic conditions" (2011, 13), which seems a little at odds with the other descriptions. The Strategy also describes the region in relation to its growing geopolitical importance which is due to "the climate effects in the Arctic" and "the economic potential of the region" (2011, 9). Similar sentiments are expressed in the 2008 Strategy and both documents also acknowledge that the Arctic is not heavily populated (2011, 16; 2008, 25). The 2011 Strategy uses the term "Arctic" to describe the region, while "circumpolar" and "North" are each used once in the document (see: 2011, 9, 36).

Both documents identify different government ministries that will be involved in regional affairs. In both cases, the Governments of Greenland and of the Faroe Islands are involved, demonstrating their self-governing status. Interestingly, there are only four ministries that appear in both documents, which are the Ministry of Science, Technology and Innovation, the Ministry of Foreign Affairs, the Ministry of Finance, and the Ministry of Transport. Additionally, the 2011 Strategy identifies the Ministry of Economic and Business Affairs, the Ministry of Justice, the Faroe Island's Ministry of Trade and Industry, and the Greenland's Department of Foreign Affairs. The 2008 document also mentions the Ministry of Environment and Food, the Ministry of Climate, Energy and Building, and the Ministry of Education (2011, 14, 17, 20, 27, 35, 57; 2008, 12, 13, 30, 32, 39, 41).

Figure 9 provides a comparison of how many quotes are assigned to the different indicators, as a percentage of the total number of coded quotes (rounded to the nearest whole number) in the documents.
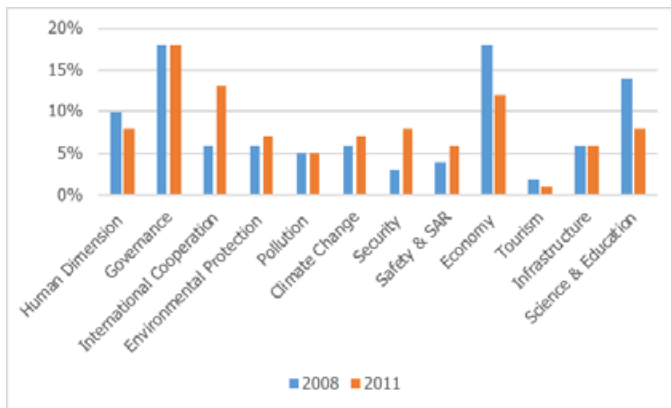
Figure 9. Comparing the Kingdom of Denmark's 2008 and 2011 Strategies
Note: The percentages in each indicator are rounded to the closest whole number and represent the percent of the total number of quotes coded for each document.

The **Human Dimension,** which accounts for 8 % of the total coded quotes in the 2011 Strategy and 6 % of the 2008 document (see Figure 9), recognizes that the Arctic has a small and sparse population, especially Greenland (2008, 41). Additionally, the 2011 Strategy explains that "the Arctic region is populated by people, including more than 30 different Indigenous peoples such as the Inuit who originate from the Thule culture" (2011, 9). Thus, both documents discuss issues concerning Indigenous peoples.

Both documents emphasize the Kingdom's efforts to help protect the rights of Indigenous peoples, which seems to be a point of pride for the country, especially considering that "The Act on Greenland Self-Government was granted to Greenland on June 21, 2009," thus giving Greenland control over policies pertaining to "education, health, fisheries, environment and climate" (Government of Greenland n.d.). This development is apparent, as the 2008 document recognizes that Greenland's self-rule status affords it rights and abilities that other Indigenous peoples do not have, and that the Kingdom of Denmark and Greenland desire other Indigenous peoples to have the same rights (2008, 20). The 2011 Strategy builds on this, explaining that "Greenland's self-government model, natural resource management, climate policy, environmental policy and preservation of its cultural heritage is a model of inspiration for many of the world's Indigenous peoples" (2011, 10). Not surprisingly, therefore, both documents discuss and support other mechanisms to protect Indigenous rights. For example, there are different venues within the UN, such as the UN Special Rapporteur on the rights of Indigenous peoples, the UN Expert Mechanism on Indigenous Peoples Rights, and UN Declaration on the Rights of Indigenous Peoples (UNDRIP) (2011, 51, 52; 2008, 17, 20). Additionally, the 2008 document recognizes that the Arctic Council is another venue that addresses issues concerning Indigenous peoples and that there is an Indigenous Peoples Secretariat (2008, 19, 20).

Climate change, according to the 2011 Strategy, can contribute to rights violations in the Arctic; UNDRIP has a role to play here. More specifically, the Strategy states: "The Kingdom will assist in reinforcing the rights of Indigenous peoples in negotiations towards a new international climate agreement by promoting the visibility of Indigenous peoples' situation and also ensuring that the principles of the UN Declaration on the Rights of Indigenous Peoples from 2007 are observed" (2011, 44, 50). In addition to climate change, the 2008 document explains that hunting and fishing are also rights issues, especially in relation to Inuit culture (2008, 19–20, 24). The 2011 Strategy further expands on these issues, showing support for seal hunting. In particular, the Strategy explains: "The Kingdom will work internationally for the Arctic Indigenous peoples' right to conduct hunting and to sell products from seal hunting, as long as it is based on sustainable principles" (2011, 32). This support is important because, even though the UN seal ban has a special provision for the Inuit, Greenland's Inuit still experience challenges selling their furs (European Commission 2019; Raspotnik and Østhagen 2016).

The topic of health and wellbeing is discussed, and both strategies recognize the different issues that can affect health, especially in Greenland. The two documents mention that pollution is causing harm, while the 2008 document notes it affects breastfeeding mothers (2011, 45; 2008, 28). However, it is the 2011 Strategy that goes into depth on the situation in Greenland. In particular, the Strategy emphasizes that "Greenland today is facing a dual challenge from both old patterns of disease characterized by relatively high infant mortality, accidents, and acute and chronic infectious diseases such as tuberculosis, as well as a new Western pattern of disease dominated by chronic and lifestyle-related diseases" (2011, 40). Greenland has thus made substantial changes to its healthcare system that will result in improved access to care (2011, 40). Moreover, the 2011 Strategy recognizes that healthcare issues exist throughout the Arctic and can be addressed collectively. The document explains that "the cooperation between Arctic partners on common challenges should be further developed, especially based on a Greenland context. Enhanced Arctic cooperation could include, research, evaluation and also exchange of "good/best practices" regarding infectious diseases, public health, telemedicine, a culturally attuned health service and environmental medicine" (2011, 40).

The two strategies also comment on the Arctic Council's contributions to health and wellbeing. For example, the 2008 document notes that the Council was associated with the Survey of Living Conditions in the Arctic and the Arctic Human Development Report (2008, 18, 19). However, the Arctic Council could play a strong role in this area. The Strategy, too, remarks that the Arctic Council could play a stronger role. Indeed, "the Arctic Council must be reinforced as the only relevant political organization that has all Arctic states and peoples as members…The Kingdom will emphasize that the human dimension, i.e. people's living conditions and wellbeing, is given increasingly more space in cooperation" (2011, 52).

Equality is discussed in the 2011 Strategy in two ways. First, the document focuses on self-government for Greenland and the Faroe Islands. In particular, the document explains that "today, both the Faroe Islands and Greenland have extensive self-government" (2011, 10). Second, is gender equality in Greenland. Indeed, "Greenland is also sharing its experience on family matters and gender equality with, among others, the Nunavut region of Canada Furthermore, the Nordic Council of Ministers has been focusing on changes in the Arctic from a gender perspective" (2011, 40).

Finally, both documents speak to migration issues, albeit with different foci. Labour migration is a factor in the 2011 Strategy which comments that "it will also be a significant challenge for Greenland to develop policies which, apart from the goal of social and societal-related sustainability, deal with the prospect of significant foreign labour migration" (2011, 23), although there is no explanation as to why this would be the case. In contrast, the 2008 document comments on the challenges of identifying illegal migration (2008, 10) but does not explain if this is an issue that Greenland is facing.

The **Governance** indicator, which accounts for 18% of the total coded quotes for the 2011 Strategy and 18% of the 2008 document (see Figure 9, p. 61), recognizes the importance of strengthening cooperation between Kingdom of Denmark and Greenland in different areas of research, decision-making and governance.

The 2011 Strategy clearly states that "the Faroe Islands and Greenland have had home rule since 1948 and 1979, respectively. Home rule arrangements have been continuously modernised, most recently by the Takeover Act on Power of Matters and Fields of Responsibility and the Act on Faroes Foreign Policy Powers of 2005 in the Faroe Islands and the Greenland Self-Government Act of 2009." Apart from this, Greenland serves as an example and model for Indigenous peoples worldwide with its "self-government model, natural resource management, climate policy, environmental policy and preservation of its cultural" (2011, 10). The document continues that "today, both the Faroe Islands and Greenland have extensive self-government and the division of legislative and administrative powers between the Kingdom's three parts requires good cooperation and a joint strategy to meet the opportunities and challenges in the Arctic." While Greenland is fully responsible for "decisions on development, exploration and exploitation of resources in Greenland… revenues from mineral activities will benefit both the Greenland and Danish people" (2011, 10; 2008, 14, 29, 39).

Protection of the "rights of Indigenous peoples and their survival through respect for their culture, language and way of life" as well as the peoples' right to self-determination under international law is very important to the Kingdom of Denmark. Based on "the initiative of Denmark and Greenland," a "Permanent Forum on Indigenous Issues" under the UN framework was established in 2002 (2011, 50, 51; 2008, 10, 17, 20, 40). The 2011 Strategy also highlights the support of the Danish Realm "for cooperation among different institutions in the field of Arctic research concerning the development of best practices, public health and health-related consequences of pollution", and gives high priority for Nordic, European and international cooperation on research and education. In addition to this "the Kingdom will continue to develop cooperation in the health area, including emergency and specialist treatments within the Kingdom – and in the case of Greenland also with Iceland – and training and recruitment within the Kingdom and through Nordic and Arctic cooperation" (2011, 35, 40).

The 2011 document also refers to the mineral resources in Greenland, highlighting that the sector "has significantly matured over the last 10-15 years as a result of a long-term and deliberate strategy" based on the "adoption by Parliament Act No. 7 … on mineral resources and activities of relevance hereto the mineral resources sector was fully taken over by the Greenland Self-Government on 1 January 2010 and is a key element to building growth industries and a self-sustaining economy" (2011, 24). Furthermore, "in 2008, Greenland had already adopted the Parliament Act No. 6 of 5 December 2008 on Greenland's Mineral Resources Fund, which is inspired by the Norwegian model so that oil and gas revenues also benefit future generations… In 2000 the first licenses for exploration of the Faroese shelf were issued… In total, 17 licenses have been issued, of which 12 are currently active with a total of 11 licensees." (2011, 24, 25).

Concerning the Faroe Islands, "one condition for acquiring a license is that a commitment must be entered into to finance activities that build up local competencies." Therefore, in regard to "radioactive minerals, the Self Government follows a zero-tolerance policy, which means that it does not permit the exploration and exploitation of deposits that contain [any] radioactive elements… Terms and conditions for licenses to exploit must be reasonable for both larger and smaller companies, resilient to fluctuating market conditions as well as simple and easy to administrate for companies and authorities" (2011, 24, 25).

On the national level, the Kingdom of Denmark and Greenland also pay attention to the protection of biodiversity in the Arctic. "Effective management and control regimes must be pursued to counter illegal, unreported and unregulated fishery and hunting, and also work for international agreements on potentially attractive Arctic high seas not yet covered by the conservation and management systems" (2011, 32; 2008, 25). "The parts of the Danish Realm will work to ensure that in general fishery does not commence where a conservation and management system is not available." The 2011 Strategy also lists key organizations in the fisheries and hunting sector, which include the International Council for the Exploration of the Sea, the North Atlantic Marine Mammal Commission, the Northwest Atlantic Fisheries Organization, the Northeast Atlantic Fisheries Commission, and the International Whaling Commission. Correspondingly, on the international level, the 2011 Strategy states that "there is very limited understanding for the catch of marine mammals." Additionally, this also applies to the "Greenland catch of large whales, which is regulated by the International Whaling Commission in accordance with the exemption that

applies to Indigenous peoples." The Kingdom of Denmark "will also work towards the introduction of a special regional form of control for a prudent fishery in large ecosystems in sparsely populated areas where there is no historical data and where it is particularly challenging to collect data and carry out control." The 2011 document emphasizes the importance of development of methods "for sustainable management in situations of scientific uncertainty, whereby models are developed that support a learning management system based on the precautionary principle" (2011, 32).

Concerning the sensitive whaling issue, the Strategy clarifies that "each part of the Danish Realm is empowered to regulate the exploitation of whale resources in their own waters – though some whale species are subject to decisions to which the Kingdom is bound under the framework of the International Whaling Commission (IWC)." The EU rules apply also to the waters of Kingdom of Denmark, "i.e. a total ban on whaling". Nevertheless, "in Greenland, the hunting of small as well as large whales is operated in connection to the society's food supply. Large whales are covered by the IWC's regulatory powers. In case of the Faroe Islands, the commercial hunting of large whales was "previously operated, but [it] has for many years only operated non-commercial hunting of small whales, mostly pilot whales, which are not subject to the IWC" (2011, 33).

The **International Treaties and International Cooperation** indicator, which accounts for 13 % of the total coded quotes for the 2011 Strategy and 6 % of the 2008 document (see Figure 9, p. 61) emphasizes that "the Arctic has to be managed internationally on the basis of international principles of law to ensure a peaceful, secure and collaborative Arctic." Furthermore, "increased economic activity and renewed geopolitical interest in the Arctic results in a number of key challenges to ensuring a stable, peaceful and secure region characterized by dialogue, negotiation and cooperation" (2011, 7, 9, 10, 55; 2008, 7). In future international Arctic cooperation, the Kingdom of Denmark wants to play a key role as "international law and established forums of cooperation provide a sound basis for conflict resolution and constructive cooperation in the development of the Arctic" (2011, 13; 2008, 5, 7). In addition to that, "within the entire spectrum of tasks, the Kingdom attaches great importance to confidence building and cooperation with Arctic partner countries" (2011, 20; 2008, 6).

According to the 2011 Strategy "the Kingdom will prioritize global cooperation relevant to the Arctic, including, in particular, an ambitious focus on climate change, the protection of nature and the environment, strict global maritime rules, and continue giving high priority to Indigenous peoples' rights." Moreover, participation in relevant international fora, such as the European Union, is given high priority, as "cooperation with the EU is to be promoted and the Arctic to be given more weight in the Nordic context" (2011, 25, 49; 2008, 6, 12, 13, 15). The relations between the EU and Kingdom of Denmark, the Faroe Islands and Greenland should also be expanded and strengthened in order to contribute to the sustainable development. "It will be in the Kingdom's interest to leave its mark on the shap-

ing and implementation of EU policies, for example, in energy, climate, fishing, hunting, exploitation of minerals and the relationship to the populations and Indigenous peoples in the Arctic." Furthermore, the 2011 Strategy highlights the importance of Arctic populations and their say in the "EU's involvement in the Arctic." The document also reminds, that the Kingdom "must seek to avoid further cases where the laws, traditions, cultures and needs of Arctic societies are neglected, as for example in the EU's ban on the import of seal products." The Strategy highlights that "for the parts of the Kingdom that are not in the EU it will be of interest to participate in relevant EU programs where desirable and possible." From the regional perspective, "it is of particular importance to promote good relations between Greenland and the EU and expand the cooperative relations which exist between the parties involved." Particularly, that "Greenland goods have duty-free access to the EU [and] the Faroe Islands has duty-free access to the EU for the majority of its goods." In addition to this, "endeavours must be made to make the Faroe Islands more visible to the EU as part of the Arctic cooperation [and] the Kingdom will work to ensure that the EU has a place in the Arctic, including in relevant institutions such as the Arctic Council where the Kingdom supports the EU's wish for observer status" (2011, 33, 52, 53).

In order to "optimize the safeguarding of interests, the Kingdom will upgrade bilateral cooperation and dialogue regarding the Arctic, both with established and new partners" – globally, regionally and bilaterally" (2011, 49). The Arctic Five "is an essential complementary regional forum for the coastal states of the Arctic Ocean" (2011, 49). Nevertheless, "Canada, USA, Norway and Iceland will remain key partners for close cooperation in areas such as the exploitation of resources, maritime safety, climate and environment, Indigenous peoples, research, education, health and defence." Furthermore, "close contact with Finland and Sweden on Arctic issues" will remain (2011, 54). According to the 2011 strategy, the Kingdom emphasizes willingness "to further expand and develop cooperation with Russia. For example, under the auspices of the Danish-Russian governing council, there is great mutual interest in closer cooperation on strengthening the safety of navigation in Arctic waters." Additionally, "enhanced cooperation with Russia could also incorporate scientific collaboration, for example, on the continental shelf." Along with that, "it could also include the exchange of findings on economically, socially and environmentally sustainable development, as well as confidence building and studies on potential co-operation between the Danish and Russian defence, particularly in the maritime area" (2011, 54).

The 2011 Strategy explains that "It is a central goal of the Kingdom to strengthen cooperation in the Arctic Council [and consider] the Arctic Council [as] the primary organ for concrete cooperation in the Arctic" (2011, 52). The Kingdom also wishes to ensure that the "Council has an increasingly direct impact on the Arctic peoples…must evolve from a 'decision-shaping' to a 'decision-making' organisation." The documents highlight that "the Council's function as an instrument exerting influence on nation states and international organizations should be reinforced, and where feasible, the possibility of real deci-

sion-making ought to be developed." Also, that the Council "must be reinforced as the only relevant political organization that has all Arctic states and peoples as members." Importantly, "the Kingdom will emphasize that the human dimension, i.e. people's living conditions and well-being, is given increasingly more space in cooperation" (2011, 52, 54; 2008, 13). Within the Arctic Council, the Kingdom further supports several stakeholders, including the EU, and the Northeast Asian countries, China, Japan and South Korea in their efforts to obtain observer status in the Arctic Council (2011, 54).

The Kingdom is part of the UN Convention on the Law of the Sea (UNCLOS), "which contains detailed regulation of, for example, navigational rights and management of resources." Denmark ratified the Convention "on behalf of the Kingdom on 16 November 2004". UNCLOS "is the global international legal instrument in relation to the sea around the Arctic, in that the Convention defines states' rights and responsibilities in relation to their use of the oceans", and under the Convention "coastal states have the right to create an exclusive economic zone" (2011, 13, 14; 2008, 7, 11). The 2011 Strategy emphasizes that "the Kingdom will seek to resolve outstanding unresolved boundary issues and actively work to reduce the processing time of the Commission on the Limits of the Continental Shelf and thereby ensure greater assurance of coastal states' continental shelf claims in the Arctic" (2011, 15).

Both strategies highlight cooperation within the framework of the Nordic Council of Ministers, where Denmark and Greenland develop different policy initiatives. The Nordic Council of Ministers also contributes financially to the Arctic Council's work. Additionally, "a number of collaborative projects of Arctic relevance are being carried out in the Nordic Council of Ministers' various ministerial councils." Moreover, "the Kingdom wants the Arctic aspect of the Nordic Council of Ministers' work both directly and through ministerial councils to be given greater weight, both politically and financially" (2011, 53; 2008, 6, 13, 16). Importantly, "cooperation in and about the Arctic is being undertaken in a wide range of organizations other than the above-mentioned, representing regional or sector-organized interests, for example through NORA [part of the Nordic Council of Ministers], the Nordic Atlantic Cooperation (Faroe Islands, Greenland, Iceland and coastal Norway), West Nordic Cooperation (Iceland, the Faroe Islands and Greenland) and in sector organizations, such as NAMMCO (North Atlantic Marine Mammal Commission – consisting of Iceland, Norway, Greenland and the Faroe Islands)." In addition, the Kingdom also cooperates with "organizations that cover fishery, environmental or scientific interests" (2011, 53; 2008, 36).

"Many international agreements and cooperation fora are relevant to the Arctic and whose interests require active safeguarding by the Kingdom." For example, "this concerns world trade within the WTO (where both Greenland and the Faeroe Islands are part of it due to the Kingdom of Denmark's membership), environmental and nature conservation within UNEP, in research, health, and in security and defence matters in NATO among others" (2011, 49). Also, other cooperation platforms

are mentioned in the 2011 Strategy. One of them is the "Joint Committee cooperation between Greenland, Denmark and the U.S. arose from the Igaliku Agreement, signed in 2004." The Committee "is a tripartite forum…which aims to strengthen and promote economic and technical cooperation…with special focus on research, health, technology, education, culture and tourism" (2011, 55). The 2011 Strategy further emphasizes the importance of the May 2008 Ilulissat Declaration, which aims "to confirm the responsibility of the five coastal states for managing the development of the Arctic" (2011, 13). The 2008 Strategy further refers to the cooperation within the Council of the Baltic Sea States and the Barents Euro-Arctic Council (2008, 13). The Northern Dimension cooperation from 1999 is also recognized in the 2008 Strategy, particularly in the context of the Northern Dimension Policy Framework Document (2008, 14). Last, but not least, cooperation within the United Nations International Maritime Organization (IMO) is mentioned. The Kingdom is "working to promote cooperation on maritime safety in all key forums, particularly in the IMO, where binding rules for navigation in the Arctic are drawn up, but also through enhanced cooperation in the Arctic Council". In addition, the 2011 Strategy refers to the importance of "the Polar Code which will supplement the international maritime safety and environmental conventions which already apply in the Arctic with additional rules on rescue equipment, firefighting, ice navigation and navigation in uninhabited areas to allow for Arctic conditions" (2011, 17, 18, 20, 25).

The **Environmental Protection** indicator, which accounts for 7 % of the total coded quotes in the 2011 Strategy and 6 % of the 2008 document (see Figure 9, p. 61), shows that environmental protection is a priority in the two strategies. Both documents recognize that regional economic activities, including the mining, energy, and living resources sectors, can negatively affect the environment. An ecosystem-based management structure will therefore be applied to the use of natural resources, and the 2011 Strategy explains that "decisions regarding management and utilisation of resources and protection of the environment are taken in accordance with international obligations, and are based on the best scientific advice that supports healthy, productive and self-sustaining communities" (2011, 10; see also: 2008, 22).

Biodiversity and protected areas are a part of Kingdom of Denmark's environmental protection plan. Indeed, both documents discuss the importance of the Ramsar and Biodiversity Convention, and the 2011 Strategy stresses that "the aim is to promote the protection and sustainable harnessing of the Earth's biological diversity and to ensure regeneration and preservation of the ecosystem services that underpins communities and well-being" (2011, 50; see also: 2008, 25). The Strategy further explains that the Arctic is part of migration routes for many animals and that it is also home to a diversity of species that are "largely associated with the sea" (2011, 9). Shipping has the potential to harm these areas and also introduce invasive species to the region (2011, 45).

It is not surprising, therefore, that maritime pollution is an environmental concern. Home Rule has meant that "the Faroe Islands and Greenland have entirely or in part been responsible for the monitoring of the marine environment and pollution control in territorial waters" (2011, 18), and there appears to be support from the Kingdoms of Denmark's ministries of Climate and Energy, and the Environment (2008, 31). Bilaterally, the Kingdom of Denmark is a party to the CANDEN agreement "which ensures information exchange in case of oil spills and marine pollution, among other things" (2011, 55). Internationally, the IMO has also contributed to environmental protection through shipping regulations that focus on oil spills and pollution (2011, 51).

The **Pollution** indicator accounts for 5 % of the total coded quotes for the 2011 Strategy and 5 % of the 2008 document (see Figure 9, p. 61). The documents explain that while some pollution comes from within the region, many pollutants come from outside the Arctic and can have negative effects on the health and the food chains. Both strategies identify greenhouse gases, heavy metals, POPs, and oil; The 2011 Strategy also mentions mercury and chemicals, while carbon is referred to in the 2008 document (2011, 30, 40, 43, 45, 46, 47, 50; 2008, 26, 27, 28, 33). Both documents recognize that maritime traffic and mining activities contribute to regional pollution, while the 2008 document mentions military activity, and the 2011 document states that "fishing and tourism pose a risk of pollution and accidents" (2011, 45; see also: 2008, 25, 28, 33). The 2008 document also makes an interesting observation about the role climate change plays, in that additional greenhouse gases are produced from melting permafrost. Additionally, the document makes a point of stating that Greenland itself produces very little pollution (2008, 25).

The 2011 document identifies a number of international pollution treaties, formal structures, and other problem-solving methods to address regional pollution. Existing agreements include "the Stockholm Convention on persistent organic pollutants and the LTRAP protocol" which the Kingdom of Denmark would like to see improved (2011, 50). The Kingdom of Denmark is also in the process of "implementing and ratifying the HNS Protocol … and also the Ballast Water Convention" (2011, 46), and at the time working towards the creation of two new agreements: first "to support and promote the conclusion of a global agreement on limiting emissions of greenhouse gasses" (2011, 44), which likely refers to the later Paris Agreement; second, "UNEP's global mercury convention" (2011, 46), which is likely the Minimata Convention. The Kingdom of Denmark also contributes to pollution prevention through different structures. For example, the IMO regulates the shipping industry to help prevent pollution, and there is the CANDEN agreement between Greenland and Canada (2011, 25, 55), both previously mentioned in the Environmental Protection indicator.

The 2011 Strategy further recognizes problem-solving that is more domestic in nature. First, research has gone into creating a maritime atlas that "contains information about the local wildlife, local fishing and hunting interests and archaeological sites that are especially sensitive to potential oil spills" (2011,

47). Second, the Kingdom of Denmark seeks to match the EU's targets of "reducing total global greenhouse gas emissions by at least 50 % in 2050" while seeking to "become independent of fossil fuels by 2050 and that Denmark's binding renewable energy target under the EU in 2020 is 30 percent" (2011, 50).

The 2008 document, in contrast to the 2011 Strategy, does not identify specific international treaties or agreements. While it does state that pollution should be addressed through formal organizations like the Arctic Council and the Nordic Council of Ministers (2008, 26), the focus appears to be more on what needs to be done. For example, more research is needed on how pollution affects Arctic residents, especially in relation to the effects of POPs and heavy metals on Greenlanders. Pollution research could additionally be used to inform international pollution agreements (2008, 28, 29). The document also recognizes the need to better understand the consequences for Greenland if a maritime accident were to happen nearby and suggests the need for a stronger regulatory regime to prevent such incidents (2008, 28, 33).

The **Climate Change** indicator, which accounts for 7 % of the total coded quotes in the 2011 Strategy and 6 % of the 2008 document (see Figure 9, p. 61), identifies a number of consequences associated with climate change. The 2011 Strategy contextualizes how climate change has affected the region by stating that "warming in the Arctic is occurring faster than anywhere else on the planet, and the average temperature in the Arctic has surpassed all previous measurements in the first decade of the 21st century" (2011, 9). Both documents explain that this change can have negative effects on biodiversity, and according to the 2011 Strategy, on the ocean, too, "including rising sea levels" and "potential changes in global ocean currents" (2011, 43; see also: 2008, 6). At the same time, opening waters from sea ice creates new economic potential within the region. These include, for instance, "the potential for mining and exploitation of hydrocarbon resources, and also navigational options for tourism and transport" (2011, 35).

To address these issues, both documents discuss the importance of mitigation and adaptation. According to the 2011 Strategy, "the effects of climate change are already being felt, and the Kingdom underlines the importance that adaptation measures are carried out in order to mitigate the already unavoidable climate impacts" (2011, 50). The two documents state that climate research is essential to developing mitigation and adaptation measures (2011, 31; 2008, 31, 39). At a practical level, Greenland has "initiated a project concerning the consequences of climate change on the fishing and hunting industry with a view to identifying opportunities for adaptation that manage the challenges while exploiting new opportunities" (2011 31).

Both documents recognize the Arctic Council as a focus for climate work (2011, 50; 2008, 26), and also value the scientific community's work on climate change. For example, the 2008 document acknowledges the contributions to climate knowledge from the Arctic Climate Impact Assessment and suggests that continued research and new facilities will especially help

inform policy development (2008, 26, 28, 32). The 2011 Strategy provides information on how the state actively supports climate research. Notably, "in 2009, the Ministry of Science and the Government of Greenland set up an interdisciplinary climate research centre in Nuuk" which "focuses on basic research about the Arctic climate and the effects of climate change including the need for mitigation and adaptation strategies, and currently has approx. 80 Greenland, Danish and international researchers affiliated on a permanent or flexible basis" (2011, 35, 36). Additionally, "the Kingdom will work to promote the participation of Danish, Greenland and Faroese academic and scientific institutions in international research and monitoring activities" (2011, 36).

In terms of major climate agreements and frameworks, the 2011 Strategy mentions two main climate structures. First, it references "an ambitious global climate agreement" that suggests the future Paris Agreement (2011, 50). Second, and perhaps more importantly, it explains that "the Kingdom's climate policy stems from the UN's Climate Change Convention (UNFCCC), whose goal is to stabilize atmospheric greenhouse gases at a level that prevents climate change that is dangerous to humanity" (2011, 49). Certainly, addressing greenhouse gases appear to be Kingdom of Denmark's primary climate focus in this Strategy. In contrast, the 2008 document mentions COP15 (2008, 7).

The **Security** indicator, which accounts for 8 % of the total coded quotes in the 2011 Strategy and 3 % of the 2008 document (see Figure 9, p. 61), stresses the importance of collaboration and keeping the "Arctic as a region characterised by peace and cooperation" (2011, 13). The document states that "the Arctic has to be managed internationally on the basis of international principles of law to ensure a peaceful, secure and collaborative Arctic." Particularly, as "increased economic activity and renewed geopolitical interest in the Arctic result in a number of key challenges to ensuring a stable, peaceful and secure region characterized by dialogue, negotiation and cooperation" (2011, 7, 9). Apart from this, "the rising strategic interest and activity in the Arctic region necessitates a continued prioritising of a well-functioning international legal framework for peaceful cooperation, a special need for enhanced maritime safety, and persistent focus on maintaining the Arctic as a region characterised by peace and cooperation… [therefore] the Kingdom's approach to security policy in the Arctic is based on an overall goal of preventing conflicts and avoiding the militarization of the Arctic" (2011, 10).

The 2011 document states, that "even though the working relationship of the Arctic Ocean's coastal states is close, there will be a continuing need to enforce the Kingdom's sovereignty, especially in light of the anticipated increase in activity in the region" (2011, 20). For this purpose, "the Danish Armed Forces undertake important tasks in the Arctic including the enforcement of sovereignty, and attach in this respect great importance to confidence building and cooperation with Arctic partner countries" (2011, 13). The defence of Greenland's sovereignty is provided by the Kingdom's armed forces. Greenland Command provides a wide range of sovereignty services, from protecting against foreign military to inspecting fisheries (2008,

10). The Danish Defence supports the "citizens of Greenland [to] be increasingly involved in the tasks of the armed forces and participate in a wide range of training opportunities." This would be of great "benefit from Greenland's local knowledge" (2011, 20, 21; 2008, 11).

Furthermore, the 2011 Strategy highlights that the armed forces "must be visibly present in and around Greenland and the Faroe Islands with regard to the enforcement of sovereignty and surveillance… Units from the army, navy and air force carry out tasks in the Arctic." The armed forces undertake "surveillance and enforcement of sovereignty of Greenland and Faroese territorial waters and airspace, as well as the Greenland exclusive economic zone and the fishing zones to ensure that no systematic violations of territory can take place." Furthermore, "the armed forces adapts its deployment of vessels, aircraft and other capacities in accordance with the distinct difference in seasonal activity. Because of the enormous dimensions of the Arctic, international cooperation is an important element in resolving the armed forces' tasks in the Arctic" (2011, 21; 2008, 11). The 2011 Strategy further talks about "the establishment of joint service Arctic Command, which will be created by the amalgamation of the Greenland Command and the Faroe Command." The responsibilities of the Arctic Response Force vary depending on "defined periods and in defined areas anticipated to strengthen the armed forces' enforcement of sovereignty and surveillance, for instance through military exercises" (2011, 20, 21).

The Kingdom of Denmark cooperates on bilateral and multilateral bases in the field of defence and security. "In May 2010 Denmark and Canada signed a bilateral Memorandum of Understanding (MoU) on enhanced operational defence cooperation in the Arctic, focusing on joint military exercises, staff exchanges and cooperation in rescue operations. The agreement serves as a catalyst for intensifying day-to-day collaboration between Greenland's Command, Joint Task Force North in Yellowknife and MARLANT Maritime Forces Atlantic in Halifax." Moreover, "it is expected that close Danish – Canadian military cooperation will be further enhanced over the coming years partly via mutual exchange of findings in survival techniques in the Arctic, patrolling and surveillance and partly via continued participation in joint military exercises" (2011, 55). Geo-strategically and militarily, more important is that the Danish armed forces closely cooperate with the United States, in particular the US military presence at the Thule Air Base (in North Greenland), based on the bilateral US-Danish Defense Agreement of 1951, where the US Army has operated from its own facilities. In 2002, the agreement was broadened to include Thule radar as the early warning radar, part of the US missile defence system (2008, 9). "Thule Air Base is, with its deep-water port, airport and well-developed infrastructure (including tank and storage capacity, workshop, hospital, quarters, support and office facilities), a unique capability in the Arctic region north of the Arctic Circle" (2011, 54).

The 2011 Strategy underlines that "many international agreements and cooperation fora are relevant to the Arctic and whose interests require active safeguarding by the Kingdom. For exam-

ple, this concerns world trade within the WTO, environmental and nature conservation within UNEP, in research, health, and in security and defence matters in NATO among others" (2011, 49). Both strategies refer to the NATO and its important role in the region. While "the Kingdom's area in the Arctic is covered by the NATO treaty Article 5 regarding collective defence, the enforcement of sovereignty is fundamentally a responsibility of the Realm's central authorities." Importantly, "enforcement of sovereignty is exercised by the armed forces through a visible presence in the region where surveillance is central to the task. In addition, the armed forces play an important role in the provision of a range of more civilian-related duties" (2011, 20; 2008, 9).

The **Safety and SAR** indicator, which accounts for 6 % of the total coded quotes in the 2011 Strategy and 4 % of the 2008 document (see Figure 9, p. 61), identifies a key safety concern in both documents—maritime safety, which encompasses a range of issues. The 2011 Strategy explains that "maritime safety is a fundamental priority. The extreme Arctic conditions require preventive measures including training and ship safety, as well as regional cooperation on search and rescue" (2011, 13; see also: 2008, 33). Accidents and pollution should also be considered a part of maritime safety (2011, 46; 2008, 12). Safety concerns are also addressed in each of the two strategies. For instance, the 2011 Strategy also prioritizes "public health preparedness concerning disaster situations and other urgent challenges to public health" (2011, 40). While the 2008 document does not comment specifically on human health preparedness, it does note that plant and fish health are important. Additionally, the document does address the need to be prepared for disasters (2008, 12).

To help make the Arctic safe, the 2011 Strategy identifies and discusses three key structures that contribute to regional safety. First, the Strategy explains the significance of UNCLOS in terms of regional regulation and cooperation. However, it also recognizes that UNCLOS cannot remain static and that "there may be a continuous need for more detailed regulating of certain sectors. An example is the agreement on search and rescue adopted at the Arctic Council Foreign Ministers' Meeting in May 2011 in Nuuk" (2011, 14). The second structure, therefore, is the Arctic Council and its SAR agreement which facilitates rescue cooperation in the Arctic as "a binding agreement between the 8 members on search and rescue (SAR) with the Faroe Islands and Greenland as "co-signatories," which is needed because of the increased access to areas that were previously covered by ice" (2011, 52). Third is the IMO, which also regulates safety at sea. The Kingdom of Denmark is keen on the creation of the Polar Code as it will further enhance maritime safety in the Arctic. The Strategy explains: "The Polar Code will supplement the international maritime safety and environmental conventions which already apply in the Arctic with additional rules on rescue equipment, fire fighting, ice navigation and navigation in uninhabited areas to allow for Arctic conditions" (2011, 20). Indeed, "the rising strategic interest and activity in the Arctic region necessitates a continued prioritising of a well-functioning international legal framework for peaceful cooperation, a special need for enhanced maritime safety" (2011, 13). In contrast to the 2011 Strategy, the 2008 document does not provide information on safety structures, although it does suggest support for the development of the Arctic Council SAR agreement (2008, 12). While these three structures legally bind the Arctic states to the same safety practices, neither document makes the case for integrated safety efforts; they both support cooperation.

As much of the focus is on maritime safety, it is not surprising the strategies discuss the Kingdom's capabilities in this domain. Satellite surveillance and monitoring systems, such as LRIT and AIS for large vessels, are used to improve safety in the waters around the Faroe Islands and Greenland. Additionally, "ships sailing to Greenland must report to the so-called GREENPOS reporting system, which requires ships in Greenland waters to continuously report their position to the Greenland Command" (2011, 17). While it seems that the Kingdom has addressed maritime monitoring, one area marked for improvement is maritime mapping and charting. In this regard, the 2011 Strategy explains that "due to the vast sea areas, large areas of the Greenland waters will be unsurveyed beyond 2018 while still greater areas become accessible to shipping as the ice melts. For reasons of safety at sea the Kingdom will furthermore continue to prioritize the work of the International Hydrographic Organization (IHO), such as in the regional commission on the Arctic which was established in 2010" (2011, 17). The 2008 document also addresses mapping and monitoring, but focuses more on efforts to map and monitor the Greenland's shelf and landmass, which includes using the Greenlandic names for different locations (2008, 30). The 2011 Strategy also considers the role that Thule Airbase in Greenland could play in maritime safety. For instance, "collaboration on the logistical facilities in Thule could thus eventually include assignments and emergency preparedness in relation to the maritime environment, a base for exercises in connection to joint procedures such as search and rescue services, and also be a platform for joint research in the Arctic" (2011, 54).

The **Economy** indicator, which accounts for 12 % of the total coded quotes in the 2011 Strategy and 18 % of the 2008 document (see Figure 9, p. 61), identifies a broad range of economic activities. According to the 2011 Strategy, "today, tourism, second only to fisheries, is the most important export industry in Greenland, and the tourist industry has potential for growth in the future" (2011, 23; 2008, 5, 36). The 2011 Strategy also recognizes that trade can help economies in other ways, as "the new trading opportunities can contribute to the diversification of Greenland's economy and create the basis for economic sustainability and prosperity. For the Faroe Islands in particular, the opening of the Northeast Passage will unfold new opportunities as a result of increased navigation" (2011, 33). The 2008 Strategy also identifies veterinary services, crafts and cultural products (2008, 35, 38). However, it is the natural resource sectors that seem to hold greatest importance. Natural resources include living resources, such as fish, and non-living resources found in the mining and oil and gas industries. Certainly, the fish industry does represent a substantial amount of trade for the Kingdom. For the Faroe Islands, it "represents approx. 90 % of total exports and for Greenland, approx. 85 % of total exports" (2011, 31). However, Greenland provides the most ac-

cess to mining and oil and gas opportunities. A broad range of minerals are found in Greenland that can be used to support innovative technology and financial independence. For example, the 2011 Strategy explains that "Greenland is also rich in mineral deposits, including zinc, copper, nickel, gold, diamonds and platinum group metals, and has substantial deposits of so-called critical metals, including rare earth elements, several of which are important components of high-end technology, including green energy technologies" (2011, 24; see also: 2008, 23). As for oil and gas, these activities are not as developed as the mining industry. The two documents explain that while there has been some development, oil exploration is still taking place around Greenland. While exploration can be expensive, the payout will likely be worth it as "it is estimated that 31 billion barrels of oil and gas off the coast of Northeast Greenland and 17 billion barrels of oil and gas in areas west of Greenland and east of Canada could be discovered, though the probability is greater for discoveries in Northeast Greenland," according to the 2011 Strategy (2011, 24; see also: 2008, 22).

While oil and gas resources are being explored, renewable energies are also being exploited. For example, Greenland has been generating hydropower since at least 1993 (2008, 20–21). Renewable energy is important to the Kingdom in two ways, according to the 2011 Strategy. First, the renewable energy generated in Greenland can be used to power facilities in the mining sector. For example, the 2011 Strategy states that "an example is the designing, in collaboration with the American company, Alcoa, of an aluminium smelting plant in Maniitsoq which will be operated solely by hydropower" (2011, 30). Additionally, renewable energy generated in both the Faroe Islands and Greenland will help Denmark meet EU energy goals. The 2011 Strategy explains that "Denmark's commitment to renewable energy targets under the EU is 30 % by 2020. Greenland will increase its share of renewable energy to 60 % of total energy production by 2020. The Faroe Islands will increase the use of renewable energy, including the target of 75 % of electricity production based on renewable energy by 2020" (2011, 30).

Sustainable development is important to many of the Kingdom's economic activities. According to the 2011 Strategy, "it is a central goal of Greenland, the Faroe Islands and Denmark that decisions regarding management and utilisation of resources and protection of the environment are taken in accordance with international obligations, and are based on the best scientific advice that supports healthy, productive and self-sustaining communities" (2011, 10). Sustainable practices are applied to living resources through different mechanisms, such as fishing quotas, conservation, and ecosystem-based management, for example (2011, 32; 2008, 6, 24, 25). Interestingly, the 2008 document suggests that the USA has not fully supported the work of the Arctic Council, apparently in the area of sustainable development (2008, 13).

The strategies sketch out different ways in which the Kingdom's northern economy will be prioritized. Both documents explain that a great deal of focus will be on developing Greenland's economy. In particular, the 2011 Strategy stresses that this "will

be an overriding political priority for the Kingdom" (2011, 23), especially in relation to mineral resources. Because of this, education and training in this area will be prioritized (2011, 36). The 2008 document also discusses the importance of the mineral industry, but also includes oil and gas, and cultural products in its discussion (2011, 24; 2008, 23, 38). Another priority from the 2011 Strategy is to increase trade opportunities for the Faroe Islands and Greenland, especially with the EU (2011, 35).

Economic development does not happen without some form of regulatory practices. The 2008 document does not focus as much on this area, although the document does recognize that Greenland, under Home Rule, has the authority to regulate certain economic activities (2008, 25). In contrast, the 2011 Strategy provides more information on some of the different ways that economic activities for living and non-living resources are regulated. For living resources, the strategy explains that fishing must be a sustainable practice to prevent overfishing. "Greenland's fishery is based on a quota system whose aim is to ensure a sustainable exploitation of certain stocks. Therefore, an annual 'Total Allowable Catch' (TAC) of the principal species is stipulated, based on biological advice and respecting socio-economic concerns, commercial interests and international obligations" (2011, 31). As for the non-living resources in Greenland, the Mineral Resources Act dictates corporate responsibility, especially when environmental protection is at stake. More specifically, the Act explains that "responsibility for clean-up operations and compensation always lies with the party causing damage, whereby a number of stringent requirements are imposed following international standards regarding financial guarantees and insurance for oil and mineral activities" (2011, 26). Oil and gas licenses are also controlled by the Bureau of Minerals and Petroleum (BMP) and are issued under the strictest of conditions (2011, 26). The document also explains that shipping safety is regulated through the IMO, and that trade activities follow regulations set out by the WTO (2011, 35, 51).

As for economic actors, the 2011 Strategy is very open about who is investing in the region. For instance, the document states that "there is great interest from a number of different companies and as of January 2011 the licensees are: NUNAOIL (Greenland), DONG (Denmark), Maersk Oil (Denmark), ExxonMobil (U.S.), Chevron (U.S.), Husky (CAN), Cairn Energy (UK), PA Resources (SVE), ConocoPhillips (U.S.), Shell (NL), Statoil (NOR), GDF Suez (FRA) and Petronas (Malaysia)" (2011, 26), and for the Faroes "oil companies active in the Faroe Islands Atlantic Petroleum (FO), Cieco (Korea), Dana Petroleum (UK), DONG (DK), ENI (ITA), Exxon Mobil (US), Faroe Petroleum (FO), First Oil Expro (UK), OMV (Østrig), Sagex Petroleum (NOR), Statoil (NOR)" (2011, 27). There is also state involvement, especially with the Government of Greenland, in the resources sector, and cooperation with the broader "business community" as well (see: 2011, 35, 33). The 2008 document also names private companies, such as Acloa Inc. and Maniitsoq, both of which are in the aluminum industry. Other actors include governance bodies and other organizations such as the North Atlantic Hydrogen Association, the WTO (for Greenlandic compliance), the Greenland Innovation Centre, Piorsaavik,

the Nordic Region Cooperation (NORA) (2008, 21, 37), and, of course, the state.

The **Tourism** indicator is briefly discussed in both the 2011 and 2008 strategies and accounts for 1 % of the total coded quotes in the 2011 Strategy and 2 % of the 2008 document (see Figure 9, p. 61). Tourism in Greenland has been on the rise (2008, 36). As stated in the 2011 Strategy "today, tourism, second only to fisheries, is the most important export industry in Greenland, and the tourist industry has potential for growth in the future. This applies both to land-based tourism and the cruise-liner business. Among the benefits of the latter is that even small towns and villages along the coast can be involved in tourism" (2011, 23, 24). "The land-based tourism generates by far the greatest revenue but is currently dependent on only a few markets, primarily the Danish. Therefore, Greenland's Tourist Board is working on the development of a new national brand that more clearly defines Greenland as an adventure destination focusing on sustainable tourism and which to a greater extent appeals to the global market" (2011, 23, 24). Tourism should be further promoted in Greenland as it brings in earnings from abroad. Furthermore, tourism creates economic and job growth (2008, 36). The 2008 Strategy further explains that tourism has resulted in more flights to Greenland (2008, 36).

The Kingdom of Denmark aims to "enhance economic development and diversification of the economy, including the development of the tourist industry and bolstering the overall development with adequate infrastructure" (2011, 23). The government is taking an active role in helping Greenland develop its tourism industry (2008, 36).

The **Infrastructure** indicator, which accounts for 6 % of the total coded quotes in the 2011 Strategy and 6 % of the 2008 document (see Figure 9, p. 61), addresses different types of infrastructure. Transportation infrastructure is discussed in both documents and seems to be a priority, especially for Greenland. The 2011 Strategy states that "*infrastructure* is a key element in the development of the Greenland society and to ensure long term sustainable development, the Government of Greenland set up a transportation commission in 2009 for the socio-economic analysis of the entire infrastructure in Greenland" (2011, 24). In particular, "ports and airports" are needed but they are expensive. The government will thus look for different sources of funding, including the mining sector (2011, 24). The Strategy does not provide many particulars about what infrastructure would be developed and where, but it does seem as if ports are more important because infrastructure is needed to support growing maritime traffic and trade (2011, 17, 35). In contrast, the 2008 document is more focused on airports than it was ports because Greenland is unlikely to benefit from shipping through the Northwest Passage (2008, 33). Thus, the strategy focuses on air travel, commenting on the regular flights between Greenland and Iceland that have been taking place for 50 years. At the same time, the Strategy also acknowledges that there are very few flights between Greenland and Canada Regardless, for Greenland to increase international flights, Denmark must provide the license although there will be cooperation with Greenland (2008, 34).

Although there is not as much discussion about port development in the 2008 document, both strategies address shipping as the melting sea ice and opening waterways provide new transit opportunities, although it will be expensive (MFA 2011, 16; 2008, 33, 34). For example, the 2011 Strategy notes growing maritime traffic around the Faroe Islands and comments on the successful journey through the first Northwest Passage by a Danish shipping company in 2010 (MFA 2011, 16, 19). In the light of these developments, it is not surprising that "the Kingdom will examine the need for the establishment of new shipping routes, and implement this to the extent it promotes maritime safety and marine protection." Pollution is a concern and the 2011 Strategy comments that IMO will play an important role in with regard to safety and pollution prevention (2011, 51; 2008, 28). Despite the discussion around expanding shipping and safety concerns, there is very little about the role and function of icebreakers. Indeed, only the 2011 Strategy mentions them, but only in the context of mapping the continental shelf and that some Asian countries are developing them (2011, 15, 54).

Energy infrastructure is addressed in both documents, particularly in the context of renewable energy sources. This is probably because "the energy policy objectives of Greenland, Denmark and the Faroe Islands respectively are to create security of supply, to reduce emissions of greenhouse gases and air pollution while creating a basis for commercial development" (2011, 30). A goal, therefore, is for communities to use this type of energy (2011, 30). The 2008 document also notes the need to improve transmission line infrastructure because of functionality problems (2008, 21).

ICT and telecommunications are briefly mentioned in both documents. The 2011 Strategy states that "the health reform is underpinned by the telemedicine network which was developed with the help of Alaskan and Norwegian inspiration" (2011, 40), which obviously needs digital services. The 2008 document more broadly notes that digital services help communities (2008, 41).

Other kinds of innovation and technology are also mentioned in the strategies, such as that used for mapping and charting. In particular, the NunaGIS system is mentioned as it is used for ensuring that Greenlandic names are used appropriately on maps (2008, 29, 30). This is considered "geographical infrastructure" in more technical terms, "the objective of NunaGIS is to gather all essential information across Greenland in a digital atlas, and link this information to a data and organizational infrastructure, also called SDI (Spatial Data Infrastructure)" (2011, 37). Mapping processes are also taking place in the Faroe Islands (2011, 37).

The **Science and Education** indicator accounts for 8 % of the total coded quotes in the 2011 Strategy and 14 % of the 2008 Strategy (see Figure 9, p. 61). The two documents identify the different drivers for science. The main driver in both documents appears to be climate change (2011, 35, 36, 43, 44; 2008, 5, 27, 31, 32, 39). For example, the 2011 Strategy explains that "in order to anticipate how global climate and environmental

conditions will evolve, it is crucial to understand how climate change affects the Arctic, and in turn how changes in the Arctic affect global climate trends" (2011, 43-44). Pollution is another research driver mentioned in both documents (2011, 45; 2008, 28). Additionally, the 2011 Strategy notes that nature is also a driver, as "the Arctic nature and environment must be managed based on the best possible scientific knowledge and standards for protection" (2011, 43); the 2008 document notes the preservation of living resources (2008, 19, 20).

However, research also serves other purposes. First, research will help the Kingdom with decision-making. For instance, the documents explain that research can be used for decisions regarding the management of living resources, like fish (2011, 32; 2008, 34); the 2008 document states that research can help inform climate agreements (2008, 28). Research can also be of benefit to economic development. The 2008 document explains that research can be of assistance to the mining and shipping industries (2008, 23, 29, 32), while the 2011 Strategy explains that research can assist with workforce training. For instance, "the Kingdom's Arctic research will be at the global forefront, and research and training efforts must support the development of industry and society in the Arctic" (2011, 23). Additionally, both documents state that research will help with the Kingdom's continental shelf claim (2011, 14; 2008, 11, 12). Research should also be of benefit to northerners themselves. Indeed, the 2011 Strategy remarks that "it is also essential that research findings are of practical use by Arctic peoples in supporting the rapid cultural, social, economic and industrial development that other peoples have had generations to adapt to," including health concerns (2011, 35, 40; see also: 2008, 39, 41). Finally, research can help position the Kingdom as an Arctic research actor as "the Kingdom will work to promote the participation of Danish, Greenland and Faroese academic and scientific institutions in international research and monitoring activities" (2011, 36).

Both documents also recognize the importance of traditional knowledge, especially with respect to environmental and climate concerns (2011, 44; 2008, 18). The 2008 document, however, makes the interesting observation that the findings of traditional and scientific knowledge do not always match in the case of determining the size of animal stocks. The document suggests this can cause disagreement over decisions stemming from mismatched information (2008, 24).

This research is facilitated through different types of research infrastructure. First, there are physical research stations which include, for example, "the Zackenberg research station and a similar station in Kobbefjord near Nuuk" as noted in the 2011 Strategy (2011, 47). Second, there are different research institutes, organizations, and universities, which include, but are not limited to, the Arctic Technology Centre, the Greenland Institute of Natural Resources, the Climate Research Centre (Nuuk),

Danish Meteorological Institute, Commission for Scientific Research in Greenland, Geological Survey of Denmark and Greenland, the Technical University of Denmark, the University of Greenland, University of Copenhagen, and Aarhus University (2011, 35, 36, 44, 47; 2008, 28, 32, 41). Third, several different research networks and collaborations are mentioned in the documents. For instance, the 2008 document states that there is cooperation and collaboration with various researchers and research institutions across borders (notably with the USA), and different formalized networks like IASC, European Polar Board, and the European Polar Consortium (2008, 32). The 2011 Strategy, in the context of oceanic and ice research, states that "all collections are conducted in cooperation with Danish, Greenland, Swedish and American research institutions and have led to increased knowledge of the Arctic Ocean's plate tectonics, palaeoclimatology, physical oceanography and ecosystems" (2011, 15), demonstrating the value of such collaborations.

As for funding, state support for research seems to be associated with specific endeavors. For instance, the 2008 Strategy comments on funding for the International Polar Year, whereas the 2011 Strategy states that funding is provided for the continental shelf research (2011, 14; 2008, 32). The 2011 Strategy also explains that "within the Kingdom, cooperation between research institutions must constantly be consolidated and developed, and researchers have to be familiar with available options for funding of Arctic research" (2011, 36), and that research funding is also available "from among others the Nordic Council of Ministers and the EU" (2011, 35).

In terms of education, both documents address the need to ensure Greenlanders attain education primarily for economic reasons. Emphasis is placed on improving skills and training for the mineral resources industry to ensure Greenlanders can access this job market (2011, 36; 2008, 23), and the state is facilitating this training. For example, the 2011 Strategy comments that "in January 2011, the Government of Greenland set up a new mineral resources school by reorganising the Mining and Construction School in Sisimut. The mineral resources school will function as a knowledge centre for the entire mining resource sector and develop training within the oil industry" (2011, 36). The 2008 Strategy also contextualizes their training efforts as a way for Greenland to gain further independence (2008, 37).

Outside of training for the mining industry, other kinds of educational opportunities exist. First, the two strategies mention that learning opportunities are provided through the Joint Committee. For instance, the 2011 Strategy explains that the Kangerlussuaq summer school "is targeting two of the three priority areas which the Joint Committee has agreed upon in 2010-2011, namely to improve access for Greenland's students to U.S. institutions of learning and to improve English skills

in secondary schools in Greenland" [3] (2011, 38; 2008, 37–38). Second, distance learning is discussed in both documents. The 2011 Strategy addresses this by mentioning that "the Kingdom also supports the running of the University of the Arctic" (2011, 36), whereas the 2008 Strategy acknowledges the importance of distance, or e-learning, to high school educational attainment levels, while also recognizing the challenges to this type of learning in Greenland (for example, the need for good and affordable internet) (2008, 16, 41). Third, the 2008 Strategy notes that Greenlandic students can participate in EU education, in the areas of technology and innovation for example, through the Overseas Countries and Territories program (2008, 16).

Implementation is addressed in both documents. For the 2011 Strategy, a bullet-point list of action items is found at the end of each section. Although there is nothing written in the document that makes clear that these are indeed items or plans that should be implemented, the language used suggests just this. However, as responsibility for the different tasks is not assigned to a government ministry or department, it is not clear who has ultimate responsibility for implementation. The Strategy acknowledges that "the Kingdom consists of three societies, each with their own political priorities and social structures. Therefore, the strategy's implementation in each individual area will be adjusted to each part of the Realm's unique legislation, political priorities and budget issues" (2011, 57). Yet, despite this mention of budget issues, there is very little information on how the strategy will be funded. However, the strategy does say that "the Foreign Ministry will allocate resources hereto" (2011, 58) in regard to a few activities, including climate cooperation and trade. Yet, it is not clear if this funding will be newly allocated or come out of existing budgets.

The Strategy does, however, provide a great deal of information about follow-up and evaluation. In terms of follow-up, "a cross-disciplinary Steering Committee is to be established for the Arctic Strategy, consisting of representatives of the government (ministries with Arctic activities), the Government of Greenland and the Government of the Faroes at high level" (2011, 57). As for evaluation, "the Foreign Ministry, on behalf of the Government and in cooperation with the Government of Greenland and the Government of the Faroes, will report annually on developments in the Arctic and the status of the Strategy's implementation. The aim is to carry out a mid-term evaluation of the Strategy in 2014–2015 and consider the preparation of a new strategy in 2018-2019" (2011, 58).

To sum up

It is harder to tell from the 2008 document what implementation is addressed. The document reads as if it is explaining existing regional practices and making some suggestions about what to do moving forward. There do appear to be some 'aims' at the

end of some discussions. If the word 'aims' is the correct translation, it does not suggest a strong commitment to implementation. Additionally, no new budget is identified. That said, the document does seem to suggest a working group will be created to generate a more comprehensive strategy that will also include the ministries responsible for the Strategy (2008, 42).

Figure 9 at the beginning of the Denmark discussion shows that the top three coded indicators for the 2011 document are Governance, International Cooperation, and Economy. Similarly, both the Governance and Economy indicators tie for the most-coded in the 2008 Strategy, followed by Science and Education and the Human Dimension. The least-coded indicators in 2011 are Tourism and Pollution, with Infrastructure and Safety and SAR tying for third least-coded indicators.

As mentioned earlier, the 2011 Strategy identifies four areas of importance (2011, 10–11). First is "a peaceful, secure, and safe Arctic." Generally, this is accounted for in the Security indicator which falls in the mid-to-lower range in terms of the percentages of coded quotes (see Appendix). However, the International Cooperation indicator, which is the second most-coded indicator, also addresses these issues through discussions around international law and cooperation. It thus seems that this priority is met. Second, "self-sustaining growth and development" is associated with the Economy indicator, which is the third most-quoted indicator and discusses Greenland's access to oil and gas. Third is "respect for the Arctic's fragile climate, environment and nature." While the Environmental Protection, Pollution, and Climate Change indicators are each in the mid-to-lower range in terms of percentages coded, when combined they become the most discussed and coded topic(s). It seems therefore that this priority is met. Finally, there is "close cooperation with our international partners" which is accounted for by the International Cooperation indicator, the second most-coded indicator (see Appendix).

There are also connections between the indicators. For example, the Human Dimension in relation to Indigenous peoples is connected to the Governance indicator through discussions around Home Rule and the Self-Government Act. The Governance indicator is also connected to the Economy indicator in terms of how natural resources will be managed. The Infrastructure indicator is also connected to the Economy indicator, but in two ways. First, infrastructure is needed to support economic activities, and second, the economy indicator focuses on oil and gas development while the Infrastructure indictor notes the desire for renewable energy for Greenlanders.

Similar to the summary on the Icelandic strategies, a full comparison is difficult between the 2011 Strategy and the 2008 document, which is an unofficial translation from which information may be missing. That being said, there are two relevant **sim-**

---

3   The Joint Committee allows for international cooperation between Greenland, Denmark, and the United States. Part of the initiative is the Science Group that "advances and encourages cooperation across multiple policy areas, involving internationally-recognized experts contending with diverse, cutting-edge issues, from deepening Arctic science cooperation to advancing science education" (U.S. Embassy in Denmark, n.d).

ilarities between the documents of which two are discussed here. *First*, the 2011 Strategy appears to be a continuation of the 2008 Strategy in terms of economic development. Indeed, both documents state that tourism, fishing, trade, natural resources, and energy are key economic activities, while the 2008 document also mentions hunting, veterinary services, and crafts. Both documents discuss the importance of sustainable development. The 2011 Strategy also comments on the need for sustainable transportation and energy practices (development of renewable energy), as well as the development of ICT. Interestingly, both documents appear to focus on economic development in Greenland and disregard the Faroe Islands. *Second*, both documents take a similar approach to addressing security. For instance, they both state that growing interest in the region must be managed. The documents also recognize the importance of international cooperation through efforts with Canada and the United States, as well as through organizations like NATO. The high relevance of security cooperation with the USA is illustrated in both documents, where the advantage of having Thule early warning radar as part of the US missile defence system is described.

Three relevant **differences** and three examples are also discussed here. *First*, there are some differences in how the two documents address migration. While both documents comment on this issue, the 2008 document is concerned with illegal migration, whereas the 2011 Strategy focuses on (presumably) legal migration and the challenges associated with potential increases in labor migration. This is very relevant especially in case of Greenland, where more than half of the migrants come from Denmark, followed by the Faroe Islands and Iceland, where there are also small numbers of migrants from Thailand and the Philippines, mainly working in the fishing industry. *Second*, both documents address environmental protection and mention the Ramsar and the Biodiversity conventions. Although the 2008 Strategy makes a little more reference to the work of the Arctic Council than the 2011 document does, the latter document provides a more in-depth understanding of the Kingdom of Denmark's environmental priorities as well as more information on specific pollutants. As environmental protection transcends borders and requires collaborative efforts, the 2008 document also notes that circumpolar environmental cooperation began in 1991 with the start of the Arctic Environmental Protection Strategy (AEPS). This could be suggestive of a broadening understanding of environmental protection by the Kingdom of Denmark. *Third*, while both documents appear to prioritize maritime safety and express the importance of international cooperation for safety, there are some differences between the two documents, with the 2011 Strategy providing more information on this topic. For instance, the Strategy recognizes that health is a safety issue, explains the role of international structures (ex. UNCLOS, IMO, and Polar Code) and how they contribute to maritime safety, and discusses Danish safety mechanisms like

GREENPOS and satellites. In contrast, the 2008 Strategy notes that natural disasters and environmental safety must also be considered, but only does so in the context of Greenland.

Overall, the 2011 Strategy aims to fulfil its purpose "to focus attention on the Kingdom's strategic priorities for future development in the Arctic towards 2020," and its aim "to strengthen the Kingdom's status as global player in the Arctic" (2011, 11). In addition, another important goal of the Strategy, drawn up two years after Greenland being accorded self-governing status, was to support that new status and strengthen Greenland's development towards increased autonomy.

Norway

To date, Norway has produced five Arctic strategies. The most up-to-date is the 2017 document, *Norway's Arctic Strategy: Between Geopolitics and Social Development*. As the English short version is analyzed here, it is difficult to determine what, if anything, is missing from the original Norwegian text. Working backwards, the other documents are the 2014 *Norway's Arctic Policy: Creating Value, Managing Resources, Confronting Climate Change and Fostering Knowledge,* the 2011 document *The High North: Visions and Strategies*, the 2009 *New Building Blocks in the North: The Next Steps in the Government's High North Strategy,* and 2006's *The Norwegian Government's High North Strategy.* For the purpose of this report, the 2017 and the 2014 strategies will be analyzed.

The 2017 Strategy has 37 pages including pictures, maps, and infographics and clearly outlines the following Arctic priorities, or "Priority areas:
* International cooperation
* Business development
* Knowledge development
* Infrastructure
* Environmental protection and emergency preparedness" (Norway MFA 2017, 6).

These items are also the same priorities as those identified in the 2014 Strategy (see: Norway MFA 2014, 3), which consists of 43 pages including pictures, maps, and infographics. Later in the 2017 Strategy, the government builds on their priority list and remarks that "the specific goals for each priority area are presented in the respective chapters. Common to all of them is that, in their different ways, they will help us realise our vision of peaceful, innovative and sustainable development in the north" (2017, 15). Additionally, the document states that "the Government's Arctic policy builds on our long-term efforts. The overarching goals, as set out in the last white paper on Arctic policy, remain unchanged:
* Peace, stability and predictability
* Integrated, ecosystem-based management

- International cooperation and the international legal order
- A stronger basis for employment, value creation and welfare" (2017, 15).[4]

Having the same priorities in 2017 as in 2014, and also mentioning the goals from 2011 (Norway MFA 2011), suggests that the Norwegian government is consistent in its policy and in its long-term strategy for the Arctic region.

Comparison by Indicator

The **(Re)mapping and (Re)defining the Arctic** indicator provides insights in terms of how Norway defines and describes the region. Both strategies recognize the importance of the region. For instance, the 2017 Strategy opens by stating that "the Arctic is important for Norway and for the world as a whole," especially as "people's everyday lives are affected both by high politics and by day-to-day issues" (2017, 2), showing the importance of the region domestically. In contrast, the opening remarks by the Prime Minister in the 2014 Strategy state that "the Arctic is Norway's most important foreign policy priority" (2014, 3), thus taking a more international perspective. Both strategies also describe the Arctic based on its physical characteristics, such as the Arctic's "vulnerable environment" (2017, 3; 2014, 43). The 2014 Strategy also comments on the region's "*inhospitable wilderness*" and explains that the "weather conditions are harsh" (2014, 11, 3). At the same time, the Strategy remarks that "the High North has some of the most beautiful scenery and wildlife that Norway has to offer" (2014, 36), thus painting two different pictures of the region.

The 2017 Strategy calls the region the "Arctic" and use the term "circumpolar" once in relation to the Arctic Council (see: 2017, 7). In contrast, the terms "Arctic," "High North," and "north" are used seemingly interchangeably, while "circumpolar" is used a few times when discussing the entire region in the 2014 Strategy (see: 2014, 16). Interestingly, the 2017 Strategy does not define the Arctic, whereas the 2014 Strategy does, both descriptively and geographically. Descriptively, the strategy states that "the Arctic as a region is defined by its natural environment, its resources and its inhabitants" (2014, 3). Geographically, the Strategy notes that "1/3 of Norway's land area lies north of the Arctic Circle" and that "80 % of Norway's sea areas lie north of the Arctic Circle" (2014, 42), suggesting the Arctic is located north of the Arctic Circle.[5]

Both documents also identify different ministries involved in Arctic affairs, but to different degrees. For instance, the 2017 Strategy only mentions the Ministry of Foreign Affairs, but does take care to recognize different levels of government. For example, a photo caption from the Regional Forum For Dialogue on Arctic Policy in February 2017 identifies the "Minister of Local Government and Modernisation, Jan Tore Sanner, Senior Adviser from the Sami Parliament, Torvald Falch, Pres-

ident of Nordland County Government, Tomas Norvoll, Executive Counselor for Planning and Finance Gerd Hetland Kristiansen, from Troms County Government, County Governor of Finnmark County Runar Sjåstad, and Minister of Foreign Affairs Børge Brende" (2017, 13). This suggests that it is not just the federal government that has responsibilities for the region.

In contrast, the 2014 Strategy identifies more federal-level ministries. These include the following ministries:
- Foreign Affairs,
- Nordic Cooperation,
- Trade, Industry and Fisheries,
- Climate and the Environment,
- Education and Research, and
- Petroleum and Energy (2014, 18, 19, 25, 26, 28).

The 2014 Strategy also recognizes other bodies that have regional responsibilities. These include the "police, Customs, the Norwegian Armed Forces, the Directorate of Fisheries, the Norwegian Maritime Authority, the Norwegian Coastal Administration and the Joint Rescue Coordination Centres" (2014, 32) in the context of BarentsWatch.

Figure 10 provides a comparison of how many quotes are assigned to the different indicators, as a percentage of the total number of coded quotes (rounded to the nearest whole number) in the document.
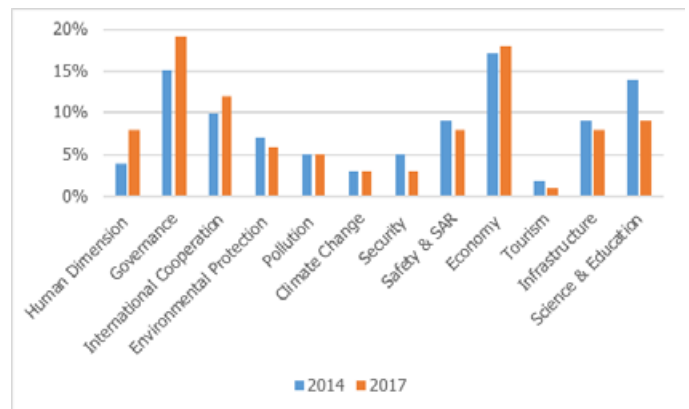
Figure 10. Comparing Norway's 2014 and 2017 Strategies
Note: The percentages in each indicator are rounded to the closest whole number and represent the percent of the total number of quotes coded for each document.

The **Human Dimension** indicator accounts for 8 % of the total coded quotes in the 2017 Strategy and 4 % in the 2014 Strategy (see Figure 10). One of the focuses in both documents is on Indigenous peoples. This is not surprising as "the Sami population totals approximately 80 000–100 000 people, living in Norway, Sweden, Finland and Russia" and "the largest Sami population is in Norway" (2014, 42) in the North (2017, 10). Both strate-

---

4   The white paper in reference is the document from 2011, *The High North - Visions and Strategies* (2017, 15).

5   This understanding is different than in previous strategies.

gies discuss the importance of the Saami Parliament, known as the Sámediggi, which represents the interests of Norway's Saami population. In relation to the 2017 Strategy, the Sámediggi's participation in the policy development process allows for Indigenous voices to be heard (2017, 13–4). The 2014 Strategy also recognizes the government's collaboration with the Saami with regard to "ethical guidelines for resource extraction in Indigenous areas" (2014, 24), although it is explicitly stated if this is in conjunction with the Sámediggi. The 2017 Strategy also explains that international Saami cooperation is important (2017, 19–20), although the 2014 Strategy provides more details on cooperation. The 2014 Strategy explains that cooperation among the Norwegian, Swedish, and Finnish Saami Parliaments takes place through the Sami Parliamentary Council which "[plays] a key role in efforts to promote cross-border cooperation and cultural exchange" (2014, 16). The preservation of the Saami language is important, and the 2014 Strategy further explains that "the Sami parliaments of Norway, Sweden and Finland have united in establishing a joint Nordic language centre – Sámi Giellagáldu. Developing and harmonising terminology in the Sami languages across the Nordic borders is the key to the use of the Sami languages in the broadest areas of society" (2014, 30). In addition to these venues of cooperation, the 2017 Strategy also states that the Norwegian government will "promote cooperation between Indigenous peoples in the Arctic under the auspices of the Arctic Council, the Barents cooperation and the Nordic cooperation" (2017, 21).

Health and wellbeing are addressed only in the 2014 Strategy, and the priority is to address health-related concerns. Indeed, efforts are under way to "strengthen health services in the north, in order to meet the needs that arise as a result of increased activity" (2014, 32), and three key areas emerge in the Strategy. First, "there is a need for a new hospital in the north and a new hospital is under construction in Kirkenes" (2014, 35). Second, there is a focus on increasing access to Northerners in remote areas. One approach to addressing this challenge is that "the National Centre for Integrated Care and Telemedicine (NST) at the University Hospital in North Norway (UNN) collects, produces, and disseminates knowledge about telemedicine services, nationally and internationally, and works to ensure that telemedicine and e-health are implemented" (2014, 35). Finally, the Strategy recognizes the need to address regional health concerns that cross borders. For example, with the Cooperation Programme on Health and Related Social Issues in the Barents Euro-Arctic Region "priority is given to cooperation on combating communicable diseases such as HIV/AIDS and tuberculosis, preventing lifestyle-related health problems and developing more comprehensive healthcare services for children and young people at risk" (2014, 19).

Different equality issues are raised in the two documents. For instance, the 2017 document mentions the Svalbard Global Seed Vault as a way of "safeguarding genetic diversity and contributing to global food security" (2017, 37). While this is not specifically about food security in the Arctic, the intent is to ensure everyone has equal access to food. The document also recognizes the "distances between people and markets in North

Norway are huge" (2017, 30) and that infrastructure solutions are needed, especially for business. The 2014 Strategy also addresses equality in the context of business and infrastructure. In particular, the need for improved infrastructure in the North is mentioned, and the Strategy states that "where agreements have been signed concerning the public procurement of transport services, the additional costs to transport companies may be transferred to the central government and county administration...The three northernmost counties have the highest expenses, and have thus been reimbursed the most" (2014, 35).

Population and migration are also important in Northern Norway, especially as "nearly 10 % of Norway's population lives north of the Arctic Circle, a greater proportion than in any other country in the world" (2014, 7). However, the 2017 Strategy explains that Norway's northern population is ageing and will likely not see the same growth rate as in southern Norway (2017, 11, 27). At the same time, the Strategy determines that "in contrast to our neighbouring countries, the population trend in the Norwegian part of the Arctic is positive. This is due to immigration" (2017, 10). This, in part, seems to be connected to the Freedom of Movement Council, which is mentioned in both documents. The aim of the Council is to facilitate cross-border flows of people "between the Nordic countries" (2017, 18; 2014, 19).

The **Governance** indicator, which accounts for 19 % of the total coded quotes for the 2017 Strategy and 15 % for the 2014 Strategy (see Figure 10, p. 73), highlights the relevance of existing policy and the effective international cooperation mechanisms, as well as the existing governance structures, including the Arctic Council and the Barents Euro-Arctic Council. Norway also recognizes "the importance of cooperation and reaching the same goals at the national level, which enables to set the agenda for the international debate on developments in the Arctic" (2017, 2, 3; 2014, 3, 12). "Both the Norwegian Government and regional Norwegian stakeholders agree with the other Nordic countries, Russia and the EU on the need to view regional policy programmes and cooperation arenas in the Arctic as parts of a coherent whole" (2014, 18, 19, 22, 43). The 2014 Strategy highlights that "the people who live in the north are the main drivers of cross-border cooperation in the region." Also, "the Barents cooperation forum has formed the basis of much of the extensive cross-border contact in the north. Contact and cooperation across national borders strengthens business activity, enhances knowledge and provides a basis for a forward-looking and sustainable society" (2014, 16).

The work of County Councils, which have plenty of "tasks relating to planning, coordination and regional development," is "of great significance of the society in the North… Due to their tasks and role as planning authorities, they have a responsibility to take a coherent approach to land use management and social and business development, and to give strategic direction to the efforts of the municipalities, regional government bodies, and other key actors in the north" (2017, 12). Furthermore, the 2017 Strategy notes that "the municipalities also have a key role to play in the development of their local societies…The Government has presented a proposal to the Storting (Norwegian par-

liament) on regional reform aimed at creating larger and more efficient regions. Among the objectives of the reform are closer coordination between sectors and a stronger role for the County Councils in the development of the region" (2017, 13).

In the 2017 Strategy, "the Government has sought to give greater consideration to the domestic aspects of Norway's Arctic policy… In the development of North Norway, it is the region's own citizens, companies and politicians that have the most important role to play" (2017, 3). Due to the fact that most of the objectives of Norways' Arctic policy are connected to the national regional policy, "the Government recently presented a white paper on regional policy, which outlines the direction of urban and regional development across the country. Sustainability is a key principle for all development. This is in line with the UN's Sustainable Development Goals" (2017, 15).

Both strategies emphasize the importance of the UN Convention on the Law of the Sea, and that "the Convention forms the legal basis for the management of the Arctic sea areas" (2017, 19–21; 2014, 11, 12, 16). The 2017 Strategy also refers to "the cooperation in the International Maritime Organization (IMO) and in the Arctic Council on maritime safety and the sustainable development of shipping in the Arctic [as] vital for ensuring a high level of maritime safety in Arctic sea areas." Norway is also "actively promoting the Polar Code, which entered into force on 1 January 2017, and is playing a role in facilitating a harmonised and effective global implementation of the code" (2017, 36, 37; 2014, 36, 38, 39).

Following from this, Norway's Arctic policy "is also ocean policy". The 2017 document highlights that Norway "have built up knowledge over generations that puts [them] in a good position to take on a leading role in promoting sustainable use of the oceans." Furthermore, "in 2015, the coastal states signed the Oslo Declaration on research cooperation and on preventing" illegal, unreported and unregulated fishing "in the international part of the central Arctic Ocean" (2017, 9, 20, 21; 2014, 19). Additionally, "the blue economy holds great promise for new investments, growth and employment. Sustainable ocean management is essential to ensure economic growth and limit negative environmental impacts in the Arctic" (2017, 22). Recently, "the Government presented an updated management plan for the Norwegian Sea, and work has begun on a complete revision of the management plan for the Barents Sea–Lofoten, which is due to be completed in 2020" (2017, 35).

In fact, "the Government attaches importance to safeguarding Sami interests. As an Indigenous people, the Sami have a right to be consulted in matters that could affect them directly. These consultations are to take place in good faith with the aim of reaching agreement on any proposed measures" (2017, 23).

Behind is that "Norway is a maritime nation, and not least a nation of marine resources. Through work on the integrated ocean management plans for Norwegian sea areas, Norway is also a pioneering country when it comes to comprehensive, ecosystem-based management." In addition, "climate change and increased activity in the sea and coastal areas in the north create new challenges for the management." Therefore, "this makes it necessary to further develop maritime administration to safeguard good environmental standards and promote business activities and food safety within sustainable limits" (2014, 38). Norway "will therefore continue to have strict environmental requirements as a basis for new activities, and protect particularly valuable and vulnerable areas" (2014, 36).

To strengthen cooperation on developments in the Arctic, "the Government has established a regional forum for systematic dialogue at political level between the national government, the three regional governments counties of North Norway and the Sámediggi." Additionally, "other key players in the Arctic, such as the business sector, academia, etc. will also be invited to take part in the forum, when relevant." The purpose of the forum is "to discuss issues of importance for developments in the north that require cooperation across different sectors and administrative levels. These discussions will form the basis for implementing policy in the three counties and nationally." As the strategy points out, "it is already clear that education, infrastructure and business development will be high on the agenda" (2017, 13; 2014, 16).

In order "to improve the quality of education and increase completion rates," the government works to "establish cooperation between representatives of the counties, municipalities, the Sámediggi (Sami parliament) and the national authorities" (2017, 29). In fact, "the Sámediggi has a number of cooperation agreements with both regional and governmental actors in the region, and with city municipalities such as Tromsø and Bodø." The Government recognizes the important input of the Sámediggi "in connection with the development of the Arctic policy based on its insight into what the various Sami communities see as the greatest challenges" (2017, 13, 14). In the 2017 Strategy, the Government also promised to "work towards signing the Nordic Sami Convention" (2017, 21).

On the bilateral level, it is important to continue cooperation with Russia in different areas of interest. One of them is "regular Norwegian-Russian search and rescue exercises that are carried out under the Barents cooperation". As well, the two states will cooperate "on oil spill preparedness and response in the Barents Sea." In fact, "targeted cooperation with Russia has also led to improved maritime safety, higher cod quotas and action to reduce the risk of radioactive pollution." Together with other states in the region, Norway "aims to maintain international cooperation on the Svalbard Global Seed Vault, with a view to safeguarding genetic diversity and contributing to global food security." Last, but not least, Norway emphasizes the importance of "further implementation of the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic, through the work of the Arctic Council's Emergency Prevention, Preparedness and Response Working Group (EPPR)" (2017, 37; 2014, 11, 16, 37). The 2014 Strategy also refers to the "new Kirkenes Declaration, adopted at the Barents summit in 2013," which "emphasizes the importance of business cooperation" (2014, 19).

The **International Treaties and International Cooperation** indicator accounts for 12 % of the total coded quotes for the 2017 Strategy and 10 % for the 2014 Strategy (see Figure 10, p. 73) and has significant relevance for the Norwegian Arctic policy. "Norway recognizes the necessity of close cooperation with other countries and organisations on how best to develop the region. These include also national, regional and local authorities, as well as various institutions and NGOs, that participate actively in cooperation in the Arctic, which promotes understanding in the region and opens up more channels for dialogue" (2017, 17). International cooperation is "vital for maintaining the overarching framework, including peace and security, but it also enhances national efforts in areas such as infrastructure, knowledge development and business development." Indeed, "the stable and predictable region where international cooperation and respect for the principles of international law are the norm" (2017, 10, 17). The 2014 Strategy highlights that "impacts of climate change are particularly marked in the Arctic." Moreover, the current major challenges "can only be tackled by means of knowledge, responsible management and international cooperation" (2014, 3).

The purpose of international cooperation in the north is "to promote predictable, peaceful and sustainable development through intergovernmental, regional and people-to-people cooperation." The 2017 Strategy further highlights the importance of "a good balance between conservation and sustainable use" (2017, 19). "Close international cooperation has played a significant part in safeguarding Norwegian interests relating to safety, environmental protection and resources in the Arctic. Safety, the environment, resource management, health and maritime safety are cross-border issues, and can only be addressed in cooperation with other countries and actors in the north" (2017, 2, 9, 17). Developments in the Arctic are also important beyond the region itself, and therefore Norway states it is important to cooperate with the observer countries of the Arctic Council – "both for the sake of the valuable contributions they can make to the Council's work, and to promote understanding of Norwegian policy… It is therefore important to maintain all existing cooperation fora in Arctic" (2017, 17; 2014, 16).

Following from this, Norway's Arctic Strategy states that "although various actors may have legitimate but conflicting interests in the north, there is no race for the Arctic or for the resources in the region… [and] Norway is intensifying its diplomatic efforts in the Arctic vis-à-vis the other Arctic states, the EU, key European countries and the new Asian observers" (2014, 12, 18). Furthermore, Norway "wants to exploit the opportunities Nordic cooperation offers for growth and development in the Arctic. Key areas for cooperation include knowledge development, business development, infrastructure, climate change, the environment, security policy, and cooperation with the EU" (2014, 18). The "government attaches importance to maintaining its dialogue with the EU on the Arctic." Norwegian government "also supports the EU's application for observer status in the Arctic Council, which is still being processed" (2017, 19).

"Respect for international law and international cooperation are crucial" values are at the core of Norway's efforts (2014, 11). This is also "crucial for promoting stability and predictability in the north" (2014, 11). Both Norwegian strategies reflect the importance of cooperation with Russia, despite Russia's violations of international law in Ukraine and Norway's response to these: "It is vital that Norway and Russia work together to address key challenges in the north." Hence, "broad cooperation with Russia over the course of many decades has been important for building trust and promoting stability in the Arctic." In fact, "the bilateral cooperation has also produced concrete results in areas of common interest." Indeed, "the government will promote Norwegian–Russian political dialogue and cooperation in areas of common interest, including fisheries management, the environment, search and rescue, nuclear safety, border control, and notification and response to incidents at sea, and maintain the direct line of contact between the head of the Norwegian Joint Headquarters and the head of the Northern Fleet." All in all, Norway wants "to have good neighbourly relations with Russia, and the Government gives high priority to dialogue with the Russian authorities. Relations with Russia will remain a constant and important element of Norway's Arctic policy" (2017, 18, 21).

Together with the rest of Europe and other allies, "Norway is standing firm in defence of international law and international rules in the face of Russia's conduct in Ukraine. Respect for the Law of the Sea, and international cooperation are crucial for promoting stability and predictability in the north." At the same time, Norway intends "to continue cooperation with Russia in areas where we have common interests." As the 2014 Strategy emphasizes, "it is in everyone's interests that the Arctic remains a peaceful and stable region" (2014, 11, 16).

In the international cooperation indicator, both strategies also highlight Norway's approach towards the Exclusive Economic Zone (EEZ) and the UN Convention on the Law of the Sea, which "provides vital guidelines for continued peaceful coexistence in the north." Indeed, "there are very few unresolved issues relating to jurisdiction in the Arctic, states comply with the Convention on the Law of the Sea, and the Arctic coastal states have committed themselves to the orderly settlement of any overlapping claims." As both strategies emphasize "the Law of the Sea must be respected in the Arctic as elsewhere" (2017, 19–21; 2014, 11, 12). Generally, "all coastal states have a continental shelf extending 200 nautical miles from their baselines… Norway has already submitted documentation on the extent of its continental shelf beyond the 200-mile limit… The maritime delimitation line agreed between Norway and Russia in 2010 stretches for 1750 kilometres. All the coastal states bordering the Arctic Ocean have undertaken to resolve maritime delimitation issues in accordance with the law of the sea." The 2014 Strategy summarizes that "it is essential for Norway to take a clear and firm approach to upholding its rights and fulfilling its duties in maritime areas under its jurisdiction in the north" (2014, 11, 12).

As the 2014 document states "the Arctic is Norway's most important foreign policy priority" (2014, 3). As well, "The Government's Arctic policy builds on our long-term efforts" and here

"the overarching goals" are: "peace, stability and predictability" and "International cooperation and the international legal order" (2017, 2, 15). Norway aims to "play a leading role in international diplomacy in the Arctic." (2014, 3). The Government will therefore "strengthen Norway's position as a responsible actor and partner in the north by focusing on knowledge development, business development and international cooperation" (2014, 16). In common with other Arctic states, Norway recognizes "the Arctic Council [as] the only circumpolar forum for political discussions at government level." "Climate change and environmental issues are key areas of the Council's work, and, in line with Norway's wishes, greater attention is now being paid to business development." As both documents point out, "the Arctic Council should remain the most important intergovernmental body for cooperation on Arctic issues" (2017, 17, 21; 2014, 3, 7, 12, 16).

Besides the Arctic Council, both strategies refer to the "Barents cooperation between the five Nordic countries, Russia and the EU which has been promoting peaceful and sustainable development in the Barents region" since 1993 (2014, 11). "The Barents cooperation was initiated in response to changes in the political landscape, which made closer cooperation between the eight Arctic states possible." Its "aim is to secure peace and stability in the Arctic." Norway will "continue to play an active role in the Barents cooperation, and to further develop people-to-people cooperation in the Barents region" (2017, 17, 18, 21; 2014, 11, 12, 16, 19). The Northern Dimension also contributes to regional cooperation. For example, "a number of partnerships have been set up in the framework of the Northern Dimension, including partnerships on the environment, health, culture, and transport and logistics" (2017, 17; 2014, 19). Both strategies also highlight the cooperation with the Baltic Sea Council and the Barents Euro-Arctic Council. The 2014 Strategy also refers to the Kirkenes Declaration on Cooperation in the Barents Euro-Arctic Region from 1993 which aims "to secure peace and stability in the Arctic" (2017, 2, 17, 18, 21; 2014, 12, 19).

The Arctic Economic Council (AEC) is also recognized in the 2014 Strategy. "The AEC will be an important platform for dialogue between the Arctic Council and the business sector. Norway considers it important that the Arctic Council gives greater priority to business development cooperation" (2014, 18). The 2014 Strategy also highlights the importance of more extensive Finnish–Norwegian cooperation as "Norway and Finland have established a partnership to strengthen economic and scientific cooperation in the Arctic. Key areas include promoting student exchanges, research cooperation, dialogue on transport and logistics, closer regional cooperation and flows of labour and services" (2014,19).

The **Environmental Protection** indicator accounts for 6 % of the total coded quotes for the 2017 Strategy and 7 % for the 2014 Strategy (see Figure 10, p. 73). As mentioned earlier, both documents consider the Arctic's environment to be vulnerable, making environmental protection a priority. According to the 2017 Strategy, "as one of the eight Arctic states, Norway has a great responsibility for ensuring sound management of all activities in the Arctic, so as to protect the region's vulnerable environment" (2017, 3). According to both documents, the main way Norway will accomplish this appears to be through balancing environmental protection and economic activities, as this will be important to both the functioning and future of the region. For example, the 2017 Strategy states that "the natural environment and natural resources are the basis of all livelihoods in the north, and healthy ecosystems provide goods and services the region depends on" (2017, 10; see also: 2014, 28). Both documents accordingly note that oil spills can be environmentally damaging and that response measures are needed (2017, 37; 2014, 39, 40). To find this balance, both documents identify different environmental practices. For example, the 2014 Strategy explains that environmental research is important for decision making, and that "the goal is to acquire new knowledge about oil and gas resources in the Arctic and develop knowledge and methods for more environmentally friendly exploration activities" (2014, 28). Research will also be used to make decisions with regard to climate change and environmental protection (2014, 36). Additionally, Norway will use an ecosystem-based management structure for managing the ocean and its resources (2014, 38). The 2017 Strategy also mentions the use of an ecosystem-based management structure; however, this exact term is only used in the context of the strategy's objectives (2017, 15). Other practices include sustainable business practices (2017, 21, 24) and finding ways to "reduce greenhouse gas emissions from road transport" (2017, 33).

Protected areas and biodiversity are also important to environmental protection and mentioned in both documents, although more detail is provided in the 2014 Strategy. The 2017 Strategy makes a general statement that "the Government will seek to safeguard threatened species and habitats, achieve good ecological status in ecosystems, and maintain a representative selection of Norwegian nature" (2017, 35). The 2014 Strategy suggests that Svalbard is an important location for animal protection. Indeed, the document notes that "65 per cent of Svalbard is protected" (2014, 38), and that "3000 polar bears live around Svalbard and in the northern Barents Sea. The breeding population of seabirds in this area totals 15 million, and the walrus population in the Svalbard area is about 4000" (2014, 7). Moreover, climate change can increase the presence of invasive species, and ocean acidification can harm the region's flora and fauna (2014, 36, 40). To address some of these issues, "Norway, together with Canada, will develop a plan for the follow-up of the Arctic Council's report on the threats to natural diversity in the Arctic" (2014, 40).

The **Pollution** indicator accounts for 5 % of the total coded quotes for the 2017 Strategy and 5 % for the 2014 Strategy (see Figure 10, p. 73). Both documents identify similar pollutants, including oil, greenhouse gases, radioactive material, and local and other waste material (2017, 6, 10, 31, 36; 2014, 6, 11, 14, 25). Additionally, the 2014 Strategy mentions short-lived climate forces, soot, and sulphur dioxide (2014, 29, 40), while the 2017 Strategy also mentions "emissions of persistent, bioaccumulative and toxic substances" and "marine litter and microplastics" (2017, 35). As for the sources of pollution, both documents

mention the shipping industry, and the "transport sector" more broadly in the 2017 document (2017, 6, 32; 2014, 40). The 2017 Strategy also mentions that pollution comes from "infrastructure development" and the 2014 Strategy also names "the nickel production facilities on the Kola Peninsula" (2017, 31; 2014, 29).

The strategies also discuss different approaches to pollution prevention. In particular, there is consistency, as they both acknowledge the Paris Agreement and the Arctic Council's Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic, as well as other mechanisms to address oil pollution in the Barents, Lofoton, and Vesterålen (2017, 32, 36, 37; 2014, 11, 36, 39). Some of the other problem-solving tactics in the 2014 Strategy include documenting pollution, or the possibility of pollution. For example, the MAREANO program maps pollution among other things (2014, 30), and in the Kola Peninsula, "documenting the impact on the environment and health is important for the dialogue with Russia on how to reducing the discharges" (2014, 30). Risk analysis is also important for preparing for potential pollution incidents. As an example, the Strategy states that "in the course of 2014, the Norwegian Coastal Administration completed an environmental risk and preparedness analysis for Svalbard and Jan Mayen. The analysis will provide a better basis to measure national preparedness against acute pollution in these areas" (2014, 39). The 2017 Strategy also speaks to plastics pollution and explains that "the Government will strengthen efforts at both national and international level to prevent and combat marine litter and microplastics" (2017, 35), but does not go into detail on what these measures will include.

The **Climate Change** indicator, which accounts for 3 % of the total coded quotes for the 2017 strategy and 3 % for the 2014 Strategy (see Figure 10, p. 73) identifies some of the consequences of climate change. The 2017 Strategy explains that climate change is a global issue, and that "the impacts of climate change in the Arctic are affecting countries both in and outside the region" (2017, 3). It also recognizes that "the impacts of climate change are particularly pronounced in the north, and this may affect current business activities and communities in the region" (2017, 3). Indeed, both documents recognize that sea ice is melting and that this may lead to new economic activity in the region (2017, 3; 2014, 3, 7), which is one of the positive consequences of climate change. That being said, there are negative consequences for the flora and fauna, as "climate change is a major and growing threat to species and ecosystems in the north and also makes them more vulnerable to other environmental pressures" (2017, 35). Somewhat similarly, the 2014 Strategy notes that "higher temperatures in the sea and changes in ocean currents may lead to fish stocks moving elsewhere" (2014, 26).

Despite the consequences of climate change, the 2017 Strategy does not use the words mitigation and adaptation. Instead, it makes statements that are suggestive of this. For example, the Strategy explains that "more knowledge and new approaches are needed to minimise the impacts of human activity and climate change on the Arctic environment" (2017, 35). Certainly, this sounds like mitigating the effects of climate change. In contrast,

the 2014 Strategy directly address adaptation with regard to regional and national efforts. Regionally, "the parties in the Barents Cooperation forum have prepared an action plan with measures that can contribute to reduced emissions and better adaptation to climate change" (2014, 40), while nationally "the Government will strengthen work on climate adaptation in the north through the measures that are announced in the white paper on climate adaptation in Norway… to the Storting)" (2014, 40).

As for climate agreements and frameworks, both documents mention the significance of the Paris Agreement for addressing climate change, and the 2014 Strategy also recognizes collaborative climate and emission reduction efforts through the work of the Barents Cooperation (2017, 12, 32; 2014, 11, 40). While these agreements are important, both documents also address the need for more climate research. For example, the 2017 Strategy suggests that research underpins climate cooperation (2017, 35), while the 2014 Strategy explains that "good climate models are necessary in order to be able to say something about future climate change, and better knowledge of sea ice is important to improving these models" (2014, 28).

The **Security** indicator, which accounts for 3 % of the total coded quotes for the 2017 Strategy and 5 % for the 2014 Strategy (see Figure 10, p. 73) illustrates the importance of international cooperation and the international legal order in security matters. The government's Arctic policy builds on long-term efforts and foundations of the Norwegian foreign policy. As both strategies emphasize, "international cooperation is vital for maintaining the overarching framework, including peace, security and stability, but it also enhances national efforts in areas such as infrastructure, knowledge development and business development" (2017, 9, 10, 15; 2014, 16). According to the Norwegian Arctic, as well as foreign, policy "it is in everyone's interests that the Arctic remains a peaceful and stable region… [due to] the importance of this approach to management in an area with such abundant natural resources but at the same time a highly vulnerable natural environment", as there are changes in Europe's security environment. Therefore, Norway will "continue to take a consistent and predictable approach to the exercise of its sovereignty" and "will play a leading role in promoting cooperation with other countries based on trust and openness" (2014, 11, 16). This entails "strategic projects with various cooperative partners that can contribute to increased interaction across borders in the north, ambitious business initiatives, broad knowledge initiatives, further development of infrastructure, and reinforced environmental protection, security and preparedness" (2014, 31).

As the 2017 and 2014 strategies are the most recent Arctic strategies of any of the Arctic states, Norway reflects Russian foreign policy and condemns its aggressive activities in Ukraine, as mentioned in the International Cooperation indicator. "Together with the rest of Europe and our other allies, Norway is standing firm in defence of international law and international rules in the face of Russia's conduct in Ukraine." This approach is also important in the context of the Arctic. "On the subject of security policy and good neighbourly relations: there is no

hiding the fact that Russia's actions in Ukraine are affecting relations between Russia and the rest of Europe" (2014, 3, 11, 16). Both strategies also refer to the increase of "Russian military activities in the North… over the last ten years". Although, "this increase in activity is not considered to be targeted at Norway, but it is nevertheless an important factor in Norway's security and defence policy" (2017, 18; 2014, 3). The Norwegian Armed Forces "will continue to exercise sovereignty and authority and [provide] situational awareness in the northern sea areas in a predictable, consistent and unambiguous way. This is an important element of the Government's overall Arctic policy." The Norwegian Coastguard plays also an important role (2017, 18, 21; 2014, 11, 16).

The 2014 Strategy highlights the importance of continued cooperation with Russia in areas where there are common interests, based on the "respect for the Law of the Sea and international cooperation are crucial for promoting stability and predictability in the north". Behind is that being among the Arctic littoral states "Norway and Russia share many common interests, not least the need to ensure sound management of the environment, the natural resources and the joint fish stocks of the Barents Sea." In addition to that, "the building of new military border stations will strengthen Norway's ability to monitor and control the Norwegian–Russian border." At the same time, "Norway cooperates with the other Arctic coastal states on measures to combat illegal, unreported and unregulated fishing in the Arctic Ocean" (2014, 16, 19). Hence, "targeted cooperation with Russia has led to improved maritime safety, higher cod quotas and action to reduce the risk of radioactive pollution" (2014, 11).

The 2017 Strategy also confirms that "membership of NATO and the transatlantic security community is the cornerstone of Norway's security policy." Moreover, "the presence of our allies, such as for training and exercising in Norway, is an important and natural result of our membership of NATO" (2017, 18). And the document continues with that "Norway is further developing its military cooperation and ability to cooperate with key allies and Nordic partner countries in the north, for example by participating in joint exercises." In fact, "the Cold Response exercise is carried out in North Norway every other year, most recently in March." Importantly, "closer cooperation between the Norwegian Joint Headquarters in Bodø and NATO's command structure strengthens the Alliance's ability to manage potential military crisis situations in the north" (2014, 16, 19).

The **Safety and SAR** indicator accounts for 8 % of the total coded quotes for the 2017 Strategy and 9 % for the 2014 Strategy (see Figure 10, p. 73). The 2017 Strategy clearly states that "environmental protection, safety, emergency preparedness and response" (2017, 35) must be addressed. In part, this includes maritime safety (2017, 3, 36). The 2014 Strategy provides more information on Norway's safety priorities, including maritime safety. For example, environmental protection is linked to oil spills, as well as other forms of pollution, especially in the Svalbard and Jan Mayen areas (2014, 36, 39). Safety and emergency preparedness at sea is also discussed. For example, the Strategy explains that maritime safety requires that "ships and other in-

stallations are suitable for polar waters, and that crew members have received the necessary training." Norway, moreover, will also be active in search and rescue (2014, 36). Rescue operations will also take place on land, especially if there is an accident or other form of health emergency in Svalbard (2014, 39). Land safety is also addressed with regard to transportation safety on roads and highways. Indeed, the document stresses that "congestion points, as well as landslide-prone and other vulnerable roads will be improved" (2014, 32).

In light of these concerns, different approaches to safety are discussed in the strategies. With regard to formalized agreements, both documents identify the Arctic Council's SAR and oil spill agreements, which are collaborative efforts with the other Arctic states (2017, 17; 2014, 36, 38). Additionally, the strategies acknowledge the important role of the IMO and the Polar Code to maritime safety. After participating in the development of the Polar Code, the 2017 Strategy states, "Norway is actively promoting the Polar Code, which entered into force on 1 January 2017, and is playing a role in facilitating a harmonised and effective global implementation of the code" (2017, 36; 14, 38). This suggests that binding safety rules are important for Norway. There are also other collaborative safety initiatives in the Barents region. For instance, Norway and Russia bilaterally cooperate on search and rescue (2017, 37), while the "the Norwegian-Russian ship reporting system, Barents SRS, and the maritime surveillance and information system BarentsWatch help to provide an overview of high-risk traffic in these sea areas and a more effective response in the event of accidents" (2017, 36; see also: 2014, 32, 34). There is also multilateral safety cooperation, with the 2014 Strategy explaining that "in 2008, Norway signed an agreement with Sweden, Finland and Russia on prevention, preparedness, and crisis management in the Barents region" (2014, 36–38). Safety collaboration also takes place within Norway, such as through the SARiNOR project that ran from 2013 to 2016. The 2014 Strategy explains the project "is led by the Maritime Forum Northern Norway" and that "the purpose of the project is to create an arena for cooperation in search and rescue among relevant private and public actors" (2014, 40). Although the two strategies demonstrate close cooperation between states, there does not seem to be a desire to integrate any of these safety systems. This sentiment is clearly expressed in the 2014 Strategy as "the challenges in the Arctic transcend all borders, and must be managed through international cooperation in agencies such as the UN Maritime Organisation IMO, and regionally in the Arctic Council" (2014, 36).

In terms of capabilities, both strategies discuss the same four key topics. First is the role of satellites for safety and surveillance. The 2017 Strategy explains that "satellite navigation, communications and surveillance systems are also important in the north for search and rescue efforts, climate and environmental monitoring, resource management and the exercise of sovereignty" (2017, 32). The 2014 Strategy identifies Norway's satellite capabilities as the AISSat-2 as part of the BarentsWatch program, and explains that capabilities are also acquired from the EU's Galileo and EGNOS programs (2014, 32, 35). However, both strategies recognize that a key challenge to satellite operation is

that "existing satellite communication systems have little or no coverage north of 75 degrees north"[6] (2014, 35; see also: 2017, 36) and that this flaw needs to be addressed. The 2017 Strategy also explains Norway's intention to "establish new land-based AIS (Automatic Identification System) base stations along the west coast of Svalbard, and will consider further developing the AIS network in Svalbard" (2017, 36).

The second topic is improved SAR capabilities, particularly near Svalbard. The strategies generally attribute this improvement to the purchase of two helicopters. The 2014 Strategy explains that these "have a greater range, reduced response time and greater carrying capacity, as well as new and modern search, communication and safety equipment" (2014, 38; see also: 2017, 37). The 2017 Strategy further explains that, in addition to the helicopters, safety around Svalbard has also been improved through new legislation "relating to ports and navigable waters" (2017, 37). The third topic is oil and pollution prevention, especially near Lofoten and Vesterålen. Both strategies show progression in addressing this concern, with the 2014 Strategy explaining that Norway wants to create a base for pollution response, and 2017 Strategy stating that Norway will "establish a centre with leading competence on oil spill preparedness and response and marine plastic litter, located in the Lofoten and Vesterålen archipelago" (2017, 37; see also: 2014, 39). The final topic is mapping and charting around Svalbard. Again, the two documents show progress with this regard. The 2014 Strategy explains that little mapping has taken place in this area, while the 2017 Strategy explains that "nautical charts and ice data are an important part of the infrastructure needed to save lives, and protect health, the environment and valuable assets and resources. The work that is already under way to chart key areas around Svalbard will therefore be continued" (2017, 37). In addition, with responsibility for Arctic safety in mind, the Coast Guard performs a range of safety related duties, "including fisheries inspections, customs inspections, environmental protection and search and rescue operations" (2014, 15).

The **Economy** indicator accounts for 18% of the total coded quotes for the 2017 Strategy and 17% for the 2014 Strategy (see Figure 10, p. 73). The two documents identify similar economic activities including tourism, reindeer husbandry, aquaculture, fisheries, seafood, and the blue economy (2017, 10, 22; 2014, 6, 20) According to the 2017 Strategy, the blue economy likely includes "ocean-based industries such as marine biotechnology, energy, seabed mining, and maritime transport" (2017, 23–24; see also: 2014, 14, 25). The blue economy, and fish in particular, are important to Norway as "24,5 billion NOK was the value of fish exports from North Norway in 2016. This amounts to around 60% of the region's total exports of goods" (2017, 6). The 2017 Strategy additionally recognizes that "traditional Sami industries" also contribute to Norway's economy, and also that there is "considerable potential for green growth in North Norway" (2017, 23, 12). The 2014 Strategy also recognizes that space is another regional economic activity. Indeed, the report states that "space

technology and research is one area in which the region is already a world leader" (2014, 14).

Minerals and energy, of course, are important aspects of Norway's economy. Both documents support developing the mining industry (2017, 31; 2014, 22), especially as "33% of turnover from the Norwegian mining and mineral industry is generated in North Norway and Svalbard" (2014, 6). Both documents also highlight the potential for increased oil and gas activity through similar statements about untapped resources. The 2014 Strategy remarks that "43% of undiscovered oil and gas resources on the Norwegian continental shelf are expected to lie in the Barents Sea" (2014, 7; 2017, 2). In light of this potential, the 2014 Strategy further explains that the Government will promote exploration and issue new licences (2014, 20). Oil and gas, however, are not the only energy sources mentioned in the two strategies; renewable energy is also addressed, and there seems to be a slight shift in tone between the two documents. For instance, the then Foreign Minister Brende expressed that "'renewable energy use should, and will, increase considerably, but a large share of the global energy supply will still have to come from sources such as gas. Gas will be an important bridge between a fossil fuel based and a low-carbon economy…'" (2014, 14), suggesting that Norway is still focusing on oil and gas. The 2017 Strategy, however, appears to put more emphasis on the use of renewable energy. Indeed, the Strategy states that "North Norway has abundant renewable energy resources, and the region as a whole has a power surplus. The Government will promote the effective use of renewable energy resources as a basis for business development and value creation" (2017, 32).

Sustainability is also important for Norway's economic activities. For instance, the 2014 Strategy states that "Foreign Minister Brende considers it important that the Government promotes sustainable business development in the north" (2014, 13–14). The 2017 Strategy further supports sustainable development, as one of its main aims is to "ensure economically, socially and environmentally sustainable business development in the Arctic" (2017, 23). The Strategy does not, however, just stop at sustainable businesses, but also seeks to create regional sustainability. It explains that "a sustainable region is one that has a balanced population structure, and is one where human and natural resources are managed in a way that promotes development and growth, both now and in the future" (2017, 9).

Considering the breadth of economic activities, both documents comment on the importance of the regional economy to Norway. For example, the 2017 Strategy expresses that "the business sector in North Norway is thriving, and the rate of growth in the north of the country is currently higher than in the south" (2017, 3). The 2014 Strategy makes similar statements, explaining that "GDP growth forecasts for North Norway for 2014 and 2015 are better than for the rest of the country, and growth of 3% is forecast for both years. Expected growth for the rest of

---

6   When making the same point, the 2017 Strategy explains that coverage issues begin at 72°N (2017, 36). It was not clear why there was a 3° difference between the two strategies.

the country in 2014 and 2015 is 2 %" (2014, 43). Moreover, "the business sector in North Norway is more export-oriented than the rest of the Norwegian economy and is responsible for some 8 % of the country's exports other than oil and gas" (2014, 43).

The two strategies recognize that the success of Northway's northern economy is dependent upon people living in the region. The two documents thus propose different approaches to ensuring a viable workforce. The approach in the 2017 Strategy is to build a sustainable region in order to attract or retain people. Indeed, the Strategy explains that "creating attractive local communities that can offer secure and interesting jobs in both the private and public sectors is therefore an essential component of the Government's Arctic strategy" (2017, 10, 23). The 2014 Strategy's plan to increase the labour force was through the Freedom of Movement Council's plan to ease cross-border employment (2014, 19) that was first mentioned here in the Human Dimension indicator. Another shared strategy is the legislation or policy changes to facilitate economic growth. The 2017 Strategy addresses "simplifying the Planning and Building Act" as a way to stimulate growth (2017, 31). In contrast, Mr. Brende in the 2014 Strategy "emphasises the fact that the Government will target its efforts towards industries with growth potential. Priority areas will include the oil and gas industry and the related supply industry, the maritime sector, the seafood industry, the mineral industry, tourism and space technology" (2014, 14).

To help facilitate some of these priorities, there will be both a "white paper and draft legislation" put forward for the seafood industry, and also a maritime strategy for maritime industries (2014, 25). Regulations will also apply to the bioprospecting field; the oil and gas industry is also accountable to international standards (2014, 25, 39). That said, the 2017 Strategy speaks to the issue of regulation and explains that "most sectors with growth potential in the north are subject to considerable government regulation" (2017, 24) which will affect how economic activities are performed.

Other actions will be taken outside of population building and economic regulation. According to the 2017 Strategy, the Government will "provide risk capital through Innovation Norway's Environmental Technology Scheme to companies seeking to develop environmentally friendly products and technology" and also "strengthen the supplier industry in North Norway by establishing a supply chain development programme for the region" (2017, 23, 24). The 2014 Strategy also looks towards international cooperation as "the prime ministers of Norway, Sweden and Finland have set up an expert group to identify ways of strengthening business cooperation in the north" (2014, 18). Combined, the two strategies identify a wide range of economic actors. The state, the EU, the private sector, and Indigenous peoples or the Saami are mentioned in both documents (2017, 18, 24; 2014, 16, 19, 20, 22). The 2017 Strategy further mentions skilled labor, Innovation Norway, and The Expert Committee for Green Competitiveness (2017, 9, 12, 23), while the 2014 Strategy names the Geological Survey of Norway, the Svalbard Directorate of Mining and the Commissioner of Mines, the Petroleum Safety Authority, and Visit Svalbard AS (2014, 22, 25, 39).

The **Tourism** indicator, which accounts for 1 % of the total coded quotes for the 2017 Strategy and 2 % of the 2014 Strategy (see Figure 10, p. 73) recognizes the relevance of the tourist industry for the future. Tourism in the North is increasing, "with visitors coming to the region from all over the world" (2017, 3). Indeed, "the High North has some of the most beautiful scenery and wildlife that Norway has to offer" which are "major competitive advantages for the travel and tourism industry" (2014, 20). Furthermore, "there is rich natural diversity, both on land and in the sea. This has been the basis of settlement, value creation and welfare for as long as people have lived here. Fisheries, aquaculture, agriculture, new marine industries and tourism make use of the natural environment and are dependent on sustainable management." The 2014 Strategy further explains that "Tourism is also important for local employment", and "the Hurtigruten ships are a symbol of authentic northern Norway to many people." As well "The Government will contribute to good, predictable framework conditions for the travel and tourism industry" (2014, 20, 23, 36).

"The Norwegian economy is undergoing a process of restructuring, and needs North Norway's contribution more than ever" (2017, 3). At the same time, the 2014 Strategy warns that "since the region is becoming more accessible as the sea ice melts and with the growing demand for energy and raw materials, the region faces several other challenges, such as the expansion of tourism, besides others like growing traffic along new sailing routes or greater oil and gas activity" (2014, 12).

The 2014 Strategy also addresses the "growth in the travel and tourism industry in Svalbard". In fact, "visit Svalbard AS is today the only travel and tourism company that receives annual support directly from the Ministry of Trade, Industry and Fisheries. This is because Svalbard has special safety and environmental challenges and the travel and tourism industry has a central position in society in Svalbard and is important for settlement" (2014, 25). The Government will further "develop the tourist industry with a focus on profitability and sustainable management of the natural environment and cultural heritage." At the same time, it will "develop the transport system in the north so that it can handle the flow of goods, everyday transport and travel and tourism" (2014, 23, 24, 32).

The **Infrastructure** indicator, which accounts for 8 % of the total coded quotes for the 2017 Strategy and 9 % of the 2014 Strategy (see Figure 10, p. 73) discusses different infrastructure issues. Improving transportation infrastructure is addressed in both strategies. Both documents comment that the National Transport Plan guides their infrastructure developments (2017, 31–32; 2014, 32), and that transportation needs to facilitate the movement of goods (2017, 11; 2014, 32). Additionally, the need to develop sustainable, environmentally friendly, and safe transportation is also discussed in both strategies, while the 2014 Strategy also acknowledges the need for accessibility (2017, 31; 2014, 32). Both strategies, though recognizing the need to develop different types of transportation infrastructure, provide different amounts of detail. While the 2017 Strategy explains that "it is vital to ensure that infrastructure is well-maintained,

ferry capacity is sufficient, roads across the mountains are kept open year-round, and that there are reliable flight connections in the region" (2017, 32), the 2014 Strategy goes into detail and provides concrete actions and proposals on highway, air, railway, and port infrastructure. For example, "National Transport Plan 2014–2023 funds have been allocated to upgrading and constructing new harbour infrastructure in the port of Longyearbyen" (2014, 35).

Shipping is also connected to infrastructure and addressed in both documents, although to varying degrees. The 2017 Strategy does not address shipping as much as the 2014 Strategy does, but it does mention Norway's plans to make local maritime traffic more environmentally friendly. It also expresses the desire for increased safety by "[Norway participating] in efforts under the IMO and the Arctic Council to harmonise implementation of the Polar Code worldwide" (2017, 37). The 2014 Strategy provides more detail, especially on safety, the IMO, and the Polar Code. It explains that "80 % of maritime traffic in the Arctic passes through Norwegian waters" (2014, 6), which contextualizes the focus on safety. It also explains that "Norway is an active driving force in establishing global safety and environmental rules for ships operating in polar waters. Norway has led the working group in the UN maritime organisation (IMO) which is working to establish the so-called Polar Code" (2014, 38).

Ensuring energy security is raised in both strategies, as is the need for transmission lines (2017, 31; 2014, 35). In particular, the 2014 Strategy explains that "Statnett, the Norwegian state owned enterprise responsible for owning, operating and constructing the central power grid in Norway, is making significant investments in the main grid, which will result in increased security of supply in Northern Norway" (2014, 32). Energy security, seemingly, may also come from renewable energy (2017, 32; 2014, 32).

Telecommunications and ICT infrastructure are briefly mentioned in both documents in a safety context. In particular, the two strategies recognize the challenges of operating satellites in the far north (2017, 32; 2014, 35), which is discussed in detail in the Safety and SAR indicator. The 2017 Strategy also recognizes that as "long distances between communities and businesses" is problematic, the Government will "facilitate improvements in broadband coverage nationwide, including in North Norway" (2017, 32, 33).

To achieve these transportation and communications goals, innovation and technology are needed. Innovation and technology in the 2017 Strategy cover transportation infrastructure with the aim of ensuring that "North Norway has effective, well-connected infrastructure that facilitates sustainable development, the transition to a green economy and the development of an innovative and adaptable business sector in the region" (2017, 31). As for communications, the 2014 Strategy states that "the Government will facilitate the development of space-based solutions for navigation, communication and earth observation" (2014, 32).

The **Science and Education** indicator accounts for 9 % of the total coded quotes for the 2017 Strategy and 14 % for the 2014 Strategy (see Figure 10, p. 73). Climate change is identified as a driver behind Norway's scientific activities in both documents, while the 2017 Strategy also explains that "the oceans, climate change and the environment are key topics in current Arctic research" (2017, 27; see also: 2014, 3). Research can also be used for other purposes. For example, both strategies suggest that research and knowledge can help improve Norway's economy (2017, 27; 2014, 28), and the 2017 Strategy directly links climate and environmental research to business development. The Strategy states that "more knowledge about interactions between oceans, ice, biodiversity, and ecosystems is necessary for overall management of the northern sea areas and business development and value creation" (2017, 28). Additionally, research is used to help inform economic decisions, including on sustainable development (2017, 9). The 2014 Strategy also explains that "it is important to have a research-based approach when evaluating environmental consequences before making decisions about new activity" (2014, 36). Both strategies also discuss the need for knowledge. The 2014 Strategy recognizes Saami knowledge, whereas the 2017 Strategy states that "we must draw on the knowledge of the people, companies, institutions and local politicians in the north" (2017, 10; see also: 2014, 30).

To facilitate this research, the two documents identify different research infrastructure. First, in terms of physical infrastructure, the 2017 Strategy explains the Government wants to "establish a centre of expertise on ocean and Arctic issues in Tromsø" and that "Norway is preparing for the future with a new ice-breaker research vessel, Kronprins Haakon" (2017, 29). The 2014 Strategy also mentions that "the Institute of Marine Research has signed a contract for the construction of a new ice-going research vessel" (2014, 28), as well as "the Alomar Observatory on Andøya" (2014, 8), and a "space research cluster made up of research centres in Svalbard, Tromsø, Narvik and on Andøya" (2014, 14). There are also plans to build "better infrastructure for research in Svalbard" (2014, 29). The 2014 Strategy also mentions different research institutes and universities, for example, the Fram Centre, the Institute of Marine Research, the Research Council of Norway, the Norwegian Polar Institute (2014, 26, 28, 29, 30), Nofima which "is Europe's largest business-oriented research institute…and the head office is located in Tromsø" (2014, 25), as well as the "University of Tromsø, the University Hospital of North Norway and the Northern Research Institute (Norut)" (2014, 25). Finally, the two strategies recognize that the research infrastructure also includes cooperation through formal and informal networks and projects. For example, the 2017 Strategy mentions "the Arctic Council and EU research programmes" (2017, 27), while the 2014 Strategy mentions the "Maritime Preparedness and International Partnerships in the High North (2014-2016)" project, and collaboration with the USA (2014, 30, 39).

The funding of research is addressed minimally in the documents. The 2017 Strategy explains that "750 million NOK was spent on research relating to the Arctic through the Research Council of Norway in 2016" (2017, 6), and that local County

Councils also provide "regional research funds" (2017, 12). In contrast, the 2014 Strategy suggests that research with commercial value receives funding. Specifically, the Strategy states that "through financing research and commercialisation, the public authorities are contributing to the development of businesses based on marine biotechnology and bioprospecting" (2014, 25).

Research, innovation and technology are also connected in both strategies. In particular, the 2014 Strategy stresses that "our aim must be for North Norway to become one of the most innovative and knowledge-driven regions of growth in the world" (2014, 14), while both strategies assert that knowledge and innovative technological developments help with the economy (2017, 27; 2014, 36). Technological innovations in space will also be of importance for Norway (2014, 32). The 2017 Strategy appears to build on this aim as the Government is stating that it will present "a national space strategy during the course of 2017" (2017, 33).

In terms of education, the two strategies comment on levels of educational attainment. The 2017 strategy states that in the north there are "school results that are lower than the national average, low completion rates in upper secondary schools, and a shortage of qualified teachers are among the challenges facing the education system in North Norway" (2017, 28). To address these gaps, "the Government is seeking to raise the level of education, improve the quality of education and training programmes, and reduce the dropout rate in upper secondary schools" (2017, 28). Indeed, the Strategy identifies the aim to "improve the quality of education from primary school to university, and increase completion rates" (2017, 27). Yet, the proposed course of action appears to be to gear education towards "regional labour market needs" (2017, 27), suggesting that education has, not only a knowledge-based purpose, but also an economic one. The 2014 Strategy also recognizes the lower attainment levels, but is more direct in connecting education to the economy. The Strategy explains that "the level of education in Northern Norway is lower than in the rest of the country. The development of strong, regional knowledge-based business environments and skilled manpower for business and society is critical to unleashing the value creation potential of the region" (2014, 26). The Strategy further solidifies the connection between education and the economy, stating that "the Government is determined to cooperate with business to make it attractive for young people to choose – and complete – courses of education that are important to the development of society in the north" (2014, 26). The focus here seems to be in the field of engineering: "the Ministry of Education and Research has therefore allocated 60 new places for technology students at the University of Tromsø for the academic year 2013/2014" (2014, 28-29). Additionally, "142 doctorates were awarded at the Universities of Tromsø and Nordland in 2013, twice the number awarded in 2006" (2014, 43).

The **Implementation** indicator identifies the different approaches to implementation in the two documents. In the 2017 Strategy, there are text boxes at the end of each section containing the wording *"THE GOVERNMENT WILL"* and listing a series

of action items. While this shows intent, the document does not provide details as to which ministries will be responsible for the action items, nor are there time frames associated with them. Strategy funding or budgets are not properly explained in the document either, although one action item says to "allocate approximately NOK 40 billion (under the National Transport Plan 2018–2029) for investment projects in Norway's three northernmost counties" (2017, 33). Finally, there is no mention of follow-up or evaluation, and the document ends without a conclusion. However, as this is a short version, more details may be provided in the original Norwegian language document.

At the end of the priority sections in the 2014 Strategy, there are subsections called "Government measures for..." that mainly provide details on what the Government is already doing or some areas that they want to address. This does not read so much like action items found in the 2017 document, perhaps because of the inclusion of existing actions. The action items, at times, do not necessarily align with what is written in the text. For example, there is an item in the international cooperation section about increasing cross border health efforts, but this is not discussed as an issue in the section. While it is a good action item, it is not substantiated by the discussion. What is more, the business section has less than one page of information but two pages of action items, and there seems to be a disconnect between them. Some aspects of the Strategy did have funding allocated to them. For example, an action item in the business section notes that "the Ministry of Foreign Affairs has allocated NOK 150 million to business projects in the High North for the period 2014-2019" (2014, 22). The document also states that "through the establishment of a new grant scheme, Arctic 2030, we are expanding the perspective, both geographically and in time. The new scheme will have a framework of NOK 150 million for 2015" (2014, 31). There is also an infographic on budgets which states that "the Norwegian Government's budget allocations for activities relating to the Arctic have risen since 2010. The figures are not exhaustive, but give an indication of the trend over time" (2014, 43). The document does not mention follow-up or evaluation.

To sum up

Figure 10 at the beginning of this chapter shows that the same four indicators—Governance, Economy, International Cooperation, and Science and Education (2017 Strategy)—have the highest percentage of quotes assigned to them in both strategies. In the 2014 Strategy, the order is slightly different: Economy, Governance, Science and Education, and International Cooperation. In both cases, Tourism is the least-coded, followed by Climate Change.

In terms of meeting Norway's stated priorities identified at the start of the Norway discussion (2017, 6), "international cooperation," "business development," and "knowledge development," these are supported by the corresponding indicators, which are in the top four coded indicators in the 2017 Strategy: International Cooperation, Economy, and Science and Education (see Appendix). Infrastructure is the fifth most-quoted indicator,

suggesting that it is neither a priority nor an afterthought. As for "environmental protection and emergency preparedness," at first glance it may not seem as if this priority is supported. However, when the Environmental Protection, Pollution, Climate Change, and Safety and SAR indicators are added together, they become the most coded issues (see Appendix) suggesting that the priority is met.

The use of infographics for certain data stands out in these documents and also draws the reader's attention to important information. There are some challenges when comparing the two documents, as the 2017 Strategy is an English short version, so it is difficult to tell what, if any, pertinent information was not included that was in the original Norwegian version. That said, there are some connections between the different indicators and themes. For instance, the international cooperation and governance indicators are connected, as cooperation takes place in different governance structures (i.e., Arctic Council, Barents) and with different governance issues, such as safety (i.e., through the Polar Code and the IMO). International cooperation is also connected to security, as cooperation is the foundation of regional stability.

To further compare the documents, the two most relevant similarities and the three most relevant differences are discussed.

There are some **similarities** between the two documents and two are discussed here. *First,* safety and SAR are addressed similarly in the two strategies. For instance, both mention the Arctic Council oil and SAR agreements, BarentsWatch, the IMO and Polar Code, and both support safety cooperation with Russia. As for capabilities, they also recognize the importance of satellites for maritime surveillance and communication capabilities but acknowledge the challenges of operating above 72°N (75°N in the 2014 Strategy). The strategies also comment on the improved SAR capabilities in Svalbard with the addition of two helicopters, and the need to improve maritime mapping and charting. Indeed, both documents recognize the gains that have been made for regional safety while also acknowledging that more needs to be done. *Second*, there are similarities in the way the economy is discussed. Indeed, both documents mention economic activities, such as mining, oil and gas, and the green economy. The discussion around green growth and renewables shows the progress made between the two documents, from something to be developed in 2014 to something to be promoted in 2017; the importance of sustainable development is also reiterated in both documents. Other industries like tourism, reindeer husbandry, and fishing are also mentioned in both documents. Another key similarity in this indicator is the way both documents stress that a successful northern economy is dependent upon people living in the region. In this regard, the 2017 Strategy suggests creating sustainable communities to attract people to the North, while the 2014 Strategy seeks to ease labor migration. In both documents, the Government also dis-

cusses actions they can take to help stimulate the economy, such as making legislation and/or regulation more business-friendly.

There are some **differences** between the two documents, three of which are discussed here. *First,* there is an interesting difference in terms of safety, with the 2014 Strategy commenting on road safety and the possibility of landslides. This appears to be the only document that actually addresses this issue.[7] *Second*, there are some differences in how transportation infrastructure is addressed. While both documents comment that improvements are needed for economic reasons, the 2014 Strategy also states that infrastructure improvements are also for residents and that they must be safe.

Additionally, more detailed information is also provided on specific road, air, and rail projects. Both documents also mention the need to improve ICT infrastructure, but the 2017 Strategy speaks more about broadband for business while the 2014 Strategy focuses on satellites for safety. *Third,* there is one key difference when it comes to security. While both strategies state that attention needs to be paid to Russian expansion in the Arctic, the 2014 Strategy clearly calls out the situation in Ukraine as something to be condemned, while at the same time also suggesting cooperation can carry on in other, shared areas in a section of the report titled 'Peace and Law of the Sea.' In contrast, the 2017 Strategy mentions Ukraine and the need for continued cooperation in a subsection on international cooperation that precedes a short security discussion that covers Russia's actions in the North, although not Ukraine. The 2014 Strategy also addresses border management in the context of new border posts that were opened.

Overall, the two documents show progression in the way the Norwegian government approaches Arctic governance in that the 2017 Strategy keeps pace with environmental changes and changing international relations.

---

7   Sweden mentions the need for "greater awareness of traffic at sea, in the air and on land helps to reduce the risks of accidents" (Sweden. GOS 2011a, 35), but then goes on to discuss maritime traffic. This is not an adequate discussion of road safety in contrast to Norway's.

Russian Federation

The Russian Federation has two main strategy documents on the Arctic that we analyze: the 2013 *Strategy for the Development of the Arctic Zone of the Russian Federation and National Security Efforts for the Period up to 2020* [Стратегия развития Арктической зоны Российской Федерации и обеспечения национальной безопасности на период до 2020 года] (Russia TRG 2013). It is a follow-up to the 2008 *Foundations of the State Policy of the Russian Federation in the Arctic until 2020 and Beyond* [Основы государственной политики Российской Федерации в Арктике на период до 2020 года и дальнейшую перспективу] (Russia TRG 2008). In 2001 Russia presented for the first time *Foundations of the State Policy of the Russian Federation in the Arctic* [Основы государственной политики Российской Федерации в Арктике], a draft of the Arctic policy for the 2008 document. For this analysis, the unofficial English translations are used and compared to the original Russian language documents; it is thus important to understand that the quotes used here may not be the same in the original Russian version.

There are also other policy documents/resolutions released by the Russian government. However, because they are not strategies, they are not considered in this analysis. *Resolution of the Government of the Russian Federation On approval of the state program of the Russian Federation Socio-economic development of the Arctic zone of the Russian Federation for the period up to 2020* [Правительство Российской Федерации Постановление Об утверждении государственной программы Российской Федерации Социально-экономическое развитие Арктической зоны Российской Федерации на период до 2020 года] issued in April 2014 (Russia TRG 2014); *Resolution of the Government of the Russian Federation On approval of the Provisions of the State Commission for the Development of the Arctic* [Правительство Российской Федерации Постановление Об утверждении Положения о Государственной комиссии по вопросам развития Арктики] from March 2015 (Russia TRG 2015); and *Resolution of the Government of the Russian Federation On Amendments to the Resolution of the Government of the Russian Federation of April 21, 2014* [Правительство Российской Федерации Постановление О внесении изменений в постановление Правительства Российской Федерации от 21 апреля 2014] from August 2017 (Russia TRG 2017). Additionally, Russian President Vladimir Putin signed an executive order on 26 February 2019 N78 *On the improvement of state governance in the sphere of development of the Arctic zone of the Russian Federation* [О совершенствовании госуправления в сфере развития Арктической зоны Российской Федерации] (Russia TRG 2019), according to which the Ministry for the Development of the Russian Far East is renamed to the Ministry for the Development of the Russian Far East and the Arctic. This Ministry has the authority, inter alia, to develop and enforce government policy and legal regulations concerning the Arctic's socio-economic development. Finally, the Russian Fedration is currently working on a new draft policy, *Strategy for the Development of the Arctic Zone of the Russian Federation up to 2035* (Korchunov 2019, 4-11).

The 2013 Strategy identifies the following five main priorities:
"a) integrated socio-economic development of the Arctic zone of the Russian Federation;
b) the development of science and technology;
c) the establishment of a modern information and telecommunications infrastructure;
d) environmental security;
e) international cooperation in the Arctic;
f) provision of military security, protection, and protection of the state border of the Russian Federation in the Arctic" (2013, 3).

The priorities of the 2008 Strategy can be summarized as maritime delimitation, regional safety (SAR) standards, regional cooperation, improved infrastructure, socio-economic development, and improving regional wellbeing (2008, 3, 4). While there may be some overlap in priorities, the new 2013 document provides a more comprehensive description of Russia's objectives, priorities, and means of implementation.

Comparison by Indicator

The **(Re)mapping and (Re)defining the Arctic** indicator provides insights into how the Russian Federation (Russia) understands the Arctic. Both documents recognize that the regional climate is extreme and that there is poor ecological stability. Additionally, Russia considers the region to be industrial despite its remoteness (2013, 2; 2008, 2,10). The strategies also refer to the region as the "Arctic" and do not use terms like circumpolar or North.

Figure 11 provides a comparison of how many quotes are assigned to the different indicators, as a percentage of the total number of coded quotes (rounded to the nearest whole number) in the document.
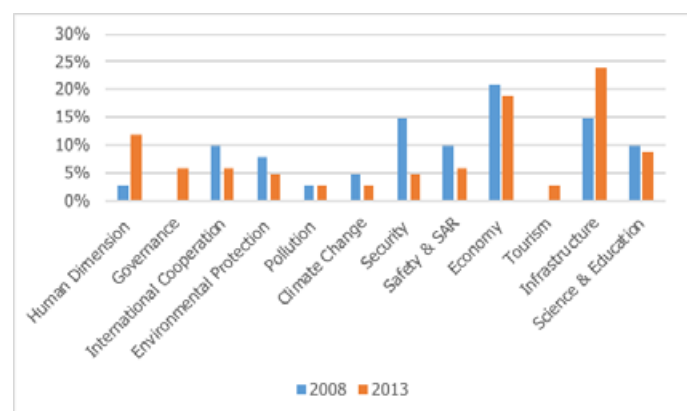

Figure 11. Comparing the Russian Federation's 2008 and 2013 Strategies
Note: The percentages in each indicator are rounded to the closest whole number and represent the percent of the total number of quotes coded for each document.

The **Human Dimension** indicator accounts for 12 % of the total coded quotes for the 2013 Strategy and 3 % of the 2008 Strategy (see Figure 11, p. 85). The 2008 Strategy addresses little to do with this indicator; there is one sentence stating that increased access to social and economic activities would improve the wellbeing of both Indigenous and non-Indigenous people in the Russian Arctic. The strategy seeks the "improvement of quality of life of the Indigenous population and social conditions of economic activities in the Arctic" (2008, 4).

In contrast, the 2013 Strategy addresses a wider range of topics. First, Indigenous peoples are discussed in relation to overall health and wellbeing corresponding to education, culture, and economic success. For instance, the Strategy links education to future success. This means the improvement of "educational programs for Indigenous Arctic zone of the Russian Federation, especially as it relates to preparing children for life in a modern society with a full mastery of skills policies for extreme environments, including equipping of educational institutions and remote areas means of distance learning" (2013, 4). The Strategy also explains that there is a connection between Indigenous culture(s), way of life, and environmental protection (2013, 4). As for Indigenous economic success, this is understood as new opportunities rooted in "the traditional economy that strengthen employment and self-employment" (2013, 5) rather than larger companies hiring Indigenous peoples as employees. To achieve this, the Strategy explains that many actors will be involved through the "mobilization of domestic resources of households and communities, and their active support from the government, business and non-profit organizations" (2013, 5).

The Strategy also addresses culture outside the Indigenous context. In particular, it provides a broad understanding of things and places that provide culture. Indeed, the strategy seeks "active formation in cities, small villages and towns new affordable for all segments of the population, and mobile multi cultural institutions (socio-cultural centers, cultural and sports facilities, information intelligence centers, mobile library)" (2013, 4).

Health and wellbeing are also addressed outside the Indigenous context. For example, there is much emphasis on the need for improved access to health care for those living in the Russian Arctic. For example, the Strategy calls for "ensuring the availability and quality of medical care to the population, including through improved primary care and primary health care in places of traditional residence and traditional economic activities of the population of the Arctic zone of the Russian Federation, the use of country vehicles and aircraft for sanitary -Air evacuation of patients, the development of technologies for remote panel of doctors" (2013, 4). The Strategy also links better telecommunications, water, housing, and energy infrastructure to improved wellbeing (2013, 4). Improved health and wellbeing, in turn, are connected to increased "self-employment and entrepreneurship" opportunities, "particularly in single-industry towns and villages" (2013, 4), as well as improved education, and access to sports and cultural activities (2013, 4).

As for demographics and migration, the 2013 Strategy also acknowledges that skilled workers are problematically leaving the Russian Arctic. For example, the Strategy identifies the "negative demographic trends in most of the Arctic regions of the Russian Federation, the outflow of labor (especially skilled) in the southern regions of Russia and abroad" (2013, 2). More skilled people will thus be needed to migrate back into the region (2013, 4).

The **Governance** indicator, which accounts for 6 % of the total coded quotes in the 2013 Strategy (see Figure 11, p. 85) is briefly captured only in the newest 2013 Strategy, while the 2008 Strategy does not reflect on governance at all. The 2013 Strategy states that for the "effective use and development of the resource base" it is necessary to "ensure the preparation of materials submitted to the Commission on the Limits of the Continental Shelf for the validation of the outer limits of the continental shelf of the Russian Federation in the Arctic" (2013, 5).

To "modernize the fishing industry" the Russian government promises "the effective use of key species of marine biological resources and the involvement of non-traditional fishing sites." At the same time, there is also a need for "preventing and combating illicit production and trafficking of water biological resources." Furthermore, the Strategy aims at "the preservation and development of the resource potential of fisheries and implementation of technical upgrading and commissioning of new capacities for deep processing of aquatic biological resources and the development of marine biotechnology" (2013, 6).

In terms of science and technology, the Russian government aims to use "use of the opportunities for international scientific and technological cooperation, ensuring the participation of Russian scientific and educational organizations in the global and regional technology and research projects in the Arctic" (2013, 6).

The **International Treaties and International Cooperation** indicator, which accounts for 6 % of the total coded quotes in the 2013 Strategy and 10 % of the 2008 Strategy (see Figure 11, p. 85), highlights the importance of joint cooperative efforts by all Arctic states. The 2013 Strategy states that "in order to promote international cooperation and preservation of the Arctic as a zone of peace" it is necessary "providing a mutually beneficial bilateral and multilateral cooperation between the Russian Federation and the Arctic states on the basis of international treaties and agreements to which the Russian Federation is increasing the efficiency of foreign economic activity" (2013, 7; 2008, 3). Russia should also "ensure a mutually beneficial Russian presence, economic, and scientific activities on the Norwegian archipelago of Svalbard keep" (2013, 8).

One of the strategic priorities of Russia is to "strengthening, on a bilateral basis and within the framework of regional organizations, including the Arctic Council and the Barents-Euro Arctic region Council, good-neighborhood of Russia with the sub-Arctic states, atomization of economic, scientific and technical, cultural interaction, and also frontier cooperation,

including in the field of effective natural resources management and environment preservation in the Arctic" (2013, 8; 2008, 4).

The 2013 Strategy also refers to the importance of "combining the efforts of the Arctic states to create a single regional system for search and rescue, and to prevent man-made disasters and elimination of their consequences" (2013, 7). There is also a need for "the implementation of the regular exchange of information on the environment, as well as data on the Arctic climate and its dynamics, the development of international cooperation in improving systems for meteorological observations in the Arctic climate, including from space" (2013, 8).

The 2008 document also emphasizes the need for "carrying out of an active interaction of the Russian Federation with the Arctic states with a view of delimitation of maritime areas on the basis of norms of international law, mutual arrangements taking into account national interests of the Russian Federation, [and also] for tackling issues of an international legal substantiation of the external border of the Arctic zone of the Russian Federation" (2008, 3). The 2013 Strategy further highlights the organization and "efficient use of transit and cross-polar air routes in the Arctic, the use of the Northern Sea Route for international shipping under the jurisdiction of the Russian Federation and in accordance with international treaties of the Russian Federation" (2013, 8).

The 2008 Strategy also emphasizes enhancing "the participation of Russian official agencies and public organizations in the work of international forums devoted to the Arctic problematic, including the inter-parliamentary interaction within the framework of the Russia - European Union partnership" (2008, 3, 4). Furthermore, the 2013 Strategy refers to the necessity of "developing a dialogue between the regions and municipalities of the Nordic countries to exchange experience in the development of climate and energy policies" (2013, 8).

The **Environmental Protection** indicator accounts for 5 % of the total coded quotes for the 2013 Strategy and 8 % of the total coded quotes for the 2008 Strategy (see Figure 11, p. 85). The two documents take different approaches to discussing environmental concerns. For instance, the 2013 Strategy acknowledges that the environment in the Russian Arctic has been damaged (2013, 3), and expresses a desire to find a way to use technologies, especially those in the resource industry, to limit further harm. The Strategy calls for the "development and implementation of new techniques and technologies in the field of environmental management, the development of offshore mineral resources and water resources, as well as the prevention and elimination of oil spills in ice conditions" (2013, 6). In contrast, the 2008 Strategy does not recognize that environmental damage has occurred, but expresses the wish to ensure that economic activities do not harm the environment. The Strategy thus states a "basic objective…in the sphere of environmental security – preservation and maintenance of environment protection of the Arctic, liquidation of ecological consequences of economic activities in the conditions of increasing economic activity and global

changes of climate" (2008, 3). Despite the small difference between the two documents with regard to recognition of existing environmental damage, both strategies do recognize the need to protect the environment.

Expanding protected areas and protection of the region's biodiversity are addressed in both documents in a similar manner. For example, the 2013 Strategy makes clear that it is important "to ensure the conservation of biological diversity of Arctic Flora and Fauna in the expansion of economic activities and global climate change, including:" i) "development and expansion of the Arctic protected areas and federal waters"; ii) "development and expansion of the Arctic protected areas of regional significance;" iii) "monitoring of ecosystems and flora" (2013, 7; see also: 2008, 7). Additionally, the 2013 Strategy explains that there will be "the development and expansion of the network of protected areas and water areas of the federal and regional level" (2013, 7), suggesting that this is a priority for the Russian government.

The **Pollution** indicator accounts for 3 % of the total coded quotes in the 2013 Strategy and 3 % in the 2008 Strategy (see Figure 11, p. 85). Neither strategy clearly defines regional pollutants, other than one statement about oil spills in the 2013 Strategy (2013, 6). There is one quote from the 2013 Strategy that identifies different sources of pollution, explaining "environmental damage caused by past economic, military and other activities in the Arctic zone of the Russian Federation" (2013, 7) is problematic. One can thus can glean that military waste is a pollutant, while the economic pollution mentioned is likely oil. The document does not state whether the mining industry has also caused pollution. Similarly, the 2008 Strategy is also vague, naming "anthropogenous pollution" (2008, 7), but not saying exactly what this is or where it comes from.

Despite the limited discussion around the types and sources of pollution, both strategies identify different pollution problem-solving measures. For instance, both documents suggest that technology can be of benefit for pollution management. The 2008 Strategy provides a little more information than the 2013 Strategy, explaining that Russia will "introduce new technologies, including for clearing of the territories of islands, coastal zones and water areas of the Arctic seas of anthropogenous pollution" (2008, 7). The 2013 Strategy identifies other problem-solving methods that range from environmental assessments, "environmental monitoring," corporate responsibility, and improved state oversight (2013, 7).

The **Climate Change** indicator accounts for 3 % of the total coded quotes for the 2013 Strategy and 5 % of the total coded quotes for 2008 Strategy (see Figure 11, p. 85). Both documents state that climate change requires further study. Indeed, in both documents there are similar statements explain the need for better understand of climate change. This means working towards "the prediction and assessment of the impact of global climate changes in the Arctic zone of the Russian Federation under the influence of natural and anthropogenic factors in the medium

and long term" (2013, 6; see also: 2008, 8). Additionally, similar statements were used with regards to using technology to predict change. For instance, Russia will "promote comprehensive research on the study of natural hazards, the development and introduction of new technologies and methods to predict in a changing climate" (2013, 6; see also: 2008, 8). Russia also recognizes that climate change research requires international cooperation. To this end, the 2013 Strategy states that there will be "organization of complex international research expeditions to study the environment (ice, pollution of marine waters, marine) and the influence of observed and projected climate change" (2013, 8).

The **Security** indicator, which accounts for 5 % of the total coded quotes in the 2013 Strategy and 15 % of the 2008 Strategy (see Figure 11, p. 85), describes the need to protect the national interests and national borders in the Arctic. According to the 2008 Strategy, the basic objective "in the sphere of military security, defense and protection of the state border of the Russian Federation [is] lying in the Arctic zone of the Russian Federation, [and] maintenance of a favorable operative regime in the Arctic zone of the Russian Federation, including maintenance of a necessary fighting potential of groupings of general purpose armies (forces) of the Armed Forces of the Russian Federation, other armies, military formations and organs in this region" (2008, 3). The 2013 document highlights that the Russian government aims at the "development of integrated security system for the protection of territory, population and critical facilities [in] Arctic zone of the Russian Federation from the threats of natural and man-made disasters" (2013, 4).

Further the 2013 Strategy states that "in order to ensure military security" it is necessary "to ensure comprehensive combat and mobilization readiness level required and sufficient for solving non-military pressure and aggression against the Russian Federation and its allies, to ensure the sovereign rights of Russia's Arctic and features the smooth implementation of all of its activities, including the exclusive economic zone and the continental shelf of the Russian Federation in the Arctic [and also] to neutralize internal and external military dangers and military threats in peacetime, providing strategic deterrence, and in the event of armed conflict – repel aggression and cessation of hostilities on terms that meet the interests of the Russian Federation" (2013, 8). Further, "there is a need for improvement of airspace and surface control and use of dual-use technologies for the benefit of a comprehensive approach to defense, security and sustainable socio-economic development of the Arctic zone of the Russian Federation" (2013, 8).

The 2008 Strategy states that one of Russia's strategic priorities in the Arctic is the "delimitation of maritime spaces in the Arctic Ocean and maintenance of a mutually advantageous presence of Russia on the Spitsbergen archipelago" (2008, 4). Furthermore, according to the 2008 Strategy, it is necessary "to optimize the system of a complex control over the situation in the Arctic, including the boundary control at the check points across the state border of the Russian Federation, [and] introduction of a border zones regime in the administrative-territorial formations of

the Arctic zone of the Russian Federation and the organization of a device technical control over the strait zones, rivers estuaries, firths on the itinerary of the Northern Sea Route" (2008, 6). The 2008 Strategy also highlights that it is necessary to create "groupings of general purpose armies (forces) of the Armed Forces of the Russian Federation, other armies, military formations and organs in this region" (2013, 8; 2008, 6).

The **Safety and SAR** indicator, which accounts for 6 % of the total coded quotes in the 2013 Strategy and 10 % in the 2008 Strategy (see Figure 11, p. 85), identifies similar safety concerns in the two documents. For instance, safe transit through the Northern Sea Route is important, as are search and rescue capabilities and the ability to address "natural and man-made disasters" (2013, 4, 7; see also: 2008, 4, 5). Additionally, the 2013 Strategy also includes environmental safety (2013, 4). Neither document names any formalized search and rescue or safety agreements, but they do address cooperation and collaboration on the issue of search and rescue. For example, the 2013 Strategy mentions cooperation through "the coordination of rescue forces" in the context of search and rescue and "man-made disasters" (2013, 7), and the 2008 Strategy also mentions the "building-up of efforts of the [Arctic] states for the creation of a uniform regional system of search and rescue" (2008, 4). The latter possibly suggests an integration of national safety solutions, or perhaps it was alluding to what would later become the Arctic Council's SAR agreement, but neither is explicitly stated in the Strategy. In terms of facilitating safe maritime transit, the 2008 Strategy also prioritizes "assistance in the organization and effective utilization of transit and cross Polar air routes in the Arctic, and also in the use of the Northern Sea Route for international navigation under the jurisdiction of the Russian Federation and according to international treaties of the Russian Federation" (2008, 4).

The 2013 Strategy identifies a few areas for improvements on the safety front, especially in relation to maritime transit. This includes the need to develop adequate mapping of sea ice, reliable weather information, communications and satellite capabilities, icebreaking services, and rescue services (2013, 5, 7). A challenge identified in the Strategy is the "lack of permanent complex space monitoring of the Arctic territories and waters dependence on foreign sources of funds and information management of all activities in the Arctic (including interaction with aircraft and vessels)" (2013, 2). The 2008 Strategy makes similar observations, recognizing the need "to create a reliable system of rendering of navigating, hydro meteorological and information services providing an effective control of economic, military, environmental activity in the Arctic, and also forecasting and prevention of emergency situations, minimization of damage in case of their occurrence, including through the use of global navigating satellite system GLONASS and multi-purpose space system" (2008, 7).

The **Economy** indicator accounts for 19 % of the total coded quotes for the 2013 Strategy and 21 % of the 2008 Strategy (see Figure 11, p. 85). The 2013 Strategy recognizes that traditional economies and the tech sector are among Russia's economic activities. Indeed, there is a desire to "build a competitive scientific and technological sector in the development and implementa-

tion of advanced technologies, including the development of new or adapting existing in Arctic conditions on the basis of relevant technology platforms" (2013, 6). However, much of the focus is on the natural resources and energy sectors in both the 2013 and 2008 strategies (note: the 2008 document does not mention other forms of economic activity). Both documents discuss hydrocarbons and energy, mining, and living resources. With regard to hydrocarbons and energy, both documents explain that developing the hydrocarbon sector is important, particularly "on the continental shelf of the Russian Federation" (2013, 5; see also: 2008, 3). Moreover, the 2013 Strategy explains the importance of energy security and the need for "sustainable development of the energy sector in the long term" as sustainable energies become substituted in traditional areas of development where production will be declining after 2020 (2013, 5). Minerals will also be extracted from the continental shelf, alongside oil and gas (2008, 4). There are other mineral extraction locations in Russia, including the Kola Peninsula and the Ural Mountains. Russia expects to extract "non-ferrous, precious metals and precious and scarce types of mineral raw materials, effective mining of chrome, manganese, tin, bauxite, uranium, titanium, zinc" (2013, 5). The biological resources appear to be ocean-based and include items such as fish, "water biological resources," and "marine biotechnology" (2013, 6; 2008, 3). At the same time, the government recognizes the need for "preventing and combating illicit production and trafficking of water biological resources" (2013, 6).

The government suggests different ways in which economic activities will be prioritized. For example, the 2013 Strategy explains that the government will help with "development and implementation of a system of state support and stimulation of economic entities operating in the Arctic zone of the Russian Federation, particularly in the development of hydrocarbon resources, other minerals and water resources, through the introduction of innovative technologies, the development of transport and energy infrastructure, modern information and telecommunication infrastructure, improvement of customs tariff and tax regulations" (2013, 3; see also: 2008, 5). The government will also help Indigenous peoples with their economic development (2013, 5). The goal appears to be "a balanced labor market, updating social guarantees and compensation for people working and living in the Arctic zone of the Russian Federation" (2013, 4). Supporting economic development also means ensuring new regulatory frameworks are in place, and to address this the government seeks "improving the regulatory framework that promotes the rationalization of property relations in the sphere of culture and promotion of business through the development of a system of grants, sponsoring institutions, copyright, sponsorship, insurance, tax, and other specific sources of funding of social and cultural projects" (2013, 4).

Different economic actors are involved in Russia's northern economy. These include "state, business, science and education" institutions (2013, 6). The state, however, appears to be the most involved, according to the strategies. Notably, the 2013 Strategy explains that the state shall facilitate the "promotion

of new projects of economic development of the Arctic territories through their co-financing from the budgets of the various levels of the budget system of the Russian Federation and extra-budgetary sources" (2013, 3; see also: 2008, 5).

The **Tourism** indicator is reflected only in the most recent strategy (2013) and accounts for 3 % of the total coded quotes in it (see Figure 11, p. 85), with the document stating that the Russian Federation shall provide for "development of Arctic tourism and expansion of environmentally friendly tourism activities in the Arctic" (2013, 3). Furthermore, the 2013 Strategy emphasizes that Russia aims at "improving the regulatory framework of tourism, establishment of its financial support on the basis of public-private partnerships, promotion of regional tourism clusters [and] Arctic tourism promotion at the national and international markets" (2013, 3). Last but not least, "in order to promote international cooperation," Russia will focus on "the development of international tourism, including recreational, scientific, cultural, educational, environmental" (2013, 7, 8).

The **Infrastructure** indicator accounts for 24 % of the total coded quotes in the 2013 Strategy and 15 % of the 2008 Strategy (see Figure 11, p. 85), and different types of infrastructure are discussed. Both documents recognize that transportation infrastructure needs to be improved due to the "underdevelopment of basic transport infrastructure, its marine and continental components, aging icebreaker fleet, lack of small aircraft" (2013, 2). There is also need for "modernization and development of the infrastructure of the Arctic transport system" and "re-structuring of volumes of cargo transportation through the Northern Sea Route" (2008, 4, 5). The 2013 Strategy provides a great deal of information on Russia's plans for transportation infrastructure development. Russia intends to develop regional rail and road networks. For the latter to be successful, the government recognizes that "the development and introduction of new vehicles adapted for use in arctic conditions" will also be required (2013, 6). Air transport will be addressed through "the development of small aircraft to meet the needs of air traffic and to ensure their availability in the Arctic zone of the Russian Federation" (2013, 6). Maritime traffic will be improved through the creation of new ports and ensuring an easy transition between maritime, rail, and air transport options (2013, 5). This indicates that transport infrastructure should facilitate the movement of commercial goods.

As mentioned, icebreakers also contribute to the transportation infrastructure and Russia needs to update its fleet. The 2008 Strategy recognizes that "state support" will be needed for new icebreakers, while the 2013 Strategy states that new icebreakers will need "modern technologies … including nuclear power plants" (2013, 5; see also: 2008, 5). In addition to state support, funds for development could be raised through "tariff regulation services for icebreaking and other types of support" (2013, 5). In addition to icebreakers, other infrastructure is needed to support shipping in the Russian Arctic. While the 2008 Strategy does not address shipping, the 2013 Strategy notes that shipping safety is a concern. As previously mentioned in the Safety & SAR indicator, improved navigational aids are needed (2013, 2, 5).

Both strategies recognize the importance of telecommunications and ICT infrastructure to the region. Both documents explain that this would contribute to economic development. The 2013 Strategy recognizes the benefits of digital infrastructure to the wellbeing of northerners, while the 2008 Strategy also recognizes that it will help with "military, environmental activity in the Arctic, and also forecasting and prevention of emergency situations" (2008, 7; see also: 2013, 2, 5). Digital infrastructure, according to the 2013 Strategy, should include "the establishment of a modern information and telecommunication infrastructure that enables the provision of services to the population and economic entities across the Arctic zone of the Russian Federation, including by laying underwater fiber-optic communication lines along the Northern Sea Route, and integration with networks of other countries" (2013, 7; see also: 2008, 7).

Housing infrastructure is only briefly mentioned in the 2013 Strategy as being connected to regional wellbeing and quality of life. The document notes the government recognition of the need for "updating and upgrading of the housing stock," and for "fixed assets housing on the basis of energy saving technologies" (2013, 4).

The need to improve energy infrastructure is also identified in both strategies, especially as the existing delivery system in inefficient (2013, 2; 2008, 5). The documents make similar statements suggesting different approaches to improving this situation. For example, the 2013 Strategy expresses the benefits of "power differentiation schemes, including the construction of nuclear power plants, including floating" (2013, 3), and the "optimization of economic mechanisms of the "northern delivery" through the use of renewable and alternative, including local energy sources, reconstruction and modernization of exhausted power plants, [and] the introduction of energy-saving materials and technologies" (2013, 3; see also: 2008, 5).

The **Science and Education** indicator accounts for 9 % of the total coded quotes in the 2013 Strategy and 10 % of the 2008 Strategy (see Figure 11, p. 85). The 2013 Strategy identifies that scientific research is driven by natural "hazards", climate change, and the environment (2013, 6). Research can also contribute to better understanding of social and economic conditions. The 2013 Strategy explains that other research areas in which science can contribute include "the history, culture and economy of the region, as well as the legal regulation of economic and other activities in the Arctic" (2013, 6) It can also help improve health and wellbeing, and contribute to greater international cooperation (2013, 6). The 2008 Strategy also recognizes the importance of research for social and economic issues, and states that research helps inform the "management of the Arctic territories" (2008, 3).

To carry out scientific activities, a proper research infrastructure is needed. However, the 2013 Strategy states that "in the field of science and technology are scarce technical resources and technological capabilities to the study, development and use of the Arctic areas and resources, lack of readiness for the transition to innovative development of the Arctic zone of the Russian Federation" (2013, 3). The strategy, thus, calls for the "development of materials adapted to the climatic conditions of the Arctic, as well as introduction of means and equipment base, adapted for the polar research" (2013, 6). Both strategies state that maritime research vessels are important, and according to the 2013 Strategy, this could include "the use of deep-robotic systems" (2013, 6; see also: 2008, 7).

Education is addressed only in the 2013 Strategy and links education to the economy. In particular, it covers "the development of education, provision of training, retraining and advanced training in higher and secondary education to work in the Arctic with the existing and projected need for specialists in the field of marine geology, hydrocarbon production and processing, marine biotechnology, information and communication technology and other specialties" (2013, 4). Education, including distance education, is also important for the health and wellbeing of northerners, and in particular for Indigenous peoples (2013, 4). This was also discussed under the Human Dimension indicator.

Both documents address **Implementation** in great detail. The 2013 Strategy has a section on "Mechanisms for the implementation of the Strategy" (2013, 8) that lists nine action items. The 2008 Strategy lists five key action items and details on how to achieve them (2008, 5–8). Both documents also provide information on how implementation follow-up will occur. For example, the 2013 Strategy divides the tasks into two stages; the first running until 2015 and the second until 2020 (2013, 9, 10). In contrast, the 2008 Strategy uses three phases: 2008–2010, 2011–2015, and 2016–2020 (2008, 9–10). This makes sense, however, as both strategies run until 2020 and the first document was written five years prior to the second, leaving more time for implementation when it was written. The 2013 Strategy also addresses evaluation in the section, "Monitoring the Implementation of the Strategy" (2013, 11). This section stresses that the "Government of the Russian Federation, federal executive authorities and executive authorities of the Russian Federation shall provide system monitoring and analysis of the implementation of the state policy of the Russian Federation in the Arctic" (2013, 12). There will also be "an annual report to the President of the Russian Federation on the progress and results of the Strategy" (2013, 12), which will support accountability. The budget is addressed only in the 2013 Strategy. In particular, the document states that "the scope of work and the volume of their funding from the federal budget is determined by the development of state… federal and departmental target programs" (2013, 9). Moreover, "extra-budgetary financial support of the Strategy is a public-private partnership, with the resources of development institutions, international financial institutions and foreign investments into the future of infrastructure, social, innovation, environmental and other projects" (2013, 9).

To sum up

Figure 11 at the beginning of this chapter shows that the most-coded indicators in 2013 are Infrastructure, followed by Economy and the Human Dimension. In 2008, the most coded indicator is Economy, with Infrastructure and Security tying for

second place, and Safety and SAR, International Cooperation, and Science and Education tying for third. The three least-coded indicators in 2013 are Tourism, Pollution, and Climate change, tying for top place, followed by Environmental Protection and Security tying for second, and Governance, International Cooperation, and Safety and SAR tying for third. Tying for least-coded indicators in 2008 are Tourism and Governance, followed by Human Dimension and Pollution tying for second, and Climate Change coming third.

As mentioned above, there are six priorities in the 2013 Strategy (2013, 3). First, "integrated socio-economic development of the Arctic zone of the Russian Federation" would be associated with the Economy and Human Dimension indicators, which are the second and third most-coded indicators in the document (see Appendix), suggesting that this priority is met. Second, "the development of science and technology" is associated with the Science and Education indicator, which is the fourth most-coded indicator. Third, "the establishment of a modern information and telecommunications infrastructure" is associated with the Infrastructure indicator, which is the most-coded indicator, suggesting this priority is met. Fourth, "environmental security" is associated with the Environmental Protection indicator, which is the second least-coded indicator. When combined with the Pollution and Climate Change indicator, environment becomes the fourth most-discussed topic (see Appendix). It seems that these priorities are met. Fifth, "international cooperation in the Arctic" is associated with the International Cooperation indicator, which is in the middle in terms of coded quotes (see Appendix). Sixth, "provision of military security, protection, and protection of the state border of the Russian Federation in the Arctic" is associated with the Security indicator, which is the second least-coded indicator. While international and cross-border cooperation and security are not the most coded, there is discussion dedicated to these indicators.

Comparison of the two documents is interesting, especially in terms of the discussion on the Human Dimension and Infrastructure, as the percentage of quotes for these indicators substantially increases from 2008 to 2013. For the Human Dimension, the newer strategy spends a considerable amount of time recognizing what needs to be done to improve the living conditions of Indigenous peoples, as well as on regional health and wellbeing. In infrastructure terms, there is an increased focus on improving transportation to improve connectivity and tele-communications/ICT infrastructure for economic and safety reasons in 2013.

There are also some connections between the indicators. For example, the Human Dimension is connected to the Economy indicator in the context of access to, and skills for, economic opportunities. The Human Dimension is also connected to the Infrastructure indicator, as wellbeing can be improved with increased access to different types of infrastructure. The Science and Education indicator is connected to both the Human Dimension and the Economy indicators through the need for research in these areas. The Science and Education indicator is also connected to the Economy indicator through skills training.

To further compare the documents, the two most relevant similarities and the three most relevant differences are discussed.

There are also some **similarities** between the two Russian documents of which two are discussed here. *First*, both documents stress the importance of international cooperation with other states. This includes at different levels of government, within and between organizations, and the need to abide by international law and treaties, especially on maritime activities and rescue operations. Regional safety issues are then are discussed similarly, as both documents mention maritime safety, man-made disasters, and SAR. However, the 2013 Strategy does a better job at identifying where Russia could improve its safety capabilities, despite discussing safety substantially less (as a percentage of total quotes) than the 2008 document. *Second*, both documents recognize the importance of environmental protection, especially in relation to ongoing economic activities in the region. Both documents call for protected areas to help maintain biodiversity, although the 2013 Strategy appears to take environmental protection more seriously than the 2008 document does. Moreover, in terms of pollution, the two documents identify different types of pollution (military and economic vs. anthropogenic), but neither provides much detail on what the actual pollutants are. Despite this vagueness, they do both suggest that technology can help address reduce environmental damage.

There are also some interesting **differences** between the two strategies, and three are discussed here. *First*, the human dimension is discussed substantially more in the 2013 document than it is in the 2008 document. The 2008 Strategy makes one comment about improving Indigenous wellbeing through economic activity, while the 2013 Strategy discusses Indigenous health and wellbeing, and economic growth. The 2013 Strategy also speaks about maintaining a northern culture to ensure overall health and wellbeing in the Russian north, and identifies an outflow of labor migration from the region. *Second*, both strategies state that security practices must protect the land, people, and infrastructure; however, the two documents lay out different priorities for these topics and they are discussed more in the 2008 Strategy. The 2013 document shows more concern with preparing for military and non-military threats to the Russian Arctic (security and defense in general), which also includes internal threats. In contrast, the 2008 Strategy is more focused on border management, including in the Arctic Ocean. *Third*, both documents explain that Russia's economic priorities are resources and energy. Additionally, the 2013 Strategy paints a broader picture of Russia's other Northern economic activities (e.g., fisheries and biotechnology) and provides more information on how the state will foster this growth, to include Indigenous small businesses and self-employment.

Sweden

To date, the Swedish government has produced one Arctic strategy, *Sweden's Strategy for the Arctic Region,* in May 2011. However, in a recent speech the Swedish Minister of Foreign Affairs remarked that "during the year, Sweden will renew its Arctic Strategy" (Wallström 2019), indicating that a new strategy is not far off. Additionally, in 2016, Sweden released a memorandum entitled the *New Swedish Environmental Policy for the Arctic* (Sweden MEA 2016), further demonstrating the state's continued interest in the region. That said, as the *Environmental Policy* is about the environment, it is not a national strategy for the region and thus only the 2011 Arctic Strategy is considered in the following analysis.

The Swedish government provides a clear statement about the purpose of the Strategy: "the purpose of the Government's Strategy for the Arctic Region is to present Sweden's relationship with the Arctic, together with the current priorities and future outlook for Sweden's Arctic policy, proceeding from an international perspective" (Sweden GOS 2011a, 4). Moreover, the release of Sweden's strategy aligns with its first Chairmanship of the Arctic Council from 2011 to 2013, and this has influenced the strategic priorities. The document emphasizes: "Ever since the Arctic Council was founded in 1996, there has been strong consensus on the view that economic, environmental and social development must be seen as a single concept to create long-term sustainable development in the region. Continued Swedish research and education initiatives are essential if progress is to be made. The priorities below are to be seen in this context: • Climate and the environment • Economic development • The human dimension" (2011a, 23).

The following discussion about the indicators will show whether the priorities stated by the government are reflected in the document, or not.

Comparison by Indicator

The **(Re)mapping and (Re)defining the Arctic** indicator addresses how the Arctic is defined within the context of the strategy. In particular, it states that "there is no uniform definition of what "the Arctic" actually is. The region is made up of an ocean (the Arctic Ocean) surrounded by sovereign states" (2011a, 11). Not only is there no one definition of the Arctic, but there are also multiple ways to describe the region within the Strategy as, for example, "the region concerned is sometimes referred to as the Arctic region, sometimes as the Arctic and sometimes as the Arctic area" (2011a, 4). Additionally, there are regional variations in the circumpolar Arctic as, for example, "in describing the Nordic countries' part of the Arctic (including in the context of regional cooperation with Russia), the term High North is sometimes used as well" (2011a, 4). The Strategy also refers to the region as the "North" in a few instances (2011a, 40). Reference is made, too, to the "unique Arctic environment" and one of the "world's most vulnerable areas" (2011a, 25, 27). Additionally, it is mentioned that "widely scattered, small population centres" (2011a, 43) characterize the region.

Sweden's Strategy does not provide much detail on which government ministries have responsibilities in areas covered by the strategy. The Strategy mentions that the "Barents region's trade and industry ministers" (2011a, 32) are involved in business development, while other government agencies such as the Swedish Polar Research Secretariat and the Swedish Marine Administration also have regional involvement (2011a, 29, 36). Both the environmental ministers and the foreign affairs ministers from the Arctic countries are also mentioned in the appendices, which provides further information on various regional governance structures.

Figure 12 provides a comparison of how many quotes are assigned to the different indicators, as a percentage of the total number of coded quotes (rounded to the nearest whole number) in the document.
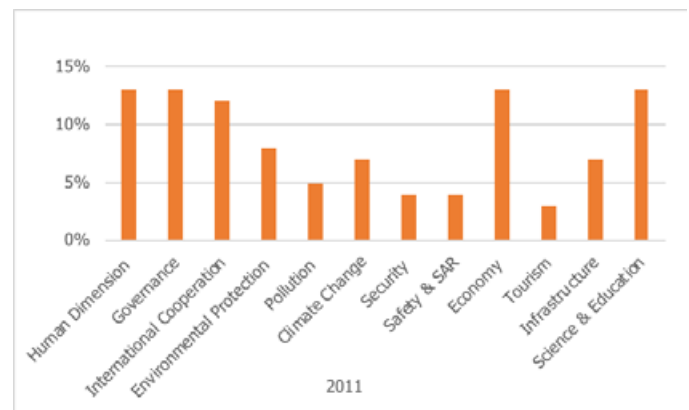
Figure 12. Sweden's 2011 Strategy

Note: The percentages in each indicator are rounded to the closest whole number and represent the percent of the total number of quotes coded for each document.

The following analysis on the written content of these codes will give a better understanding of how the Strategy addresses these themes and issues.

The **Human Dimension** indicator accounts for 13 % of the total coded quotes (see Figure 12) and comments on the remoteness of the region: "most of the Arctic is characterised by widely scattered, small population centres" (2011a, 43). The document also that the Arctic is the homeland to Indigenous peoples, and that "the geographical area inhabited by the Sámi from time immemorial is usually referred to as Sápmi or Sameland and stretches over the northernmost parts of Norway, Sweden, Finland and Russia" (2011a, 17).

Based on the troubled history between the Sami and the state, the Strategy recognizes that "from the seventeenth century onwards, more and more land was colonised as part of an active colonist policy, which gradually led to growing conflicts between colonists, forest farmers and the Sámi industries" (2011a, 12). This acknowledgement, perhaps, is suggestive of the government taking a more inclusive approach to addressing Indigenous, and particularly Sami issues.

One of the issues the Strategy recognizes in relation to Indigenous peoples are the negative effects of climate change and pollution on Indigenous communities. The Strategy states that "climate change means that many traditional customs and livelihoods will be more difficult to maintain" (2011a, 41). Therefore, as part of the Strategy, "Sweden will work for the conservation and sustainable use of biodiversity in the Arctic, taking Indigenous Arctic peoples into consideration" (2011a, 24).

The relationship between Indigenous peoples and the economy is also addressed. In particular, there is mention that "the tourism sector should be developed, albeit with consideration for the environment and the traditional lifestyles of Indigenous peoples" (2011a, 6). At the same time, the document recognizes the various economic activities of Indigenous peoples. For example, the document states that "for many reindeer-herding Sámi, reindeer husbandry constitutes an important part of a "mixed economy" based on reindeer husbandry, hunting and fishing and a number of other secondary industries" (2011a, 38).

Preserving and protecting Indigenous language and culture is also important. The document recognizes the challenges of preserving Saami culture and language, especially with the "migration of younger people away from traditional settlement areas in order to acquire an education or work elsewhere" (2011a, 46). To counter this, "Sweden will promote the preservation of the Sámi language and other Arctic Indigenous languages and present Swedish experiences of revitalisation work," as well as recognizing the importance of "ratifying the UNESCO15 Convention on the Safeguarding of Intangible Cultural Heritage" (2011a, 41, 45).

The Strategy also addresses different issues of rights and equality. For instance, gender is discussed, as "Sweden will work to bring the human dimension and the gender perspective to the fore in Arctic-related cooperation bodies" (2011a, 6) and also within domestic politics. "Between 2008 and 2010, the Swedish Government has targeted special measures at increasing the participation of Sámi women in political processes and the Sámi Parliament has been working actively on the issue" (2011a, 45). The Strategy also acknowledges formal agreements and treaties that affect rights. For instance, it identifies UNDRIP and the Universal Declaration on Human Rights, as well as work on the Nordic Sámi Convention (2011a, 20, 22).

Sweden also identifies key elements of health and wellbeing. In particular, the Strategy states that "the basic prerequisites for the people living in the Arctic are: a long-term optimism; opportunities for them to earn a livelihood; good communications and social care" (2011a, 30). As this, however, fails to account for the some of the causes of illness, the Strategy explains that "measures will be needed to counteract the negative health and social impacts of climate change, pollutants and the expected increase in the exploitation of Arctic natural resources" (2011a, 6).

The **Governance** indicator accounts for 13 % of the total coded quotes (see Figure 12, p. 92) and captures the importance of re-

gional cooperation. Sweden emphasizes in the document that "the distances from traditional centres of power also provide greater scope for self-determination in everyday life, a form of practical Arctic empowerment" (2011a, 43). The Strategy also mentions the importance of the Sámi Parliamentary Council (SPC). The SPC was created from the "three Sámi Parliaments and the Russian Sámi as observers" and "The overarching aim is to strengthen borderless cooperation between Sámi and speak for them as one voice internationally" (2011a, 22). The Strategy further explains that "a special form of cooperation between Sweden, Norway and Finland, in which the Sámi Parliament has a natural place. The ongoing negotiations on a Nordic Sámi Convention are one of the most important current issues with regard to this cooperation." Additionally, "Within the framework of the gender equality measures, the Sámi Parliament has also begun an exchange of experience with Finland, Norway and Russia on gender equality, men's violence against women, sexual harassment and abuse." Sweden is also "taking a clear stance in favour of socially and culturally sustainable development for Arctic Indigenous peoples with technological development to ensure ethically and biologically sustainable resource use" (2011a, 6, 22, 45).

According to the Swedish strategy the rapidly changing climate "requires greater political cooperation across territorial borders to develop methods for managing species affected by hunting and fishing". Furthermore that "Ecosystem-based management of marine resources based on the principle of conservation and sustainable use and with special protection for threatened areas, species and stocks would be a way forward". Therefore, "Sweden will work for international management plans to be drawn up for species affected by hunting and fishing and by a changed climate… [and] contribute to ecosystem–based marine management/spatial planning" (2011a, 24, 28).

The **International Treaties and International Cooperation** indicator accounts for 12 % of the total coded quotes (see Figure 12, p. 92) and focuses on Sweden's commitment that "activities and cooperation projects in the Arctic will be in accordance with international law, including UN conventions and other international treaties" (2011a, 5, 18). Sweden promises to "bring the human dimension and the gender perspective to the fore in Arctic-related cooperation bodies" (2011a, 6). It also emphasizes that "despite significant challenges, Arctic cooperation is characterised by a low level of conflict and broad consensus," and at the same time, declares that it will "ensure that the Arctic remains an area of low political tension" (2011a, 18, 19). The Strategy further clearly emphasizes that "efficient, multilateral cooperation on the Arctic is a main priority for Sweden" (2011a, 19).

Sweden also declares that it "will highlight the importance of respecting international law when extracting the energy resources of the Arctic." Moreover, Sweden aims "to be a driving-force in international cooperation in order to protect the unique Arctic environment and minimise the negative effects and risks of an anticipated increase in extraction." In this context, "the scope for developing green and climate-neutral energy supply needs to be taken into consideration" (2011a, 30, 37). The Strategy high-

lights the importance of "international research cooperation in areas of relevance for the Arctic, such as mineral research, environmental technology and sustainable natural resource use," as well as identifying that "cooperation among small and slightly larger institutions across national borders in the North is an effective way of ensuring good resource use and increasing the quality of education and research" (2011a, 40).

Sweden recognizes that "the main multilateral arena for Arctic-specific issues is the Arctic Council" and aims to "strengthen the Arctic Council in its role as the central multilateral forum for Arctic-related issues." As stated in the Strategy, "the Council should be more active in developing common policies and practical projects for the benefit of the region." This would be particularly so if its "mandate were broadened to include other important strategic issues such as joint security, infrastructure and social and economic development." Sweden believes therefore the Arctic Council could be further energized "to strengthen [it] both institutionally and politically" (2011a, 4, 18, 19). Sweden further commits to "highlight the human dimension in the Arctic Council as a result of, among other things, its work on the Nordic Sámi Convention" and will consult with Sámi Parliament representatives prior to important Arctic Council meetings (2011a, 41).

Sweden supports the EU's ambition to become an observer to the Arctic Council, while promising to "actively contribute to the ongoing development of an EU policy on Arctic issues." Moreover, "Sweden wishes to promote the EU as a relevant cooperation partner in the High North within relevant policy areas" (2011a, 5, 18, 19, 20). Sweden further emphasizes strengthening "cooperation with the Barents Euro-Arctic Council on measures to combat what are known as hotspots" (2011a, 27). "In the Nordic Council of Ministers, Sweden will work to sharpen the focus of Arctic–related project activities that have a clear supplementary value for the Arctic Council" and the Barents Euro-Arctic Council (2011a, 5, 18, 20).

In the Council of Ministers Sweden is working "to promote the free movement of people, goods, services and capital". For instance, "Cooperation in the Northern Dimension's new partnership for culture provides scope for helping to strengthen creative and cultural industries in the region" (2011a, 32, 39). Additionally, "'The Nordic Council for Reindeer Husbandry Research,' which is under the auspices of the Nordic Council of Ministers, is a good starting-point for continuing to develop cooperation even in an Arctic perspective" (2011a, 47).

Furthermore, reference is made to the Ilulissat Declaration of 28 May 2008, when "the five coastal states also agreed to solve outstanding issues in accordance with current international law" (2011a, 14). Sweden also underlines the importance of cooperation with "Russian regions within the framework of the EU Kolarctic ENPI CBC financing instrument". Additionally, "Regions in northern Scandinavia can also cooperate with Iceland and Greenland within the framework of the Northern Periphery Programme" (2011a, 31).

On the global scale, Sweden respects the UNCLOS Convention, stating that "the Arctic coastal states, like coastal states in general, have rights to certain sea areas as defined in the UNCLOS Convention – both as regards the ocean and the seabed" and "the International Seabed Authority is responsible for the administration of extraction from the seabed outside the jurisdiction of the coastal states." Sweden takes an active part in "the UN and its various bodies [which] provide important arenas for promoting the Arctic region" (2011a, 11, 20). Additionally, Sweden recognizes the importance of the IMO and its efforts at "limiting emissions of greenhouse gases from ships," as well as the importance of having the IMO's Polar Code into force (2011a, 20, 30).

In the Strategy, several international agreements, which directly affect the Arctic, are mentioned, such as the Commission on the Limits of the Continental Shelf, the Universal Declaration on Human Rights, the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Convention on Biodiversity (CBD) and the United Nations Declaration on the Rights of Indigenous Peoples. Among UN bodies involved in the Arctic, the United Nations Development Programme (UNDP) and United Nations Environmental Programme (UNEP) are also among UN bodies involved in the Arctic, as are the World Health Organization's European Region (WHO Europe) and Region of the Americas (WHO PAHO) (2011a, 20).

The **Environmental Protection** indicator accounts for 8 % of the total coded quotes (see Figure 12, p. 92). It notes that the Arctic environment is "unique," and "sensitive," and also calls the Arctic "one of the world's most vulnerable areas" (2011a, 25, 27, 28, 38). Not surprisingly, therefore, "it is in Sweden's interest that new emerging activities are governed by common and robust regulatory frameworks and above all that they focus on environmental sustainability" (2011a, 4). Thus, attention needs to be paid to "short-lived climate forcers" and pollution (2011a, 5, 26, 27). To this end, the government recognizes that economic activities contribute to environmental problems and seeks to find a balance between the economy and the environment. For example, the Strategy states that "increased resource extraction in the Arctic involves considerable risks, however and especially sensitive areas must be protected from exploitation" (2011a, 31). What is more, "Sweden will work to prevent and limit the negative environmental impact potentially caused by the opening–up of new shipping routes and sea areas in the Arctic" (2011a, 24). The use of marine resources will also follow an ecosystem-based management structure, and it is in the interest of the government to monitor the Arctic environment (see: 2011a, 6, 28, 36).

Protecting flora and fauna, and maintaining biodiversity is mentioned, even highlighted. The document states that "to strengthen the capacity for adaptation and resilience, networks of protected areas that are important for flora and fauna should be created in the Barents region and elsewhere" (2011a, 28). There is also concern about non-native species entering the region and that "species composition is changing as a result of southern species starting to outcompete high-arctic species"

and that "there is also a risk of negative environmental impact from shipping as a result … the spread of non-native organisms" (2011a, 28, 35). To address this these concerns, "Sweden will contribute to the preservation and sustainable use of biodiversity in the Arctic" (2011a, 5). As well as, "the Arctic Council should also contribute to continued global biodiversity-related efforts" as well as the United Nations Convention on Biodiversity (2011a, 22, 28).

The **Pollution** indicator accounts for 5 % of the total coded quotes (see Figure 12, p. 92) and identifies a broad range of pollutants affecting the Arctic, including:

- "emissions of long-lived greenhouse gases, including carbon dioxide"
- "short-lived climate forcers such as soot, tropospheric ozone and methane"
- "persistent bioaccumulative organic pollutants"
- "non-accident-related discharges of oil and chemicals, air pollution, waste and the spread of non-native organisms" from ships
- "organic pollutants, such as polychlorinated biphenyls (PCB) and other dioxins and certain heavy metals (mainly mercury)" and
- POPs (2011a, 5, 24, 26, 35, 44).

The Strategy recognizes that "despite there being few local sources of emissions in the Arctic, the spread of pollutants in and via the Arctic is a major problem … Most pollutants are transported there via air or water currents" (2011a, 27). These sources of pollution include "carbon emissions from steelmaking," the shipping industry which "is responsible for 870 million tonnes of greenhouse gas emissions, or 2.7 percent of global emissions" and "significant emissions of pollutants, both into the air and water, occur in a large number of industrial areas in the Russian Arctic" (2011a, 29, 34–35, 44).

According to the Strategy, to combat pollution, "Sweden needs to actively pursue issues relating to reduced emissions and the spread of oil, chemicals, waste, non-native organisms and other air pollutants" (2011a, 27). At a policy and political level, this includes "making active efforts within the framework of the Stockholm Convention and the UN Convention on Long–Range Transboundary Air Pollution (LRTAP)" and "[contributing] to the international efforts in the IMO aimed at limiting emissions of greenhouse gases from ships." This includes advancing the Polar Code (2011a, 30), and working with Arctic neighbors to reduce "the risk of emissions of compounds that could pose hazard to man and environment" (2011a, 44). Additionally, "nuclear safety issues may also come to the fore from an environmental and security perspective" (2011a, 37). There is room for the private sector and researchers to contribute to pollution reduction. For example, "Sweden and Norway, together with 48 businesses and organisations in the mining, steel, energy and engineering industries as well as research institutes and universities, take part in the priority research programme ULCOS (Ultra-Low Carbon Dioxide Steelmaking) with the aim of halving carbon emissions from steelmaking" (2011a, 29).

The **Climate Change** indicator accounts for 7 % of the total coded quotes (see Figure 12, p. 92). Both positive and negative consequences are identified. Positive developments tend to be economic as "new conditions are emerging for shipping, hunting, fishing, trade and energy extraction." This is especially so for shipping in the Northwest and Northeast Passages (2011a, 4, 7).

Most of the consequences, however, are problematic. In environmental terms, climate change is "causing the world's glaciers and sea-ice to melt at an accelerated pace" and it has "changed ocean currents and [caused] more frequent extreme weather events" (2011a, 16, 43). Indeed, "this rapid rise in temperature increases the likelihood of dramatic effects on Arctic ecosystems and can reduce their resilience" (2011a, 25). There are social impacts, for example, "security may well become more of a question of public crisis management in extreme weather situations." There is also "a greater risk of contaminated drinking water caused by changes in the permafrost that affect water sources" (2011a, 14, 44). Additionally, the Strategy explains that climate change negatively affects traditional and Indigenous ways of life (2011a, 7).

To address climate change, the government identifies some mitigation and adaptation strategies. For example, "in cooperation with other Arctic countries, Sweden will contribute to proposals for knowledge–building and action to strengthen the capacity for adaptation to and recovery from the effects of climate change" (2011a, 24). Indeed, "adaptation to a changed climate requires good knowledge about the effects not only on biological and technical systems but also on communities and humans" (2011a, 28), emphasizing the importance of the scientific community. The Strategy states that "Sweden will continue to be a leading nation as regards climate and environmental research, focusing also on the impact of climate change on humans." As climate action requires broader frameworks, "Sweden will work to ensure that climate change in the Arctic and its global impact is highlighted in international climate negotiations" (2011a, 24). The Strategy acknowledges the UNFCCC and the Intergovernmental Panel on Climate Change (IPCC) (2011a, 24, 26).

The **Security** indicator accounts for 4 % of the total coded quotes (see Figure 12, p. 92); it emphasizes that "Sweden's security policy position based on "security in cooperation" means that the security policies of the EU Member States and Nordic countries will strongly influence Swedish security policy" (2011a, 14). The Strategy further indicates that "the overall security policy climate in the Arctic is very much dependent on the relationship between Russia and the United States" (2011a, 14). As well, "Dialogue, transparency, confidence-building measures and cooperation in line with international law form the starting-point for Sweden's approach to security concerning the Arctic" (2011a, 19).

In bilateral and multilateral contexts, Sweden wishes "the Arctic remains a region where security policy tensions are low" (2011a, 4) emphasizing "an approach based on security in its broadest sense and that the use of civil instruments is preferable to military means" (2011a, 19). The Nordic Declaration of Solidarity, adopted in 2009, has led to "Sweden's security policy becoming even more closely interwoven with the political priorities of the

other Nordic countries" (2011a, 15). In this context, the Strategy recognizes the influence of Arctic developments on Swedish security, while at the same time the Strategy points out that "the current security policy challenges in the Arctic are not of a military nature" and that "The Arctic is an area of low political tension in which the changed climate presents new opportunities and challenges" (2011a, 19, 23). The Swedish Strategy, however, mentions that as a "result of climate change, security may well become more of a question of public crisis management in extreme weather situations; adaptation to changed climatic conditions in order to protect human life, health and the economy" (2011a, 14) are needed.

Sweden proposes that "the Council could however be further energised if its mandate were broadened to include other important strategic issues such as joint security" (2011a, 19). The Strategy also briefly mentions energy security, when pointing out the "large volumes of fuel produced in the Arctic may therefore affect European security of supply and prices on several markets" (2011a, 37).

The **Safety and SAR** indicator accounts for 4 % of the total coded quotes (see Figure 12, p. 92); it primarily identifies maritime safety issues associated with increased traffic. The Strategy states that "increased shipping also brings issues related to safety requirements for sea transport to the fore. Poor safety routines or vessel construction can have devastating consequences for seafarers, marine flora and fauna and those who depend on the sea for their livelihoods" (2011a, 35). Issues around "sea and air rescue," the need for "more stringent safety requirements," and surveillance (2011a, 6, 34, 35) are thus addressed. Indeed, prevention is a key aspect of Sweden's maritime safety agenda (2011a, 35).

The Strategy discusses two approaches to addressing these concerns. First, through the IMO and the Polar Code, "an assessment will be made of whether the existing international environmental regulatory frameworks offer a sufficient level of protection or whether further measures are needed" (2011a, 35). Second, the Arctic Council also plays a safety role: "the Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic agreement negotiated between the members of the Arctic Council will enable more flexible use of existing resources and make it possible to find cost-effective solutions" (2011a, 36). Importantly, Sweden does not call for the integration of the different national safety systems, but rather seeks "to continue development of regional cross–border cooperation in the field of sea and air rescue and to tighten the safety requirements for sea transport in several sectors" (2011a, 30). The Strategy also states that "better surveillance of shipping traffic, preventive measures and improved regional cross-border cooperation on air and sea rescue are all important components" of Sweden's Strategy (Sweden. GOS 2011, 36). That said, capabilities could be improved as "the Arctic is sparsely populated and there are currently no widespread mechanisms in place for rescuing people in distress at sea" (2011a, 35).

The **Economy** indicator accounts for 13 % of the total coded quotes (see Figure 12, p. 92) and reveals a wide range of eco-

nomic activities that would be expected in the region. These include natural resource extraction (addressed in more detail below) such as "hunting, fishing and reindeer herding… in Arctic Norway, Sweden, Finland and Russia" as well as tourism (2011a, 15). There were also some unique industries such as "marine bioprospecting after unique genes" and "ice-breaking, sea transport and consultancy based on knowledge of business activities in the Arctic climate." Additionally, "the Swedish space industry has its base in the extreme north of Sweden" and that "Sweden is currently a world-leading supplier of vehicle-tests in the Arctic environment" (2011a, 15, 33, 37, 40).

Sweden participates in the "ore and mineral extraction" industry. This is important because "extraction is currently high on the global economic agenda, which has led to significant levels of investment in the Swedish mining industry" (2011a, 15). Sweden has interests in other natural resources like wood. "Together with fish, the forest is the Arctic's most important renewable source of raw materials" and "Sweden has a world-leading pulp, paper and wood engineering industry, which also utilises forest materials from the Arctic region" (2011a, 15).

Trade is another important economic activity. "Sweden's growth and competitiveness stand to benefit from increased free trade and active efforts to counter technical barriers to trade in the Arctic region" (2011a, 6). To facilitate the movement of goods, "the Nordic countries cooperate closely on trade issues within the EU/EEA and in the Nordic Council of Ministers, and Sweden is working in the Council of Ministers to promote the free movement of people, goods, services and capital" (2011a, 31–32).

Sweden is not greatly involved in the Energy sector. The Strategy states that "in contrast to the five coastal states, Sweden has no direct national energy interest in the Arctic and does not take part in energy policy cooperation initiatives in the area" (2011a, 37). Sweden does, however, have access to energy products—"increased trade and cooperation in energy – and rawmaterial-related sectors have been given high priority in Sweden and would help to achieve economic, energy and environmentally related objectives" (2011a, 32).

Sustainable development is important to regional economic activities. The Strategy recognizes that "in order not to undermine the social or natural environment for people living in the region, its economic developments must be sustainable in the long term" (2011a, 30). For example, "Sweden is … striving for environmentally sustainable use of the forest in the Arctic… the Sámi villages affected [by forestry activities] will be consulted prior to forest being harvested in year-round reindeer-grazing grounds inside the Arctic area" (2011a, 32–33). The Strategy also states that "it is in Sweden's interest that new emerging activities are governed by common and robust regulatory frameworks and above all that they focus on environmental sustainability" (2011a, 4).

The government prioritizes economic activity in a few different ways. It first recognizes that "green growth can lay the foundation for new jobs where the business sector can play a central role in the development of innovative solutions" (2011a, 31). Second,

"Sweden needs the right skills in order to utilise the potential released by a developed Arctic region" and that "the recruitment requirement for the mining and mineral industries will be considerable in the forthcoming five-year period" (2011a, 40). To this end, Luleå University of Technology offers Master's level education in natural resources (2011a, 40).

There are a variety of actors at different scales that help with Sweden's Arctic economic activities. Internationally, Swedish Trade Council offices "should be instructed to build up skills to promote Swedish commercial interests in the Arctic" (2011a, 6). At a regional level "Sweden is cooperating on this with the countries in the Barents region in for example the Baltic Sea Region Energy Cooperation (BASREC) and the Nordic Council of Ministers" (2011a, 32). Locally, "the involvement of Swedish businesses in local communities and their willingness to adhere to the principles of human rights, labour law, social responsibility, sound environmental and sustainability efforts and anti-corruption will give them a competitive edge in future business deals and investments in the Arctic" (2011a, 31).

The **Tourism** indicator accounts for 3 % of the total coded quotes (see Figure 12, p. 92) and briefly summarizes the Swedish approach towards this specific industry, which has growth potential in the Arctic. Sweden recognizes that "many visitors choose the Arctic because of its clean air, water, mountains, forest and silence – things that are in short supply in many other parts of the world." Furthermore, "the tourism sector, including hunting and fishing, has considerable potential for creating jobs and boosting economic growth" (2011a, 15, 38). At the same time, the Strategy emphasizes that "the tourism sector should be developed in a sustainable manner and communications between tourist destinations should be improved", although this means with "consideration for the environment and the traditional lifestyles of Indigenous peoples" (2011a, 6, 30, 38). Sweden also "welcomes the development of Arctic cooperation aimed at strengthening the conditions for tourism in the Arctic area" since "accessibility is a key success factor in the development of the Arctic as a tourist destination" (2011a, 6, 38).

Besides highlighting the opportunities for development of the sector, the Strategy also notes the potential problematic areas - the "increased seaborne tourism in Arctic waters heightens the risk of accidents affecting both the environment and humans" and "poor infrastructure makes it very difficult to deal with emergency situations." As well, "Better surveillance of shipping traffic, preventive measures and improved regional cross-border cooperation on air and sea rescue are all important components" of the Strategy (2011a, 35, 36). Finally, the Strategy also recognizes the possible side effects of tourism, stating that "if we then add socioeconomic development, in terms of intensified forestry activities, expanded infrastructure and more tourism to the equation, the risk of conflicts of interest between reindeer herding and other land use becomes even greater" (2011a, 45).

The **Infrastructure** indicator accounts for 7 % of the total coded quotes (see Figure 12, p. 92). Transportation infrastructure is discussed primarily in the context of economic and resource development. For example, the Strategy states that "raw material extraction in the Arctic also generates the need for long-term sustainable land transport" (2011a, 33). Additionally, "the increasing demand can also be expected to intensify calls for investment in infrastructure, such as new or upgraded harbours, railways, roads and airports" (2011a, 33-34). Shipping is emphasized, especially as "the most energy – and cost-effective way of transporting goods" (2011a, 34). Shipping could increase, as melting ice could open transit routes through the Northeast and Northwest Passage (Sweden. GOS 2011a, 7). There is recognition that "increased shipping also brings issues related to safety requirements for sea transport to the fore" (2011a, 35). In addition to supporting commercial activities, "Swedish ice-breakers may be able to support increasing commercial shipping in the Arctic as well as help with both the monitoring of the vulnerable marine environment and Arctic research" (2011a, 36).

Telecommunications and ICT are also an important component of icebreaking. To this end, "the development of technology and communications that facilitate ice-breaking operations are important from a Swedish perspective" (2011a, 36). Improved digital infrastructure can also help in other areas like, for example, better "access to cost-effective and leading IT and telecom technology ... can present opportunities for Swedish businesses in this field" (2011a, 38–39).

Improved energy infrastructure is also mentioned, with the Strategy explaining that "energy efficiency is one area where there is considerable need in some of the Arctic states and within which Sweden has substantial expertise and a strong industry" (2011a, 32). Potential options include "hydro- and wind-power, solar and bioenergy and technology for improving energy efficiency and reducing carbon emissions" (2011a, 37).

The **Science and Education** indicator accounts for 13 % of the total coded quotes (see Figure 12, p. 92) and identifies climate change and the environment as key drivers of science and research. Notably, the Strategy states that "Sweden will continue to be a leading nation as regards climate and environmental research, focusing also on the impact of climate change on humans" and that "Sweden should work to support Arctic research and to monitor the vulnerable marine environment" (2011a, 24, 30). In addition to the climate and environment, research serves other purposes. For example, Sweden's long history of Arctic research can be used to ensure Sweden's place as an Arctic stakeholder (2011a, 12). Research also contributes to the functioning of the Arctic Council and "continued Swedish research and education initiatives are essential if progress is to be made" (2011a, 23). Research "cooperation across national borders in the North also helps to maintain good relations in the High North" (2011a, 40). Sweden is also interested in opportunities in space; the Strategy states that "Sweden is striving for cooperation in the Nordic region and the EU in order to develop space technology to promote monitoring, exploration and communication in the Arctic" (2011a, 39).

To facilitate its research program(s), Sweden makes use of four different types of research infrastructure. First, icebreakers and other vessels play a key role, with the Strategy boasting that

"few research vessels around the world can match the Swedish ice-breaker Oden's capacity in terms of combining the class of an Arctic ice-breaker with advanced research equipment for seabed mapping and logistic platforms for climate studies" (2011a, 17). Indeed, Oden and other "research vessels are an important part of the infrastructure and give researchers the same opportunities as onshore research stations" (2011a, 39). Second, with regard to onshore research, "Northern Sweden is home to research stations in Abisko and Tarfala," each of which serves different purposes. "The Abisko Scientific Research Station administrates, coordinates and performs experiments and tests for researchers from all over the world," while "the Tarfala Research Station, located in the Kebnekaise mountains, conducts basic research, glacier monitoring, meteorological and hydrological analyses, snow chemistry and permafrost studies" (2011a, 29). Third, are universities (2011a, 40), and fourth, Sweden draws on different research networks and opportunities for collaboration. The Strategy recognizes the importance of informal cooperation and "Sweden should encourage international research cooperation in areas of relevance for the Arctic, such as mineral research, environmental technology and sustainable natural resource use" (2011a, 40). More formal networks are also important because "important knowledge is fostered within the framework of forums such as the International Arctic Science Committee (IASC) and the Arctic Council's Sustaining Arctic Observing Networks (SAON)," and through the University of the Arctic (2011a, 26–27, 40).

There is much discussion about the importance of knowledge throughout the Strategy. For example, according to the Strategy, more knowledge is needed regarding the effects of industry, ecosystems and biodiversity, and climate change; dissemination is also important (2011a, 8, 26, 27). The way knowledge is generated is important, too, with the Strategy recognizing the need for interdisciplinary research. To illustrate this, the document proclaims that in the context of climate change, "current research cooperation and network-building need to move towards more integrated research in which natural scientists, social scientists and humanists cooperate to improve understanding of the many multi-dimensional problems" (2011a, 28). The role of traditional knowledge is also addressed, with the Strategy stating, for example, that "Sweden will strive to ensure that Indigenous peoples have greater scope for preserving and developing their identity, culture and traditional industries and [will] facilitate their traditional knowledge gathering and transfer" (2011a, 41). Much of the focus is on transferring knowledge to Indigenous peoples (2011a, 46–47) rather than including traditional knowledge into scientific knowledge production. Perhaps the focus on this one-way transfer is in part related to the statement that "much of the traditional knowledge has been either entirely or partly forgotten" (2011a, 46).

Very little is mentioned in the Strategy about education, although it does call for improved access to higher education through exchange programs. For example, "Sweden should urge the EU to invest in Arctic research and higher education. This may include an improved Arctic window in Erasmus Mundus, the Bologna Process, an Arctic research and student exchange programme as well as EU involvement in a strengthened infrastructure" (2011a, 40). The Strategy recognizes the work of the University of the Arctic which "focuses on postgraduate education, academic distance learning, Master's programmes and the training of experts in a network comprising several institutes of higher education in the High North" (2011a, 40).

As for **Implementation**, at the end of the sections on International Cooperation and Swedish Priorities, there are blue text boxes with what appears to be a list of items the Swedish government will undertake in support of the Strategy. However, the text boxes do not have headings that make clear these are actually items to be implemented. The document itself ends following the section on the Human Dimension, without a conclusion. There is no discussion about time frames for following through on goals, nor are there any budget or plans for follow-up or evaluation.

To sum up

Figure 12 at the beginning of this chapter shows the percentage of quotes within the document towards the different indicators. It shows that the most-coded indicators are the Human Dimension, Governance, Economy, and Science and Education, all with the same amount of quotes, followed by International Cooperation. The least-coded indicators were Tourism, Safety and SAR, and Security tied in second place, while Pollution was the third least-coded indicator.

Unlike the other Arctic states, Sweden has produced only one Strategy to date. As previously mentioned, based on the percentage of quotes assigned to the different indicators (see Appendix), the Strategy reflects the state's focus on climate/environment, economic, and the human dimension, as the priorities of the Arctic policy (2011a, 23). The Human Dimension indicator addresses the different relationships between Indigenous peoples and the state, the economy, and changing climate. It also includes discussion on language and culture protection, and how Sweden is working to protect Indigenous rights. Considering the size of Sápmi territory in the European Arctic, as well as in Sweden, it is not surprising that Indigenous peoples are prioritized.

The Environmental Protection, Pollution, and Climate Change indicators, when read together, show that a variety of pollutants are entering the Arctic environment, some of which contribute to climate change, which then has consequences for the environment and local biodiversity. The Strategy discusses different problem-solving strategies to both address pollution and mitigate climate change. As for the economy, there is a decent overview of Sweden's different economic activities, which include resource development, but also activities like reindeer herding and innovation development, to name a few. The Strategy states that economic activities, including tourism, are to be performed in a sustainable manner. The Tourism indicator complements the Economy indicator by providing more information on Sweden's approach to tourism, including issues of sustainability, Indigenous rights, and safety.

There also interesting findings from the indicators that fall outside of Sweden's strategic priorities. When read together, the Governance and International Cooperation indicators provide a comprehensive overview of how Sweden operates in the Arctic, both domestically and internationally. Indeed, as cooperation helps keep the region stable, it is not surprising that Sweden cooperates in a broad range of areas. For example, there is cooperation between the state and the Saami people within Sweden. Internationally, there is cooperation in the areas of safety, resource management (energy and animals), and in the area of research. Cooperation also takes place in different governance organizations like the Arctic Council, BEAC, the NCM, different UN programs, the WHO, and through structures like the Ilulissat Declaration and the UNCLOS.

The Security and Safety & SAR indicators are also connected and should be read together. Both are underpinned by the need for international cooperation to address regional concerns. Sweden's position is that security should not necessarily focus solely on military threats, but rather look at other, softer security issues like safety. The Arctic Council could play a greater role, and has already begun to do so through the Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic agreement. The IMO has already taken on regional maritime safety through the creation of the Polar Code, which was in development at the time the report was written. Safety, however, will be improved when the regional infrastructure is improved, according to the Strategy.

The Infrastructure indicator shows a connection between infrastructure development, and economic development. Transportation infrastructure, shipping, icebreakers, and even ICT developments can help fuel economic growth. Advances in ICT can help icebreakers function more efficiently, which also serves environmental and research purposes. New energy infrastructure development can help create green and renewable energy, thus helping the environment.

The Science and Education indicator connects back to many of the other indicators. For instance, science is driven by climate change and the environment; research can help inform governance structures like the Arctic Council; icebreakers are used to facilitate research; and research cooperation is important to address shared issues. The Strategy also stresses that there is more than one type of knowledge and that interdisciplinary and traditional knowledge are also important. However, the focus seems to be on transferring knowledge to Indigenous communities rather than incorporating Indigenous knowledge into scientific settings. As for education, there is mention of exchange programs, which is a form of cooperation with other institutions.

United States of America

The first Arctic strategy for the United States (USA) was released in 2009 with the *National Security Presidential Directive/NSPD—66 and Homeland Security Presidential Directive/ HSPD—25*, with 14 pages and no pictures or maps. It was followed up with a more formal strategy, the *National Strategy for the Arctic Region,* in 2013, with 11 pages and no pictures or maps. In addition to these two documents, the government released the *Implementation Plan for the National Strategy for the Arctic Region* (USA TWH 2014) in 2014, and in 2015 the *Executive Order 13689— Enhancing Coordination of National Efforts in the Arctic* (USA TWH 2015) was released. More recently, the United States Coast Guard released their own *Arctic Strategic Outlook* (USA United States Coast Guard 2019), and the Department of Defense released the *Department of Defense Arctic Strategy* (USA Department of Defense 2019). In this study the presidential and homeland security directives (2009) and the 2013 Strategy will be analyzed.

In the introduction to the 2013 Strategy, the government clearly states its priorities, seeking "an Arctic region that is stable and free of conflict, where nations act responsibly in a spirit of trust and cooperation, and where economic and energy resources are developed in a sustainable manner that also respects the fragile environment and the interests and cultures of Indigenous peoples" (USA TWH 2013, 4). The Strategy outlines "three lines of effort" that will help the USA achieve its goals. These are to "1. Advance United States Security Interests"; "2. Pursue Responsible Arctic Region Stewardship"; and "3. Strengthen International Cooperation" (2013, 2). The Strategy explains that, as things change in the region, "we will be guided by our central interests in the Arctic region, which include providing for the security of the United States; protecting the free flow of resources and commerce; protecting the environment; addressing the needs of Indigenous communities; and enabling scientific research" (2013, 4). In contrast, the 2009 directives do not make clear priority statements. Instead, the documents' section headings can be used to indicate the policy priorities. They are "B. National Security and Homeland Security Interests in the Arctic"; "C. International Governance"; "D. Extended Continental Shelf and Boundary Issues"; "E. Promoting International Scientific Cooperation"; "F. Maritime Transportation in the Arctic Region"; "G. Economic Issues, Including Energy"; and "H. Environmental Protection and Conservation of Natural Resources" (USA TWH 2009, 3, 4, 6, 7, 9, 10, 12).

Comparison by Indicator

The quotes in the **(Re)mapping and (Re)defining the Arctic** indicator provides further insights into how the region is understood by the USA. While the 2009 directives do not define the region, the opening remarks of the 2013 Strategy seem to define the American Arctic as the state of Alaska; it specifies that an "Arctic state is defined as one of the eight nations making up the permanent membership of the Arctic Council and includes the following nations: Canada, Denmark (including Greenland and the Faroe Islands), Finland, Iceland, Norway, Russia, Swe-

den, and the United States" (2013, 4). Describing the region, the 2013 Strategy considers the Arctic to be "one of our planet's last great frontiers" (2013, 1); both documents use phrases like "unique" and "changing," while also recognizing the value of the region's resources (2013, 1; 2009, 2, 12). Both documents also call the region the "Arctic," although the directives use the term "circumpolar" when discussing "the establishment of an Arctic circumpolar observing network" (2009, 8), presumably because it includes all Arctic states.

Only the government ministries or departments responsible for the Arctic are addressed in the directives as the directives were sent to 24 different officials, including, but not limited to, the Secretaries of State, the Treasury, Defense, the Interior, Commerce, Health and Human Services, Transportation, Energy, and Homeland Security (2009, 1).

The departments with responsibilities for the 2013 Strategy are actually identified in the 2014 implementation report, and can take on the role of either lead or supporting agency for the different tasks. Throughout the document these include the Departments of Agriculture (supporting), Defense (lead and supporting), Commerce, National Oceanic and Atmospheric Administration (lead and supporting), Energy (lead and supporting), Health and Human Services (lead), Homeland Security (lead and supporting), Homeland Security, United States Coast Guard (lead and supporting), Interior (lead and supporting), Interior, United States Geological Survey (supporting), State (lead and supporting), Transportation (lead and supporting), Transportation, Federal Aviation Administration (lead and supporting), Transportation, Maritime Administration (supporting). Other agencies and departments are also mentioned, including the Environmental Protection Agency (lead and supporting), Member Departments and Agencies of the Aquatic Nuisance Species Task Force and the National Invasive Species Council (supporting), Member Departments and Agencies of the Committee on the Marine Transportation System (supporting), Member Departments and Agencies of the United States National Response Team (supporting), National Aeronautics and Space Administration (supporting), National Maritime Intelligence-Integration Office (supporting), National Oceanic and Atmospheric Administration (lead), National Science Foundation (lead and supporting), Office of Science and Technology Policy (lead), Smithsonian Institute (lead and supporting), and the U.S. Arctic Research Commission (supporting). Although there are 24 different government entities listed; some only play supporting roles, and more importantly, some are more involved than others.

Figure 13 provides a comparison of how many quotes are assigned to the different indicators, as a percentage of the total number of coded quotes (rounded to the nearest whole number) in the document.
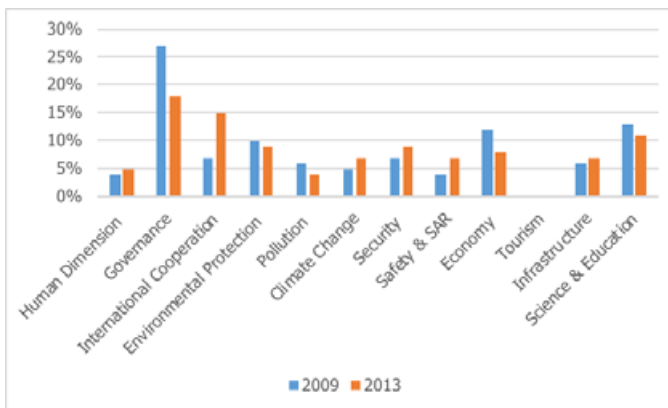
Figure 13. Comparing the United States of America's 2009 Directives and 2013 Strategy

Note: The percentages in each indicator are rounded to the closest whole number and represent the percent of the total number of quotes coded for each document.

The **Human Dimension** indicator accounts for 5 % of the total coded quotes in the 2013 Strategy and 4 % of the directives (see Figure 13) and addresses improving the state's relationship with Indigenous peoples through consultations. For example, the 2013 Strategy gives importance to "[engaging] in a consultation process with Alaska Natives, recognizing tribal governments' unique legal relationship with the United States and providing for meaningful and timely opportunity to inform Federal policy affecting Alaskan Native communities" (2013, 3; see also: 2009, 3). The two documents also recognize that changes to the environment can be harmful for Indigenous peoples. In this regard, the 2013 Strategy explains the USA "will endeavor to do no harm to the sensitive environment or to Alaska native communities and other Indigenous populations that rely on Arctic resources" while the 2009 directives identify climate change as a problem and recognize that energy development can also harm the environment (2013, 4; 2009, 10, 11). The 2009 directives also recognize that the Arctic Council "provides a beneficial venue for interaction with Indigenous groups" (2009, 5).

Culture is addressed only in the 2013 Strategy. The document identifies the incorporation of "cultural values" into the decision-making process, accounting for "cultural sensitivities" (2013, 8) in the context of resource and development. Additionally, culture must also be considered in the context of national security (2013, 6). The Strategy does not provide a definition of what constitutes cultural values, except in relation to the energy sector and the "cultures of Indigenous peoples" (2013, 4).

The 2009 directives briefly mention health and wellbeing, and connect wellbeing to climate change in two different ways. First, climate change is argued to negatively affect Indigenous peoples, with the directives commenting that "climate change and other factors are significantly affecting the lives of Arctic inhabitants, particularly Indigenous communities" (2009, 10).

Second, climate change and the economy are also connected to wellbeing (2009, 11).

In the **Governance** indicator, which accounts for 18 % of the total coded quotes in the 2013 Strategy and 27 % of the directives (see Figure 13, p. 100), the emphasis is placed on, among other things, the "effects of climate change and increasing human activity in the Arctic region" (2009, 2). "New or enhanced international arrangements for the Arctic to address issues [are] likely to arise from expected increases in human activity in that region, including shipping, local development and subsistence, exploitation of living marine resources, development of energy and other resources, and tourism" (2009, 6).

The 2009 directives highlight that "the United States promotes the sharing of Arctic research platforms with other countries in support of collaborative research that advances fundamental understanding of the Arctic region in general and potential Arctic change in particular. This could include collaboration with bodies such as the Nordic Council and the European Polar Consortium, as well as with individual nations" (2009, 7). The directives further state that "given the need for decisions to be based on sound scientific and socioeconomic information, Arctic environmental research, monitoring, and vulnerability assessments are top priorities" (2009, 12).

Furthermore, the 2009 directives state that the USA will "consult with other Arctic nations to discuss issues related to exploration, production, environmental and socioeconomic impacts, including drilling conduct, facility sharing, the sharing of environmental data, impact assessments, compatible monitoring programs, and reservoir management in areas with potentially shared resources" (2009, 11). In addition, the USA will "continue to emphasize cooperative mechanisms with nations operating in the region to address shared concerns, recognizing that most known Arctic oil and gas resources are located outside of United States jurisdiction." Also, "in cooperation with other nations, respond effectively to increased pollutants and other environmental challenges" (2009, 12, 13).

The 2009 directives recognize that "sustainable development in the Arctic region poses particular challenges." Therefore, "stakeholder input will inform key decisions as the United States seeks to promote economic and energy security." At the same time, the USA will "pursue marine ecosystem-based management in the Arctic" (2009, 10, 14). The 2013 Strategy also underlines that "the law recognizes these rights, freedoms, and uses for commercial and military vessels and aircraft. Within this framework, we shall further develop Arctic waterways management regimes, including traffic separation schemes, vessel tracking, and ship routing, in collaboration with partners" (2009, 7).

The 2013 Strategy highlights that the USA "will emphasize science-informed decisionmaking and integration of economic,

environmental, and cultural values" and that "across all lines of effort, decisions need to be based on the most current science and traditional knowledge" (2013, 3, 8). At the same time, decisions should be made by "using the best available information by promptly sharing – nationally and internationally – the most current understanding and forecasts based on up-to-date science and traditional knowledge" (2013, 10). Thereofore, "Just as a common spirit and shared vision of peaceful partnership led to the development of an international space station, we believe much can be achieved in the Arctic region through collaborative international efforts, coordinated investments, and public-private partnerships" (2013, 6).

Last but not least, the role of Indigenous peoples is reflected in both documents. The 2009 directives state that "it is the policy of the United States to… involve the Arctic's Indigenous communities in decisions that affect them" (2009, 2, 3). The 2013 Strategy further confirms that the "Arctic nations have varied commercial, cultural, environmental, safety, and security concerns in the Arctic region. Nevertheless, [the] common interests make these nations ideal partners in the region" (2013, 9). The Strategy explains that "we seek new opportunities to advance our interests by proactive engagement with other Arctic nations through bilateral and multilateral efforts using of a wide array of existing multilateral mechanisms that have responsibilities relating to the Arctic region" (2013, 9). As the US Policy "emphasizes trust, respect, and shared responsibility… [and] articulates that tribal governments have a unique legal relationship with the United States and requires Federal departments and agencies to provide for meaningful and timely input by tribal officials in development of regulatory policies that have tribal implications" (2013, 11). The USA needs to "engage in a consultation and coordination process with Alaska Natives, recognizing tribal governments' unique legal relationship with the United States and providing for meaningful and timely opportunity to inform Federal policy affecting Alaskan Native communities" (2013, 3).

The **International Treaties and International Cooperation** indicator accounts for 15 % of the total coded quotes in the 2013 Strategy and 7 % of the directives (see Figure 13, p. 100); this highlights the importance of international cooperation, which is emphasized in both documents. The 2009 directives state that "it is the policy of the United States to… strengthen institutions for cooperation among the eight Arctic nations" (2009, 2). The 2013 Strategy further confirms that the USA aims to strengthen the international cooperation in the Arctic, stating that "what happens in one part of the Arctic region can have significant implications for the interests of other Arctic states and the international community as a whole" (2013, 8). The 2013 Strategy further recognizes that "the United States will rely on existing international law, which provides a comprehensive set of rules governing the rights, freedoms, and uses of the world's oceans and airspace, including the Arctic" (2013, 10).

The 2013 Strategy states that "the Arctic region is peaceful, stable, and free of conflict. The United States and its Arctic allies and partners seek to sustain this spirit of trust, cooperation and collaboration, both internationally and domestically" (2013, 1). The 2013 Strategy also highlights that "*the United States is an Arctic Nation with broad and fundamental interests in the Arctic Region, where we seek to meet our national security needs, protect the environment, responsibly manage resources, account for Indigenous communities, support scientific research, and strengthen international cooperation on a wide range of issues*" (2013, 2).

The United States recognizes the value and effectiveness of existing fora, international organizations, and bilateral contacts which promote the United States' interests in the Arctic. The USA participates in a variety of them: for instance, the Arctic Council, the International Regulators Forum, the International Standards Organization, the International Maritime Organization (IMO), the "United Nations (U.N.) and its specialized agencies, as well as through treaties such as the U.N. Framework Convention on Climate Change, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, the Convention on Long Range Transboundary Air Pollution and its protocols" (2009, 5–6), the Montreal Protocol on Substances that Deplete the Ozone Layer, wildlife conservation and management agreements, and many other mechanisms. "As many nations across the world aspire to expand their role in the Arctic, we encourage Arctic and non-Arctic states to work collaboratively through appropriate fora to address the emerging challenges and opportunities in the Arctic region, while we remain vigilant to protect the security interests of the United States and our allies" (2013, 6; see also: 2009, 3, 5, 6). The USA "will seek to strengthen partnerships through existing multilateral fora and legal frameworks dedicated to common Arctic issues." Furthermore, the Strategy states that the USA "will also pursue new arrangements for cooperating on issues of mutual interest or concern and addressing unique and unprecedented challenges, as appropriate" (2013, 8, 9).

The 2013 Strategy further explains in detail how "U.S. efforts to strengthen international cooperation and partnerships will be pursued through four objectives": i) "pursue arrangements that promote shared Arctic State prosperity, protect the Arctic Environment, and Enhance Security"; ii) "work through the Arctic Council to advance U.S. interests in the Arctic Region"; iii) "accede to the Law of the Sea Convention"; iv) "cooperate with other interested parties" (including "non-Arctic states and numerous non-state actors [that] have expressed increased interest in the Arctic region) (2013, 9).

Behind is that the outcomes of the Arctic Council have "produced positive results for the United States by working within its limited mandate of environmental protection and sustainable development" and "it is the position of the United States that the Arctic Council should remain a high-level forum devoted to issues within its current mandate and not be transformed into a formal international organization, particularly one with assessed contributions." However, "the United States

is nevertheless open to updating the structure of the Council, including consolidation of, or making operational changes to, its subsidiary bodies, to the extent such changes can clearly improve the Council's work and are consistent with the general mandate of the Council" (2009, 5).

The 2009 directives ask the US Senate to act favorably and promptly on the US accession to UNCLOS "to protect and advance U.S. interests, including with respect to the Arctic. Joining will serve the national security interests of the United States, including the maritime mobility of our Armed Forces worldwide. It will secure U.S. sovereign rights over extensive marine areas, including the valuable natural resources they contain" (2009, 5). "The most effective way to achieve international recognition and legal certainty for our extended continental shelf is through the procedure available to States Parties to the U.N. Convention on the Law of the Sea" (2009, 6). The need to join UNCLOS is emphasized again in the 2013 Strategy, since the USA being the only non-UNCLOS party of the Arctic states: "Only by joining the Convention can we maximize legal certainty and best secure international recognition of our sovereign rights with respect to the U.S. extended continental shelf in the Arctic and elsewhere, which may hold vast oil, gas, and other resources. Our extended continental shelf claim in the Arctic region could extend more than 600 nautical miles from the north coast of Alaska" (2013, 9). As well, "instances where the maritime zones of coastal nations overlap, Arctic states have already begun the process of negotiating and concluding maritime boundary agreements, consistent with the Law of the Sea Convention and other relevant international law" (2013, 9–10). The Strategy continues to explain that "the United States supports peaceful management and resolution of disputes, in a manner free from coercion. While the United States is not currently a party to the Convention, we will continue to support and observe principles of established customary international law reflected in the Convention" (2013, 10).

The **Environmental Protection** indicator accounts for 9 % of the total coded quotes in the 2013 Strategy and 10 % in the directives (see Figure 13, p. 100); it notes that these documents comment on the "fragile" and "unique" nature of the Arctic, as mentioned in the (Re)mapping and (Re)defining the Arctic indicator. The 2013 Strategy also comments that there is a "harshness of the Arctic climate" (2013, 10), while also stating that the environment is "sensitive" (2013, 4). This suggests a need to protect the environment, and both documents make clear statements that environmental protection is a priority for the USA. Indeed, the 2013 Strategy states that "protecting the unique and changing environment of the Arctic is a central goal of U.S. policy" (2013, 7), while the 2009 directives state that "it is the policy of the United States to … Protect the Arctic environment and conserve its biological resources" (2009, 2). Additionally, the 2013 Strategy identifies different areas of environmental concern, such as "land ice and its role in changing sea level; sea-ice and its role in global climate, fostering biodiversity, and supporting Arctic peoples; and, the warming permafrost and its effects on infrastructure and climate" (2013, 8).

According to the U.S. documents, environmental protection must be balanced with regional economic activities, while also ensuring that Indigenous peoples are not negatively affected (2013, 2, 4; 2009, 11). The Arctic environment needs to be properly managed; the 2009 directives explain that the USA will "pursue marine ecosystem-based management in the Arctic," while the 2013 Strategy more generally states that it will "establish and institutionalize an integrated Arctic management framework" (2013, 2; 2009, 14).

Environmental protection can make use of protected areas, although none of the documents is explicit in terms of the intent of the USA to use or create such areas. The 2013 Strategy, for example, focuses on 'preservation' and not protection. The document states that "the remote and complex operating conditions in the Arctic environment make the region well-suited for collaborative efforts by nations seeking to explore emerging opportunities while emphasizing ecological awareness and preservation" (2013, 9). The 2009 directives also skirt around the topic, speaking more generally to the "effective conservation and management" of "living marine resources" (2009, 13) and recognizing American participation in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (2009, 5).

Biodiversity is also an important aspect of environmental protection, even if the term "biodiversity" is not used[8] in all documents. For example, the 2013 Strategy states that "the United States in the Arctic will assess and monitor the status of ecosystems and the risks of climate change and other stressors to prepare for and respond effectively to environmental challenges" (2013, 8). Similarly, the 2009 directives seek to "continue to identify ways to conserve, protect, and sustainably manage Arctic species and ensure adequate enforcement presence to safeguard living marine resources, taking account of the changing ranges or distribution of some species in the Arctic" (2009, 13). Both quotes are suggestive of biodiversity protection.

The **Pollution** indicator, which accounts for 4 % of the total coded quotes in the 2013 Strategy and 6 % of the directives (see Figure 13, p. 100), identifies sources of pollution found in the Arctic. For example, the 2013 Strategy identifies methane, mercury, oil spills, and "emissions of black carbon or other substances from fossil fuel combustion" (2013, 5, 7). The 2009 directives mention "persistent pollutants (e.g., persistent organic pollutants and mercury) and airborne pollutants (e.g., soot)" (2009, 13). The directives also recognize that "pollutants from within and outside the Arctic are contaminating the region" (2009, 12). While there is some overlap in terms of the types of pollution identified, the two documents identify different sources of the pollution. The 2013 Strategy suggests that poorly planned economic activities, or "uncoordinated development" is to blame. In contrast, the 2009 directives remark that pollution is a result of climate change as "with temperature increases in the Arctic

region, contaminants currently locked in the ice and soils will be released into the air, water, and land" (2009, 13). Moreover, the document comments that "increased human activity within and below the Arctic, will result in increased introduction of contaminants into the Arctic" (2009, 13).

Each document discusses different strategies for addressing pollution. For example, according to the 2013 Strategy, "it is imperative that the United States proactively establish national priorities and objectives for the Arctic region" in relation to black carbon (2013, 5). The document also explains that the Arctic Council's Arctic Marine Oil Pollution Preparedness and Response Agreement will help with regional cooperation and that "together, Arctic nations can responsibly meet new demands – including ... developing capabilities to prevent, contain, and respond to oil spills and accidents – by increasing knowledge and integrating Arctic management" (2013, 7). In contrast, the 2009 directives pay more attention to international treaties, such as the "Convention on Long Range Transboundary Air Pollution and its protocols" (2009, 5-6) and the role of the IMO in relation to "oil and other hazardous material pollution response agreements" (2009, 9).

The **Climate Change** indicator accounts for 7 % of the total coded quotes in the 2013 Strategy and 5 % of the 2009 directives (see Figure 13, p. 100) with the consequences of climate change being discussed in those documents. The 2013 Strategy explains that "while the Arctic region has experienced warming and cooling cycles over millennia, the current warming trend is unlike anything previously recorded" (2013, 5). Both documents draw attention to melting ice and thawing permafrost. "Sea ice and glaciers are in retreat. Permafrost is thawing and coasts are eroding," with consequences for Indigenous peoples (2009, 12; see also: 2013, 5). At the same time, the documents also recognize that climate change can be of economic benefit—"the melting of Arctic ice has the potential to transform global climate and ecosystems as well as global shipping, energy markets, and other commercial interests" (2013, 11). Climate change can also improve energy security (see: 2013, 7).

To a limited extent, the documents mention mitigation and adaptation with respect to climate change, although the 2013 Strategy does not explicitly use these words. The 2009 directives, in contrast, mention adaptation once, explaining that "the United States affirms the importance to Arctic communities of adapting to climate change, given their particular vulnerabilities" (2009, 10). A possible reason for so little discussion in the documents about mitigation and adaptation may be due to no connection being made in the documents between climate change and scientific research, and the failure to recognize climate change agreements and frameworks. The 2009 directives do, however, refer to the UNFCCC (2009, 5), but they do not discuss what climate cooperation within this framework might entail.

---

8   The 2013 Strategy only uses the term 'biodiversity' once in a list of issues that the government wants to learn more about, rather than in relation to the protection of biodiversity.

In the **Security** indicator, which accounts for 9 % of the total coded quotes in the 2013 Strategy and 7 % of the directives (see Figure 13, p. 100), the documents highlight the importance of national security in the Arctic. The 2009 directives confirm that "it is the policy of the United States to… meet national security and homeland security needs relevant to the Arctic region" (2009, 2). The 2013 Strategy states that the United States "will be guided by our central interests in the Arctic region, which include providing for the security of the United States" (2013, 4). As such, "the United States has broad and fundamental national security interests in the Arctic region and is prepared to operate either independently or in conjunction with other states to safeguard these interests. These interests include such matters as missile defense and early warning; deployment of sea and air systems for strategic sealift, strategic deterrence, maritime presence, and maritime security operations; and ensuring freedom of navigation and overflight" (2009, 3). The United States is "establishing an overarching national approach to advance national security interests, pursue responsible stewardship of this precious and unique region, and serve as a basis for cooperation with other Arctic states and the international community as a whole to advance common interests" (2013, 4). The Strategy further emphasizes that "we acknowledge that the protection of our national security interests in the Arctic region must be undertaken with attention to environmental, cultural, and international considerations outlined throughout this strategy" (2013, 6).

According to the 2013 Strategy, "U.S. security in the Arctic encompasses a broad spectrum of activities, ranging from those supporting safe commercial and scientific operations to national defense" and the USA seeks "an Arctic region that is stable and free of conflict, where nations act responsibly in a spirit of trust and cooperation, and where economic and energy resources are developed in a sustainable manner that also respects the fragile environment and the interests and cultures of Indigenous peoples" (2013, 2, 4). "The United States will identify, develop, and maintain the capacity and capabilities necessary to promote safety, security, and stability in the region through a combination of independent action, bilateral initiatives, and multilateral cooperation" (2013, 6).

The 2009 directives explain that "the Arctic region is primarily a maritime domain; as such, existing policies and authorities relating to maritime areas continue to apply, including those relating to law enforcement" (2009, 2). Furthermore, the 2013 Strategy states that "in protecting these interests, we draw from our long-standing policy and approach to the global maritime spaces in the 20th century, including freedom of navigation and overflight and other internationally lawful uses of the sea and airspace related to these freedoms; security on the oceans; maintaining strong relationships with allies and partners; and peaceful resolution of disputes without coercion" (2013, 4). Additionally, "freedom of the seas is a top national priority for the USA" (2009, 3) and "preserving the rights and duties relating to navigation and overflight in the Arctic region supports our ability to exercise these rights throughout the world, including through strategic straits" (2009, 4).

The USA strives to "encourage the peaceful resolution of disputes in the Arctic region" (2009, 3). Furthermore, the 2013 Strategy confirms that the USA will "safeguard peace and stability by working to maintain and preserve the Arctic region as an area free of conflict, acting in concert with allies, partners, and other interested parties" (2013, 10). This will require action by the United States and "the actions of other interested countries, in supporting and preserving international legal principles of freedom of navigation and overflight and other uses of the sea related to these freedoms, unimpeded lawful commerce, and the peaceful resolution of disputes" (2013, 10).

"Working through the International Maritime Organization (IMO), the United States promotes strengthening existing measures and, as necessary, developing new measures to improve the safety and security of maritime transportation, as well as to protect the marine environment in the Arctic region" (2009, 9). Furthermore, the United States "exercises authority in accordance with lawful claims of United States sovereignty, sovereign rights, and jurisdiction in the Arctic region, including sovereignty within the territorial sea, sovereign rights and jurisdiction within the United States exclusive economic zone and on the continental shelf, and appropriate control in the United States contiguous zone" (2009, 3). In addition, "the United States will support the enhancement of national defense, law enforcement, navigation safety, marine environment response, and search-and-rescue capabilities" (2013, 6).

The 2009 directives also address prevention of terrorism: "the United States also has fundamental homeland security interests in preventing terrorist attacks and mitigating those criminal or hostile acts that could increase the United States vulnerability to terrorism in the Arctic region" (2009, 2). The 2013 Strategy further addresses energy security: "the Arctic region's energy resources factor into a core component of our national security strategy: energy security. The region holds sizable proved and potential oil and natural gas resources that will likely continue to provide valuable supplies to meet U.S. energy needs" (2013, 7).

The **Safety and SAR** indicator accounts for 7 % of the total coded quotes in the 2013 Strategy and 4 % of the 2009 directives (see Figure 13, p. 100). The documents address different safety concerns. The 2013 Strategy recognizes a number of safety issues, including "search and rescue, and pollution prevention and response," which can be connected to "safe, secure, and reliable Arctic shipping" (2013, 1, 10). The Strategy also recognizes the possibility of "natural or man-made disasters" (2013, 6) and there is a need for general situational awareness (see: 2013, 6, 7). The 2009 directives primarily focus on shipping safety and also includes SAR, environmental protection, and situational awareness through, for example, "short- and long-range aids to navigation, high-risk area vessel-traffic management, iceberg warnings and other sea ice information, [and] effective shipping standards" (2009, 9). Situational awareness could also include, but is not limited to, "ship routing and reporting systems, such as traffic separation and vessel traffic management schemes in Arctic chokepoints; updating and strengthening of the Guidelines

for Ships Operating in Arctic Ice Covered Waters; underwater noise standards for commercial shipping; a review of shipping insurance issues; oil and other hazardous material pollution response agreements; and environmental standards" (2009, 9). Although the directives focus on shipping, they demonstrate that shipping safety is a complex issue.

As for safety agreements, the 2013 Strategy recognizes the role of the Arctic Council in regional safety. For example, it notes that "recent successes of the Council include its advancement of public safety and environmental protection issues, as evidenced by the 2011 Arctic Search-and-Rescue Agreement and by the 2013 Arctic Marine Oil Pollution Preparedness and Response Agreement" (2013, 9). While the 2009 directives were written before these agreements were put in place, the documents address similar issues at a national level. In particular, they mention that the USA will, "commensurate with the level of human activity in the region, establish a risk-based capability to address hazards in the Arctic environment. Such efforts shall advance work on pollution prevention and response standards; determine basing and logistics support requirements, including necessary airlift and icebreaking capabilities; and improve plans and cooperative agreements for search and rescue" (2009, 10).

With regard to safety capabilities, the documents identify areas for improvement. For the 2009 directives, the only mention is of improvements in the area of SAR being required (2009, 10). In contrast, the 2013 Strategy recognizes two key areas where improvements can be made. First, the strategy explains that "the United States will endeavor to appropriately enhance sea, air, and space capabilities as Arctic conditions change, and to promote maritime-related information sharing with international, public, and private sector partners, to support implementation of activities such as the search-and-rescue agreement signed by Arctic states" (2013, 6). Second, improvements also need to be made with respect to mapping. "Given the vast expanse of territory and water to be charted and mapped, we will need to prioritize and synchronize charting efforts to make more effective use of resources and attain faster progress. In so doing, we will make navigation safer and contribute to the identification of ecologically sensitive areas and reserves of natural resources" (2013, 8). The 2013 Strategy would thus appear to be more reflective of America's capabilities than the documents.

Despite their shortcomings, the documents demonstrate that safety and SAR is truly a multilevel governance issue. For example, the 2009 directives recognize that "effective search and rescue in the Arctic will require local, State, Federal, tribal, commercial, volunteer, scientific, and multinational cooperation" (2009, 9). Similarly, the 2013 Strategy states that the USA, "working cooperatively with the State of Alaska, local, and tribal authorities, as well as public and private sector partners, we will develop, maintain, and exercise the capacity to execute Federal responsibilities in our Arctic waters, airspace, and coastal regions, including the capacity to respond to natural or man-made disasters" (2013, 6).

The **Economy** indicator accounts for 8 % of the total coded quotes in the 2013 Strategy and 12 % in the 2009 directives (see Figure 13, p. 100) which provides only a narrow understanding of regional economic activities. The 2013 Strategy mentions oil and gas, shipping, and briefly mentions trade (2013, 7). The 2009 directives mention natural resources and "maritime commerce" (2009, 9, 2). Much of the focus in both documents is on oil and gas and natural resources.

The documents recognize the importance of the continental shelf for access to natural resources, although the 2009 directives also note that the USA must "consider the conservation and management of natural resources during the process of delimiting the extended continental shelf" (2009, 7; 2013, 9). The 2013 Strategy, more generally, also acknowledges that resource conservation and environmental protection must take place (2013, 7). The documents explain that "within the context of this broader energy security strategy, including our economic, environmental and climate policy objectives, we are committed to working with stakeholders, industry, and other Arctic states to explore the energy resource base, develop and implement best practices, and share experiences to enable environmentally responsible production of oil and natural gas as well as renewable energy" (2013, 7). Similarly, the 2009 directives explain that "the United States seeks to ensure that energy development throughout the Arctic occurs in an environmentally sound manner, taking into account the interests of Indigenous and local communities, as well as open and transparent market principles" (2009, 11). Energy security is also a priority of the two documents. The 2013 Strategy remarks that the USA will increase "efficiency and conservation efforts to reduce our reliance on imported oil and strengthen our nation's energy security" (2013, 7) while the 2009 directives explain that the USA will "work with other Arctic nations to ensure that hydrocarbon and other development in the Arctic region is carried out in accordance with accepted best practices and internationally recognized standards and the 2006 Group of Eight (G-8) Global Energy Security Principles" (2009, 11). The 2009 directives also discuss other types of natural resources, such as fishing. The directives state that the government will "seek to develop ways to address changing and expanding commercial fisheries in the Arctic, including through consideration of international agreements or organizations to govern future Arctic fisheries" (2009, 13).

Sustainable development is raised in both documents, although often in passing. For instance, the 2013 Strategy explains that "we will seek opportunities to pursue efficient and effective joint ventures, based on shared values that leverage each Arctic state's strengths. This collaboration will assist in guiding investments and regional activities, addressing dynamic trends, and promoting sustainable development in the Arctic region" (2013, 9). This is clearer than the 2009 directives which make statements about actions that are "environmentally sustainable" or about carrying out such actions "in an environmentally sound manner" (2009, 2, 11). At the same time, the directives also state that "sustainable development in the Arctic region poses particular challenges. Stakeholder

input will inform key decisions as the United States seeks to promote economic and energy security" (2009, 10), without going into detail about what those difficulties are. None of the documents depict what sustainable development looks like in an American context.

None of the documents address tourism industry; thus, the **Tourism** indicator is not discussed.

The **Infrastructure** indicator accounts for 7 % of the total coded quotes in the 2013 Strategy and 6 % of the 2009 directives (see Figure 13, p. 100) and addresses different types of infrastructure. With regard to transportation infrastructure, the 2013 Strategy mentions this slightly more the 2009 directives do. For instance, the Strategy links infrastructure development and the resource industry because the potential of untapped resources has "inspired fresh ideas for commercial initiatives and infrastructure development in the region" (2013, 5). A general increase in regional activity also calls for new infrastructure as "we will carefully tailor this regional infrastructure, as well as our response capacity, to the evolving human and commercial activity in the Arctic region" (2013, 6). An increase in regional activity also has implications for the shipping industry, and the Strategy explains that "Arctic nations can responsibly meet new demands – including maintaining open sea lanes for global commerce" and that the IMO can help facilitate shipping and maritime safety (2013, 7, 10).

In contrast, the 2009 directives do not pay as much attention to transportation infrastructure as they do to shipping. The directives state that "the United States priorities for maritime transportation in the Arctic region are: a. To facilitate safe, secure, and reliable navigation; b. To protect maritime commerce; and c. To protect the environment" (2009, 9). Shipping safety, and the importance of the IMO, are also discussed in the directives (2009, 9), as, too, is the need to "develop additional measures, in cooperation with other nations, to address issues that are likely to arise from expected increases in shipping into, out of, and through the Arctic region" (2009, 10). The directives, unlike the Strategy, also mention icebreaking, but again in the context of maritime safety (2009, 10).

Regarding other forms of infrastructure, the role of innovation and technology is mentioned only in the 2013 Strategy. The document states that "the unique Arctic environment will require a commitment by the United States to make judicious, coordinated infrastructure investment decisions, informed by science" (2013, 10). None of the documents address telecommunication and ICT, housing, or energy infrastructure. The lack of discussion on the energy infrastructure is surprising, considering the focus on energy security. That said, energy security is more about accessing and producing energy rather than building the infrastructure needed to get it to the people.

The **Science and Education** indicator accounts for 11 % of the total coded quotes in the 2013 Strategy and 13 % in the 2009 directives (see Figure 13, p. 100) and identifies the environment as a driver behind American Arctic science. For example, the

2013 Strategy states that "proper stewardship of the Arctic requires understanding of how the environment is changing, and [that] such understanding will be based on a holistic earth system approach" (2013, 8; see also: 2009, 2–3). The 2009 directives also identify climate change and pollution as scientific drivers. For example, the document states that "an understanding of the probable consequences of global climate variability and change on Arctic ecosystems is essential to guide the effective long-term management of Arctic natural resources and to address socioeconomic impacts of changing patterns in the use of natural resources" (2009, 12). The USA will "intensify efforts to develop scientific information on the adverse effects of pollutants on human health and the environment and work with other nations to reduce the introduction of key pollutants into the Arctic" (2009, 14).

The mention of using climate science to help with the regional economy shows that science is directed at purposes other than climate change. The 2013 Strategy notes that research helps inform decision-making at all levels of governance (2013, 7, 10). It also explains that traditional knowledge is important to decision-making because "across all lines of effort, decisions need to be based on the most current science and traditional knowledge" (2013, 3). The 2009 directives also recognize the value of science to decision-making. For example, they state that "given the need for decisions to be based on sound scientific and socioeconomic information, Arctic environmental research, monitoring, and vulnerability assessments are top priorities" (2009, 12) and that "scientific research is vital for the promotion of United States interests in the Arctic region" (2009, 7). There is an economic aspect to research; the USA will "seek to increase efforts, including those in the Arctic Council, to study changing climate conditions, with a view to preserving and enhancing economic opportunity in the Arctic region" (2009, 11).

The ability to support these efforts is important; however, only the 2009 directives note the USA's research infrastructure. For example, the documents mention that "the United States has made significant investments in the infrastructure needed to collect environmental data in the Arctic region, including the establishment of portions of an Arctic circumpolar observing network through a partnership among United States agencies, academic collaborators, and Arctic residents" (2009, 7–8). This quote recognizes both physical infrastructure and infrastructure in the form of networks by noting that "[strengthening] partnerships with academic and research institutions and [building] upon the relationships these institutions have with their counterparts in other nations" (2009, 9) will help facilitate research.

Obtaining new knowledge, both scientific and traditional, is also important. For example, the opening statement of the 2013 Strategy comments that "working together, we will continue to increase our understanding of the region through scientific research and traditional knowledge" (2013, 1). Moreover, "responsible stewardship requires active conservation of resources, balanced management, and the application of scientific and traditional knowledge of physical and living environments" (2013, 7). While the 2009 directives also recognize the need for knowl-

edge-based understanding of the region (2009, 12), there is no mention of the role of traditional knowledge in this process.

Research on Arctic conditions also requires a certain level of innovation. To address this, the 2013 Strategy comments that the USA will "Pursue Innovative Arrangements to support the investments in scientific research, marine transportation infrastructure requirements, and other support capability and capacity needs in this region" (2013, 10). Innovation and technology are also important, including in the space domain (2013, 6), mentioned in the discussion under Safety indicator. Innovation and technology are not overtly addressed in the 2009 directives.

As for education, neither document addresses access to higher education, educational attainment, or the role of the University of the Arctic and distance learning. The focus, therefore, is clearly on science.

The 2009 directives provided detailed **Implementation** plans. Indeed, the directives state that "this directive establishes the policy of the United States with respect to the Arctic region and directs related implementation actions" (2009, 1). At the end of the policy priorities, there is also an implementation section that lists action items that will be done. These sections also include a list of departments that have responsibility for the items and that they 'shall' do them, suggesting there is some importance behind doing them. Moreover, the document states: "Implementing a number of the policy elements directed above will require appropriate resources and assets. These elements shall be implemented consistent with applicable law and authorities of agencies, or heads of agencies, vested by law, and subject to the availability of appropriations. The heads of executive departments and agencies with responsibilities relating to the Arctic region shall work to identify future budget, administrative, personnel, or legislative proposal requirements to implement the elements of this directive" (2009, 14). Certainly, the document provides an implementation strategy for the various aspects of the directives.

The 2013 Strategy also provides insights into how it will be implemented. For example, it states that "when implementing this strategy, the United States will proceed in a thoughtful, responsible manner that leverages expertise, resources, and cooperation from the State of Alaska, Alaska Natives, and stakeholders across the entire nation and throughout the international community" (2013, 4). Additionally, at the end of each of the three lines of effort, there are bullet point lists of different objectives. However, unlike in the directives, there are no details as to how they will be implemented and who will be responsible. Instead, the 2014 implementation plan does this in great detail as each issue clearly lays out an objective, next steps, how progress will be measured, and who are the lead and supporting agencies. At the end of the document, it is explained that: "The Implementation Plan will be reviewed on an annual basis to ensure that progress continues to be made in positioning the United States to best prepare and respond to changes, challenges, and opportunities in the Arctic region" and that it "will be revisited after 5 years to ensure that it still meets the intent and priorities of the Nation" (USA TWH 2014, 32), providing follow-up and evaluation.

To sum up

Figure 13 at the beginning of this section discussion shows that Governance, International Cooperation, and Science and Education are the three most-coded indicators in the 2013 Strategy and that Governance, Science and Education, and Economy are the three most-coded in the 2009 directives. The three least-coded in 2013 are Tourism, Pollution, and the Human Dimension, while the three least-coded in 2009 are Tourism, Human Dimension and Safety and SAR (tying second) and Climate Change being the third least-coded indicator.

As identified at the beginning of the discussion on the American strategies, the three lines of effort for the 2013 Strategy are security, stewardship, and international cooperation. As the International Cooperation indicator is the second most-coded indicator (see Appendix), it is fair to say this line of effort is met. As for the security line of effort, the security indicator is tied as the fourth most-coded indicator. Despite security not being in the top three indicators, the Strategy does make clear and concise statements about the USA's broadening understanding of regional security. As for stewardship, this is more difficult to assess because it cuts across different indicators and draws on quotes from the environment indicator, governance (natural resources, blue economy, licensing), safety (mapping), and science and education.

Moreover, the 2013 Strategy, also states that the USA will "seek an Arctic region that is stable and free of conflict, where nations act responsibly in a spirit of trust and cooperation, and where economic and energy resources are developed in a sustainable manner that also respects the fragile environment and the interests and cultures of Indigenous peoples" (2013, 4). This is a broad statement that is connected to the International Cooperation (second most-coded), Security and Environmental Protection indicators (tied as fourth most-coded), the Economy indicator (fifth most-coded), and Human Dimension indicators (seventh most-coded).

Governance is the most-coded indicator and Science and Education is the third most-coded (see Appendix) in the 2013 Strategy. The Governance indicator addresses topics around science-informed decision-making, international cooperation, and respecting and consulting Indigenous governments. The Science and Education indicator identifies the environment as a driver behind research and values the use of traditional knowledge. While not all the indicators associated with the priorities are highly coded, this priority does seem to be addressed through connected discussions.

There are also some connections between the different indicators and themes. For example, the Governance indicator is connected to the Human dimension indicator through statements about ensuring consultations with Indigenous groups,

and it is also connected to the Science and education indicator, as research will be used to inform governance decisions. Governance structures are also used for safety, such as the Arctic Council's SAR and oil agreements. Another linkage occurs with the Economy indicator. Indeed, economic activities can cause pollution and harm the environment, while climate change may increase the regional economic activity. The Economy indicator is also linked to the Security indicator through discussions around energy security, and to the Safety indicator, as shipping can increase environmental safety risks.

To further compare the documents, the two most-relevant similarities and the three most-relevant differences are discussed.

It is possible to compare the documents, and there are some **similarities** between them. Two similarities stand out. *First*, the documents address environmental protection, with the 2013 Strategy calling it "a central goal" (2013, 7), and the 2009 directives state that environmental protection is a policy. In the documents, there is thus a desire to balance environmental protection with economic development. While protected areas were discussed more in the 2013 Strategy, it and the directives address biodiversity protection, even if the term is not explicitly used. *Second,* climate change is addressed by the Strategy and the directives; however, the 2013 Strategy is more expressive about the consequences, both positive and negative, than the 2009 directives which are more matter-of-fact. Regardless of how the consequences ware framed, neither the Strategy nor the directives places much emphasis on issues of mitigation/ adaptation or ways of addressing climate change through international frameworks or scientific research.

There are also some **differences** between the documents, three of which are discussed here. *First*, the Governance indicator is discussed more in the 2009 directives than it is in the 2013 Strategy, and there is very little overlap in ideas. The directives mention cooperation and fisheries management, while the 2013 Strategy mentions the use of law for maritime governance. There is some overlap as the documents discuss decision-making, but the directives speak to stakeholder engagement while the Strategy speaks to science as a way to inform decision making. That being said, they both reference the need to include Indigenous peoples in the decision-making process. *Second*, the documents take slightly different approaches to the issue of pollution. While they mention similar, but slightly different types of pollution, their responsibility for addressing pollution differs. Notably, the 2009 directives state that melting permafrost and undefined human activity are the causes of pollution and that international cooperation and adherence to international conventions are the solution. In contrast, the 2013 Strategy suggests economic and resource development are the primary source of pollution, and the USA must take responsibility for this. As the directives were released 11 days before former President Bush stepped down and former President Obama was sworn in, this shift is telling of the change in government from Republican to Democrat. It could also be suggestive of greater self-reflection and national accountability within the Arctic region. *Third,* while there are similarities regarding how security is addressed

between the documents, there is one key difference. Notably, the 2009 directives comment on the possibility of terrorism in the region, whereas the 2013 Strategy emphasizes the need for increased energy security. Again, this difference is indicative of the change in government.

The two documents address similar issues even though the Strategy and the presidential directives are different types of documents, but some issues are discussed with different foci. Nevertheless, the documents, overall, provide a comprehensive understanding of the USA's regional priorities.

Comparing the Current Strategies

The last section provided an overview the contents of the strategies and policies on the Arctic of the eight Arctic states, and how they have developed. To gain a better understanding of how the Arctic region is currently being governed, as well as how the national strategies and policies complement each other, a comparison between the current strategies for each state is needed.

This section will go through the current national strategies and policies of the eight Arctic states with an indicator-by-indicator comparison. It will identify both similarities and differences in general, and discuss on some of relevant (biggest) differences that could have implications for the state of Arctic governance and development of the entire region. It is important to note that, with the exception of Norway (2017), the current strategies were released between 2009 and 2013. While some countries are working on new strategies as noted earlier, the majority of documents that currently govern state action in the Arctic are between six and ten years old.

To recognize where the similarities and differences are, to measure their value, and whether they are general or rare, we have used simple criteria. If there are seven or more similarities between the national strategies and policies, the finding is striking. If there are five or more, the finding is relevant, and if there are three or fewer similarities, the finding suggests fragmentation.

Table 6 shows where the different countries place the official priorities of their Arctic strategies and policies. For example, all countries, except the USA, clearly state that economy/economic development is a priority (Canada and Russia use the term with socio-economic development), which is striking. Similarly, all countries, except Canada and Sweden, state that international cooperation is a priority, which is relevant. All countries, except the United States, either have climate change or environmental protection as a priority, which is striking. Security and stability are priorities for Finland, Iceland, Kingdom of Denmark, Russia, and the United States, which is relevant, but not striking.

Overall, what this tells us as a conclusion is that the economy, international cooperation, and environmental protection are the overarching priorities of the national strategies and policies of the Arctic states.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Climate change			X	X			X	
Economic development		X	X	X	X		X	
Environmental protection incl. climate change	X	X		X	X	X	X	
Expertise		X	X		X			
Human dimension Incl. Indigenous rights				X			X	
Improving and devolving northern governance	X							
Infrastructure					X	X		
International cooperation		X	X	X	X	X		X
Safety / Emergency preparedness					X			
Science and technology						X		
Security / Stability		X	X	X		X		X
Socio-economic development	X					X		
Sovereignty / position in the region	X	X	X					
Stewardship								X
(Strengthen) Arctic Council			X					

Table 6. Comparing (Official) Priorities

The table also shows some issues that are priorities for one or two states. Interestingly, Iceland is the only state to explicitly identify Indigenous rights as a priority, although Sweden does prioritize the Human Dimension which includes Indigenous peoples and rights. Either way, this shows fragmentation. Some of the other priorities are country-specific, such as Canada and devolving governance, Iceland and the Arctic Council, and Russia and telecommunications (as part of infrastructure). These suggest a certain degree of fragmentation.

Comparison by Indicator

The **(Re)mapping and (Re)defining the Arctic** indicator provides a good understanding of how each Arctic state views the region. Table 7 shows the which words are used to describe the Arctic (region) and its features in the documents. Most of the strategies (Canada, Finland, Kingdom of Denmark, Russia, and Sweden) comment on the region's remote, scattered, or sparse populations. As for the environment, ecosystem(s), and climate, Canada, the Kingdom of Denmark, Sweden, and the USA comment on its uniqueness, while the Kingdom of Denmark, Norway, and Sweden consider it vulnerable, and Canada, Iceland, and the Kingdom of Denmark comment on its fragility. Only Finland considers it to be pure or exceptional, which are more positive assessments than the others. Ad-

ditionally, the region is also described in geopolitical contexts as strategic or important for Finland, Iceland, the Kingdom of Denmark, and Norway.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Part of identify	X							
Pure		X						
Exceptional (env.)		X						
Strategic or important		X	X	X	X			
Fragile (env., climate, or ecosystem)	X			X	X			
Vulnerable (climate or env.)				X	X		X	
Unique (ecosystem or env.)	X			X			X	X
Valuable (env)								X
Frontier								X
Extreme (climate)						X		
Unstable ecologically						X		
Industrial						X		
Remote / scattered / sparsely populated	X	X		X		X	X	

Table 7. Describing the Region

Table 8 shows the different terms used to name the region. All states but Canada prioritize the use of the term "Arctic" whereas Canada uses "Arctic" and "North" fairly interchangeably. Finland, Iceland, the Kingdom of Denmark, and Sweden also use "North" but very minimally. Circumpolar is also used by Finland, the Kingdom of Denmark, and Norway to describe larger regional affairs. The term "High North," which was originally launched by Norway in its 2006 High North Strategy, is mentioned in Iceland and Sweden's strategies, but not as a term Norway uses itself to describe the region in its 2017 policy .

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Arctic	X	X*	X*	X*	X*	X	X*	X
High North			X				X	
North	X	X	X	X			X	
Circumpolar		X		X	X			

Table 8. Naming the Region

*indicates most common term when multiple given

Generally speaking, none of the strategies provide a set definition of the Arctic, although a few imply where a border might be. For instance, both Canada and the Kingdom of Denmark suggest that the southern border of the Arctic region might be around the 60th parallel. For Canada, this is suggested based on their focus on the three northern territories, although the Canadian Strategy notes that the territory of some of Canada's north-

ern Indigenous peoples goes further south. For the Kingdom of Denmark, there is a map with what appears to be the 60th parallel on it. If so, this would mean that almost the whole territory of Finland would be included in this definition. Perhaps, then, it is not surprising that the official Arctic policy of Finland considers the entire country to be within the Arctic. A little further north, Iceland suggests the Arctic Circle might be the boundary, as the Strategy comments on the country's proximity to it. The U.S. Strategy recognizes the American Arctic as Alaska, and uses a political boundary for the Arctic by stating it consists of the eight Arctic states. Sweden comments on a sub-region within the Arctic—the High North which includes the Nordics and Russia.

The documents also take different approaches in assigning responsibility to their strategies. For instance, Russia and the USA do not name any ministries, although the American implementation plan identifies 24 different departments and agencies. Iceland, Norway, Canada, and Sweden mention only between one and three ministries. In contrast, the Kingdom of Denmark names six ministries plus the Government of Greenland and their Department of Foreign Affairs, and the Government of the Faroe Islands and their Ministry of Trade and Industry, while Finland lists the most at 11. This suggests is that Finland and the Kingdom of Denmark (and the USA) have either a clearer vision or a greater sense of accountability in terms of how their respective strategies will be delivered, or the governments of these states want to involve as many ministries as possible in the process. For example, if the Finnish Government states that the whole country belongs to the Arctic, all ministries should be involved in designing policy there and for the region.

Concerning the comparison of the current national strategies and policies of the Arctic states, Figure 14 provides an overview and detailed comparison of how the most current strategies prioritize the different indicators as a percentage of the total quotes for each document. Governance, Economy, and International Cooperation have the most quotes coded to them, although the next one, Human Dimension is very close. Tourism, Pollution, and Climate Change have the lowest percentage of coded quotes. (see Figure 14. Comparing the Current Strategies, p. 111)

The table also shows some interesting differences. Canada discusses the Human Dimension indicator the most and the USA the least. Iceland mentions the Governance indicator much more than the other countries, and Russia the least. Finland is the only country to provide a substantial discussion on Tourism. Finland, Russia, and Norway have the most quotes on the Economy indicator; whereas the other states did not devote as much space to this topic. Russia mentions the Infrastructure more than all the other states, and the most within its strategy.

The **Human Dimension** indicator reveals similarities and differences in the approaches to Indigenous, human, and gender rights. For Indigenous peoples, all current strategies address Indigenous peoples, including Iceland, though there are no Indigenous peoples living in the country, a striking finding,

though not surprising at all. The issues are discussed country-by-country in different ways. A fragmented finding is that the United Nations for the Declaration on Indigenous Peoples (UNDRIP) is mentioned only by the Kingdom of Denmark and Sweden, even though five of the Arctic states voting in favor of it on 13 September 2007 (Finland, Iceland, the Kingdom of Denmark, Norway, and Sweden), while Canada and the USA voted against, and Russia abstained (United Nations 2007). In 2010, Canada and the USA demonstrated for support for UNDRIP, with Canada adopting the Declaration in 2016 (CBC News 2010; Fontaine 2016; Richardson 2010). Considering these events, it is not surprising that neither Canada nor Russia mentioned UNDRIP in their strategies.

The recognition of Indigenous governments, however, was a more relevant finding. All but Iceland and Russia refer to it (see Table 9), although from different perspectives. Canada recognizes self-government in the context of land claim settlements, the United States mentions tribal government, and Kingdom of Denmark champions the self-government system in Greenland. Finland, Norway, and Sweden all mention the Saami Parliament.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
UNDRIP				✕			✕	
Indigenous Gov	✕	✕		✕	✕		✕	✕
UN Declaration on Human Rights							✕	
Gender Equality			✕	✕			✕	

Table 9. Rights and Equality

Table 9 also shows that the United Nations Declaration on Human Rights is mentioned only by Sweden. However, Canada, Kingdom of Denmark, Iceland, Norway, and the United States all signed the Declaration in 1948, while the Soviet Union abstained (United Nations 1948). Finland, joined the UN in 1955 (United Nations 2006) and has since signed the Declaration. The table also shows that gender equality is mentioned only by Iceland, Kingdom of Denmark, and Sweden. Both the human rights and gender equality findings are therefore fragmented.

In addition to discussions about Indigenous peoples, the documents speak more generally to topics that affect everyone living in the region. For example, Canada seeks to ensure that "Northerners" have access to necessary services (2009, 5, 22). Similarly, Finland addresses issues for the "local population" and "local inhabitants" (2013, 11, 20), and Iceland is concerned about the effects of climate change on "Arctic residents" (2011, 2). The Kingdom of Denmark addresses hunting rights for the "Arctic community" (2011, 31), Norway comments on ensuring diversity in "local communities" and good "settlement patterns" for a "balanced population" (2017, 3, 10).
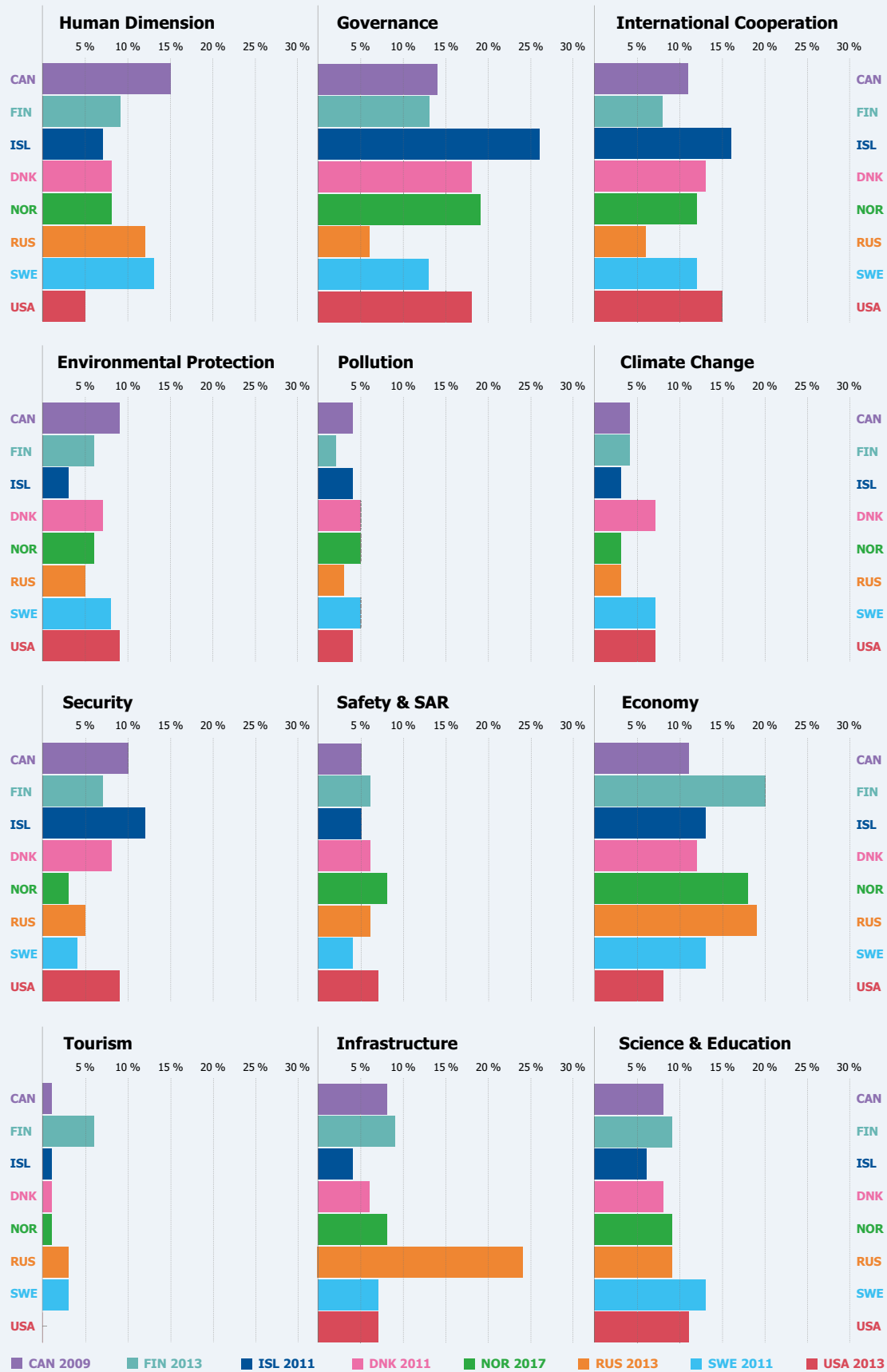
Figure 14. Comparing the Current Strategies

Note: The percentages in each indicator are rounded to the closest whole number
and represent the % of the total number of quotes coded for each document.

Russia mentions issues affecting "people living and working in the Arctic zone of the Russian Federation" (2013, 4), and Sweden shows its concerns about the life expectancy of "those living in the Arctic area" (2011, 43). Finally, the USA broadly mentions the "Arctic region" and the desire for stability (2013, 4). Of course, Indigenous peoples would also be accounted for in these broader descriptions.

The **Governance** indicator illustrates the importance of governance to all eight states. From the perspectives of a quantitative and qualitative content analysis, all eight countries of the Arctic devote a considerable part of their strategies to governance. The only exception here is Russia, which according to both analyses, dedicates the least space to Governance compared to other areas of interest in their strategy. For Iceland, on the contrary, the Governance indicator, together with the international cooperation, is the most significant, covering more than 25 percent of its Strategy. The high relevance of Governance is shown by Arctic states listing several key regional and international organizations in their strategies and discussing their involvement in particular organizations or cooperative platforms. Although, governance is described differently by different states, there is a considerable overlap in their approaches. The high political stability of the region enables the states to focus on cooperative relationships and invest in support for these relationships. The majority of the states emphasize the work of the Arctic Council, and mention successful cooperation with the United Nations, European Union, Nordic Council of Ministers, Barents Euro-Arctic Council, Northern Dimension, Barents Regional Council, or Council of the Baltic Sea States. Interestingly, Sweden is the only country to highlight the potential stakeholder conflict of interest. With increased socioeconomic development and other land use, there is a risk of conflicts of interest with the more traditional way of life and culture of reindeer herders. Therefore, Sweden focuses on socially and culturally sustainable development of the Arctic.

In the **International Treaties and International Cooperation** indicator there is a clear difference between the quantitative and the content analyses. In the quantitative analysis Finland and Russia address international cooperation the least of all the Arctic States. In the figure below, however, the comprehensive approach of the Finnish government can be seen with respect to all aspects of international cooperation. Moreover, Finland is the only Arctic state to address the 1992 UN Rio+20 conference in its 2013 Strategy. The USA and Iceland lead the quantitative analysis based on the frequency of quotes on this indicator. Russia devotes the least space to international cooperation, as illustrated both by the quantitative and the content analysis. However, as very clearly stated by the recent declarations of the Arctic Council Ministerial meetings, all the Arctic states consider international cooperation as a key instrument of the development of the Arctic to maintain the high geopolitical stability of the region and continue the constructive cooperation, and thus keep the region free from potential conflicts.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Role and importance of int.coop.	✕	✕	✕	✕	✕	✕	✕	✕
Major agreements and forums	✕	✕	✕	✕	✕		✕	✕
Global perspective and scales	✕	✕		✕			✕	
UN SDGs (or RIO 1992)		✕						

Table 10. International Treaties and International Cooperation

There are mainly similarities in how the **Environmental Protection** indicator is addressed by the different strategies. Table 11 shows that all strategies recognize the need to balance environmental protection with economic activities. Canada refers only to sustainable development, while the USA alludes to this kind of balance but does not state it as explicitly as other documents do. Four strategies explicitly state they will use an ecosystem-based management system with regard to maritime resources, although Norway uses this phrase only in the overall document's strategic priorities and not in the discussion about the environment. The USA does not use the term ecosystem-based management, but refers to an "integrated Arctic management framework" (2013, 2) which seems similar (see also: 2013, 8).

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Balance environment and economy (ex. Sustainable dev)	✕	✕	✕	✕	✕	✕	✕	✕
Ecosystem based management		✕		✕	✕		✕	✕
Protected areas vs Conservation	P	C	P	P	C	P	P	P
Invasive species	✕			✕			✕	

Table 11. Environmental Protection
P=protected area C=conservation

Six of the eight countries address the concept of protected areas, with four referring to them as protected areas and two mentioning them as being linked to conservation. In the U.S. Strategy, the focus is on 'preservation' without specific geographical areas being stated. The Iceland document also generally speaks about protecting or conserving biota, but does not recognize any specific areas.

While there are many similarities, there is also fragmentation when it comes to recognizing invasive species, with only three documents raising this issue.

The **Pollution** indicator shows that each strategy, to varying extents, discusses the sources of pollution and different approaches to problem-solving in this regard. Table 12 identifies which pollutants are mentioned in the different strategies. However, there is not one pollutant that is addressed by all strategies. Oil is mentioned in six strategies, while greenhouse gases and economic activity are each identified in five (see Table 12). Thus, these are relevant findings for the pollutants of greatest concern. All other pollutants are mentioned in three or fewer strategies, suggesting there is a fragmented approach to pollution. Interestingly, military waste is explicitly mentioned as a pollutant by the Russian strategy. Microplastics is mentioned only in the Norwegian strategy, probably because that document, released in 2017, is the latest one. While plastics have been in the oceans for decades, it was not until 2014 that a study identified the vast amounts of plastics in the Oceans (Eriksen et al. 2014, 7).

Table 13 shows different pollution problem-solving approaches. The strategies that identify greenhouse gases (e.g. black carbon) as pollutants also address, to varying degrees, the need to reduce those emissions. This is also the case for POPs and the Stockholm Convention, and pollution from economic activity. Note that because a problem-solving approach is mentioned and captured on Table 13, does not necessarily mean the solution is given much attention in the corresponding strategy.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Man-made pollutants				X				
Greenhouse Gases		X	X	X	X		X	
Carbon dioixde		X					X	
Short lived climate poll.		X					X	
Black carbon		X						X
Methane		X					X	X
Radioactive material		X			X			
Heavy Metals				X				
Mercury				X			X	X
POPs				X			X	
PBTs					X		X	
PCBs							X	
Chemicals				X			X	
Oil		X		X	X	X	X	X
Pathogens from ballast water	X							
Economic activity (mining, shipping, etc)	X	X		X		X	X	
Soot							X	
Military waste						X		
Microplastics					X			
Marine litter					X			
Local Pollution		X			X			

Table 12. Pollutants

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Greenhouse gas reduction (UNFCCC –XX, Paris Agreement - XXX)		X	XX	X	XXX		X	
Stockholm Convention on POPs				X			X	
Long-Range Transboundary Air Pollution (LRTAP)				X			X	
Hazardous and Noxious Substances (HNS) Protocol				X				
Agreement on Cooperation on Marine Oil Pollution Preparedness & Response in the Arctic	X				X			X
Ballast Water Convention				X				
UNCLOS			X					
IMO Requirements			X	X			X	
Polar Code							X	
Nuclear Safety		X					X	
Research on pollution (consequences, best practices)				X				X
Pollution monitoring			X	X		X		
International cooperation	X		X	X	X		X	X
Domestic legislation, policies, and practices	X				X	X		X
Changes to economic activities	X	X		X		X	X	

Table 13. Pollution Problem-Solving

It surprising that more strategies do not mention POPs/Stockholm Convention and show more concern over the long-range transmission of these pollutants, considering they have been present in the Arctic since the 1970s at least (see: AMAP 1997, 72). It is also surprising how few strategies opt to root their pollution action in formalized institutions like UNCLOS and the IMO. Instead, there is more emphasis in working collaboratively with other Arctic states on certain issues.

The **Climate Change** indicator captures information from all the strategies, although the issue is mentioned to different extents. Table 14 shows some of the ways each state approaches climate action. It is striking that all strategies, except that of the USA, recognize the role of the scientific community—either existing scientific contributions, the need for continued research, or greater interaction between researchers and government.

There are also three relevant findings: i) Canada, Finland, the Kingdom of Denmark, Norway, Sweden, and the USA all address issues around mitigation vis-a-vis adaptation. However, although Norway does not explicitly use these terms, its Strategy discusses activities that could be understood as such. ii) Canada, Finland, Iceland, Kingdom of Denmark, Norway, and Sweden all refer to climate change agreements. In particular, Canada, Iceland, Kingdom of Denmark, and Sweden mention the UNFCCC. Sweden is also the only country to mention the Intergovernmental Panel on Climate Change.[9] Norway is the only country to mention the Paris Agreement, as this is the only strategy written after the signing of the Agreement. The Kingdom of Denmark, however, does allude to the Agreement, mentioning an "ambitious global climate agreement" (2011, 13). Finland, in contrast, makes a general comment about reducing emissions in "global climate negotiations" (2013, 13). iii) Climate change causing environmental refugees, and Asia as a contributor to climate change, are not mentioned in any document.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Mitigation/ Adaptation	✕	✕		✕	✕		✕	✕
Frameworks:	✕	✕	✕	✕	✕		✕	
UNFCC	✕		✕	✕			✕	
IPCC							✕	
Paris Agreement				✕	✕			
Scientific Community Heard	✕	✕	✕	✕	✕	✕	✕	
Climate Change as Security Factor		✕		✕			✕	✕
Environmental Refugees								
Asia Mentioned								
Access to Fresh Water		✕					✕	

Table 14. Climate Action and Climate Concerns

Fragmentation also exists as only two strategies mention access to fresh water. Sweden clearly states that there is "a greater risk of contaminated drinking water caused by changes in the permafrost that affect water sources" (2011a, 44) and Finland makes a vague reference to ensuring that changes are made to protect "water resources" (2013, 39).

There is one more interesting finding that is neither relevant nor fragmented—climate change as a security issue. Finland, the Kingdom of Denmark, Sweden, and the USA mention this in different ways. Finland suggests that climate change could cause regional instability and that the security of Indigenous cultures could also be undermined. The Kingdom of Denmark notes that climate change could lead to softer security issues like illegal fishing. Sweden comments on the effects on health as a security issue, while the USA suggests climate change would improve energy security.

The **Security** indicator is relatively fragmented. While all the Arctic states to some extent define security, none of them covers all aspects of the indicator. Interestingly, Canada and Finland discuss security most comprehensively, covering a broad range of sub-indicators. However, the perspective of frequency of codes in the quantitative analysis illustrates that Canada, the USA, and, surprisingly, Iceland, are the three countries that put the most emphasis on security in their strategies (in comparison to other indicators). The issues of sovereignty are covered by Canada, Kingdom of Denmark, Norway, and Finland. For Finland, a general notion related to "International Cooperation" is that "while the sovereignty of the States must be respected, it should not discourage genuine recognition of mutual dependencies" (2013, 43). This matches well with the results of an international public opinion survey *Rethinking the Top of the World* on global perceptions of Arctic security

---

9   The Finnish strategy lists the IPCC in an appendix but does not address it in the body of the strategy (2013, 66).

which explains that "while most of the Nordic countries heavily support negotiating a compromise to Arctic territorial disputes (64 % of Danes, 50 % of Finns, and 49 % of Norwegians), in Canada and Russia, there is more support for pursuing a firm line in asserting their sovereignty in the Arctic (41 % of northern Canadians, 43 % of southern Canadians, and 34 % of Russians)" (Munk School/Gordon Foundation, 25 January 2011).

Interestingly, border issues are included only in the Russian strategy, which refers to the delimitation of territorial waters, the economic zone, and the continental shelf. NATO and its role is mentioned only by three out of five Arctic—NATO members Iceland, Kingdom of Denmark, and Norway. The issues connected to maritime security are included in the strategies of four states: Canada, Finland, Kingdom of Denmark, and Sweden.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
How defined	X	X	X	X	X	X	X	X
Sovereignty	X	X*		X	X			
Borders						X		
Stability and stability building	X	X	X				X	X
Interpretation of security	X	X	X		X			X
Armed forces	X	X		X	X	X		
Measures to increase security	X	X	X				X	
NATO and its role			X	X	X			
Military spending	X	X						
Military capabilities		X		X				
Maritime Security (military and coast guard)	X	X		X				X

Table 15. Security

* the 2013 Finnish strategy includes a general notion on sovereignty related to "International Cooperation" (see text)

The **Safety and SAR** indicator reveals some similarities and differences in terms of how the different strategies understand safety, what formal structures are involved, and how the states respond to these issues. Table 16 shows two striking similarities in that all the strategies identify environmental safety, and search and rescue (SAR) as being the most relevant safety topics. Another relevant similarity is that maritime safety is identified in five of the strategies, and these are not necessarily the five littoral states of the Arctic. Transportation safety is mentioned in four strategies. There is also some fragmentation, as disaster preparedness is mentioned in three strategies, occupational safety in two, and civil preparedness, emergency preparedness, and health preparedness are each only mentioned once. This tends to show that there is more focus perhaps on the commercial aspect of the Arctic rather than the human side (although there are clearly human implications for issues such as environmental safety).

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Environmental Safety (incl. pollution, oil spills, etc.)	X	X	X	X	X	X	X	X
Search and Rescue	X	X	X	X	X	X	X	X
Surveillance	X		X				X	X
Maritime Safety (including shipping)	X		X	X	X		X	
Tourism	X	X		X			X	
Civil preparedness			X					
Emergency preparedness					X			
Disaster preparedness				X		X		X
Health preparedness				X				
Transport safety		X				X	X	X
Occupational safety		X	X					
Nuclear Safety		X						

Table 16. How Safety is Understood

There are also similarities and differences with regard to which international safety bodies are mentioned. Table 17 shows that six strategies mention the Arctic Council's SAR agreement, while five refer to either the IMO and/or the Polar Code. Only two strategies comment on Barents-specific cooperation, while only Finland mentions the Arctic Council's EPPR working group, and Iceland mentions NATO.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Arctic Council SAR Agreement		X	X	X	X		X	X
IMO/Polar Code		X	X	X	X		X	
UNCLOS				X				
Barents cooperation (ex. SAR, surveillance)		X			X			
Arctic Council EPPR		X						
NATO			X					

Table 17. Safety Institutions

Finally, there are also some similarities, but mostly differences, when it comes to the safety capabilities or practices mentioned in the strategies. Table 18 shows the most striking similarity, namely, that six strategies state international cooperation to be important for different safety practices. Additionally, four strategies note that safety involves multilevel cooperation within the country, and only Finland and the Kingdom of Denmark recognize cooperation domestically and internationally, while the Kingdom of Denmark states that the Faroe Islands look after their own SAR. Another similarity is that four strategies state the importance of surveillance and monitoring, including the use of satellites and communications, to safety practices. That

said, two of the strategies (Norway and Russia) comment on the need to improve some of these capabilities. Four strategies also refer to mapping and charting, and three of them also comment that there is a need for improvement in these areas.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Multilevel cooperation (in country)	✕	✕		✕				✕
International Cooperation		✕	✕	✕	✕	✕	✕	
Vessel reporting in national waters	✕			✕				
Surveillance, monitoring, and/or communication (including satellites)		✕		✕	✕*	✕*		
Information sharing								✕*
Maritime mapping and charting	✕*			✕*	✕			✕*
SAR equipment					✕			
Pollution solutions					✕			
Export of safety products		✕						
Occupational safety knowledge		✕						

Table 18. Capabilities and Practices
*needs to be improved

There is also some fragmentation in the results. For example, only the USA comments on information sharing and the need for it to be improved. Only Norway mentions SAR equipment like helicopters, as well as problem-solving for pollution. Finland is the only state to mention having an ability to help others through its expertise in making safety products and its occupational knowledge.

The **Economy** indicator reveals some similarities and differences between the approaches to economic activities, economic prioritization, and economic actors. Table 19 shows the range of activities discussed in the different strategies. There is a striking similarity between all the strategies, with the exception of the USA, in that they actively discuss the mining industry. Iceland does so in the context of Greenland. The USA strategy does make a generalized statement about new minerals being discovered, and that "these estimates have inspired fresh ideas for commercial initiatives and infrastructure development in the region" (2013, 5), but this does not indicate what U.S. interests are in mining. Another striking finding is that all strategies, except the U.S. strategy, mention tourism.

Six strategies explicitly discuss fisheries.

Another striking similarity is that all strategies mention export trade (although to varying degrees), while striking similarities include the general mention of energy in five strategies (Finland, Iceland, Norway, Russia, and the USA). As types of economic energy production, Canada, Iceland, the Kingdom of Denmark, Norway, Sweden, and the USA discuss oil and gas, while Russia discusses hydrocarbons. Sweden and Finland both recognize the oil potential in Norway and Russia. Renewable energies are also mentioned by Iceland, the Kingdom of Denmark, Norway, and the USA.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Energy		✕	✕		✕	✕		✕
Oil and Gas	✕		✕	✕	✕		✕	✕
Renewables			✕	✕	✕			✕
Hydrocarbons						✕		
Mining	✕	✕	✕	✕	✕	✕	✕	
Forestry		✕					✕	
Fisheries	✕		✕	✕	✕	✕	✕	
Aquaculture					✕			
Blue Economy					✕			
Bioprospecting						✕	✕	
Reindeer Husbandry		✕			✕		✕	
Tourism	✕	✕	✕	✕	✕	✕	✕	
Cultural Products/Crafts	✕	✕			✕			
Local food		✕						
Shipping Services and Transport		✕			✕		✕	✕
Export Trade	✕	✕	✕	✕	✕	✕	✕	✕
Technology		✕				✕		
Maritime tech (incl. icebreakers)		✕					✕	
Biotechnology					✕	✕		
Cold Climate		✕					✕	
Space Industry							✕	
Construction		✕						

Table 19. Economic Activities

Table 19 also shows some fragmentation as strategies become more specific in discussing their economic activities. For example, cold climate expertise and forestry are discussed by Finland and Sweden, whereas Canada, Finland, and Norway mention cultural products or local crafts. Certainly, the fragmentation also illuminates industries that might be unique to certain countries or sub-regions.

In terms of how the different strategies prioritize their regional economic activities (see Table 20), there is nothing particularly striking or relevant, but this is rather fragmented. Only four strategies mention government support programs, such as SINED in Canada, Tekes in Finland, and Innovation Norway, whereas the Russian strategy speaks more generally about the state supporting regional growth.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Gov't legislation and policy changes					×			
Economic actions in line with regional priorities								×
Gov't Support Programs	×	×			×	×		
Indigenous business and economic development						×		
Focus on national expertise		×	×					
Focus on areas of growth							×	
Cooperation with other states			×	×				
Encouraging people to move to the North					×			
Compensating people that live in the North						×		

Table 20. How the Economy is Prioritized

There are also some differences as to how states approach similar priorities. For example, Canada discusses skills development for Indigenous peoples to facilitate increased employment opportunities in the resources sector, whereas the Russian strategy seeks to increase Indigenous capacity to gain employment and to become self-employed.

Table 21 shows what economic actors are identified in the different strategies. There is a striking finding that all strategies mention the private sector, although this is to varying degrees. Six of the eight strategies also interpret the government as an economic actor, as it helps facilitate economic opportunities. Finland also names the public sector, which is an extension of the state. The USA mentions public–private partnerships, which involves the state/public sector. Sweden also mentions public–private cooperation, notably with the Swedish Trade Council.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Other states		×	×					
EU					×			
Government(s) / state	×		×	×	×	×	×	
Public Sector		×						×
Private sector	×	×	×	×	×	×	×	×
Oil companies				×				
Indigenous businesses and communities	×				×			
Funding and financing agencies	×	×						
Academia and research institutes		×			×	×		
Industry networks		×					×	

Table 21. Economic Actors

There is also fragmentation with the economic actors. For example, many of the strategies mention working with other Arctic states on economic issues. Only Finland and Iceland acknowledge the increasing presence of certain Asian countries, like China and Japan, in the region. Another example is with industry networks where Finland mentions NordMin mining network, and Sweden mentions the Baltic Sea Energy Cooperation.

In the **Tourism** indicator, the biggest similarity is that, for all the A8, it is the least important of any of the indicators analyzed. This may be partly due to the fact, as mentioned above, that the strategies were published between six and ten years ago, when the tourism was not dramatically increasing. Another possible explanation might be the approach to how this indicator is analyzed—it is done separately, but can be part of the economy indicator. These two explanations are, however, not sufficient with respect to Norway, which has the most recent strategy (2017) yet makes limited reference to tourism.

The general impression is that this indicator is very fragmented and that it is referred to by individual states in different ways. For Canada the tourism perspective is mostly connected to the development of the Northwest Passage and navigation safety. At the same time Canada supports the traditional knowledge and Indigenous cultural programs. In the case of Finland, the aim is to increase tourism that is sustainable. Finland, of all eight Arctic states, covers tourism the most, comprehensively explaining how it is defined, who are the actors, and what is the scale and level of state support… "the growth in adventure and nature tourism is reflected in Lapland" (2013, 11), which is a popular location for visitors to Finland. Iceland approaches tourism as one of the main economic activities of the country, besides fisheries and energy production.

For the Kingdom of Denmark, the tourism is mainly connected to Greenland and the Faroe Islands, while being "second only to fisheries, is the most important export industry in Greenland" (2011, 23). The Kingdom of Denmark's strategy is the only one that mentions cruise activities. Norway focuses on state support of the tourist industry with an emphasis "on profitability and sustainable management of the natural environment and cultural heritage" (2017, 24). Similarly, Russia highlights state support for environmentally friendly tourism. Interestingly, only Sweden addresses the impact of tourism (potential for "creating jobs and boosting economic growth") and possible side-effects of the industry, such as "the risk of conflicts of interest between" individual industries, especially between "reindeer herding and other land use" (2011, 38, 45). The United States does not reflect on tourism industry at all.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Safety and security defined in this context	×	×					×	-
Tourism defined		×	×	×	×		×	-
Actors (who does tourism)	×	×						-
Scale of industry		×					×	-
Cruise activities				×				-
Impact of tourism							×	-
Level of state support	×	×				×		-
Possible side effects							×	-

Table 22. Tourism

The **Infrastructure** indicator shows that, overall, a broad range of infrastructure needs are discussed, although to varying degrees. For example, Table 23 shows that all strategies address transportation and shipping, while most mention icebreakers, telecommunications and ICT, innovation and technology, and energy. However, only three strategies touch on housing infrastructure. Additionally, not all infrastructure types receive the same amount of attention.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Transportation	×	×	×	×	×	×	×	×
Icebreakers	×	×			×	×	×	
Shipping	×	×	×	×	×	×	×	×
Telecoms / ICT	×	×		×	×	×	×	
Innovation and tech	×	×		×	×	×	×	×
Energy		×		×	×	×	×	
Housing	×	×				×		

Table 23. Infrastructure

As all strategies discuss transportation infrastructure and shipping, it is important to see if there are similarities and differences in these discussions. Table 24 shows that, strikingly, all

strategies except Iceland's state or suggest that transportation infrastructure development is underpinned by economic reasons, although Finland and the USA do also acknowledge the benefit residents will obtain. A relevant finding is that six strategies mention air travel (Finland, Iceland, the Kingdom of Denmark, Norway, Russia, and Sweden). None of the strategies provide much detail on air infrastructure, but Finland and Iceland position it within international travel, Norway says it is for regional travel, while Russia wants new planes to better service the Russian North.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Maritime					×	×		
Port	×			×		×	×	
Air		×	×	×	×	×	×	
Rail		×				×	×	
Roads		×			×	×	×	
Border infrastructure		×						
Economic	×	×		×	×	×	×	×
For the people		×						×

Table 24. Transportation Infrastructure

As shipping is also discussed in every strategy, it is worth taking a closer look at what the different strategies emphasize. For example, Table 25 shows that all countries are concerned with safety. As a relevant finding, five of the strategies comment on increased navigability or possible new routes opening. Finland, Kingdom of Denmark, and Sweden mention both the Northern Sea Route and the Northwest Passage. Finland and Sweden comment on the possibilities of these new routes. The Kingdom of Denmark notes the possibilities of the Northwest Passage, and also provides information on the 2010 voyage of a Danish ship through the Northeast Passage. Russia only mentions the Northern Sea Route, and Canada the Northwest Passage. Interestingly, only Finland makes reference to existing other routes "in Greenland and Spitsbergen" (2013, 30).

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Northern Sea Route		×		×		×	×	
Northwest Passage	×	×		×			×	
Increased navigability/ new routes	×		×	×			×	×
Other existing transit routes		×						
Safety	×	×	×	×	×	×	×	×

Table 25. Shipping

In the **Science and Education** indicator there are some similarities and differences in terms of both science and education. For science, Table 26 shows that seven out of eight strategies state climate change to be a major research driver, and six out of eight interpret the environment as a key driver. (Iceland is included

here as it mentions glacier research.) There is also some fragmentation, as some strategies identify other issues of concern, such as natural hazards, health and other social issues, as a driver for science and research.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Environment			X	X	X	X	X	X
Climate Change	X	X	X	X	X	X	X	
Pollution				X				
Natural Hazards						X		
Health	X							
Social issues				X				

Table 26: Drivers behind Science and Research

Research can also be used to serve different purposes, although there is not much consensus on what those purposes are, other than five strategies noting that research can be used to increase cooperation or build and strengthen relationships. That said, Table 27 shows some similarities, as four states mention that research and knowledge will be used to inform decision-making and four strategies state that research can also help with economic activities.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Economy		X		X	X	X		
Social Issues		X		X		X		
Policy / decision making	X	X			X			X
Governance		X					X	
Cooperation and relationship building	X		X		X	X	X	
Regional influence or positioning		X		X			X	
Sovereignty	X							

Table 27. Other Purposes of Research

Table 27 also shows that three countries consider that research could help with social issues, and three consider that research could also help assert their position within the Arctic. Only two strategies consider research important to governance, while one mentions that it could help with sovereignty.

There are also some similarities and differences in terms of research infrastructure. For example, Table 27 shows that universities and/or research institutes are the most mentioned infrastructure, appearing in five strategies. Four strategies mention research stations (in the case of Canada, the station was still in the development stage) and four strategies comment on the importance of formal research networks (i.e., organizations and structures) through the Arctic Council, the EU, or IASC. Informal networks, such as cooperation between universities and researchers, is mentioned in three strategies. Three strategies also state that icebreakers are used to help facilitate research and scientific activities.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Research Stations	X	X		X			X	
Icebreakers / vessels		X			X		X	
Universities / research institutes		X	X	X	X		X	
Informal networks		X		X			X	
Formal networks		X	X		X		X	

Table 28. Arctic Research Infrastructure

Knowledge is an important factor in the eight strategies, as it means more than just scientific knowledge. Six strategies (Canada, Finland, Kingdom of Denmark, Norway, Sweden, and the USA) mention the importance of traditional knowledge, although the Norwegian strategy mentions "knowledge of the people" (2017, 10). It is not surprising that Iceland does not mention traditional knowledge, as there are no recognized Indigenous groups in the country.

As for education, there are no striking or relevant findings. There is some consistency, however, as Table 29 shows four strategies suggesting that education be used to help with economic development through programs and training geared towards certain industries or other economic needs. In contrast to this, there is also fragmentation, as only Norway mentions that attainment levels need to be improved in the North.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Attainment levels					X			
Attainment for economic reasons	X			X	X	X		
UArctic		X	X	X			X	
Distance learning						X		

Table 29. Education in the Arctic

There is also some consistency, as four strategies mention the University of the Arctic. However, only Russia mentions distance learning in general. Interestingly, the U.S. strategy does not discuss education at all.

The **Implementation** indicator shows that there are both striking similarities and some fragmentation in how each state expresses its implementation plans. Table 30 shows that seven out of eight strategies provide action items indicating how the strategy is to be implemented. As previously mentioned, the U.S. strategy provides a list of items after each line of effort that is suggestive of action items, but the real implementation plan follows in a subsequent document. As for Canada, there are no clearly outlined action items, but that is because the government considers the document itself to be the implementation plan.

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
Action items		✕	✕	✕	✕	✕	✕	✕
Budget	✕	✕		✕	✕	✕		
Follow-Up		✕	✕	✕				
Evaluation				✕		✕		

Table 30. Implementation Details

In terms of budgets or funding for the strategies, Finland, the Kingdom of Denmark, and Russia's strategies comment that funding will come out of existing budgets, while Russia also comments that the private sector may also contribute to financing aspects of the strategy through partnerships. Canada and Norway both mention items that will receive funding, but it is not clear if this is new or existing and reallocated funding.

As for follow-up, only the strategy of the Danish realm provides detailed information on its plans for follow-up (e.g., steering committee), while Finland and Iceland remark that certain ministries will be responsible. As for the USA, this kind of information is found in the subsequent implementation plan document. Only the Kingdom of Denmark and Russia address evaluation: the former comments on a "mid-term evaluation" (2011, 58), while the latter seemingly envisages ongoing monitoring processes.

Conclusions

All Arctic states use the term 'Arctic,' and all, except Canada, prioritize it. In the national strategies, this 'Arctic' is described to be remote, scattered, and with a spare population. Its ecosystem is vulnerable, fragile, or unique. While there is no strict definition of the (Arctic) region, there is rather broad agreement that if there is a southern border to the region, it runs along the 60th Northern parallel.

A comparison of the current national strategies and policies of the Arctic states finds, as an overall conclusion, that the economy, international cooperation, and environmental protection are the overarching priorities of the Arctic states. On the other hand, according our coding of different indicators, the most-coded quotes relate to the Governance, Economy, International Cooperation, and Human Dimension indicators (see Appendix). Thus, two of these – Economy and International Cooperation - align with the priorities identified by the states themselves.

If, however, the Environmental Protection, Pollution and Climate Change indicators are looked at as one indicator, all dealing with environmental protection, then the percentage of quotes coded to these indicators falls between the Governance and Economy indicators. This means that there is a fifth major priority according to the most-quoted issues or themes, and then the three priorities identified by the strategies align with the percentages of coded quotes.

Why then is Governance, with the most quotes, not among the official priorities? Is there a mismatch? This is not necessarily the case. If Security and/or Stability, which are among the official priorities, are interpreted as governance issues—as they de facto are—and then included as part of Governance, we have the fourth official priority. From the perspective of both the quantitative and qualitative content analysis, therefore, the Arctic states devote a considerable part of their strategies to governance and, moreover, explicitly mention their existing governance structures. This can be interpreted as meaning that there is major political support for the current high geopolitical stability and international cooperation in the Arctic region and also for the work of the Arctic Council, which is the main international forum in the region and dealing with it.

This is supported by the strong and unanimous interpretation by the Arctic states of international cooperation as a key instrument of the development of the Arctic, and the high value placed by those states on international agreements and organizations, such as UNCLOS, and the legally binding agreements on the Arctic region under the auspices of the Arctic Council. Constructive cooperation in the Arctic, based on a common will, has materialized as human capital. This is the success story and a resilient narrative, as mentioned earlier, that has maintained the high geopolitical stability in the region.

It is a little surprising is that only half the strategies have a global perspective and scale. The reason could be that the current national strategies and policies are already 6–10 years old, except for that of Norway which, however, does not present a global perspective. Are the states afraid of the growing interests and activities of non-Arctic states if rapid climate change melts the rest of the sea ice, in particular, the major economies which have the status of Arctic Council observers? Or, are they afraid of the global commons discourse, in particular, if science becomes a more dominant actor playing a more important role in the Arctic, as it does in the Antarctic?

The Human Dimension indicator has a good number of quotes, but is not among the official priorities. Furthermore, all strategies explicitly mention Indigenous peoples. Six documents, including that of Iceland, which has no Indigenous peoples, also recognize Indigenous governments, and another six states, except Russia and the USA, explicitly mention self-governance/self-determination. Why, then, does the Human dimension seem not to be valued by the governments of the Arctic states—not appearing among their official priorities? Perhaps the importance of issues affecting Indigenous peoples is taken for granted, given that the Indigenous peoples are represented on Arctic Council as Permanent Participants and that Indigenous rights and issues are considered by many Arctic states at the domestic level.

The big issue of Arctic governance and geopolitics—either challenge or ambivalence—is the environment (environmental protection and climate change) vis-à-vis economic activities in the Arctic. In the national strategies and policies of all the Arctic states, there is a balance between environment and economy,

including sustainable development. Most documents also discuss protected areas or conservation. However, the Economy indicator is quoted the most, and within this indicator, mining, tourism, oil and gas, and fisheries are the top four, which questions the states' commitment to balancing the economy and the environment. In terms of economic actors, the private sector is explicitly mentioned in the strategies and is thus a popular actor. This is followed by the Government/State, although the public sector is depicted as the most important and most wanted economic actor and investor in Arctic regions.

It is not surprising that there a great deal of fragmentation with pollutants, and that oil and greenhouse gases are the most frequently alluded to. While there is a general sense that international cooperation can help address pollution, the use of research in this area has been limited. In contrast, there is almost a unanimous readiness to listen the scientific community on climate change, which is why climate change is mentioned as the most important driver behind science and research. There is also strong common support for international frameworks, in particular for UNFCCC. It is thus not surprising that environmental safety, including pollution and oil spills, together with search and rescue, is the most identified safety concerns in the Safety & SAR indicator, with maritime safety coming second. A more fundamental question is why the Climate Change indicator is not among the most quoted indicators, with the ACIA being launched in 2004 and climate change having become the most referred-to trigger for the Arctic and global change. While the Paris Agreement was signed only in 2016, and thus only the Norwegian current strategy was adopted after it, climate change is not much quoted even in the latter. Is this an explanation, or at least an excuse? Or, could it be that a real shock is needed, such as the 2018 IPCC Report together with the 2018 and 2019 summers being among the hottest summers on record. It will be interesting to see how climate change is addressed in forthcoming strategies of the Arctic states.

As infrastructure relates to economy and development, and includes transportation, it is not surprising that it is quoted so often. And that it is, in fact, the most quoted indicator in the Russian strategy—the Russian strategy focuses on the socio-economic development of the Russian Arctic, which consists of almost half of the entire Arctic region and the coast of the Arctic Ocean. The topic of Arctic shipping has been hyped, much like the speed of thinning and melting of the sea ice of the Arctic waters. Thus, the unanimous support of the Arctic states for shipping and transportation in general is nothing new. Likewise, the interest in telecommunication and ICT among these states is well known. What is not that well known is the high interest in aviation of six states, excluding Canada and the USA which both also have plenty flight connections between the northernmost regions and the southern parts of their respective states. It would be interesting to know more about this issue and whether the states that focus on aviation are more interested in increasing the volume of flights going north–south or rather east–west within the Arctic. Or will aviation services be decreased in the near future due to people's

growing conscience about global warming, though pan-Arctic flight routes would save time and energy, as well as pollute less.

The areas of expertise, stewardship, as well as science & technology is a priority of five Arctic states, not all. It is weaker than the Science and Education indicator in terms of being quoted in the policy documents. This indicator, however, is the most even and has the highest similarity among the Arctic states, just as environment and climate change are the most important drivers behind Arctic research

The sovereignty of the eight Arctic states over their territories in the Arctic (excluding international sea areas) is thus firmly supported by the official priorities of the Arctic states' strategies, the figures on their quoted interests, and their de facto priorities —and also by those of the observer states of the Arctic Council, as will be discussed later. This allows us to build a more holistic picture of the state of Arctic governance and geopolitics. Briefly, the main issue is that, although there is no international treaty on the Arctic and its environment, the Arctic states have full legitimacy to protect the Arctic ecosystem. Moreover, they have shown increasing concern over the state of the ecosystems, they prioritize economic or socio-economic development, including large-scale activities such as mining, oil and gas drilling and tourism, and they support the private sector as the main economic actor. There is an increasing need for more protection of the fragile ecosystem and for more strict regulation of their use, for the Arctic states to be legitimized, and for civil society and NGOs to ask them do more to implement their concerns and principles.

All in all, concluding this section by a short summary: The Arctic states, except the United States of America, clearly state that economy/(socio)economic development is a priority, as well as either have climate change or environmental protection as a priority, which is striking. All countries, except Canada and Sweden, state that international cooperation is a priority, which is relevant. Security and stability are priorities for Finland, Iceland, the Kingdom of Denmark, Russia, and the United States of America, which is also relevant, but not striking. As an overall conclusion, on the one hand, comparing the current official national strategies and policies economy/economic development, international cooperation, and environmental protection are stated the overarching priorities by the Arctic states. On the other hand, according to our coding of different indicators, the most-coded quotes relate to the Governance, Economy, International Cooperation, and Human Dimension indicators, as well as the Environmental Protection one (when connected to Pollution and Climate Change), which falls between Governance and Economy.

Part II:
Arctic Council Chairmanship Programs and Declarations

The Arctic Council, as mentioned in the introduction, has a rotating chairmanship, with each member state serving as chair for two years. At the start of each chair, a program is produced by the government of the chairmanship country that outlines its agenda for the next two years. Each chairmanship then concludes with a ministerial meeting that provides guidance for the following chair (Arctic Council 2015d) based on a consensus of the eight member states.

This section analyzes the declarations and the priorities of each state on taking the chair, in order to identify similarities and differences in the collective decisions of the Arctic Council. Each set of documents will be compared indicator by indicator. Striking similarities will be deemed to occur when ten or more declarations address an issue; relevant similarities with seven to nine declarations; and fragmentation with four or fewer declarations.

It is important to note that four declarations—in 1991 in Rovaniemi, in 1993 in Nuuk, in 1996 in Inuvik, and in 1997 in Alta—are not considered in this analysis, as they were issued under the auspices of ministerial meetings of the Arctic Environment Protection Strategy (AEPS), not in those of the Arctic Council.

Chairmanship Programs

A program for a two-year rotating chairmanship of the Arctic Council is launched at the start of each chairmanship to outline the Chair's priorities and goals for the next two years. This section analyzes and compares the chairmanship programs that were found on the Arctic Council's website (note that there was no official program in the first Canadian chairmanship in 1996–1998), and the first one is a *Memo on U.S. Chairmanship Priorities, 1998-2000.* As there have been, in 1996–2019, eleven programs this means that in our coding 10 or more similarities are a striking finding, 7 or more similarities are relevant, and 4 or fewer show fragmentation.

Table 31 shows the different priorities as identified in the program headings, with the exception of the second Iceland program which makes a clear statement about their priorities (see, Iceland MFA 2019, 2). While there are no particularly striking similarities, there is a general focus on issues of the environment and the climate, and also on the human aspect of the Arctic. As these priorities are, for the most part, main headings, this does not mean that other issues are not addressed within them. For example, Norway talks about "*Strengthening the adaptive capacities of Arctic residents, including Indigenous peoples and*

local communities, and identifying the most vulnerable sectors of society" (Norway 2006, 5) within the context of climate change. The second Iceland program also focuses on pollution within its discussion on the "Arctic marine environment" (Iceland MFA 2019, 3, 4). (see Table 31. Priorities in the Chairmanship Programs, p. 124)

In addition to the priorities identified by headings, some of the programs made clear statements about their intent during their chairmanships. For example, Iceland's first program states that
> "The Council's environmental work has evolved continually and currently a number of important projects are being undertaken under the auspices of the Council's environmental working groups. Iceland, during the term of its chairmanship, intends to emphasise successful continuation of the environmental cooperation of the Council. Co-operation on the social, economic and cultural aspects of sustainable development, on the other hand, has a shorter history within the Council. Therefore, Iceland intends to emphasise this part, especially as concerns well-being and quality of life of the inhabitants of the region" (Iceland MFA 2002, 2).

Similarly, the Danish Program states that
> "The chairmanship will focus on enhancing monitoring and assessments to give a more complete picture of status and trends in the availability of both species that are essential to traditional lifestyles and new species that in the future could constitute important resources for a sustainable Arctic" (Denmark DCAC 2009, 2).

Most of the programs follow a similar structure when it comes to program titles, "Program of, Chairmanship Program for …". However, when the Chairmanship rotation began its second cycle, the programs were given more descriptive titles that are also indicative of programs' priorities. These include:
- *Development for the People of the North: The Arctic Council Program During Canada's Chairmanship (2013-15)*
- *One Arctic. Arctic Council U.S. Chairmanship 2015–2017*
- *Exploring Common Solutions. Finland's Chairmanship Program for the Arctic Council 2017-2019*
- *Together Towards a Sustainable Arctic. Iceland's Arctic Council Chairmanship 2019-2021*

Comparison by Indicator

The **(Re)mapping and (Re)defining the Arctic** indicator does not tell us much about how the region is understood or defined in the different programs. Indeed, none of the programs provide a definition of the Arctic, although that is probably because

Part II: Arctic Council Chairmanship Programs and Declarations

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Arctic Council functioning		X			X	X	X				X
Sustainable Development	X	X	X	X							X
Climate					X	X	X		X		X
Science, research, and knowledge		X		X*		X*					
Environment	X	X		X			X			X	
Marine Environment											X
Biodiversity						X					
Human dimension / development		X	X				X				X
Communities								X	X		X
Indigenous peoples		X		X							
Education	X									X	
ICT			X							X	
Economic Development		X									
Integrated resource management					X	X					
EU		X									
Safety and emergencies				X				X			
Operational cooperation						X					
Responsible resource development								X			
Green energy											X
Arctic Ocean									X		
Seas							X				
Arctic awareness									X		
Meteorological awareness										X	

Table 31. Priorities in the Chairmanship Programs

*focus on IPY

they use the definition of the eight Arctic states from the Arctic Council. The programs do use different words to describe the region, with "Arctic" being the primary descriptor, as shown in Table 32. For the USA, the term "Far North" is also used as more of a location that a description: "the United States will continue highlighting the need to ensure that humanitarian relief reaches those living in the far North" (USA USC 1998, 1).

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Arctic	X*	X*	X*	X*	X*	X*	X	X*	X	X*	X*
Far North	X										
Circumpolar		X	X	X	X	X		X		X	X
Polar				X							
North					X	X		X			

Table 32. Naming the Region in the Chairmanship Programs
*Primary term if more than one is used

The Arctic is also described in different ways in the programs, and Table 33 shows the descriptors that are used in most of the programs. Interestingly, neither the first American or second Icelandic programs use descriptors to define the region, although the U.S. Program comments on "the unique circumstances of living in the Arctic" (USA USC 1998, 1) and the Icelandic Program mentions "small and remote Arctic communities" (Iceland MFA 2019, 5).

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Unique			X			X	X	X			
Fragile			X			X					
Remote									X	X	
Sparse						X				X	
Vulnerable		X			X		X				
Unpredictable							X				
Amplifier						X					
Spacious				X							
Pristine / clean					X						X

Table 33. Describing the Arctic in the Chairmanship Programs

There is not much information on the different government ministries that have Arctic responsibilities. That said, Table 34 does show what ministries are mentioned, and in many cases, the programs discuss activities that will bring all ministers from certain departments together.

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Foreign		X	X				X*				
Culture				X*							
Education				X*							
Science				X*							
Environment							X*			X*	
Commerce (US)	X										
Interior (US)	X										
Minister for Arctic Council								X			

Table 34. Ministries in the Chairmanship Programs
*in context of all the ministers of these departments meeting at the Arctic Council.
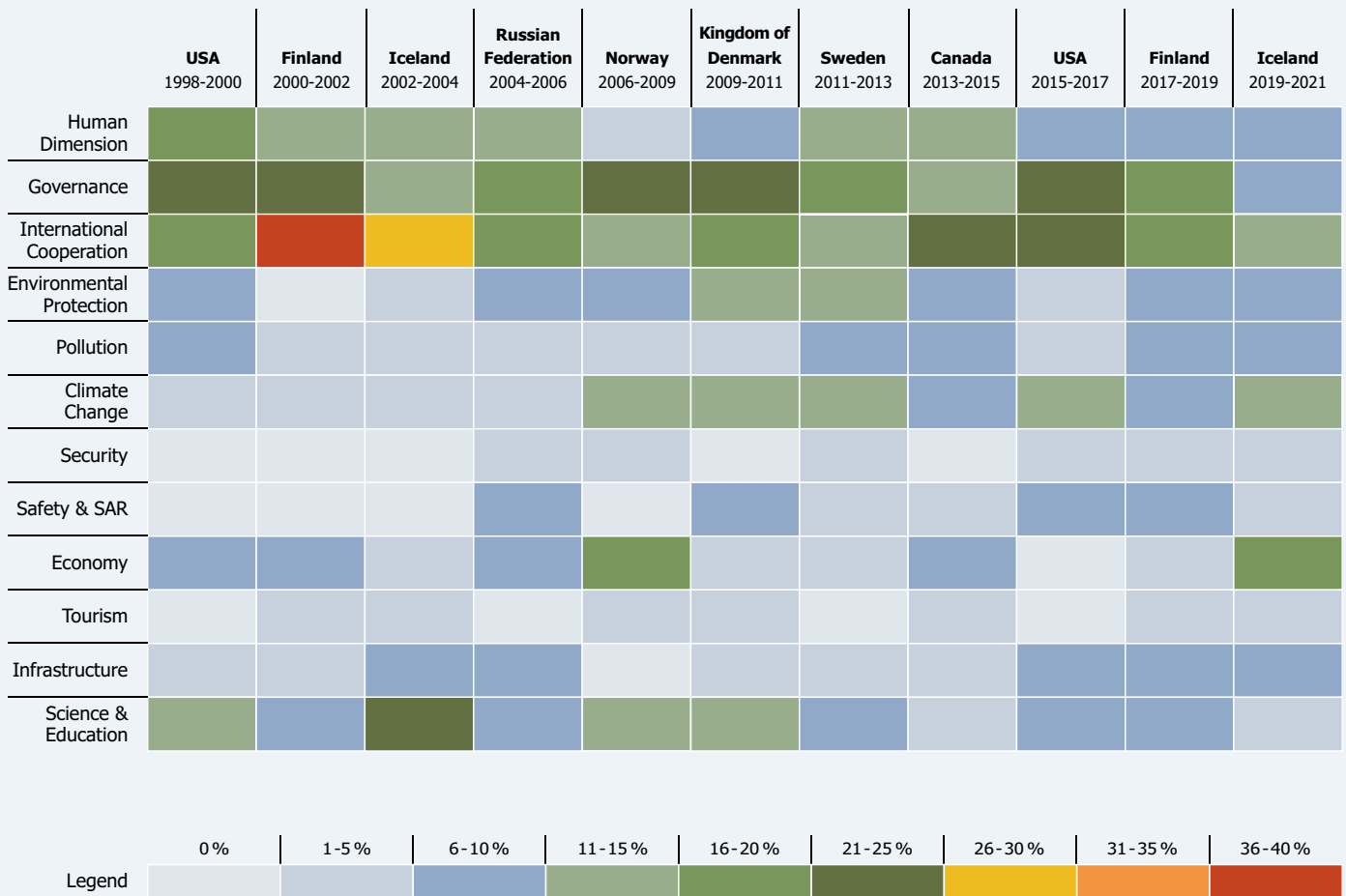
The Danish Program does not identify any ministries, but it does, however, state: "The Government of Denmark will be coordinating the chairmanship in close cooperation with the Governments of Greenland and the Faroe Islands" (Denmark DCAC 2009, 1).

Figure 15 provides a comparison of indicators across the chairmanship programs as a percentage of the total quotes coded for each indicator. The table shows that International Cooperation, Governance, the Human Dimension, and Science and Education are the most coded indicators over time, while Security and Tourism are the least, as they are not mentioned in every program (see Figure 15. Priorities in the Chairmanship Programs, p. 126).

The Figure also shows that with the exception of the current Finnish and Icelandic programs, at least one indicator is not present in the programs. Moreover, as more topics are addressed over time, this does not mean that they receive similar treatment in terms of attention being paid to them. Indeed, some issues, like Governance, are discussed more than others. The Figure also shows that Environmental Protection, Pollution, and Climate Change gain momentum until about 2013, after which they are not mentioned as much.

The **Human Dimension** indicator shows that there is one striking finding across the different programs. Indeed, all the programs address Indigenous peoples, although in different ways. For example, the first American Program mentions "Saami fisheries" (USA USC 1998, 1), while the Danish and Swedish programs discuss the importance of "traditional food" (Denmark DCAC 2009, 2; Sweden GOS 2011b, 5). In terms of Indigenous relations with the Arctic Council, the Norwegian Program mentions the success between the Council and Indigenous peoples (Norway 2006, 1) and the second Finnish Program comments on their support for "the strong participation of Indigenous peoples in the work of the Arctic Council and the integration of traditional and local knowledge into the programs and proj-

	USA 1998-2000	Finland 2000-2002	Iceland 2002-2004	Russian Federation 2004-2006	Norway 2006-2009	Kingdom of Denmark 2009-2011	Sweden 2011-2013	Canada 2013-2015	USA 2015-2017	Finland 2017-2019	Iceland 2019-2021
Human Dimension											
Governance											
International Cooperation											
Environmental Protection											
Pollution											
Climate Change											
Security											
Safety & SAR											
Economy											
Tourism											
Infrastructure											
Science & Education											

Legend

0%	1-5%	6-10%	11-15%	16-20%	21-25%	26-30%	31-35%	36-40%

Figure 15. Priorities in the Chairmanship Programs

Note: The numbers represented in each indicator are a percent of the total number of quotes coded for each document. The scale also ranges from 0 - 40% because none of the percentages went higher than this.

ects of the Council" (Finland FC 2017, 14). Some programs also identify areas of improvement: the first Icelandic, Danish, and Swedish, and the second Canadian programs mention the need to better facilitate Indigenous participation (Canada CC 2013, 2; Denmark DCAC 2009, 7; Iceland MFA 2002, 4; Sweden GOS 2011b, 4). The first Finnish Program also mentions "improving the living conditions of Indigenous peoples" (Finland MFA 2001, 7), the Russian Program states that Arctic activities "fully correspond to the needs of the Arctic Indigenous peoples" (Russia MFA 2004, 6), and the second U.S. Program mentions that the Permanent Participants would contribute to maritime environmental protection (USA CAC 2015, 4). Considering the breadth of discussion around Indigenous peoples, it is surprising that the second Icelandic Program mentions Indigenous peoples only in the context of cooperation within the Arctic Council as Permanent Participants (see: Iceland MFA 2019, 2, 9).

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Culture and language recognition and / or protection		X	X	X	X		X	X			
Gender equality		X	X				X			X	X
Food security							X				
Sustainable Development for health and wellness	X		X				X			X	
Human health	X	X		X		X	X			X	
Mental wellness								X	X	X	
Wellbeing											X

Table 35. The Human Dimension in the Chairmanship Programs

Culture is often associated with Indigenous peoples; however, that is not always the case. For example, the first Finnish Program mentions "Arctic cultures" (Finland MFA 2001, 6), Iceland mentions the "Languages of small nations" (Iceland MFA 2002, 4), and Norway discusses "cultural monuments" (Norway 2006, 4).

The issue of health is raised in six of the programs (see Table 35), while more recently the need to address "mental wellness" is mentioned (Canada CC 2013, 4; Finland FC 2017, 15; USA CAC 2015, 2). In contrast to this, the second Icelandic Program does not focus on particular health concerns and simply states: "Initiatives that aim to promote the wellbeing of the roughly four million people living in the region will remain central to the Arctic Council's work" (Iceland MFA 2019, 8).

Table 35 shows that gender equality is raised in five programs, and twice by Finland and Iceland The first Finnish Program states: "Issues of gender equality have not yet been addressed within the Arctic Council although equality has been promoted, inter alia, in networks of women from Indigenous communities" (Finland MFA 2001, 6), while the second states that

"Gender equality can be supported by raising awareness of the contribution of women and men to sustainable development. Finland supports the ongoing work on gender equality in the Arctic Council" (Finland FC 2017, 15). The second Icelandic Program states that "Iceland will continue to lead a project that aims to promote dialogue on gender equality in the Arctic and strengthen a network of experts and stakeholders in the field" (Iceland MFA 2019, 8), suggesting a continuation from the second Finnish Program. While there is still work to be done on gender, this does suggest that Council has taken up the issue, even if it is not mentioned in all programs.

Food security is also mentioned in the Swedish Program as being connected to traditional food sources (Sweden GOS 2011b, 5).

The **Governance** indicator addresses the existing structures within the Arctic region. Mainly, it refers to the Arctic Council's "mandate concerning protection of the Arctic environment" and the work of its working groups (AMAP, CAFF, EPPR, PAME), which provide recommendations to the AC (USA USC 1998, 2; Finland MFA 2001, 2; Iceland MFA 2002, 1; Russia MFA 2004, 1; Norway 2006, 1; Denmark DCAC 2009, 1, 2; Sweden GOS 2011b, 1; Canada CC 2013, 2; USA CAC 2015, 5; Finland FC 2017, 5; Iceland MFA 2019, 9). Finland, in its first chairmanship program, underlines the unique character and composition of the Arctic Council, where "representatives of Indigenous peoples convene around the same table with representatives of the governments of the member states." At the same time, "several observers, states, international organizations and non-governmental organizations bring their contributions to the activities of the Council", as Finland proposes more active involvement of the Observers to the work of the AC (Finland MFA 2001, 2,4). Sweden, in its program, states that "the Arctic Council and its working groups should link their scientifically based reports to practical decision-making and policies" (Sweden GOS 2011b, 2). Iceland, in its first chairmanship program, reminds that "there is also need for stronger co-operation between the governments and stakeholders at all levels" (Iceland MFA 2002, 2).

The majority of the chairmanship programs (see Table 36. Governance in the Chairmanship Programs, p. 130) underline the importance of strengthening cooperative relations and better coordination with the European Union and other regional bodies such as the Euro-Arctic Council, Nordic Council of Ministers, Council of Baltic Sea States, and Parliamentarians of the Arctic Region" (USA USC 1998, 3; Finland MFA 2001, 4,7; Iceland MFA 2002, 5; Russia MFA 2004, 4; Denmark DCAC 2009, 2; Sweden GOS 2011b, 2). The most recent chairmanship programs also address the need to strengthen the "cooperation between the Arctic Council and the Arctic Economic Council" and the Arctic Coast Guard Forum (Finland FC 2017, 5, 17; Iceland MFA 2019, 9,10). In its first chairmanship program, the USA also promises to "encourage region-to-region contact, of the sort which has developed between Alaska and the Russian Far East under the auspices of the Northern Forum" (USA USC 1998, 3). Finland, in its first chairmanship program, highlights the need for partnership between the AC and the European

Commission, in order to "strengthen Arctic knowledge and co-operation" (Finland MFA 2001, 4). In its second chairmanship, Finland proposes to "participate in the continued work of the Task Force on Arctic Marine Cooperation, recognizing the need for implementing an ecosystem-based approach to management and taking into account the positive experiences of cooperation in other sea areas" (Finland FC 2017, 12). The Environmental impact assessment (EIA) is also mentioned as "an important tool for sustainable and responsible development in the Arctic" and that Finland also "proposes to develop an Arctic-specific EIA tool in which public participation is an integral part of the process" (Finland FC 2017, 11).

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Eixsting structures	×	×	×	×	×	×	×	×	×	×	×
international and transboundary cooperation	×	×	×	×	×	×	×	×	×	×	×
natural resources, blue economy, and licensing	×			×	×	×	×			×	
public consultations and env. impact assessments			×		×		×			×	
Decision making		×					×	×		×	

Table 36. Governance in the Chairmanship Programs

The **International Treaties and International Cooperation** indicator is well-defined and elaborated by all Arctic states in their chairmanship programs, ranging from the first U.S. chairmanship to the latest Icelandic chairmanship (see Table 37, p. 129). The programs mainly refer to cooperation on the level of the Arctic Council. The programs also mention the AC's important role and activities with a focus on "environmental issues and sustainable development became key elements in the Council's sphere of activities" (Finland MFA 2001, 3,5; Iceland MFA 2002, 2; Russia MFA 2004, 1; Norway 2006, 1,6; Denmark DCAC 2009, 1, 2; Sweden GOS 2011b, 1; Canada CC 2013, 2; USA CAC 2015, 1,5; Finland FC 2017, 5; Iceland MFA 2019, 4). The Icelandic Program highlights the necessity "to strengthen scientific and technological co-operation for sustainable development through increased networking between scientists and research institutions." In this respect, the document is the only one of all the documents to refer to the important role of the International Arctic Science Committee (Iceland MFA 2002, 3). Not surprisingly, Denmark is the only one to mention in its program that "the Ilulissat Declaration of 28 May 2008 underlines that co-operation on the sharing of information is a prerequisite for addressing future challenges" (Denmark DCAC 2009, 6).

The programs highlight Council's relations with other regional bodies, such as the Barents Euro-Arctic Council, the Nordic Council of Ministers, Northern Forum, and the UN agencies, including the International Maritime Organization. In addition, the USA promises to "expand Arctic international cooperation" in public health (USA USC 1998, 1–2). For the first time, Finland mentions in its chairmanship program the need to "promote co-operation between the Council and the EU" and "making the EU an Arctic cooperation partner" "so that the Commission becomes a permanent Observer in the Council." The cooperation between the Council and the Northern Forum should also be enhanced (Finland MFA 2001, 4, 7). Other AC Observer states (and organizations) are also briefly mentioned (Finland MFA 2001, 3; Iceland MFA 2002, 4 ,5, 6; Russia MFA 2004, 4,7; Denmark DCAC 2009, 7; Canada CC 2013, 3; USA CAC 2015, 5; Finland FC 2017, 17; Iceland MFA 2019, 9,11). It is in the second Canadian chairmanship, that the first reference is made to "establishing a Circumpolar Business Forum", which "will foster circumpolar economic development and provide opportunities for business to engage with the Arctic Council" (Canada CC 2013, 3). In addition, "Finland proposes to deepen meteorological and oceanographic cooperation among the Arctic States in collaboration with the World Meteorological Organization" (Finland FC 2017, 5, 8). Finland also welcomes the establishment of the Arctic Coast Guard Forum.

The Arctic state chairmanship programs also refer to the category of Permanent Participants as a body for Indigenous peoples' representation in the Council. "Representatives of Indigenous peoples sit at the same table with the member states' representatives, participating in the proceedings but without power of decision-making" (Finland MFA 2001, 3; Iceland MFA 2002, 6; Russia MFA 2004, 1; Norway 2006, 1, 2; Denmark DCAC 2009, 1,2; Sweden GOS 2011b, 1; USA CAC 2015, 5; Finland FC 2017, 5; Iceland MFA 2019, 11). Finland mentions in its first chairmanship program that "At the Rio + 10 follow-up meeting of the UN in 2002, the Arctic Council should be able to present its activities to support sustainable development" (Finland MFA 2001, 5). The Russian Program briefly follows up on this, stating that the Arctic Council "is the main mechanism for implementing the principles of sustainable development set forth in the Program of Action on the Implementation of the Agenda 21 adopted by the UN Conference on Environment and Development in 1992…and the decisions taken by the World Summit on Sustainable Development in 2002" (Russia MFA 2004, 1).

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Role and importance of int. cooperation	X		X	X	X	X	X	X		X	X
Major agreements and forums	X	X	X	X	X	X	X	X	X	X	X
Global Perspective and Scales											
UN SDGs (or Rio 1992)		X		X						X	

Table 37. International Treaties and International Cooperation in the Chairmanship Programs

The **Environmental Protection** indicator reveals one relevant finding. Specifically, Table 38 shows that seven programs also address protection of the marine environment, either in general or with specific reference to the Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities. Seven programs also mention the need to find a way to balance environmental protection with economic activities; yet only three programs mention ecosystem-based management. There are also some similarities, with six of the programs addressing the issue of biodiversity and five programs addressing protected areas.

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities	X			X							
Protect marine environment				X	X			X	X	X	X
Protected areas				X	X	X			X	X	
Biodiversity		X	X	X	X	X				X	
Invasive species							X			X	
Animal conservation						X		X			
Balance environment and economy (ex. Sustainable dev)				X	X	X	X	X	X		X
Ecosystem-based management					X		X			X	
International cooperation	X			X							
Share best practices					X		X				

Table 38. Environmental Protection in the Chairmanship Programs

There is also some fragmentation, as two programs mention animal conservation and invasive species. Moreover, only two programs mention international cooperation and sharing best practices. This fragmentation is surprising, as environmental issues cross national boundaries.

The **Pollution** indicator reveals a somewhat fragmented approach to addressing pollution. Table 39 shows that starting with the Swedish Program, "short-lived climate forcers (SLCF), such as black carbon,… and methane" (Sweden GOS 2011b, 2), are consistently identified as problems for the Arctic, and the second Finland Program recognizes that these pollutants can come from outside the region (Finland FC 2017, 11). Oil (pollution) is also mentioned in four of the last six programs, suggesting that this, along with the short-lived climate forcers, are the primary concern.

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Man-made pollutants				X							
Greenhouse Gases						X	X				
Carbon dioxide						X					
Short lived climate poll.							X	X	X	X	X
Black carbon							X	X	X	X	X
Methane							X	X	X	X	X
Radioactive material					X						
Heavy Metals							X				
Mercury	X						X	X			
POPs	X										
PCBs	X										
Chemicals								X			
Oil							X	X	X	X	
Mining waste							X				
Shipping Waste							X				
Marine litter											X
Plastics											X

Table 39. Pollutants in the Chairmanship Programs

It is surprising that the broad term of "greenhouse gases" is used in only two programs (Danish and Swedish), although black carbon and methane are explicitly named in every program since Sweden's in 2011. The second most-identified pollutant is oil (spills), which was mentioned in the Danish, Swedish, second Canadian, and second Finnish programs (Canada CC 2013, 3; Denmark DCAC 2009, 7; Finland FC 2017, 13; Sweden GOS 2011b, 2). Plastics is named for the first time in the second Icelandic Program (Iceland MFA 2019, 4). Table 39 also shows further fragmentation as POPs, PCBs, man-made pollutants, radioactive materials, chemicals, mining waste, and shipping waste are each mentioned in only one strategy.

There is also substantial fragmentation with regard to the different approaches to addressing pollution. Table 40 shows that none of the approaches to problem-solving are mentioned in more than three programs. For example, only the first U.S., Finnish, and Russian programs recognize the Arctic Council's Action Plan to Eliminate Pollution of the Arctic (ACAP) (Finland MFA 2001, 4; Russia MFA 2004, 4; USA USC 1998, 2). Moreover, three programs express support for the work of AMAP. For instance, the Russian Program states that "the Russian Chairmanship in-

tends to pursue the policy aimed at intensifying efforts taken by the Arctic Council Member States within the framework of the Arctic Monitoring and Assessment Program (AMAP)" (Russia MFA 2004, 4). Both the Swedish and second Finnish programs express support for specific projects under AMAP. For Sweden, that is "a report on the impact of carbon dioxide emissions on the acidification of the Arctic Ocean, *Arctic Ocean Acidification*" (Sweden GOS 2011b, 4), and the Finnish Program notes that "the Arctic Council's report "Chemicals of Emerging Arctic Concern" (2017) will guide the work on pollution" (Finland FC 2017, 11).

There are also some time-specific findings. For example, the Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities and the Russian Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities are not mentioned after 2006. Moreover, the SAR Agreement was signed in 2013, and is thus mentioned in the second Canadian and second Finnish programs (Canada CC 2013, 3; Finland FC 2017, 13), while the Polar Code is mentioned in the second Finnish Program (Finland FC 2017, 13). Additionally, it appears that the Arctic Council's work with the Framework for Action on

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Greenhouse gas reduction						✕	✕				
Short lived climate forcers reduction							✕		✕		
Global rules on mercury							✕				
Long-Range Transboundary Air Pollution (LRTAP)										✕	
Recognize and support work of AMAP				✕			✕			✕	
Recognize and support work of CAFF	✕										
Recognize and support work of EPPR	✕										
Arctic Council Action Plan to Eliminate Pollution of the Arctic (ACAP)	✕	✕		✕							
Agreement on Cooperation on Marine Oil Pollution Preparedness & Response in the Arctic								✕		✕	
Framework for Action on Enhanced Black Carbon and Methane Emissions Reduction										✕	
Expert Group on Black Carbon and Methane											✕
Polar Code										✕	
Research on pollution					✕						
Pollution assessments			✕								
Cooperation					✕						
Share best practices					✕						
Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities	✕			✕							
Russian Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities				✕							
Changes to economic activities										✕	
Oil spill prevention or preparedness								✕	✕		
Regional Action Plan for marine litter											✕

Table 40. International Treaties on Pollution and Problem Solving Measures

Enhanced Black Carbon and Methane Emissions Reductions from the second Finnish Program (Finland FC 2017, 10) will be followed up during the second Icelandic chairmanship: "building on the work of the Expert Group on Black Carbon and Methane, efforts to identify opportunities to reduce emissions of short-lived climate pollutants will continue" (Iceland MFA 2019, 5). The second Icelandic chairmanship will also start to address marine litter: "The Arctic Council will work on the development of a Regional Action Plan to reduce marine litter, including micro-plastics, along with other efforts to monitor and limit its impacts" (Iceland MFA 2019, 4).

Other approaches to problem-solving include less formal mechanisms. Iceland mentions pollution assessments in the larger context of environmental protection (Iceland MFA 2002, 4) and Norway mentions increasing knowledge and sharing best practices, as well as cooperation: "cooperation under the Arctic Council and integration of Indigenous peoples' knowledge into these efforts has yielded results far greater than could have been achieved by national efforts alone. This is particularly true in the fields of long-range pollution and climate change" (Norway 2006, 1; see also: 3).

The **Climate Change** indicator shows growth in the way that climate change is addressed in the chairmanship programs (see Table 41). From the first U.S. Program, and with the exception of the Russian, and the second Canadian and U.S. programs, there is evidence that the scientific community has been, or is being, heard on this issue. Indeed, the ACIA Report was the first big climate project/study and is mentioned in the first Finnish, Icelandic, Norwegian, Danish, and second Finnish programs (Denmark DCAC 2009, 1; Finland FC 2017, 10; Finland MFA 2001, 5; Iceland MFA 2009, 4; Norway 2006, 5). The Norwegian Program recognizes the report's significance, especially with regard to mitigation and adaptation efforts. It states that "according to the ACIA report, the consequences of climate change in the Arctic will be dramatic for human life, ecosystems and many sectors of society. Further studies of impacts and means of adaptation are needed in order to address these issues" (Norway 2006, 5), and since then all programs have mentioned mitigation and/ or adaptation. The significance of the ACIA is not lost in the second Finnish Program which states that "the conclusions of the Arctic Climate Impact Assessment (2004) have been largely confirmed by local environmental observations" (Finland FC 2017, 10).

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Mitigation/ Adaptation					✕	✕	✕	✕	✕	✕	✕
Frameworks:											
UNFCC				✕	✕	✕				✕	
IPCC							✕			✕	
Paris Agreement										✕	
Kyoto Protocol				✕							
Scientific Community Heard	✕				✕	✕	✕			✕	✕
ACIA		✕	✕		✕	✕				✕	
Access to Fresh Water									✕	✕	

Table 41. Climate Action in the Chairmanship Programs

With respect to the climate framework, the Russian Program recognizes that Russia is working with its international partners on these issues—"a major evidence of this is the ratification by the Russian Federation of the Kyoto Protocol to the UN Framework Convention on Climate Change, which cleared the way to the entry into force of that instrument" (Russia MFA 2004, 3–4). Although Kyoto is not mentioned again, the UNFCCC is mentioned by the Norwegian, Danish, and second Finnish programs and the IPCC is mentioned by the Swedish and second Finnish programs (Norway 2006, 5; Denmark DCAC 2009, 4; Sweden GOS 2011b, 2; Finland FC 2017, 11). The second Finnish Program also mentions the Paris Agreement, stating that "putting into practice the commitments of the Paris Climate Agreement will be the most important contribution from the Member States in addressing climate change" (Finland FC 2017, 10). Interestingly, the second Icelandic Program does not mention climate frameworks and instead states that "Member States take action to address climate change in accordance with their respective international commitments and national policies" (Iceland MFA 2019, 5).

The issue of access to freshwater is brought up in the second U.S. and the Finnish programs. While neither overtly makes the connection, they both show concerns. For instance, the U.S. Program states "the Arctic Council's work on energy and water security seeks to improve economic and living conditions in the region by pursuing innovative technologies to mitigate the significant challenges faced by remote Arctic communities" (USA CAC 2015, 2) and the Finnish Program that "raising awareness of the state of Arctic freshwater and its ecological, economic, social and cultural value is also important" (Finland FC 2017, 11).

The **Security** indicator is not captured in any of the first AC chairmanship programs (Canada, US, Finland, Iceland, years 1996–2004). It only appears for the first time in the chairmanship program of Russia in 2004 in connection with environmental security. The Program states that the "main priorities of the Russian Chairmanship of the Arctic Council include implementation of further coordinated measures to protect, preserve and restore the Arctic environment, enhance environmental security, including prevention of ecological emergencies, as well as to provide for the rational Arctic resource management in order to ensure environmental, social and economic welfare of the present and future generations in that region" (Russia MFA 2004, 4). In 2006, Norway recognizes the importance of keeping the region out of conflict, stating that "while many of the other petroleum provinces of the world are characterised by conflicts and political unrest, the Arctic stands out as a stable and peaceful region" (Norway 2006, 2). Denmark does not address any security issues in its 2009 Program. Two years later in 2011, Sweden recognizes that "the issue of food safety and access to good quality water in the Arctic is a matter of constant concern to the region's inhabitants and is closely linked to climate change and other environmental disturbances" (Sweden GOS 2011b, 5). Canada in its 2013–2015 chairmanship program does not address any security matters. The USA, at the beginning of its AC chairmanship, states that "with the increase in human and maritime activity in the Arctic, Arctic Council members are working together to promote Arctic Ocean safety, security and stewardship, including by exercising Arctic State agreements on search and rescue cooperation and oil pollution preparedness and response" (USA CAC 2015, 1).

Finland in its second chairmanship program emphasizes that all AC "Member States have pledged to maintain the Arctic as a region of peace, stability and constructive cooperation" (Finland FC 2017, 5). Furthermore, Finland states that "the goal must be to ensure the positive future perspectives of the inhabitants and to improve the safety of communities in the Arctic" (Finland FC 2017, 14). In particular, "electronic communication services improve safety and quality of life for those who live in or visit the Arctic. Access to broadband facilitates e-learning, enables the development of digital health and social services, and allows connectivity to media" (Finland FC 2017, 7). Finland also "highlights the socioeconomic dimension of freshwater bodies in the Arctic. These are used as sources of water supply, nutrition and recreation by many Arctic communities and they form an important part of the food security of the communities" (Finland FC 2017, 14). Moreover, "health security requires the ability to prevent, detect and respond to health threats across borders" (Finland FC 2017, 5, 7, 14, 15). In the sphere of security, Finland further welcomes the "establishment of the Arctic Coast Guard Forum" and "Under the auspices of the Arctic Coast Guard Forum, the Finnish Border Guard will strengthen the cooperation with search and rescue stakeholders to promote safety at sea. The aim is to exchange best practices, align standard operating procedures and promote interoperability" (Finland FC 2017, 13). Iceland in its second chairmanship program focuses on promoting "safe and sustainable shipping in the Arctic" (Iceland MFA 2019, 4). It continues: "With increasing marine traffic and activities, it

is essential to maintain close and effective cooperation among the Arctic States on search and rescue, as well as emergency prevention, preparedness and response. Circumpolar meteorological and oceanographic cooperation also serves to improve safety at sea and should be developed further, in collaboration with the World Meteorological Organization" (Iceland MFA 2019, 4).

The **Safety and SAR** indicator demonstrates that safety does not receive much attention until the Russian chairmanship and then becomes a regular topic starting with the Danish chairmanship. Table 42 shows that maritime safety is the general regional safety concern. Environmental security is also a concern and has been connected to pollution and the potential for oil spills (Denmark DCAC 2009, 7; Finland FC 2017, 13; Russia MFA 2004, 4). Search and Rescue services are also mentioned in five programs, and Finland also recognizes that climate change can also affect safety (Finland FC 2017, 11).

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Environmental Safety (incl. pollution, oil spills, etc.)				×			×		×		
Climate change										×	
Maritime Safety						×	×	×	×	×	×
Tourism safety								×			
Search and Rescue				×		×			×	×	×
Emergencies (in general)				×						×	×

Table 42. Safety Concerns in the Chairmanship Programs

Interestingly, the Danish Program comments on the challenges associated with SAR in the Arctic. The Program states that "due to low population and infrastructure density, emergency response resources are thinly spread over a large area, making for instance search and rescue operations difficult to stage and manage" (Denmark DCAC 2009, 6). The second U.S. Strategy comments on the importance of telecommunications for rescue operations (USA CAC 2015, 2), suggesting that challenges remain.

There are also varied responses to addressing safety issues. Table 43 shows that the most-mentioned response was in support of the work of the IMO (Denmark DCAC 2009, 7), and also the development of the Polar Code (Canada CC 2013, 3; Finland FC 2017, 13). Moreover, the second U.S. and Finnish programs recognize the Arctic Council's SAR agreement (Finland FC 2017, 13; USA CC 2015, 1), while the Russian and Danish programs mention safety cooperation, which seems to entail efforts leading up to the SAR agreement. For instance, the Russian Program states that in the context of emergencies "in the longer term we could consider the signing of an intergovernmental agreement on cooperation between rescue services of the Arctic Council Member States in this area" (Russia MFA 2004, 6). The

Danish Program, also in the context of emergencies, states that "there is a growing understanding that the capacity to respond to emergency crises in the Arctic should be improved and that the means to doing so is through the exchange of information, training and experience, technical development and support, and the co-ordination of response" (Denmark DCAC 2009, 6). The second Icelandic Program also mentions cooperation, but does so in the context of shipping and not in relation to any particular agreement (see: Iceland MFA 2019, 4).

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Arctic Council SAR Agreement									✕	✕	
Arctic Marine Shipping Assessment							✕				
Arctic Coast Guard Forum										✕	
IMO / Polar Code						✕		✕		✕	
Satellites										✕	
International cooperation on rescue services and/ or supports				✕		✕					✕
International cooperation maritime safety guidelines						✕					
International cooperation on weather and ocean research										✕	✕
Information sharing						✕					
Oil spill prevention							✕				

Table 43. Responses to Safety Concerns in the Chairmanship Programs

The Danish Program also supports international cooperation on creating safety guidelines and sharing information (Denmark DCAC 2009, 7). Sweden mentions the importance of the Arctic Marine Shipping Assessment and the need for better oil spill prevention (Sweden GOS 2011b, 2). The second Finnish Program mentions the value of satellites for safety purposes and the role the Arctic Coast Guard Forum can play in improving regional safety (Finland FC 2017, 13). Additionally, both the second Finnish and second Icelandic Program state the need for "Circumpolar meteorological and oceanographic cooperation" (Finland FC 2017, 8; Iceland MFA 2019, 4) as safety measures, mainly due to climate change and having WMO as an observer of the Arctic Council.

The **Economy** indicator shows that a broad range of economic activities takes place in the Arctic. However, there is no striking consistency with respect to what these activities are and involve.

Indeed, Table 44 shows that four or fewer programs identify a particular industry. Instead, what emerges is that different programs prioritize different types of activities. For example, the first Finnish Program focuses on living resources and associated activities (Finland MFA 2001, 7), while Norway tends to focus more on a broad range of natural resources (Norway 2006, 1–3), and the second Finnish Program emphasizes more technological or innovative activities (Finland FC 2017, 5).

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Natural resources			✕	✕	✕			✕			
Energy										✕	
Renewables				✕		✕					
Green energy											✕
Fossil fuels				✕							
Oil and gas				✕	✕	✕	✕				
Mining /minerals / metals				✕			✕			✕	
Forestry		✕									
Hunting					✕						
Fisheries and fishing	✕				✕						
Reindeer husbandry		✕			✕						
Agriculture			✕								
Living marine resources											✕
Bioeconomy										✕	✕
Shipping				✕			✕			✕	✕
Tourism			✕			✕		✕		✕	✕
Technology					✕						
Cold climate										✕	
Communication			✕							✕	
Construction			✕								
Housing										✕	

Table 44. Economic Activities in the Chairmanship Programs

Sustainable development or sustainable economic activities are mentioned in all the programs, except the second U.S. Program. However, the programs address the issue in different ways. For instance, the first Finnish Program states that "attention should be paid on not only the ecological dimension but also the social, cultural and economic dimensions of sustainable development" (Finland MFA 2001, 2). The first Icelandic Program, however, comments on the complexity of sustainable development as it "requires, among other things, adaptation of international education and science to regional conditions through local research and development projects" (Iceland MFA 2002, 1). The Norwegian Program diverges a little, however, by stating that "protection of the environment combined with sustainable utilisation of natural resources should be the core area of cooperation under

the auspices of the Arctic Council in the years ahead" (Norway 2006, 3), and further at the very beginning of the document that "Until now, the main emphasis has been on sustainable development and environmental protection, and an extensive knowledge base has been established under the auspices of the Council. However, it will not be possible to maintain settlement patterns and ensure growth and welfare without economic activity. Therefore, the Council should also initiate broad political debate on all issues of importance to the Arctic and the people living there" (Norway 2006, 1).

The Finnish second chairmanship also addresses "the cooperation between the Arctic Council and the Arctic Economic Council to support the goal of facilitating business-to-business activities and responsible economic development" (Finland FC 2017, 5).

The first mention of the **Tourism** indicator is in the Finnish chairmanship program in 2000, when Finland recognizes the success of the Arctic Council's "tourism project on eco-culture" (Finland MFA 2001, 7). In addition, "Finland aims at strengthening co-operation on tourism that supports sustainable development, by utilizing and co-ordinating the work done in this field by other bodies, such as the WWF and the Northern Forum" (Finland MFA 2001, 7). In 2002 Iceland follows up on this, stating in its chairmanship program that the Icelandic "aim is to build on existing international organizations and programmes working with issues such as sustainable agriculture, communications, tourism, construction, and use of natural resources" (Iceland MFA 2002, 3). Russia does not address tourism in its chairmanship of the AC in 2004–2006. Norway in 2006 states in its chairmanship program that "the establishment of guidelines for responsible development of petroleum and mineral resources in the Arctic should be given priority. The need for guidelines for other activities such as tourism, shipping, the establishment of infrastructure and waste management should also be considered" (Norway 2006, 3). Denmark also briefly mentions tourism in its chairmanship program from 2009, stating how in "responding to the general increase in activities taking place in the Arctic," it "would be useful to explore how co-operation could be enhanced to further the development of guidelines in fields such as tourism, shipping and maritime safety, etc." (Denmark DCAC 2009, 7).

Sweden does not address tourism in its 2011 AC chairmanship program. Two years later, Canada mentions tourism in its 2013 Program, particularly recognizing that "opportunities for tourism are growing in the Arctic." Canada believes that "by establishing guidelines for sustainable tourism and cruise-ship operations, the Arctic Council will encourage the benefits that tourism will bring to communities while reducing the risks associated with increased activity" (Canada CC 2013, 3). The USA does not mention tourism in its chairmanship 2015-2017, while Finland in its second chairmanship 2017–2019 "strives to increase the cooperation between the Arctic Council and the Arctic Economic Council to support the goal of facilitating business-to-business activities and responsible economic development. Common areas of interest include capacity build-

ing, risk management, connectivity, cold-climate technologies and services, maritime transport, energy, bioeconomy, tourism, housing and mining." Finland further "proposes to continue the Arctic Council's work on telecommunications and explore ways to enhance the connectivity and availability of broadband services in the Arctic. This work would take into account the needs of Indigenous peoples, local communities and businesses, tourism, and researchers" (Finland FC 2017, 5,7). Iceland in its second chairmanship follows up on its first Program, stating that "new economic opportunities, including in shipping and tourism, can contribute to growth and prosperity of Arctic communities, if they are carried out sustainably. Environmental protection and social inclusion must always go hand in hand with economic development" (Iceland MFA 2019, 8).

The **Infrastructure** indicator shows some similarities and differences in the types of infrastructure that are discussed. Table 45 shows that seven programs broach the topic of telecommunications and ICT, which will be discussed in more detail later, and six programs address shipping. The Russian Program comments on the Northern Sea Route (Russia MFA 2004, 2), while the Danish Program mentions the Arctic Marine Shipping Assessment (Denmark DCAC 2009, 6); the Swedish Program mentions that surveillance could help the shipping industry (Sweden GOS 2011b, 6), and the Canadian and second Finnish programs mention the Polar Code (Canada CC 2013, 3; Finland FC 2017, 13). The second Finnish Program also remarks that climate and ocean research will "benefit international shipping and air traffic" (Finland FC 2017, 8), and the second Icelandic Program states that "Iceland will continue to promote safe and sustainable shipping in the Arctic" (Iceland MFA 2019, 5).

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Transport		X		X						X	
Icebreakers										X	
Shipping				X		X	X	X		X	X
Telecoms / ICT	X	X	X	X					X	X	X
Innovation and tech									X		
Energy							X		X	X	X
Housing										X	

Table 45. Infrastructure in the Chairmanship Programs

As mentioned, a relevant finding is that telecommunications and ICT are mentioned in seven programs that span a long time frame. Table 46 shows that the most common issue was improving health services via telemedicine (Finland MFA 2001, 6; Russia MFA 2004, 3; USA USC 1998, 1) or other "digital health and social services" (Finland FC 2017, 7). Another ongoing discussion is around the use of ICT to improve educational opportunities. The first Finnish, first Icelandic, and second Finnish programs comment on distance or e-learning (Finland 2017, 7;

Finland MFA 2001, 6; Iceland MFA 2002, 2). The two Icelandic and second Finnish programs also comment on the use of telecommunications for economic reasons (Finland FC 2017, 8; Iceland MFA 2019, 8; Iceland MFA 2002, 2).

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Communications tech and infrastructure					-	-	-	-	✕	✕	
Internet			✕		-	-	-	-		✕	
ICT and Arctic Council			✕	✕	-	-	-	-		✕	
Telehealth / health services	✕	✕		✕	-	-	-	-		✕	
Education			✕	✕	-	-	-	-		✕	
Economic development			✕		-	-	-	-		✕	✕
Safety					-	-	-	-		✕	
Need cost-effective telecoms			✕		-	-	-	-			

Table 46. Telecommunications and ICT in the Chairmanship Programs

The connection between ICT and the Arctic Council is interesting. For instance, the first Icelandic Program comments that "limited time and financial resources can restrain direct participation in the work of the Arctic Council, especially by the Indigenous peoples organizations. It is important to strengthen the use of information technology in the work of the Arctic Council in order to facilitate communications and consultations" (Iceland MFA 2002, 5). The Russian Program discusses work the Council is doing on ICT, stating: "We believe it important that the Arctic Council activities continue to be focused on enhancing cooperation in the field of information and communication technology including further practical steps to develop the Arctic Information and Communication Technology Network" (Russia MFA 2004, 3). The second Finnish Program also states that "Finland proposes to continue the Arctic Council's work on telecommunications and explore ways to enhance the connectivity and availability of broadband services in the Arctic" (Finland FC 2017, 7).

In terms of the **Science and Education** indicator, Table 47 shows that the programs primarily identify informal and formal networks as part of their science infrastructure. For informal networks, the first Icelandic Program mentions networking and general cooperation (Iceland MFA 2002, 3), the Russian Program states that "further strengthening of the Arctic Council interaction with other international and regional organizations" (Russia MFA 2004, 7) which means strengthening networks, while the Norwegian Program wants to "strengthen the international monitoring networks" (Norway 2006, 4), and the Danish Program to maintain connections developed during the IPY (Denmark DCAC 2009, 3).

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Research institutes										✕	
Informal networks		✕	✕	✕	✕						
Formal networks		✕	✕	✕						✕	

Table 47. Science Infrastructure in the Chairmanship Programs

Regarding the formal networks, the first Finnish and first Icelandic programs mentions the International Arctic Science Committee (IASC) (Finland MFA 2001, 5; Iceland MFA 2002, 3). The Russian Program mentions the International Polar Year (IPY) (Russia MFA 2004, 7), and the second Finnish Program calls the Arctic Council a "recognized international forum" (Finland FC 2017, 5). The Finnish Program is also the only one to recognize research institutes, and in this case "occupational health research institutes" (Finland FC 2017, 15), as part of the science infrastructure.

In terms of the reasons for research, Table 48 shows that climate change is the primary driver as it is mentioned in seven programs. Pollution is mentioned by three programs, and the environment in one.

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA 2015-17	Finland 2017-19	Iceland 2019-21
Environment							✕				
Climate Change			✕	✕	✕	✕	✕			✕	✕
Pollution					✕	✕			✕		

Table 48. Drivers of Research in the Chairmanship Programs

However, research does more than just generate new knowledge on these topics. Table 49 shows some of the other purposes that research can be used for. Seven of the programs note that research will be used to inform policy or to help with decision-making. For example, the first Icelandic Program comments on the need for clarity of research findings, remarking that "research results also need to be presented in a way that can be used by policy makers in formulating policies and solving practical matter" (Iceland MFA 2002, 3). The Swedish Program asserts that "strong support for research in this part of the world will give decision-makers data on which to base an effective response to challenges arising in a rapidly changing region" (Sweden GOS 2011b, 5).

	USA 1998-00	Finland 2000-02	Iceland 2002-04	Russia 2004-06	Norway 2006-09	Denmark 2009-11	Sweden 2011-13	Canada 2013-15	USA2015-17	Finland 2017-19	Iceland 2019-21
Social Issues						×	×				
Policy / decision making		×	×		×	×	×			×	×
Inform AC working groups						×					
Cooperation	×		×	×		×					
Sustainable development			×								
Increase knowledge of Arctic	×				×	×					
Education	×				×						

Table 49. Purpose of Research in the Chairmanship Programs

Although somewhat fragmented, both the first U.S. and Norwegian programs comment on the assistance of the Arctic Council in education. The first U.S. Program states that "we attach high priority to the Council's mandate to encourage education and public awareness of Arctic-related matters, and are beginning to consider a public affairs strategy" (USA USC 1998, 3); the Norwegian Program states its wish to "use of the work and publications of Arctic Council working groups for educational purposes" (Norway 2006, 4). This also contributes to increasing knowledge of the region (see also: Denmark DCAC 2009, 6).

The use and incorporation of traditional knowledge is mentioned in both of the Finnish, the first Icelandic, and the Norwegian, Swedish, and Canadian programs. However, the first Icelandic and Swedish programs mention local knowledge (Finland MFA 2001, 2; Iceland MFA 2002, 3; Norway 2006, 1, 4; Sweden GOS 2011b, 5; Canada CC 2013, 4; Finland FC 2017, 14) rather than specifically naming Indigenous peoples. Traditional knowledge is not mentioned in any of the U.S., Russian, and second Icelandic programs.

As for education, the UArctic is mentioned in the first U.S. and discussed in the Finnish, Icelandic, Russian, and Norwegian programs in one capacity or another (USA USC 1998, 3; Finland MFA 2001, 5, 6; Iceland MFA 2009, 3; Russia MFA 2004, 6; Norway 2006, 4). Distance learning outside the UArctic is mentioned in two programs. The first Icelandic Program specifically mentions that "the Internet is increasingly being used in elementary and secondary schools and by the same token the residents in remote communities may now take university courses through distance learning" (Iceland MFA 2002, 2). While the second Finnish program also notes "access to broadband facilitates e-learning" (Finland FC 2017, 7), but does not comment on the level of education covered by the distance learning. For access to education, the first Icelandic Program comments on how the University of the Arctic has created an "international and interdisciplinary Bachelor of Circumpolar Studies, which were initiated in the spring of 2002" (Iceland MFA 2002, 3), which would create more access to education. For education-

al attainment levels, the second Finnish Program remarks that "fair educational opportunities in remote areas are key for creating sustainable development and building resilience in Arctic communities" (Finland FC 2017, 9).

The **Implementation** indicator shows how the different programs address these matters. In terms of action items, the entire program can be considered an action item list, as it outlines chairmanship priorities and what is expected to take place during a chairmanship. Some items are new, while others explain how previous work will be carried forward. For example, the first Finnish Strategy states that "during its chairmanship Finland will promote Arctic research and develop the University of the Arctic" (Finland MFA 2001, 6) and also that "Finland aims at ensuring the progress of the Environmental Protection Strategy by supporting various environmental programs" (Finland MFA 2001, 5). The first U.S. document, which is a memo, states: "The purpose of this communication is to set out U.S. thinking on Arctic Council priorities during the period of our Chairmanship, and, for planning purposes, to provide an initial calendar regarding proposed Council activities during this period" (USA USC 1998, 1), which suggests that the items that follow in the document will be actioned. The second Canadian and U.S. programs are in brochure form and, while short on detail, still provide information on what will be done during their chairmanships (see: Canada CC 2013; USA CAC 2015).

With regard to follow-up, the first U.S., Russian, Norwegian, Swedish, and second Finnish programs discuss follow-up activities to previously agreed-upon decisions. For example, the Russian Program states: "Due attention will be given by the Russian Chairmanship to enhanced collaboration in the field of education and science and to the implementation of the Declaration of the Meeting of Ministers of Education and Science of the Arctic Council Member States in Reykjavik on June 9, 2004" (Russia MFA 2004, 3).

Evaluation is mentioned only in a couple of documents. In the context of the SDWG, the Russian Program states: "Our success will be measured primarily by the extent to which the Arctic Council Member States manage to translate the SDAP into practical activities, specific projects in each area of sustainable development, and to attract resources, first of all financial ones, needed for its realization" (Russia MFA 2004, 2). The Swedish Program states: "Before the start of the Norwegian Chairmanship of the Arctic Council in 2006, Norway, Denmark and Sweden informally adopted a joint 'umbrella programme' for their successive chairmanships. Sweden intends to highlight the jointly agreed objectives and the results achieved at the foreign ministers meeting in 2013" (Sweden GOS 2011b, 6).

To sum up

As a whole, the chairmanship programs tend to focus on issues pertaining to the environment. In the past few years there has also been a focus on pollutants that contribute to climate change. As for the social aspect, there is an overall focus on health and wellbeing, as well as culture and/or language protection. Gen-

der equality also shows up on the agenda every few years or so. Maritime safety has also emerged as a safety concern over the past few programs.

Overall, it is surprising that the chairmanships do not have formal or public evaluation processes, especially as the ministerial declarations produced at the end of the Chairmanship are rooted in consensus and provide a future vision for the Council and not a critical reflection of the previous two years. Instead, a SAO report to ministers is issued at the end of the chairmanship to provide a summary of achievements for the working groups and other initiatives during the chairmanship and their plans during the next chairmanship (for example, see, Arctic Council 2019c). While this is informal and useful for a better understanding of the breadth of work of the Council, how effective the chairmanship program has been is not mentioned.

The Swedish Program remarks that "before the start of the Norwegian Chairmanship of the Arctic Council in 2006, Norway, Denmark and Sweden informally adopted a joint 'umbrella programme' for their successive chairmanships" (Sweden, GOS 2011b, 6). As this analysis shows, climate change and addressing how the Arctic Council functions are the only priorities the three have in common (see the beginning of this section). However, there is some commonality shown when different indicators are examined. For example, in the environmental protection indicator, all three programs address protected areas and biodiversity protection. With climate change, the three programs discuss mitigation and adaptation, and indicate that the scientific community is important for climate action, which aligns with the science and education indicator where climate change is identified by all three as a driver of science. That said, there are also many instances where there is no commonality between the three programs.

Programs vis-à-vis Arctic States' Strategies

This section examines the Arctic Council chairmanship programs in relation to the *current* Arctic state strategies. Before delving into this discussion, it is important to have a better understanding of the timeline in which the strategies and chairmanships began. The bottom of Figure 16 shows the dates of the chairmanships, and the top shows when the different strategies were written. (see Figure 16. Arctic Council Chairmanships and Arctic State Strategies Timeline)

Figure 16 shows that it took 10 years after the start of the Arctic Council for the Arctic states to create their own national strategies and policies. Norway was the first to do so with its strategy of 2006, which was also the year it began its first chairmanship. Sweden also released its strategy in the same year, even on the same day, as its first chairmanship, and Denmark's first strategy was released in the year prior to its first chairmanship. For the other states, there was a flurry of activity, even a sort of national competition by the Arctic states (see Heininen 2011), between 2009 and 2013. In 2009 Canada, Iceland, Norway, the Russian Federation, and the USA released their own strategies. In 2010 Canada and Finland each released a strategy. The year 2011 saw the release of four more strategies, including that of Sweden, which was the last to create such a document. Three strategies were then released in 2013, while Norway went on to release updated strategies in 2014 and 2017. This shows that the release of national strategies for the Arctic is not necessarily aligned with chairmanships.

Figure 16. Arctic Council Chairmanships and Arctic State Strategies Timeline
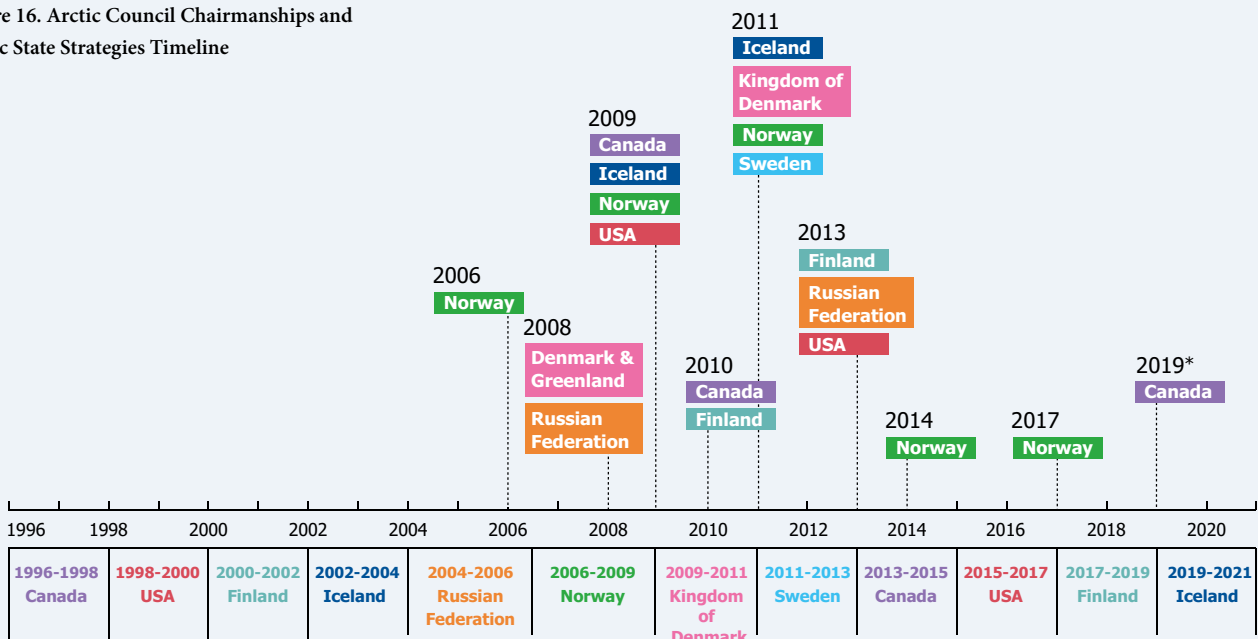
* Canada's Arctic and Northern Policy Framework was published in September 2019.

As previously mentioned, there tends to be some fragmentation of priorities within both the strategies and the chairmanship programs. For the current strategies, the priorities that appeared in five or more documents are environmental protection (6), international cooperation (6), economic development (5), and security/stability (5). There is less consistency in the chairmanship programs, as only issues concerning the main functions of the Arctic Council: the environment (5), climate (4) and sustainable development (4), as well as improving the Arctic Council's functioning (4) appeared in four or more documents. The only overlap between the two document sets is the environment, and within the environment, only Finland, Russia, and Sweden appeared on both lists.

Comparison by Country

Canada began its second Chairmanship in 2013, four years after the release of its 2009 Strategy. As the Program is a short brochure, it does not have as much detail as Canada's Strategy and policy documents, but some comparisons can be made. These two documents will be compared.

For instance, with the Human Dimension, both the Program and the 2009 Strategy address issues around health and wellbeing, the Program also addresses the issue of mental wellness, suggesting a deeper understanding of health concerns faced by northern communities.

In both indicators—Governance and related International Cooperation—Canada highlights the importance of cooperation in the region as well as recognizing the Arctic Council as the most relevant and key institution for "deepening global understanding of the Arctic" (Canada INAC 2009, 35). Canada also emphasizes the need to strengthen the Arctic Council, improve the "coordination and maximize efficiencies," and "enhance the capacity of the Permanent Participant organizations" (Canada CC 2013, 2).

Regarding the Environmental Protection indicator, the two documents express the need to protect the marine environment, especially in the context of pollution, as well as the need to balance environmental protection with economic activity.

For the Pollution indicator, there are differences between the Program and the 2009 Strategy. Notably, the Program recognizes pollutants that affect climate change, such as black carbon and other short-lived climate pollutants, while the 2009 Strategy mentions waste from economic activity and ballast water pathogens. As for problem-solving, the Program mentions the Arctic Council's oil pollution agreement, while the Strategy seeks to reduce pathogens from ballast water and suggests changes to economic activity may help.

With regard to the Climate Change indicator, the only commonality between the Program and the Strategy is that mitigation and adaptation are mentioned in both documents. The Program does not mention frameworks or the role of science in climate action, while the Strategy does.

While in the 2009 Strategy, security is described extensively in the Security indicator, in the chairmanship program it is not reflected at all.

For the Safety indicator, the two documents express a desire for maritime safety. As for ways to address safety issues, the Program mentions the IMO and Polar Code, whereas the Strategy mentions domestic regulations, like NORDREG.

For the Economy indicator, resource development is mentioned in both documents. Yet, while natural resources are an important aspect of the economic discussion in the 2009 Strategy, the Program identifies "responsible Arctic resource development" (Canada CC 2013, 2) as a priority, although it does not actually speak to what resources will be developed and how. Instead, it focuses on how the Arctic Council can help and mentions the need for sustainability.

The Tourism indicator is reflected in the 2009 Strategy mainly in connection to the "increased number of ships undertaking destination travel for tourism" (Canada INAC 2009, 5). The second chairmanship program follows up on that with reference to the establishment of "guidelines for sustainable tourism and cruiseship operations" (Canada CC 2013, 3).

The only similarity to the Infrastructure indicator is that both documents address shipping, particularly in relation to safety.

The only similarity between the documents with regard to Science and Education is that the importance of traditional knowledge is recognized in both.

The first **Finnish** Chairmanship began in 2000 (until 2002), eight years before the release of its first Arctic Strategy. The second Strategy was released in 2013 and was in effect during Finland's second Chairmanship from 2017–2019. The current 2013 Strategy and 2017–2019 Program will now be compared.

In the Human Dimension, both the current Strategy and latest Program mention improving mental wellness. However, the Program takes the discussion further and address suicide prevention (Finland FC 2017, 15). A difference between the two documents is that the Program explicitly addresses improving "gender equality in the Arctic Council" (Finland FC 2017, 15), while the Strategy less so.

The Governance and International Cooperation indicators underline the relevance of multilateral cooperation to solve common challenges. Interestingly, while the Strategy quite extensively supports the "EU's policy towards the Arctic" and "the reinforcement of its role in the region" (Finland PMO 2013, 47), the chairmanship program does not talk about the EU at all.

For the Environmental Protection indicator, both documents state that an ecosystem-based management structure is important to regional environmental protection. However, the 2013 Strategy speaks more about finding a balance between the environment and the economy, whereas the Program focuses

more on biodiversity. This suggests either that Finland's environmental focus changed over time, or that there were lessons learned from the feedback of the 2010 Arctic Strategy.

In terms of the Pollution indicator, only four pollutants are mentioned in both documents, including short-lived climate forcers, black carbon, methane, and oil, while the 2013 Strategy additionally mentions greenhouse gases, carbon dioxide, radioactive material, economic waste, and local waste. As for pollution problem-solving, the Program identifies six approaches and the Strategy four. Yet, the only overlap is with respect to acknowledging the Arctic Council's oil spill agreement and changes to economic activity.

For the Climate Change indicator, both documents recognize the importance of science and research for climate action and that both mitigation and adaptation strategies are needed. In terms of understanding the contexts in which this kind of work can be done, there are, however, differences between the two documents. Notably, the Strategy makes a general reference to "global climate negotiations" (Finland PMO 2013, 13) while the Program mentions the UNFCCC, IPCC, and the Paris Agreement. A key difference is that the Strategy names climate change as a security issue whereas the Program does not.

In the case of the Security indicator, both documents illustrate the importance of maintaining "the Arctic as a region of peace, stability and constructive cooperation" (Finland FC 2017, 5). Security and stability in the Arctic region are considered as vital for any activities and efforts to develop the economy. While the Strategy refers to the rather traditional way of understanding of security in connection to "foreign and security policies" (Finland PMO 2013, 14) (including crime prevention), the Program reflects health and food security, as well as maritime security.

The Safety indicator shows some similarities in safety issues, such as SAR and transport/shipping safety. As for environmental safety, the Strategy suggests that pollution is the priority, whereas the Program suggests that climate and weather are environmental concerns. To address safety issues, both documents recognize the importance of satellite monitoring and communications, as well as the role of the IMO and Polar Code and the Arctic Council's SAR agreement as structural frameworks for maritime safety.

For the Economy indicator, the Program mentions only two economic activities: fishing and reindeer husbandry, both of which were identified among the twelve activities mentioned in the Strategy. The Strategy provides much more information about how the economy will be prioritized. One key issue is addressed in both documents: that business development requires communications and information networks. As this is mentioned in documents that were written four years apart, this suggests that more work is needed in this area.

The Tourism indicator is briefly addressed in the Program in relation to the increase in cooperation between the Arctic Council and the Arctic Economic Council to support "business-to-business activities and responsible economic development" (Finland FC 2017, 5). This approach is also supported in the 2013 Strategy by focusing on increasing the level of sustainable tourism.

For the Infrastructure indicator, both documents refer to transportation infrastructure, including icebreakers and shipping, as well as telecommunications and ICT, housing, and energy infrastructure. There are some similarities and differences in how these issues are discussed. A similarity, for example, is that access to energy and energy efficiency are mentioned in both documents. A difference is that, while the Strategy mentions that icebreakers serve a variety of functions (economic, research, etc.), the Program only mentions them in relation to research.

For the Science and Education indicator, climate change is identified as the driver behind scientific activities in both documents. Both documents indicate that research would be for decision-making purposes, while the Strategy also notes that research can be used for economic, social, governance purposes, and regional influence. Traditional knowledge is also acknowledged in both documents, although the use of this knowledge is more explicit in the Program. In terms of education, only the UArctic is mentioned in both documents, but only in relation to the UArctic International Secretariat in the Strategy. In contrast, the Program links the UArctic to teacher training.

Iceland's two strategy documents (2009, 2011) were released between Iceland's two chairmanships (2000–2002 and 2019–2021). As such, the most current Strategy (2011) (Iceland Althingi. 2011) and Program (2019) will be compared.

There are some similarities between the current Strategy and current Program in the Human Dimension indicator. For example, they both express the importance of wellbeing and of gender equality. However, gender is only mentioned in passing in the Strategy, while the Program contextualizes gender equality in sustainable development. Both documents also mention Indigenous Peoples, although the Strategy speaks about Indigenous rights, whereas the Program only discusses Indigenous Peoples in relation to the Permanent Participants.

In the International Cooperation and Governance indicators, the Icelandic Strategy expresses the need for inclusion of all eight Arctic states in discussions or important decisions. Iceland clearly states the disagreement with an approach in which "other members of the Arctic Council, i.e. Iceland, Finland, Sweden and representatives of Arctic Indigenous peoples, were excluded from the meetings" (Iceland Althingi 2011, 6) of the five littoral Arctic states (e.g., Ilulissat Declaration 2008). In the Program, Iceland stresses the importance of "cooperation between the states and peoples," as well as to "strengthen cooperation between the Arctic Council and the Arctic Economic Council" (Iceland MFA 2019, 2, 10). In the Program there is no mention of the exclusion from discussions or decisions by the five Arctic states.

For the Environmental Protection indicator, both documents indicate that environmental protection and economic activities must be developed through sustainable practices, while

the Program focuses more on the marine environment than the Strategy does.

The Pollution indicator suggests more concern and awareness of regional pollution between the 2011 Strategy and the 2019 Program. More specifically, the Strategy mentions only greenhouse gases, whereas the Program identifies short-lived climate pollutants, black carbon, methane, marine litter, and plastics as pollution problems. The two documents also take different approaches to problem-solving. For instance, the Program focuses on the work of the Arctic Council through the Expert Group on Black Carbon and Methane, and the Regional Action Plan for marine litter, while the Strategy looks at other international forums, such as the UNCLOS, the UNFCCC, and the IMO, as well as through international cooperation, monitoring, and changes to economic activities.

For the Climate Change indicator, both documents acknowledge that scientific research is important, although the Program is more explicit about the role that science plays in climate action. Mitigation and adaptation are mentioned in the Program but not in the Strategy. As for frameworks, the Strategy mentions the UNFCCC, while the Program does not mention specific frameworks, but recognizes that frameworks are implemented at the state level.

Despite Iceland having no army, the Security indicator is discussed quite broadly in the Strategy, especially in connection to strengthening security and prevention of militarization. The Strategy also refers to NATO and its increasing role in the region. The Program specifically mentions only the promotion of safety in regard to shipping and marine traffic.

There is some consistency in the Safety indicator with regard to understanding regional safety issues. For instance, both documents acknowledge maritime safety, SAR, and emergencies/civil preparedness as concerns, while the Strategy also mentions environmental safety and surveillance. Both documents discuss how international cooperation can improve safety, although in different ways. For example, the Strategy recognizes more 'traditional' forms of state-to-state cooperation with activities like surveillance and SAR, whereas the Program recognizes that safety cooperation also takes place through SAR cooperation, as well as through weather and ocean research. The Strategy also mentions other governance organizations, such as the Arctic Council (SAR agreement), IMO, and NATO.

The Economy indicator shows some overlap and divergence in the economic activities mentioned in the Strategy and the Program. In terms of overlap, both documents mention tourism. The Program mentions green energy, while the Strategy mentions renewable energy; the Program mentions living marine resources while the Strategy mentions fisheries (and that fish are living marine resources). The divergence is interesting, as the Strategy mentions oil and gas, and mining, while the Program mentions bioeconomy and shipping. While the differences are not major, it does indicate a possible shift toward more green or sustainable economic activities.

The Tourism indicator is briefly mentioned in both documents but in different contexts. While the Program talks about tourism as one of the "new economic opportunities" (Iceland MFA 2019, 9), the Strategy illustrates the connection of utilizing the Arctic resources for different industries, including tourism.

In terms of the Infrastructure indicator, the only similarity between the Strategy and the Program are discussions around safe shipping, although the Program also calls for shipping to be sustainable. Moreover, the Program mentions telecoms and ICT, and energy infrastructure, while the Strategy mentions infrastructure for air transportation.

For the Science and Education indicator, both documents explain that climate change is a driver for research, while the Strategy also mentions the environment and social issues. The two documents diverge on the purposes of research, with the Program recognizing that it can help inform policy and the Strategy arguing that research can help international cooperation. Interestingly, traditional knowledge is not addressed in either document. Education is mentioned only in the context of the UArctic.

The Kingdom of Denmark released its first Strategy one year prior (2008) to the commencement of its Chairmanship (2009-2011), and its second one in 2011, the year its Chairmanship concluded. The Chairmanship Program will thus be compared to the most recent policy (2011).

In terms of the Human Dimension indicator, both documents address Indigenous peoples, although with some differences. For example, the Program addresses the role of the Permanent Participants in the Arctic Council and improving the wellbeing of Indigenous peoples, as well as ensuring traditional lifestyles are preserved, while the Strategy mentions hunting. The Strategy differs in the sense that it provides considerable discussion on Indigenous rights in Greenland, through UNDRIP and other UN mechanisms.

Concerning the Governance and International Cooperation indicators, the Program focuses on the importance of a strong Arctic Council to "safeguard the inherent cultural, economic and political rights of the Arctic states and of the Peoples of the Arctic" (Denmark DCAC 2009, 8). The Program also supports "international outreach, research and co-operation" (Denmark DCAC 2009, 1) with neighboring countries in different policy fields. The Strategy on the other hand, elaborates more on international law in order "to ensure a peaceful, secure and collaborative Arctic" (Denmark MFA 2011, 7). It also reflects on the self-government and the division of legislative and administrative powers between Denmark, the Faroe Islands, and Greenland.

There are similarities in the topics addressed in the Environmental Protection indicator, as both documents discuss biodiversity and animal protection, as well as the need to balance environmental protection with economic activities. However, the Strategy also discusses protected areas, which the Program

does not. The Strategy discusses, too, the use of ecosystem-based management, while the Program does not. These two differences suggest that the Kingdom of Denmark's understanding of environmental protection may have evolved during its Chairmanship.

There are a number of similarities in the Pollution indicator with regard to the regional pollutants identified. Indeed, both documents mention greenhouse gases, heavy metals, mercury, oil, and economic waste. Additionally, the Strategy mentions man-made pollution, POPS, and chemicals. Correspondingly, the Program mentions only greenhouse gas reduction, whereas the strategy mentions this, five other international treaties or governance regulations, and other practices like changes to economic activities. In both cases, the Strategy shows growth in Denmark's understanding of the sources of pollution and mechanisms to address it.

For the Climate Change indicator, both documents address mitigation and adaptation, although with different emphases. For instance, half the quotes in the Program address mitigation, while the other half address adaptation. In contrast, the majority of quotes on this issue address adaptation in the Strategy. Nevertheless, both documents recognize that research is important for climate action. The two documents also acknowledge the UNFCCC, while the Strategy alludes to the creation of the Paris Agreement. One key difference is that the Strategy recognizes the impact climate change could have on illegal fishing.

The Program does not address the Security indicator at all. The Kingdom's approach to security policy is broadly described in the Strategy, emphasizing the prevention of conflicts, sovereignty, confidence-building, and international relationships. The Strategy also talks about the establishment of the Arctic Response Force and NATO as a reference to the protection of its territory under the Article 5 of collective defence.

There are also some similarities and differences in the Safety indicator. For instance, both documents recognize that SAR and maritime safety are important, while the Strategy also mentions environmental, disaster, health, and occupational safety. There are some similarities in how safety is addressed. For instance, both documents identify the IMO as a safety actor: the Program calls for cooperation on SAR while the Strategy mentions the adoption of the Arctic Council's SAR agreement. International cooperation is also addressed in both documents, especially in terms of creating maritime safety guidelines, while the Program also mentions information sharing. As for differences, the Strategy also recognizes UNCLOS as a safety actor and the importance of surveillance.

For the Economic indicator, both documents mention tourism, oil and gas, and renewables. The Strategy also mentions mining, fisheries, and exports. The Strategy provides suggestions on how to further prioritize economic development, while the Program does not.

Tourism is mentioned in the Program in relation to the development of guidelines for the responsible management of resources in the light of increased activities in the region. The Strategy talks about tourism as being the second "most important export industry" after fisheries in Greenland (Denmark MFA 2011, 23). At the same time, the Strategy addresses both "land-based tourism and the cruise-liner business" (Denmark MFA 2011, 23).

There are two similarities in the Infrastructure indicator: First is that both documents discuss shipping, although the Program does so in the context of the Arctic Marine Shipping Assessment, while the Strategy looks the possibility of new routes opening and safety issues. The second similarity is in regard to energy, with the Program commenting that heating through the use of fossil fuels is expensive and the Strategy building on this idea and discussing options for the generation, supply, and delivery of renewables.

For the Science and Education indicator, both documents identify climate change and pollution as research drivers, while the Strategy additionally mentions the environment. Regarding the purposes of research, there is only one common purpose mentioned in both documents, namely, that research can help with social issues, particularly in the area of health. Additionally, both documents make statements about using traditional knowledge alongside scientific knowledge. Education is discussed only in the Strategy with reference to the UArctic and increasing educational opportunities for economic reasons.

Norway's first Strategy was released the same year as it held its first Arctic Council Chairmanship (2006–2009). Since then, Norway has released four strategies in 2009, 2011, 2014, and 2017. The chairmanship program will thus be compared to the most recent (2017) Strategy.

For the Human Dimension indicator, both documents address culture and languages, in two somewhat similar ways. First, both documents speak about Indigenous culture. For instance, the Program recognizes that "environmental change in the Arctic will affect … Indigenous cultures" (Norway 2006, 1), and the Strategy remarks that Indigenous language and culture need to be protected. Second, both documents discuss culture as experiential. The Program, for example, talks about cultural monuments and world heritage sites, while the Strategy positions "cultural heritage" in the context of tourism (Norway MFA 2017, 24).

Both documents address the Governance and International Cooperation indicators in connection with close international cooperation at different levels and particularly within the environmental field. The Arctic Council is considered the most relevant body for cooperation in the region. The Strategy further describes other platforms where Norway cooperates—"the Barents cooperation, the Baltic Sea cooperation, and the Northern Dimension" (Norway MFA 2017, 17). The Program also mentions the World Heritage Convention.

For the Environmental Protection indicator, both documents remark that environmental protection and economic development must be balanced. It is thus not surprising that the Program and Strategy also mention the use of ecosystem-based management[10] to ensure this takes place. Additionally, the two documents state that biodiversity needs to be protected.

There are some differences for the Pollution indicator. In particular, the Program mentions only chemicals and radioactive material as regional pollutants. In contrast, the Strategy, written 11 years later, also identifies greenhouse gases, PBTs, oil, military waste, microplastics, marine litter, and local pollution in addition to radioactive materials. This suggests that Norway is keeping pace with pollution, especially as it refers microplastics in its Strategy. As for approaches to pollution problem-solving, the only similarity between the documents is their call for international cooperation. Otherwise, the Program also mentions pollution research and sharing best practices, while the Strategy identifies formal structures like the Paris Agreement, the Arctic Council's oil spill agreement, and enforcement of domestic legislation.

One key difference in the Climate Change indicator is that while both documents discuss mitigation and adaptation, the Strategy does not use these terms explicitly. Both documents also stress that science is the basis for further knowledge about climate change, while the Strategy mentions putting this knowledge into action. As for frameworks, the Program mentions the UNFCCC and the Strategy mentions the Paris Agreement, suggesting that Norway is part of a larger, international effort to address climate change.

The Program reflects briefly on the Security indicator only once, mentioning that the Arctic is a "stable and peaceful region," unlike "many other petroleum provinces of the world which are characterized by conflicts and political unrest" (Norway 2006, 2). The Strategy provides a broader understanding of the security in the region. The Strategy confirms that "foreign policy should lay the foundation for peace and stability in the region" (Norway MFA 2017, 9). At the same time, it describes the "role played by the Norwegian Armed Forces in exercising sovereignty and authority" (Norway MFA 2017, 18). For the first time, a Norwegian strategy comments on the increase of "Russian military activity in the North" (Norway MFA 2017, 18) which should be considered an important factor for Norway's security and defence policy. The Strategy also addresses the measures to strengthen defence capabilities in the North.

The Program has nothing to say about the Safety indicator, whereas the Strategy identifies different safety issues, international safety and SAR agreements, speaks about safety cooperation, and discusses different capabilities.

There is some overlap between economic activities in the Economy indicator. Both the Program and the Strategy mention oil

and gas, mining, fishing, reindeer husbandry, and shipping. This overlap suggests that these are key economic activities. Additionally, the Program mentions fossil fuels, hunting, and technology, while the Strategy mentions renewables, aquaculture, blue economy, tourism, cultural products, and biotechnology. Sustainable development is also mentioned in both documents, although the Strategy provides a more nuanced discussion as to what this entails.

The Tourism indicator is discussed in the Program, in accordance to the Strategy, in relation to the establishment of guidelines and infrastructure for responsible and sustainable development of the Arctic resources and activities.

There is nothing in the Program under the Infrastructure indicator, whereas the Strategy discusses transportation, icebreakers, shipping, telecommunications and ICT, innovation and technology, and energy infrastructure.

For the Science and Education indicator, both documents identify climate change as a driver of science, while the Program also mentions pollution and the Strategy mentions the environment. Both documents mention decision-making support as a purpose of Science. Additionally, the Program notes that science can also be used to help the economy, while the Strategy notes that it can help improve knowledge of the Arctic, and for education. There are no similarities between the documents with respect to education. Indeed, the Program acknowledges only the UArctic, while the Strategy addresses educational attainment levels and comments that education can be used for economic reasons.

The first formal strategy of the **Russian Federation** was released in 2008, two years after the conclusion of its chairmanship (2004–2006). The second Strategy was released in 2013, and this will be compared to the chairmanship Program.

Regarding the Human Dimension indicator, both documents express a desire to protect traditional Indigenous ways of life and Indigenous culture. The Strategy explains that cultural infrastructure and activities (Indigenous and not) will also be developed. Both documents also address wellbeing, but in different ways. The Program, for instance, speaks about health and at times connects this back to the environment. The Strategy also mentions health concerns, but also more broadly speaks about conditions that affect wellbeing, such as access to telecommunications, employment, and access to social services.

For the Governance and International Cooperation indicators, both Russian documents emphasize the need for "enhancing international cooperation in the field of environmental protection" (Russia MFA 2004, 3). The Arctic Council is considered to be a "unique forum for interaction" (Russia MFA 2004, 1) of different stakeholders. In the Program, Russia also calls for a more substantial and balanced contribution of the Arctic Council to

---

10   The Strategy mentions only ecosystem-based management as a strategic objective and does not provide much detail on the topic (Norway MFA 2017, 15).

resolve the challenges connected to "sustainable development of the Arctic" (Russia MFA 2004, 1).

For the Environmental Protection indicator, both documents discuss the need to balance environmental protection with economic development and the protection of biodiversity. One difference is that the Strategy discusses the creation of protected areas while the Program does not.

Regarding the Pollution indicator, the Program notes only that man-made pollution is a problem. The Strategy mentions oil, economic activities, and military waste as pollutants—all of which are man-made. While the Strategy does not name all the pollutants it could (compared to the other strategies), it is more specific than the Program. The documents also differ somewhat in how they address pollution problem-solving. The Program only makes reference to the work of the Arctic Council, including the Russia-specific Russian Program of Action for the Protection of the Arctic Marine Environment from Land-based Activities. In contrast, the Strategy does not reference Arctic Council activities, but also mentions pollution monitoring, changing domestic practices, and changing economic practices. Considering the nine years between the Program and Strategy there has been progress in cleaning up the environment.

The Climate Change indicator is discussed differently in the two documents. For example, the Program refers to the UNFCCC and the Kyoto Protocol, while the Strategy notes that climate change needs to be studied. Neither document mentions mitigation and/or adaptation.

In the Program, the Security indicator is discussed in terms of the need for measures "to protect, preserve and restore the Arctic environment, [and] enhance environmental security, including prevention of ecological emergencies" (Russia MFA 2004, 4). The Strategy describes "the establishment of integrated security system for the protection of territory, population and critical facilities" of the Russian Arctic (Russia TRG 2013, 4). The Strategy also indicates the need for a "comprehensive combat and mobilization readiness level" of the armed forces required for "aggression against the Russian Federation and its allies, to ensure the sovereign rights of Russia's Arctic," to provide "strategic deterrence, and in the event of armed conflict - repel aggression and cessation of hostilities" (Russia TRG 2013, 8).

For the Safety indicator, both documents recognize that environmental safety and SAR are important: the Program and Strategy mention the need to be prepared, for, respectively, general emergencies and for disasters, and to improve transport safety. Both documents state that international cooperation for rescue operations is important, while the Strategy also discusses surveillance capabilities.

The Economy indicator shows different ways in which regional economic activities are understood. The Program mentions the use of natural resources, oil and gas, and renewable energy. The Strategy mentions hydrocarbons, but also identifies hunting, fishing, bioprospecting, biotechnology, and technology.

The Tourism indicator is reflected only in the Strategy and is fully excluded from the Program. The Strategy addresses the intention of the Russian Federation to develop and expand "environmentally friendly tourism activities in the Arctic." The Strategy also emphasizes the need for improvement of "the regulatory framework of tourism" (Russia TRG 2013, 3).

As for the Infrastructure indicator, both documents discuss transportation, shipping, and telecommunications and ICT. The discussion around telecoms and ICT is interesting as the Program seeks cooperation on developing these networks and also using them for health services. The Strategy also recognizes the need to improve this infrastructure, especially as it can help with social and economic conditions, research, and safety. The fact that this is still being discussed nine years later suggests the complexity of this type of infrastructure in the Arctic.

For the Science and Education indicator, both documents identify climate change as a driver of research, and both explain that research is also used to help with international cooperation. However, the Strategy provides more information and indicates that science is also driven by the environment and natural hazards, while research can also help with economic and social issues. Neither document mentions the role of traditional knowledge. As for education, the Strategy explains the need for distance-learning opportunities, while the Program suggests that the UArctic can possibly help with education on a number of issues. Educational attainment levels are addressed only in the Strategy, and within the context of improving people's employment opportunities.

Sweden's Strategy was released in 2011, the year its Arctic Council chairmanship began. As Sweden only has one Strategy, this will be compared to the chairmanship Program.

In the Human Dimension indicator, both documents briefly identify gender as an issue. The Program calls generally for gender equality, while the Strategy more clearly indicates that increased gender issues are needed in international organizations. A difference between the two documents is that the Strategy addresses human rights by mentioning both UNDRIP and the Universal Declaration on Human Rights, and the Program does not.

Concerning the International Cooperation and Governance indicators, both documents emphasize that despite substantial challenges, "cooperation in the Arctic is characterised by a low level of conflict and broad consensus" (Sweden GOS 2011b, 1). The Arctic Council is considered as "the main multilateral arena for Arctic-specific issues" (Sweden GOS 2011a, 19). The Strategy further mentions their desire to strengthen the Arctic Council "both institutionally and politically" (Sweden GOS 2011a, 19) (see also, Kiruna Vision (Arctic Council Secretariat 2013)). It also describes the cooperation with other organizations in the region as well as the need to respect international law in developing the Arctic.

For the Environmental Protection indicator, both documents support the creation of protected areas and the protection of biodiversity. Both also mention the need to balance environmental protection with economic activity and suggest that an ecosystem-based management may be the way to achieve this balance.

For the Pollution indicator, there are similarities in the pollutants identified. For instance, both documents mention short-lived climate forcers, greenhouse gases, methane, mercury, and oil. The Program also mentions black carbon, and the Strategy identifies POPs, PTBs, PCBs, chemicals in general, soot, and waste from economic activity. Yet, despite these similarities, the only comment on pollution problem-solving, mentioned in both documents, is the need to reduce greenhouse gases.

For the Climate Change indicator, both documents address mitigation and adaptation, support the use of science to better understand climate change, and make reference to the IPCC. In addition, the Strategy also mentions the UNFCCC. What really stands out, however, is that the Strategy names climate change as a security factor, and the Program does not. Although security, and military security in particular, is not normally addressed in the Arctic Council, the Strategy frames this threat as an issue of "public crisis management" (Sweden GOS 2011a, 14), an issue that could have been addressed in the Program but is not.

The Security indicator is mentioned in the Program only in relation to food safety and access to good quality water as being a matter of constant concern to the region's inhabitants. The Strategy elaborates a little more on security, underlining that the Arctic remains a region where security policy tensions are low. Moreover, the Strategy emphasizes the "importance of an approach based on security in its broadest sense and that the use of civil instruments is preferable to military means" (Sweden GOS 2011a, 23).

For the Safety indicator, both documents mention environmental and maritime safety, while the Strategy also mentions SAR, surveillance, and transport safety. To address these safety issues, the Program mentions working toward oil spill prevention capabilities and the Arctic Council's Arctic Marine Shipping Assessment, while the Strategy mentions the Arctic Council SAR agreement and the efforts toward creating the IMO's Polar Code.

Regarding the Economy indicator, economic activities referred to in both documents are mining, oil and gas, and shipping. The Strategy identifies a broad range of activities, including but not limited to cold climate expertise, bioprospecting, and forestry.

The Tourism indicator is described only in the Strategy. A further development of the tourism is mentioned, "albeit with consideration for the environment and the traditional lifestyles of Indigenous peoples." Furthermore, "communications between tourist destinations should be improved in a sustainable manner" (Sweden GOS 2011a, 6).

The only similarity between the two documents regarding Infrastructure is that both mention shipping and address safety issues, while the Strategy also comments on the possibility of new routes opening.

For the Science and education indicator, both documents identify the environment and climate change as drivers of science. Despite these similarities, the two documents note that research can be used for different purposes. For instance, the Program notes that it can be used to help with social issues and decision-making, while the Strategy notes that research can help with governance, cooperation, and regional influence. Both documents also comment on preserving traditional knowledge, and the Strategy comments on the need to improve the sharing of traditional and scientific knowledge. Education is not addressed in the program; however, the UArctic is mentioned in the Strategy.

The USA's first chairmanship was from 1998–2000, but the USA did not publish its first strategy until 2009 with the release of the presidential and homeland security directives. This was then followed by the 2013 Strategy, two years before the USA's second chairmanship (2015–2017). Thus, the 2013 Strategy and the 2015–2017 chairmanship Program will be compared. It should be noted that as the Program is short and in brochure form, comparison may be limited.

Regarding the Human Dimension indicator, the two documents discuss Indigenous peoples in different ways. The Program, for example, mentions only that the Permanent Participants will work with the Arctic Council on environmental issues, while the Strategy recognizes the role of Indigenous governments, Indigenous-state relations, and respecting Indigenous cultures. Another difference is that the Program addresses mental wellness, while the Strategy does not address health and wellbeing at all.

The International Cooperation and Governance indicators are mentioned in both documents in connection to the important role of the Arctic Council as the "preeminent international forum for promoting cooperation" (USA CAC 2015, 5). The AC promotes "cooperation, coordination and interaction among the Arctic States, Indigenous communities and other interested parties on common Arctic issues, with particular emphasis on sustainable development and environmental protection" (USA CAC 2015, 5). The Strategy further reflects on the accession of the USA to UNCLOS.

Regarding the Environmental Protection indicator, both documents recognize the need to balance environmental protection with economic activities. The Program also discusses marine protected areas, while the Strategy speaks more generally about preservation.

There are some similarities in the Pollution indicator, with both documents identifying black carbon and methane as pollutants found in the region. The Program also more generally mentions short-lived climate pollution, while the Strategy mentions mercury and oil. Regarding pollution problem-solving strategies, the two documents provide different options. The Program calls

for the reduction of short-lived climate forcers, while the Strategy mentions the Arctic Council's oil pollution agreement, the need for pollution research, international cooperation, and development of national pollution strategies.

The only similarity in the Climate Change indicator is that both documents mention adaptation. Interestingly, the Strategy links climate change to increased energy security.

The Program briefly addresses the Security indicator in relation to the increased human and maritime activity in the Arctic. The Strategy illustrates that the US "security in the Arctic encompasses a broad spectrum of activities, ranging from those supporting safe commercial and scientific operations to national defense" (USA TWH 2013, 2). For the first time, the Strategy also mentions energy security as a core component of the national security. Furthermore, the USA supports "the enhancement of national defense, law enforcement, navigation safety, marine environment response, and search-and-rescue capabilities" (USA TWH 2013, 6).

Following from this, for the Safety indicator, both documents comment on environmental safety and SAR as safety issues. Regarding safety agreements and capabilities, each document mentions the Arctic Council's SAR agreement.

For the Economy indicator, the Program does not mention any economic activities (or anything about the economy for that matter), whereas the Strategy mentions energy, oil and gas, renewables, shipping, and export trade.

None of the documents reflect on the Tourism indicator.

For the Infrastructure indicator, the only similarity is that both documents address innovation and technology. For the Program, this includes finding solutions for "energy and water security" (USA CAC 2015, 2), whereas the Strategy suggests that, in general, technology can support regional infrastructure.

The two documents identify different research drivers in the Science and Education indicator: the Program mentions pollution, while the Strategy mentions the environment. As for other research purposes, the Strategy states that research can inform decision-making, while the Program does not mention any other purposes. Another difference between the documents is the stated importance of traditional knowledge in the Program while the Program does not mention it at all. Education is not mentioned in either document.

Finally, concluding this section by a short summary: The Arctic Council chairmanship programs tend to focus on issues pertaining to the environment. In the past few years, there has also been a focus on pollutants that contribute to climate change. As for the social aspect, there is an overall focus on health and wellbeing, as well as culture and/or language protection. Gender equality shows up on the agenda every few years or so. Maritime safety has also emerged as a safety concern over the past few programs.

Declarations

This section analyzes the Ottawa Declaration, which provides the foundation for the work of the Arctic Council, as well as the ten ministerial declarations that followed, from Iqaluit in 1998 to Fairbanks in 2017 (see, List of declarations in appendix). The Kiruna ministerial meeting also adopted a special *Vision for the Arctic* paper produced by the Arctic Council Secretariat (Kiruna Vision 2013). The 2019 Rovaniemi Ministerial meeting failed to produce a signed declaration because consensus could not be reached on the issue of climate change. Instead, the *Rovaniemi Joint Ministerial Statement 2019* was signed by representatives of the eight Arctic states, while the Finnish Minister for Foreign Affairs, Timo Soini, also made a *Statement by the Chair* (Rovaniemi Statement by the Chair 2019). The *Statement by the Chair* resembles what would have been the declaration had all parties agreed to it, and provides guidance; that is why it is considered in this analysis.

Unlike the Arctic state strategies, it is harder to determine the priorities of the Arctic Council ministerial declarations, as they do not generally include priority statements. Priorities can, however, be determined based on the different section headings of the document. Table 50 provides this overview and it groups similar issues together. Note that the first Iqaluit and Barrow declarations do not have headings, making it difficult to determine their priorities. The 1996 Ottawa Declaration on the establishment of the Arctic Council also has no headings; it was decided to follow Arctic Council procedure and to define "common Arctic issues, in particular issues of sustainable development and environmental protection in the Arctic" (Ottawa Declaration 1996, 1) as the two main functions or pillars of the Council. In this study, these were deemed to be the priorities of the document.

In Table 50 below, Ministerial Declaration Priorities, there are no striking or relevant similarities per se and a great deal of fragmentation. However, when similar issues are looked at together, four relevant similarities emerge. First, eight declarations address human and social issues when combining the human/social development, health, communities, and capacity-building priorities. Similarly, eight declarations also prioritize the environment, when environmental protection, marine environment, biodiversity, flora and fauna, pollution, and contaminants are taken together. Seven declarations prioritize climate change. Seven declarations also address the functioning of the Arctic Council, and every declaration since Kiruna in 2013 has taken on this task. As the permanent Arctic Council Secretariat was established in 2013, this suggests that it may have identified areas of improvement.

Taken together, the main priorities would thus seem to be: the human dimension, environmental concerns, and ensuring a functioning Arctic Council.

	Ottawa 1996	Iqaluit 1998	Barrow 2000	Inari 2002	Reykjavík 2004	Salekhard 2006	Tromsø 2009	Nuuk 2011	Kiruna 2013	Iqaluit 2015	Fairbanks 2017	Rovaniemi 2019
AC Procedure	×			×			×		×	×	×	×
International cooperation				×	×*							
Human / social development				×	×			×	×*		×*	×
Health							×					
Communities										×		
Capacity building				×								
Economy									×*		×*	
Energy							×					
Sustainable development	×				×*	×						
Env. protection	×							×*	×	×		×*
Marine Env.					×	×	×	×				×
Climate change					×	×	×	×	×*	×		×*
Biodiversity					×	×		×				
Flora & Fauna					×							
Pollution				×	×							
Contaminants						×	×					
Monitoring & Assessment					×							
Science & Monitoring								×				
Int'l Polar Year						×	×					
Ocean Safety, security, stewardship											×	×
Emergencies					×	×						

Table 50. Ministerial Declaration Priorities
*two or more issues were linked in one declaration

The table also shows fragmentation. For example, energy is identified only once, and surprisingly emergency preparedness only twice, like international cooperation. That said, the discussion in each section reflects a broader range of issues, which is why an indicator-by-indicator comparison is necessary.

Comparison by Indicator

The **(Re)mapping and (Re)defining the Arctic** indicator identifies how the Arctic is defined in the context of the Arctic Council. Specifically, the Ottawa Declaration's opening statement defines the Arctic in a geopolitical context, stating: "THE REPRESENTATIVES of the Governments of Canada, Denmark, Finland, Iceland, Norway, the Russian Federation, Sweden and the United States of America (hereinafter referred to as the Arctic States) meeting in Ottawa" (Ottawa Declaration 1996, 1). This definition is not disputed or expanded upon in subsequent declarations.

There is consistency in the terms used to describe the region (see Table 51). All declarations primarily use the term "Arctic" while also using, to a lesser extent, "circumpolar" with the exception of the Rovaniemi Chair Statement which only uses the term as part of a proper name.[11] Additionally, the Tromsø Declaration (2009, 3–4) uses the term "polar" in the context of the IPY.

Describing the Arctic was not really done until Salekhard in 2006 and it stopped with Fairbanks in 2017. There is also no consistency in the terms that are used, although "vulnerable" and "unique" are used most often, and in the context of the environment.

	Ottawa 1996	Iqaluit 1998	Barrow 2000	Inari 2002	Reykjavík 2004	Salekhard 2006	Tromsø 2009	Nuuk 2011	Kiruna 2013	Iqaluit 2015	Fairbanks 2017	Rovaniemi 2019
Unique						×	×			×		
Remote							×					
Vulnerable						×			×	×	×	
Harsh											×	

Table 51. Describing the Arctic in the Arctic Council Ministerial Declarations

Each declaration is signed by a representative of the eight Arctic states. Table 52 (Arctic State Representation at the Arctic Council Ministerial Meetings, p. 147) shows which ministry, department, or agency had a representative (either the minister or a senior official) attending the ministerial meeting and signing the declaration. In the case of the Ottawa Declaration, state representatives signed on behalf of their government and not as a representative of a particular ministry.

For each subsequent declaration, signatories were identified based on their ministry, department, or agency. Either the Premier or the Deputy Premier for Greenland signed for the Barrow, Reykjavík, and Nuuk declarations, while the Prime Minister of the Faroe Islands was also signatory in Nuuk (Nuuk Declaration 2011, 10; Reykjavik 2004, 8; Barrow 2000, 8). Table 52 also shows consistency from certain states in terms of who signed the declarations. For example, Sergey Lavrov represent-

---

11   For example, the Circumpolar Resilience, Engagement and Action Through Story report and the Circumpolar Biodiversity Monitoring Program's State of the Arctic Freshwater Biodiversity report are mentioned (Rovanimei Statement by the Chair 2019, 4, 8).

	Canada	Finland	Iceland	Denmark	Norway	Rusia	Sweden	USA
Ottawa 1996								
Iqaluit 1998	*Lloyd Axworthy,* Minister of Foreign Affairs	*Pekka Haavisto,* Minister of Environment	*Gudmundur Bjamasson,* Minister of the Environment	*Niels Helveg Petersen,* Minister for Foreign Affairs	*Knut Vollebaek,* Minister for Foreign Affairs	*Vladimir Goman,* Chairman of the State Committee for the Development of the North	*Anders Bjurner,* Deputy State Secretary	*Wendy Sherman,* Ambassador
Barrow 2000	*Mary Simon,* Ambassador	*Johannes Koskinen,* Minister of Justice	*Siv Fridleifsdottir,* Minister for the Environment	*Jonathan Motzfeldt,* Premier, Greenland Home Rule	*Johan L. Løvald,* Assistant Secretary General	*Yuri Tsaturov,* First Deputy Head Federal Service for Hydrometerology and Environmental Monitoring	*Eva Kettis,* Ambassador	*Frank E. Loy,* Under Secretary of State for Global Affairs
Inari 2002	*William Graham,* Minister of Foreign Affairs	*Erkki Tuomioja,* Minister for Foreign Affairs	*Halldór Ásgríms-son,* Minister for Foreign Affairs	*Ole Samsing,* Senior Arctic Official	*Kim Traavik,* State Secretary	*Roald F. Piskoppel,* Deputy Minister of Economic Development and Trade	*Anna Lindh,* Minister for Foreign Affairs	*Paula Dobriansky,* Under Secretary of State for Global Affairs
Reykjavík 2004	*Stéphane Dion,* Minister of the Environment	*Erkki Tuomioja,* Minister for Foreign Affairs	*Davíð Oddsson,* Minister for Foreign Affairs	*Josef Motzfeldt,* Greenland's Deputy Premier	*Jan Petersen,* Minister of Foreign Affairs	*Sergei Lavrov,* Minister of Foreign Affairs	*Laila Freivalds,* Minister for Foreign Affairs	*Paula Dobriansky,* Under Secretary of State for Global Affairs
Salekhard 2006	*Robert Mills.* Member of Parliament	*Erkki Tuomioja,* Minister for Foreign Affairs	*Valgerður Sverrisdóttir,* Minister for Foreign Affairs	*Connie Hedegaard,* Minister for the Environment	*Jonas Gahr Støre,* Minister of For-eign Affairs	*Sergei Lavrov,* Minister of Foreign Affairs	*Carl Bildt,* Minister for Foreign Affairs	*Paula Dobriansky,* Under Secretary of State for Global Affairs
Tromsø 2009	*Lawrence Cannon,* Minister of Foreign Affairs	*Alexander Stubb,* Minister for Foreign Affairs	*Ásta Ragnheiður Jóhannsdóttir,* Minister of Social Affairs	*Per Stig Møller,* Minister of Foreign Affairs	*Jonas Gahr Støre,* Minister of Foreign Affairs	*Sergey Lavrov,* Minister of Foreign Affairs	*Carl Bildt,* Minister for Foreign Affairs	*James Steinberg,* Deputy Secretary of State
Nuuk 2011	*Leona Aglukkaq,* Minister of Health	*Jakko Laajava,* Under-Secretary of State	*Össur Skarphéðinsson,* Minister for Foreign Affairs	*Lene Espersen,* Minister of Foreign Affairs; *Kaj Leo Johannesen,* Prime Minister Faroe Islands; *Kuupik Kleist,* Premier Greenland	*Jonas Gahr Støre,* Minister of Foreign Affairs	*Sergey Lavrov,* Minister of Foreign Affairs	*Carl Bildt,* Minister for Foreign Affairs	*Hillary Clinton,* Secretary of State
Kiruna 2013	*Leona Aglukkaq,* Minister for the Arctic Council	*Erkki Tuomioja,* Minister for Foreign Affairs	*Hermann Örn Ingólfsson,* Director General	*Villy Søvndal,* Minister of Foreign Affairs	*Espen Barth Eide,* Minister of Foreign Affairs	*Sergey Lavrov,* Minister of Foreign Affairs	*Carl Bildt,* Minister for Foreign Affairs	*John F. Kerry,* Secretary of State
Iqaluit 2015	*Rob Nicolson,* Minister of Foreign Affairs	*Erkki Tuomioja,* Minister for Foreign Affairs	*Gunnar Bragi Sveinsson,* Minister for Foreign Affairs	*Martin Lidegaard,* Minister of Foreign Affairs	*Børge Brende,* Minister of Foreign Affairs	*Sergei Donskol,* Minister of Natural Resources and Environment	*Kristina Persson,* Minister for Nordic Cooperation	*John Kerry,* Secretary of State
Fairbanks 2017	*Christina Alexandra Freeland,* Minister for Foreign Affairs	*Timo Saini,* Minister for Foreign Affairs	*Guðlaugur Þór Þórðarson,* Minister for Foreign Affairs	*Anders Samuelsen,* Minister of Foreign Affairs	*Børge Brende,* Minister of Foreign Affairs	*Sergey Lavrov,* Minister of Foreign Affairs	*Margot Wallstrbm,* Minister for Foreign Affairs	*Rex Tillerson,* Secretary of State
Rovaniemi 2019	*Chrustia Freeland,* Minister of Foreign Affairs	*Timo Saini,* Minister for Foreign Affairs	*Guðlaugur Þór Þórðarson,* Minister for Foreign Affairs	*Anders Samuelsen,* Minister for Foreign Affairs	*Ine Eriksen Søreide,* Minister of Foreign Affairs	*Sergey Lavrov* Minister of For-eign Affairs	*Margot Wallstrbm,* Minister for Foreign Affairs	*Michael R. Pompeo,* Secretary of State

Table 52. Arctic State Representation at the Arctic Council Ministerial Meetings

ed Russia at seven of the ministerial meetings, Erkki Tuomioja represented Finland at five, and Carl Bildt represented Sweden at four while others have attended only a couple of meetings. Of course, who attends depends on the governments of the day of the Arctic states; it is thus important to see what position was held by the signatories and from which ministry they came. In the early years, signatories represented a broad range of ministries, but this began to change around 2002 when, for the most part, the signatories were from the Ministry of/for Foreign Affairs (or the State Department in the USA). However, it was not until 2017 in Fairbanks that, for the first time, all signatories were Minister of/for Foreign Affairs/Secretary of State, and this was replicated in the most recent meeting in Rovaniemi. This shift, starting in the early 2000s, is suggestive of the growing importance of the Arctic and the Arctic Council.

Regarding the content of the declarations, Figure 17 (Comparison of Arctic Council Ministerial Declarations, p. 149) shows that International Cooperation, Governance, Human Dimension and Environmental Protection to be the most-quoted indicators across time. In contrast, Tourism and Security are the least-quoted indicators across time, and in some cases, are not mentioned at all.

The Figure also shows that, over time, more topics are addressed and in greater detail. This is suggestive of both the expanding mandate of the Arctic Council and the growing importance of new concerns, such as Climate Change (after the launch of the ACIA Report in 2004) and Infrastructure.

The **Human Dimension** indicator reveals some similarities and differences in priorities regarding the Human dimension in the Arctic. Table 53 shows that Indigenous peoples, and especially the Permanent Participants, are addressed in every declaration. Indeed, all declarations make statements that recognize and value the contributions of Indigenous peoples to the Arctic Council. For example, the first Iqaluit Declaration comments that "the category of Permanent Participation is created to provide for active participation and full consultation with the Arctic Indigenous representatives within the Arctic Council" (Iqaluit 1998, 1). There are also repeated requests for financial support for the Permanent Participants. For example, the Nuuk Declaration reiterates "the need to finance circumpolar cooperation, as well as the importance of providing adequate funding to Permanent Participants to support their preparations for, and participation in, the Arctic Council, the working groups, task forces and Arctic Council projects" (Nuuk 2011, 9). Seven declarations also address Indigenous culture and languages. For instance, in the second Iqaluit Declaration (2015, 6) the Ministers of the eight Arctic states: "Recognize the importance of Arctic Indigenous languages in empowering Arctic communities, and look forward to continuous efforts to assess and promote Arctic Indigenous languages through the Arctic Council", while the Rovaniemi Chair Statement notes that the Council "welcomed the conclusions of the Teacher Education for Diversity and Equality in the Arctic project, including the call to promote Indigenous languages in education, as well as national and regional mea-

sures taken in relation to the International Year of Indigenous Languages declared by the United Nations General Assembly in 2019" (2019, 9).

	Ottawa 1996	Iqaluit 1998	Barrow 2000	Inari 2002	Reykjavik 2004	Salekhard 2006	Tromsø 2009	Nuuk 2011	Kiruna 2013	Iqaluit 2015	Fairbanks 2017	Rovaniemi 2019
Permanent Participants	×	×	×	×	×	×	×	×	×	×	×	×
Culture and language recognition and / or protection	×	×				×	×			×	×	×
Gender equality				×*						×		×
Food security			×					×		×	×	×
Poverty						×						
Sustainable Development for health and wellness	×	×	×	×	×		×			×	×	
Human health	×	×	×	×*	×	×	×	×	×	×	×	×
Mental health								×	×	×	×	×
Recognize work of SDWG		×	×		×	×						

Table 53. The Human Dimension in the Ministerial Declarations
*strong connection.

Another striking similarity is that all declarations address issues of human health. Health discussions address telemedicine (Reykjavik 2004, 3; Inari 2002, 2; Iqaluit 1998, 2) in the earlier years, and mental health in more recent years (Rovaniemi 2019, 8; Fairbanks 2017, 3; Iqaluit 2015, 13; Kiruna 2013, 2; Nuuk 2011, 5), including for Indigenous peoples. Moreover, eight declarations make the connection between sustainable development and health and wellness.

However, there is also some fragmentation, especially around certain issues of equality. For example, only the Salekhard Declaration (2006, 3) mentions Indigenous poverty. Food security, especially for Indigenous peoples, is mentioned in five declarations (Rovaniemi Statement 2019, 5; Fairbanks 2017, 3; Iqaluit 2015, 7; Nuuk 2011, 6; Barrow 2000, 4). Finally, gender inequality is mentioned in three declarations: in the Inari Declaration (2002, 2) the ministers of the eight Arctic Council states: "Recognize the crucial role of women in developing viable Arctic communities," while also recognizing that gender equality can improve wellbeing and violence against women can harm it (Inari 2002, 2). In the second Iqaluit Declaration (2015, 7) the ministers: "Note the work done for the Arctic Council through the second Arctic Human Development Report, acknowledge that gender equality is very important for economic, social and cultural development and improves the prospects for future generations in the Arctic, and welcome[s] the report on current gender realities and future challenges." Finally, the Rovaniemi Chair Statement (2019, 9)
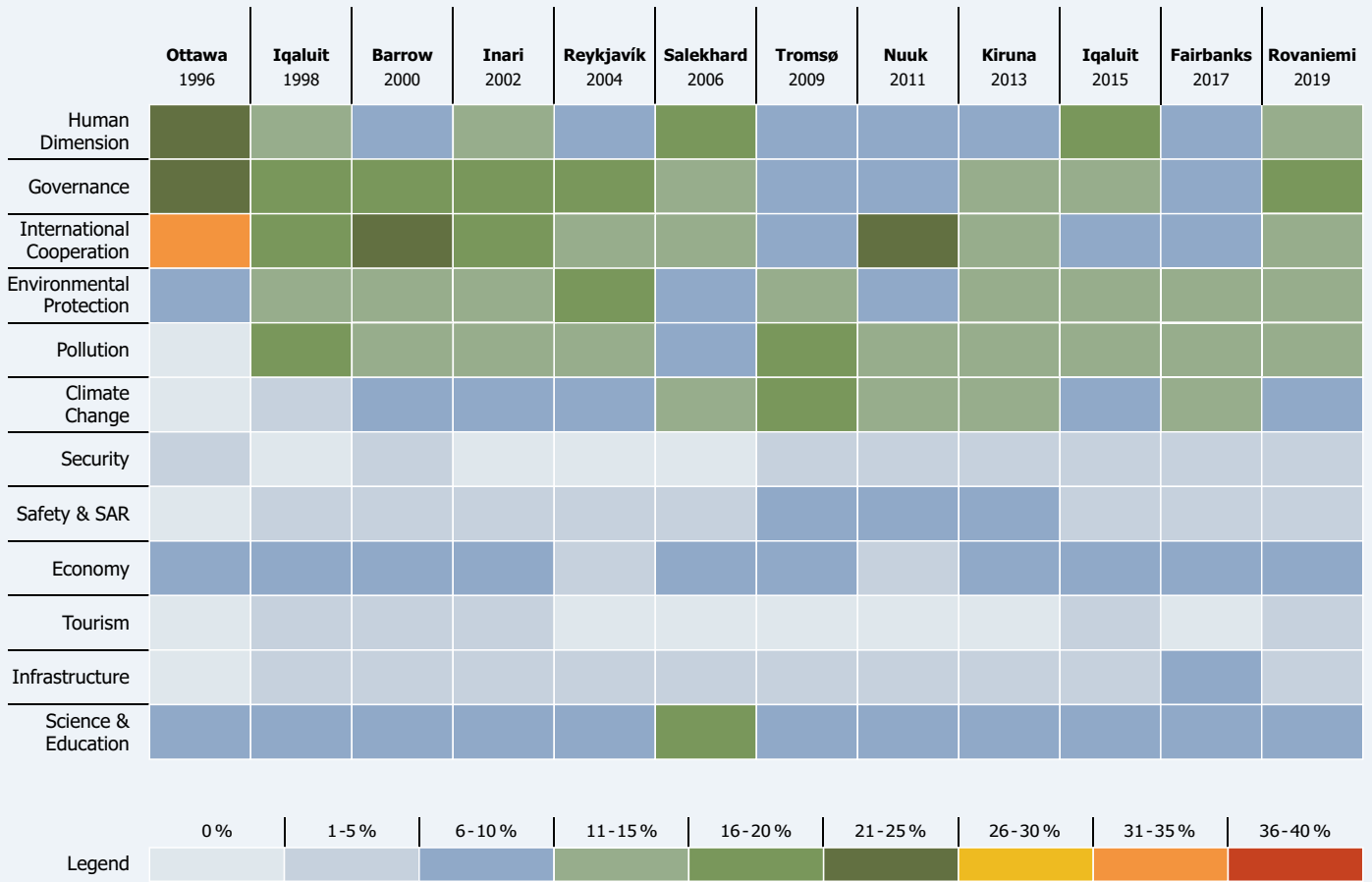
Figure 17. Comparison of Arctic Council Ministerial Declarations

Note: The numbers represented in each indicator are a percent of the total number of quotes coded for each document. The scale also ranges from 0 - 40% because none of the percentages went higher than this.

states that "it welcomed gender equality perspectives in the work of the Arctic Council and encouraged their mainstreaming".

In the **Governance** indicator, the AC declarations refers to the Arctic Council as a key high-level forum for cooperation in the Arctic. Beginning with the first Iqaluit Declaration (1998), the majority of the following declarations also "emphasize the need for the Arctic Council and its programmes to cooperate closely with existing organizations such as the Barents Euro-Arctic Council, the Nordic Council of Ministers, and other appropriate fora, including scientific bodies" (Ottawa 1996, 1,2; Iqaluit 1998, 6; Barrow 2000, 1,7; Inari 2002, 1,6; Reykjavik 2004, 7; Salekhard 2006, 9; Tromsø 2009, 1,9; Kiruna 2013, 1; Fairbanks 2017, 1; Rovaniemi 2019, 1). The Inari Declaration (2002, 5) talks specifically about "closer cooperation between the Arctic Council and the European Commission." The importance of the AC for Arctic states, expressed in the ministerial declarations of 2000, 2002, 2004, 2006, and 2009, is further discussed in detail under the International Cooperation indicator. Additionally, the Inari declaration "take note of the recommendations issued by the 5th Conference of the Parliamentarians of the Arctic Region and welcome their continuous cooperation and support" (Inari 2002, 6).

The AC declarations stress the necessity of "full consultation with and the full involvement of Indigenous people and their communities and other inhabitants of the Arctic" (Ottawa Declaration 1996, 1) on the "decision-making in relation to policy planning and implementation" (Salekhard 2006, 3). Therefore, "the category of Permanent Participation is created to provide for active participation and full consultation with the Arctic Indigenous representatives within the Arctic Council" (Iqaluit 1998, 1). At the same time, the declarations of 1996, 2002, 2006, 2013, 2015, 2017, and Statement of 2019 acknowledge the need to pay "attention to the impact of development and the use of natural resources on the traditional sources of livelihood of Indigenous peoples and their communities" (Inari 2002, 4).

The Iqaluit Declaration (1998, 5) refers for the first time to "promote the application of the Arctic Council Offshore Oil and Gas Guidelines" and "an assessment of the adequacy of existing international agreements and arrangements related to the protection of the Arctic marine environment." The Guidelines are mentioned once again in the Tromsø Declaration (2009, 5). The AC declarations of 1998, 2000 and 2002 further "acknowledge the successful integration of the Arctic Environmental Protection Strategy (AEPS) and the four working groups" into the Arctic Council (Iqaluit 1998, 3). The Rovaniemi Chair Statement (2019, 5) refers for the first time to "the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean" from 2018, "which provides for possible future fisheries regulation and strengthens future marine science cooperation" as well as ensuring "conservation and sustainable use of fish stocks in Arctic waters."

The Iqaluit Declaration (1998, 4) talks about the "ratification and implementation of the Protocols on the elimination or reduction of discharges, emissions and losses of Persistent Organic Pollutants (POPs) and of Heavy Metals under the framework of the United Nations Economic Commission for Europe Convention on Long-Range Transboundary Air Pollution." The declaration also "reaffirm our commitment from the Alta Declaration to take the findings and recommendations from the AMAP Report Arctic Pollution Issues : A State of the Arctic Environment Report, into consideration in our policies and programmes, to increase our efforts to limit and reduce emissions of contaminants into the environment" (1998, 3).

	Ottawa 1996	Iqaluit 1998	Barrow 2000	Inari 2002	Reykjavik 2004	Salekhard 2006	Tromsø 2009	Nuuk 2011	Kiruna 2013	Iqaluit 2015	Fairbanks 2017	Rovaniemi 2019
Existing structures	✕	✕	✕	✕	✕	✕	✕	✕	✕		✕	✕
international and transboundary cooperation	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕
natural resources, blue economy, and licensing		✕		✕	✕		✕	✕	✕	✕	✕	✕
public consultations and env. impact assessments	✕			✕	✕		✕			✕		✕
Decision making	✕			✕	✕	✕			✕		✕	✕

Table 54. Governance in the Ministerial Declarations

The **International Treaties and International Cooperation** indicator illustrates how important collaboration is on the regional and international level for all Arctic states (see, Table 55). The first AC declarations already state that Arctic states are "Desiring further to provide a means for promoting cooperative activities to address Arctic issues requiring circumpolar cooperation, and to ensure full consultation with and the full involvement of Indigenous people and their communities and other inhabitants of the Arctic in such activities" (Ottawa Declaration 1996, 1).

The Arctic states emphasize "the importance of circumpolar and international cooperation as being fundamental to addressing circumpolar challenges" and confirm that "in international relations the rule of law is a prerequisite for peaceful regional development" (Barrow 2000, 1; Inari 2002, 6; Reykjavik 2004, 1, 2; Salekhard 2006, 2; Tromsø 2009, 1). Furthermore, the Arctic states "welcome the increased contributions to Arctic cooperation by non-arctic observer countries as well as scientific institutions, international organizations and NGOs" (Inari Declaration 2002, 5).

The most discussed forum for cooperation in the AC declarations is undoubtedly the Arctic Council. The high level forum "provide a means for promoting cooperation, coordination and interaction among the Arctic States, with the involvement of the Arctic Indigenous communities and other Arctic inhabitants on common Arctic issues, in particular issues of sustainable devel-

opment and environmental protection in the Arctic" (Declarations of 1996, 1; 1998, 1; 2000, 1; 2002, 1; 2004, 1; 2006, 1; 2009, 1; 2011, 3; 2013, 1,2; 2015, 4,12; Statement of 2017, 6,7). Besides that, the Arctic states ministers also "recognized the contribution of international science to the knowledge and understanding of the Arctic region and noted the role that scientific cooperation, through the International Arctic Science Committee and other organizations, is playing in developing a truly circumpolar cooperation" (Ottawa Declaration 1996, 4). In the 2004 Reykjavik Declaration (2004, 2) the reference to the International Polar Year (IPY) 2007–2008 is made for the first time, and states that the IPY represents "a unique opportunity to stimulate cooperation and coordination on Arctic research and increase awareness and visibility of the Arctic region and underline the role of the Arctic Council." Following up on that, this statement is further confirmed in the declarations of 2006 (p. 3) and 2009 (p. 3).

Besides the Arctic Council, the Arctic states recognize the importance of, and the need to, "cooperate closely with existing organizations" (Iqaluit 1998, 6) and with cooperative frameworks in the Arctic. The Iqaluit 1998 Declaration mentions for the first time the Barents Euro-Arctic Council and the Nordic Council of Ministers. The following declarations further reaffirm the need to strengthen the cooperation. The Barrow Declaration also introduces the cooperation with the Council of the Baltic Sea States, the Northern Forum, and the European Union's Northern Dimension, and the later declarations (Iqaluit 1998, 6; Barrow 2000, 7; Inari 2002, 6; Reykjavik 2004, 7; Salekhard 2006, 9; and Tromsø 2009, 9) confirm this. In the Nuuk Declaration (2011), for the first time none of the other cooperation frameworks besides the Arctic Council is mentioned at all. The Kiruna Declaration (2013, 6) follows up on the Nuuk, where only the European Union's application for AC observer status is briefly mentioned. The Iqaluit 2015 Declaration (2015, 5) makes reference only to the establishment of the Arctic Economic Council. The Fairbanks Declaration (2017, 2) recognizes cooperation through the Arctic Coast Guard Forum.

Interestingly, on the global level, the AC declarations refer only twice to the Rio/Rio+10 climate conference.[12] The first time, the Barrow Declaration states that the Arctic states "welcome the opportunity presented by the Rio+10 process to review the work of the Arctic Council with a view to bringing Arctic issues to the attention of the global community through the preparatory processes associated with the ten year review of Agenda 21" (Barrow Declaration 2000, 3). The second time, the Tromsø Declaration (2009, 6) "urge Member States to apply the precautionary approach and polluter-pays principle as reflected in Principles 15 and 16 of the Rio Declaration, respectively, and conduct risk and environmental impact assessments for the exploration, development, transport and storage of oil, and enact and/or enforce appropriate laws and controls." Six years later, in 2015, the second Iqaluit Declaration (2015, 5) reaffirms the "Arctic States' commitment to work together and with partners

towards an effective, ambitious, durable international climate agreement in Paris in December 2015 that is applicable to all, and our determination to work within and beyond the United Nations Framework Convention on Climate Change to limit the increase in global average temperature to below 2 degrees Celsius above pre-industrial levels." In 2017, the Fairbanks Declaration (2017, 1) refers for first time to the UN SDGs, stating that the Arctic states are "reaffirming the United Nations Sustainable Development Goals and the need for their realization by 2030."

	Ottawa 1996	Iqaluit 1998	Barrow 2000	Inari 2002	Reykjavik 2004	Salekhard 2006	Tromsø 2009	Nuuk 2011	Kiruna 2013	Iqaluit 2015	Fairbanks 2017	Rovaniemi 2019
Role and importance of int.coop.	X		X	X	X	X	X	X	X			
Major agreements and forums	X	X	X	X	X	X	X	X	X	X	X	
UN SDGs (or RIO 1992)			X				X				X	
Mentions of other int. orgs.		X	X	X	X	X	X			X	X	
IMO/Polar code		X	X				X	X	X	X	X	X

Table 55. International Treaties and International Cooperation in the Ministerial Declarations

The **Environmental Protection** indicator shows that there is a considerable amount of consistency in how the declarations address environmental protection. Indeed, Table 56 shows three striking similarities. First, all the declarations recognize the importance of environmental protection and the need to balance it with economic development, mostly through sustainable development. This is likely because these are the two main functions of the Arctic Council based on the Ottawa Declaration (1996, 1), that is, "AFFIRMING concurrently our commitment to the protection of the Arctic environment, including the health of Arctic ecosystems, maintenance or biodiversity in the Arctic region and conservation and sustainable use of natural resources." Second, all the declarations address the need to protect biodiversity in one way or another. For example, the first Iqaluit Declaration (1998, 4) mentions that Ministers of the eight states of the Arctic Council "Welcome and endorse the Conservation of Arctic Flora and Fauna (CAFF) Strategic Plan for the Conservation of Arctic Biological Diversity as an overall framework for CAFF activities," while in the Kiruna Declaration (2013, 4), the Ministers, among other things: "Recognize the value of sustaining Arctic ecosystems and biodiversity and that the Arctic environment needs to be protected as a basis for sustainable development, prosperity, lifestyles and human well-

---

12   The original United Nations Conference on Environment and Development (UNCED) was held in Rio de Janeiro in June 1992; in 2002 the Rio+10 was held as a follow up in Johannesburg.

being, and commit to pursue the conservation and sustainable use of Arctic biological resources." Third, with the exception of the Ottawa Declaration, all subsequent declarations discuss and support the work of both CAFF and PAME. The work of AMAP in an environmental context is addressed in the Iqaluit (1998, 4), Barrow (2000, 4), and Salekhard (2006, 6) declarations, and the Rovaniemi Chair Statement (2019, 5).

	Ottawa 1996	Iqaluit 1998	Barrow 2000	Inari 2002	Reykjavík 2004	Salekhard 2006	Tromsø 2009	Nuuk 2011	Kiruna 2013	Iqaluit 2015	Fairbanks 2017	Rovaniemi 2019
Recognize work of CAFF		✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕
Circumpolar Protected Areas Network* (CAFF)		✕	✕		✕			-	-	-	-	-
Recognize work of AMAP		✕	✕			✕						✕
Recognize work of PAME		✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕
Regional Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities		✕	✕	✕	✕		✕					
Biodiversity	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕
Balance environment and economy (e✕. Sustainable dev)	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕
Ecosystem-based management					✕		✕	✕	✕	✕	✕	✕

Table 56. Environmental Protection in the Ministerial Declarations
*Existed between 1996 and 2010 (CAFF n.d.).

Other Arctic Council activities are more fragmented. For example, the Circumpolar Protected Areas Network existed between 1996 and 2010 (CAFF, n.d.), yet it was only mentioned in the first Iqaluit Declaration (1998, 4), Barrow Declaration (2000, 4), and Reykjavík Declaration (2004, 6).

Table 56 also shows that the role of ecosystem-based management started to emerge with the Reykjavík Declaration and became consistent with the Tromsø Declaration. For example, in the Reykjavík Declaration (2004, 4–5) Ministers of the eight Arctic Council states "Note that an ecosystem-based manage-

ment approach underlies the AMSP and call upon Member States, Arctic Council working groups and relevant regional and international bodies to further the application of this approach to the Arctic marine environment," while in the Nuuk Declaration (2011, 6) Arctic Council ministers "Decide to establish an expert group on Arctic ecosystem-based management (EBM) for the Arctic environment to recommend further activities in this field for possible consideration by the SAOs before the end of the Swedish chairmanship." In the Kiruna Declaration (2013, 5) the ministers, "Welcome the report on Ecosystem Based Management, approve the definition, principles and recommendations, encourage Arctic States to implement recommendations both within and across boundaries, and ensure coordination of approaches in the work of the Arctic Council's Working Groups"; the Rovaniemi Chair Statement (2019, 6) notes that "the meeting welcomed the Guidelines for Implementing an Ecosystem Approach to Management of Arctic Marine Ecosystems." This shows progress and development of the management system over time.

The **Pollution** indicator provides a great deal of information on what are considered to be the main Arctic pollutants and the different approaches to dealing with them. Table 57 shows some relevant similarities, with ten declarations mentioning POPs, nine mentioning mercury and oil, and seven mentioning heavy metals. Moreover, starting with Tromsø Declaration (2009), all subsequent declarations identify short-lived climate pollutants, including black carbon and methane, and greenhouse gases, with four declarations specifically mentioning carbon dioxide.

This consistency suggests that POPs, mercury, oil, heavy metals, short-lived climate forcers (including black carbon and methane), and greenhouse gases (including carbon dioxide) are the primary pollutants in the Arctic, many of which come from outside the region (see: Rovaniemi Statement 2019 5; Fairbanks 2017, 1; Iqaluit 2015d, 7; Nuuk 2011, 6; Tromsø 2009, 2, 5, 7; Salekhard 2006, 6; Reykjavik 2004, 4; Inari 2002, 1, 3; Barrow 2000, 5, 6). Of all these, POPs, oil and heavy metals, as well as noise, radioactivity, and acidification were already mentioned in the Arctic Environmental Protection Strategy (1991, 20–24).

	Ottawa 1996	Iqaluit 1998	Barrow 2000	Inari 2002	Reykjavík 2004	Salekhard 2006	Tromsø 2009	Nuuk 2011	Kiruna 2013	Iqaluit 2015	Fairbanks 2017	Rovaniemi 2019
Man-made pollutants				×			×					
Greenhouse Gases							×	×	×	×	×	×
Carbon dioxide							×	×		×		×
Short-lived climate poll.							×	×	×	×	×	×
Black carbon							×	×	×	×	×	×
Methane							×	×	×	×	×	×
Acidifying substances						×			×			
Radioactive material			×	×			×					
Heavy Metals		×	×	×	×		×	×			×	
Mercury			×	×		×	×	×	×	×	×	×
POPs		×	×	×	×		×	×	×	×	×	×
PCBs		×	×	×		×				×		
PTS			×									
Chemicals					×	×	×				×	×
Oil		×	×		×		×	×	×	×	×	×
Shipping Waste					×							
Microplastics											×	×
Marine litter											×	×

Table 57. Pollutants in the Ministerial Declarations

There is also fragmentation in the sense that few pollutants are identified in four or fewer declarations. For instance, Table 57 shows that only two declarations mention man-made pollutants. Interestingly, only the Barrow, Inari, and Tromsø declarations comment on radioactive material (2009, 7; 2002, 3; 2000, 6). The Barrow Declaration (2000, 4) is also the only document that mentions Persistent Toxic Substances (in Russia) and the Reykjavík Declaration mentions shipping waste (2004, 5). The Fairbanks Declaration (2017, 3), and the Rovaniemi Chair Statement (2019, 6) are also the only documents to mention microplastics and marine litter.

The declarations also mention specific international treaties and a broad range of pollution solutions, including the work of the Arctic Council. Table 58 shows that the Stockholm Convention on POPs is mentioned in eight documents, while the Long-range Transboundary Air Pollution (LRTAP) and/or its protocols is mentioned in seven of the declarations. Moreover, the Minamata Convention on Mercury is mentioned by all four

documents after its signing in 2013 (Kiruna 2013, 5; Iqaluit 2015, 9; Faibanks 2017, 4; Rovaniemi 2019, 5; see also: United Nations n.d.b.). The Fairbanks Declaration and the Rovaniemi Chair Statement also mention the Paris Agreement which was signed after the second Iqaluit Declaration in 2015 (Fairbanks 2017, 1; Rovaniemi 2019, 1). This consistency suggests that these four—the Stockholm Convention, LRTAP, Minamata Convention, and Paris Agreement—are the key international agreements.

Table 58 also shows that with the exception of the Ottawa Declaration, all the remaining declarations recognize the work of one or more of the Arctic Council's working groups AMAP, EPPR, PAME, or SDWG (see Glossary) including various reports and projects. The work of the SDWG is only mentioned in the Rovaniemi Chair Statement (2019, 8) with regard to the Best Waste Management Practices for Small and Remote Arctic Communities. Five declarations also comment on the Arctic Council's Action Plan to Eliminate Pollution of the Arctic; three mention the Task Force and/ or Expert Group on Black Carbon and Methane; and two mention the Task Force on Short-Lived Climate Forcers and the Task Force on Oil Pollution. Additionally, once the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic was signed, all subsequent documents mention it. This shows that the Arctic Council has an important role to play in addressing pollution. (see Table 58. Pollution Treaties and Problem Solving in the Ministerial Declarations, p. 154)

There is also much fragmentation, as many problem-solving tactics are mentioned in four or fewer declarations. For example, the Russian Programme of Action for the Protection of the Arctic Marine Environment and Land-based Activities is mentioned only in the first Iqaluit Declaration (1998, 5) and the Inari Declaration (2002, 3).

The **Climate Change** indicator reveals some similarities and differences in how the declarations address climate change. Table 59 shows a striking similarity in that all declarations, with the exception of the Ottawa Declaration, recognize the contributions of the scientific community in general or through specific reports such as the Arctic Climate Impact Assessment (ACIA 2004). For example, in the Fairbanks Declaration (2017, 6), the ministers "Reiterate the importance of climate science to our understanding of the changing Arctic region and our activities in the Arctic environment," and in the Inari Declaration (2002, 4) they "welcome with appreciation the good progress of the Arctic Climate Impact Assessment (ACIA) and the significant progress in evaluating and synthesizing knowledge on climate variability and change and increased ultraviolet radiation."

	Ottawa 1996	Iqaluit 1998	Barrow 2000	Inari 2002	Reykjavik 2004	Salekhard 2006	Tromsø 2009	Nuuk 2011	Kiruna 2013	Iqaluit 2015	Fairbanks 2017	Rovaniemi 2019
Greenhouse gas reduction (Paris Agreement - XXX)										X	XXX	XXX
Stockholm Convention on POPs				X	X	X	X	X	X		X	X
Long-Range Transboundary Air Pollution (LRTAP) and/ or its Protocols		X	X	X	X	X	X	X				
Rio Declaration							X					
Minamata Convention on Mercury									X	X	X	X
Recognize and support work of AMAP		X	X	X	X	X		X	X		X	X
Recognize and support work of EPPR		X	X		X			X	X	X	X	
Recognize and support work of PAME		X			X	X	X			X		X
Recognize and support work of SDWG												X
Arctic Council Action Plan to Eliminate Pollution of the Arctic (ACAP)		X	X	X	X	X						
Task Force on Short Lived Climate Forcers							X	X				
Task Force and Expert Group on Black Carbon and Methane									X	X	X	X
Task force on oil pollution								X	X			
Agreement on Cooperation on Marine Oil -Pollution -Preparedness & Response in the Arctic									X	X	X	X
IMO							X				X	X
Polar Code		X								X		
Shoreline Cleanup Assessment Technique					X							
UNEP		X	X	X		X	X	X				
Nuclear Safety			X	X								
Research on pollution											X	X
Pollution monitoring						X			X	X		X
International cooperation		X				X			X			X
Domestic action				X		X	X			X		X
Sharing best practices												X
Russian Programme of Action for the Protection of the Arctic Marine Environment from Land-based Activities		X		X								
Integrated Hazardous Waste Mgmt Strategy in the Northern Regions of the Russian Federation							X					
Changes to economic activities							X				X	

Table 58. Pollution Treaties and Problem Solving in the Ministerial Declarations

	Ottawa 1996	Iqaluit 1998	Barrow 2000	Inari 2002	Reykjavík 2004	Salekhard 2006	Tromsø 2009	Nuuk 2011	Kiruna 2013	Iqaluit 2015	Fairbanks 2017	Rovaniemi 2019
Mitigation/Adaptation				✕	✕	✕	✕	✕	✕	✕	✕	✕
UNFCC					✕	✕	✕	✕	✕	✕		✕
IPCC			✕		✕	✕				✕		✕
Paris Agreement										✕	✕	
Kyoto Protocol					✕							
COP15							✕					
Montreal Protocol on Substances that Deplete the Ozone Layer									✕			
Arctic Resilience Action Framework											✕	✕
Other frameworks							✕				✕	
Scientific Community Heard		✕		✕		✕	✕	✕	✕	✕	✕	✕
ACIA			✕	✕	✕	✕						
Climate Change as Security Factor				✕								
Environmental Refugees												
Asia Mentioned												
Access to Fresh Water										✕*	✕*	

Table 59. Climate Action in the Ministerial Declarations
*connection to climate change not clear

There are also some trends. Every declaration, starting with the Inari Declaration, addresses issues of mitigating climate change vis-à-vis adapting to it. The declarations also address key climate agreements at the time they are either decided or in force. For example, in the Reykjavík Declaration (2004, 7) on the Kyoto Protocol, ministers "Note the ratification by the Russian Federation of the Kyoto Protocol" the year before the Protocol came into force in 2005 (see: United Nations n.d.a.). The Tromsø Declaration (2009, 2) "confirm[s] the commitment of all Arctic States to actively contribute to reaching an adequate agreed outcome at the UNFCCC 15th Conference of the Parties (COP15) in Copenhagen in December 2009." The second Iqaluit Declaration (2015b, 5) makes a similar statement regarding the Paris Agreement, with the Arctic Council ministers "Reaffirming Arctic States' commitment to work together and with partners towards an effective, ambitious, durable international climate agreement in Paris in December 2015 that is applicable to all"; the Fairbanks Declaration (2017, 1) "Noting the entry

into force of the Paris Agreement on climate change and its implementation"; while the Rovaniemi Statement by the Chair (2019, 1) "welcomed the outcomes of the UNFCCC COP24 in Katowice, including the Paris agreement work programme."

There is also some fragmentation, with the Inari Declaration (2002, 5) being the only document to recognize that climate change can create emergencies, and can thus be considered a security concern. The second Iqaluit Declaration (2015, 6) and Fairbanks Declaration (2017, 6) also comment on access to freshwater, but they do not explicitly make the connection to climate change.

The first mention of the **Security** indicator appears in the Ottawa Declaration (1996, 1) in a footnote stating that "the Arctic Council should not deal with matters related to military security." Two years later, the Iqaluit 1998 does not mention security in any connection. In the 2000 Barrow Declaration (2000, 4), the Arctic states "acknowledge approval for funding by the Global Environment Facility of the RAIPON/AMAP project 'Persistent Toxic Substances (PTS), Food Security and Indigenous Peoples of the Russian North'". The three AC ministerial declarations that followed this (Inari, Reykjavik, and Salekhard) do not reflect on security at all.

The Security indicator appears again in the Tromsø Declaration (2009, 1), where the Arctic states confirm "that in international relations the rule of law is a prerequisite for peaceful regional development." Security of the region is for the first time connected to the stability and peace in the Arctic. Two years later, in Nuuk (2011, 3, 6) governments of the Arctic states are "Recognizing the importance of maintaining peace, stability and constructive cooperation in the Arctic." Since the Nuuk Ministerial 2011, this sentence has been explicitly mentioned as the first preamble of the later ministerial declarations. At the same time, the governments "recognize that climate change and other negative factors have impacted the traditional livelihoods and food safety and security of Arctic Indigenous Peoples and other Arctic residents and communities." The following three ministerials—Kiruna 2013 (p. 1), Iqaluit 2015 (4, 7), and Fairbanks 2017 (1, 2, 3,)—reaffirm "the commitment to maintain peace, stability, and constructive cooperation in the Arctic" (Fairbanks 2017, 1). They also acknowledge "the cultural and nutritional importance of traditional and local foods, including from marine living resources in the Arctic", and welcome reports, project proposals, and policy recommendations to "assess and promote food security" (Iqaluit 2015, 7), "access to safe water" (Fairbanks 2017, 3), and mental wellness. The Rovaniemi Joint Ministerial Statement (2019, 1) refers to the "commitment to maintain peace, stability and constructive cooperation in the Arctic." The Rovaniemi Chair Statement also confirms this commitment but goes further (2019, 1). The meeting "approved the assessment on Biological Effects of Contaminants on Arctic Wildlife and Fish highlighting the risk of pollutants and chemicals of emerging concern to Arctic species, particularly those at the top of the food chain, and food security" (2019, 4). It also welcomed the "progress made to promote safe and sustainable Arctic marine shipping" (2019, 6).

The **Safety and SAR** indicator reveals different regional safety concerns. For example, Table 60 shows a striking similarity in that there is a shared concern about environmental safety, especially in the context of oil spills, in all but the Ottawa Declaration. Other similarities include maritime safety, which is addressed in seven declarations and search and rescue in five.

	Ottawa 1996	Iqaluit 1998	Barrow 2000	Inari 2002	Reykjavík 2004	Salekhard 2006	Tromsø 2009	Nuuk 2011	Kiruna 2013	Iqaluit 2015	Fairbanks 2017	Rovaniemi 2019
Environmental Safety (incl. pollution, oil spills, etc.)		×	×	×	×	×	×	×	×	×	×	×
Climate change				×								
Maritime Safety					×		×	×	×	×	×	×
Search and Rescue								×	×	×	×	×
Natural disasters					×							
Radiation and other chemicals					×	×						

Table 60. Safety Concerns in the Ministerial Declarations

The Iqaluit Declaration (1998, 5) mentions for the first time "the assessment of current and potential shipping activities to assist in determining what, if any, additional Arctic shipping measures are required, including work on an International Code of Safety for Ships Operating in Polar Waters (Polar Code) under the auspices of the International Maritime Organization (IMO)."

Some fragmentation also exists. Only the Reykjavík (2004, 5) and Salekhard Declarations (2006, 7) mention concerns around radiation. The Reykjavík Declaration (2004, 5) is also the one document to mention natural disasters. Climate change as a safety issue is also addressed only in the Inari Declaration (2002, 5) in which the states "Recognize the increasing importance of prevention of and response to emergencies originating in climate variability and change."

In terms of addressing safety issues, the declarations do acknowledge the work of the Arctic Council, and this is marked with an * in Table 61. Five declarations mention activities by the EPPR.[13] While there are no particularly striking findings, there are some patterns. Table 61 shows that once the Arctic Council's SAR agreement is ready, it is mentioned in every subsequent declaration.

	Ottawa 1996	Iqaluit 1998	Barrow 2000	Inari 2002	Reykjavík 2004	Salekhard 2006	Tromsø 2009	Nuuk 2011	Kiruna 2013	Iqaluit 2015	Fairbanks 2017	Rovaniemi 2019
Arctic Council EPPR		×	×		×	×		×				
Arctic Council SAR Agreement*								×	×	×	×	×
Arctic Offshore Oil and Gas Guidelines*		×					×			×		
Circumpolar Map of Resources at Risk from Oil Spills *		×	×									
Prevention of Arctic Marine Oil Pollution Project*									×			
Arctic Marine Shipping Assessment Recommendations*												×
IMO / Polar Code		×						×	×	×	×	×
Shoreline Cleanup Assessment Tool					×							
Community Radiation Information Project					×							
International Cooperation						×	×					×

Table 61. Addressing Safety Concerns in the Ministerial Declaration
*Arctic Council activities

The IMO's Polar Code is mentioned in every declaration starting with the Nuuk Declaration (2011, 7) in which the ministers "Urge the completion as soon as possible of work at the International Maritime Organization to develop a mandatory polar code for ships." Interestingly, discussions around the Polar Code began much earlier in the first Iqaluit Declaration (1998, 4); the idea was to "work on an International Code of Safety for Ships Operating in Polar Waters (Polar Code) under the auspices of the International Maritime Organization (IMO)." In addition to the Polar Code, the Tromsø Declaration (2009, 4) sought to "encourage active cooperation within the International Maritime Organization (IMO) on development of relevant measures to reduce the environmental impacts of shipping in Arctic waters" and to "urge that the ongoing work in the IMO to update the Guidelines for Ships Operating in Arctic Ice-Covered Waters be completed."

---

13   Both the Inari and Tromsø declarations mention the EPPR, but not the work it is doing.

The **Economy** indicator reveals a striking similarity in that all declarations address sustainable development. In seven declarations, sustainable development is explicitly linked to resource utilization (see Ottawa, both Iqaluit, Barrow, Inari, Tromsø, Kiruna declarations, and Rovaniemi statement). This similarity is not surprising, as the Ottawa Declaration (1996, 1) is clear about the Council's position on sustainable development, namely, "AFFIRMING our commitment to sustainable development in the Arctic region, including economic and social development, improved health conditions and cultural wellbeing." Similar messages are present in the other declarations. For example, the Inari Declaration (2002, 1) is "reaffirming the commitment of the Governments of the Arctic States and Indigenous peoples to work together to promote sustainable development and environmental protection in the Arctic region with increased focus on climate change, sustainable use of resources and human development in the Arctic."

Specific economic activities are also mentioned in many of the Declarations, although sometimes in passing or within the context of other economic discussions. This means that promoting or highlighting certain economic activities is not the main focus of economic discussions. Along these lines, Table 62 shows that there is general fragmentation in terms of what activities are mentioned. That said, energy, including renewables, is mentioned in six documents.

	Ottawa 1996	Iqaluit 1998	Barrow 2000	Inari 2002	Reykjavik 2004	Salekhard 2006	Tromsø 2009	Nuuk 2011	Kiruna 2013	Iqaluit 2015	Fairbanks 2017	Rovaniemi 2019
Energy			X			X	X				X	
Renewables						X	X			X	X	X
Oil and gas				X			X					
Mining / minerals / metals			X	X								
Fisheries	X											X
Reindeer husbandry			X									
Marine bioresources												X
Blue economy												X
Tourism		X	X	X						X		X
Technology	X											
Diverse economies								X	X			
Indigenous food												X

Table 62. Economic Activities in the Ministerial Declarations

For example, the Salekhard Declaration (2006, 4) states that the Arctic Council will "welcome the increased co-operation in the field of energy, reflected in various AC projects, and endorse energy, including renewable energy and environmentally friendly technologies, as an important component of the AC cooperation, addressing energy issues and their impact on human life and the environment, and request the SDWG to report on this activity to the AC Ministerial session in 2008, and to identify activities that the Arctic Council could consider for future implementation."

The Rovaniemi Statement by the Chair (2019, 6, 8) also sees the introduction of new economic activities, such as marine bio-resources and Indigenous foods. Another point to note is the change in the way economic discussions are approached after the creation of the Arctic Economic Council in 2015. While previous discussions primarily focused on issues of sustainability, the Fairbanks Declaration (2017, 4) also begins to "recognize the importance of collaborating with the private sector." Similarly, the Rovaniemi Chair Statement (2019b, 10) comments: "The meeting welcomed the Memorandum of Understanding between the Arctic Council and the Arctic Economic Council to further our shared goals, noted with appreciation the report on Business Finance in the Arctic."

The **Tourism** indicator is mentioned only five times in Arctic Council declarations—Iqaluit 1998, Barrow 2000, Inari 2002, Iqaluit 2015, and Rovaniemi 2019. The 1998 Iqaluit Declaration mentions the need to "establish the Sustainable Development Program" which would include eco-tourism as well as other areas (Arctic Council 1998, 2). The Barrow Declaration (2000, 3) follows that up by acknowledging the "results achieved by the Sustainable Development Working Group established at the last Ministerial Meeting, including the Arctic Children and Youth initiative, the Arctic Telemedicine and cultural and eco-tourism projects." The Inari Declaration (2002, 2) notes with appreciation "the Council's successful efforts to expand ecological and cultural tourism through circumpolar cooperation for the benefit of local communities." The 2015 Iqaluit Declaration (2015, 6) recognizes "the growing importance of tourism to many Arctic communities, and welcome[s] the report on Arctic marine tourism." The Rovaniemi Chair Statement (2019, 8) refers in one paragraph to tourism, addressing "the considerable growth in Arctic tourism and the economic opportunities for Arctic communities, and encouraged enhanced cooperation in developing and sharing best practices to ensure sustainable Arctic tourism."

For the **Infrastructure** indicator, Table 63 shows that there is one relevant similarity and one other similarity. The relevant similarity is that 10 of the 11 declarations address shipping; the other is that six declarations discuss telecommunications/ICT. These two topics will be addressed in more detail below.

	Ottawa 1996	Iqaluit 1998	Barrow 2000	Inari 2002	Reykjavík 2004	Salekhard 2006	Tromsø 2009	Nuuk 2011	Kiruna 2013	Iqaluit 2015	Fairbanks 2017	Rovaniemi 2019
Transport				X		X			X			
Icebreakers												
Shipping		X	X		X	X	X	X	X	X	X	X
Telecoms / ICT				X	X	X				X	X	X
Innovation and tech		X										
Energy											X	
Housing										X	X	

Table 63. Infrastructure in the Ministerial Declarations

Aside from these two similarities, there is fragmentation in the way that infrastructure is discussed. For transportation infrastructure in the Inari Declaration (2002, 2) Ministers "Emphasize the significance of infrastructure, including aviation, marine and surface transport," while the Kiruna Declaration (2013, 2) they "Welcome the Arctic Maritime and Aviation Transportation Infrastructure Initiative and its comparative analysis of seaport and airport infrastructure in the Arctic States, and encourage continued efforts to identify opportunities for complementary infrastructure development and use." The Salekhard Declaration (2006, 4) mentions infrastructure in general, which would include transportation infrastructure. Housing could be included in the "community infrastructure" mentioned in the second Iqaluit Declaration (2015, 6), while in the Fairbanks Declaration (2017, 3) ministers "Recognize the vital importance of healthy Arctic communities, homes and peoples." This Declaration is the only to recognize energy infrastructure, and in particular renewable energy infrastructure (2017, 4). Finally, the first Iqaluit Declaration (1998, 2) is the only one to recognize innovation and tech, especially in the context of "technology transfer to improve Arctic sanitation systems."

Taking a closer look at shipping, the Iqaluit, Barrow, Reykjavík, Tromsø, Nuuk, Kiruna, Fairbanks, and Rovaniemi declarations focus on safety, quite often in the context of the IMO. For example, in the Tromsø Declaration (2009, 4) ministers "urge that the ongoing work in the IMO to update the Guidelines for Ships Operating in Arctic Ice-Covered Waters be completed, application of its relevant parts be made mandatory, and global IMO ship safety and pollution prevention conventions be augmented with specific mandatory requirements or other provisions for ship construction, design, equipment, crewing, training, and operations, aimed at safety and protection of the Arctic environment." The Rovaniemi Chair Statement (2019, 7) also notes that "the joint submission by all Arctic states to the International Maritime Organization on a proposal for regional arrangement for Arctic port waste reception facilities was welcomed, the operationalization of the Arctic Shipping Best Practice Information Forum was noted with satisfaction, and further efforts for harmonized implementation of the Polar Code were encouraged."

Also connected to safety is the Arctic Marine Shipping Assessment (AMSA) finalized in 2009 and mentioned in the Reykjavík, Salekhard, Tromsø, second Iqaluit, and Fairbanks declarations. For example, in the Reykjavík Declaration (2004, 4) ministers "request PAME to conduct a comprehensive Arctic marine shipping assessment as outlined in the AMSP under the guidance of Canada, Finland and the United States as lead countries and in collaboration with the EPPR working group and other working groups of the Arctic Council and Permanent Participants as relevant," while the Tromsø Declaration (2009, 4) calls for approval of the Assessment, and the second Iqaluit (2015, 10) and Fairbanks declarations (2017, 3) comment on implementation. The Reykjavík (2004, 5), Tromsø (2009, 4), second Iqaluit (2015, 10), and Fairbanks (2017, 3) declarations, and also the Rovaniemi Chair Statement (2019, 7), recognize the connection of pollution to shipping.

While six declarations discuss telecommunications and ICT, there is only one similarity that the Inari (2002, 2, 6), Salekhard (2006, 4), second Iqaluit (2015, 6), and Fairbanks (2017, 4) declarations, and the Rovaniemi Chair Statement (2019b, 8) comment on: either the need for better communications technology or for infrastructure, which accounts for five of the six declarations that discuss this issue. There is fragmentation, as only the Inari (2002, 2) and Reykjavík (2004, 3) declarations comment on the importance of telehealth, and only the Reykjavík Declaration (2004, 3) wishes to identify best practices.

Certainly, this fragmentation is not helpful in establishing better communications in the Arctic, especially as there is an existing need for improved broadband services. The Arctic Economic Council (2016, 5) states that "reliable broadband is necessary to promote and advance interconnectivity, which in turn facilitates improvements in national economies, education, health, and many other sectors of society. Despite these benefits, broadband deployment and adoption across the globe have not been uniform. One region in danger of being left behind is the Arctic."

The **Science and Education** indicator reveals some similarities and differences in the way that science and education are addressed. In terms of science, Table 64 shows that with the exception of the Ottawa Declaration and the Rovaniemi Chair Statement, climate change is a key driver of scientific research. For example, the Salekhard Declaration (2006, 2) will "request the SAOs and the Arctic Council working groups to continue supporting, analyzing and synthesizing Arctic climate research." Similarly, in the Nuuk Declaration (2011, 8) ministers "decide to task the Senior Arctic Officials to consider maximizing the legacy of the IPY by supporting a proposal to arrange an International Polar Decade in light of the rapid climate change of the Arctic and the need for further coordinated research of the Arctic environment and its human dimension." Another trend is the environment as driver, and this is noted in five of the declarations, with biodiversity/ecosystems and/or flora and fauna being named as a concern in the Salekhard (2006, 7), Tromsø (2009, 4), Kiruna (2013, 4), and Iqaluit declarations (2015, 11).

	Ottawa 1996	Iqaluit 1998	Barrow 2000	Inari 2002	Reykjavík 2004	Salekhard 2006	Tromsø 2009	Nuuk 2011	Kiruna 2013	Iqaluit 2015	Fairbanks 2017	Rovaniemi 2019
Environment						X	X		X	X	X	
Climate Change		X	X	X	X	X	X	X	X	X	X*	
Pollution		X	X	X		X						X
Health				X								
Social Issues						X						
Economy												X

Table 64. Drivers of Science in the Ministerial Declarations

	Ottawa 1996	Iqaluit 1998	Barrow 2000	Inari 2002	Reykjavík 2004	Salekhard 2006	Tromsø 2009	Nuuk 2011	Kiruna 2013	Iqaluit 2015	Fairbanks 2017	Rovaniemi 2019
Social Issues				X	X	X	X					
Policy / decision making			X		X	X		X	X	X		X
Inform AC working groups						X						
Cooperation	X				X	X			X	X	X	
Safety										X		
Increase interest in Arctic	X					X						

Table 65. Purpose of Science in the Ministerial Declarations

Pollution, health, and social issues are fragmented drivers here. It is interesting that as pollution dropped off after 2006 (except for its mention in the Rovaniemi Chair Statement), environment picked up. The Rovaniemi Statement by the Chair (2019, 6) also addresses research for economic reasons, although there is a connection to the environment; it states that "the meeting noted the importance of conservation and sustainable use of marine bioresources for Arctic communities, and encouraged studies and sharing of best practices on the blue bioeconomy in the Arctic."

Regarding the purpose of science, there is nothing particularly striking or relevant in terms of similarities. However, Table 65 does show some commonalities. For instance, the Barrow, Reykjavík, Salekhard, Nuuk, Kiruna, and second Iqaluit declarations, and the Rovaniemi Chair Statement all note that science will help inform decision-making. For instance, in the Nuuk Declaration (2011, 8) Arctic Council ministers "recognize that the International Polar Year (IPY) was the largest circumpolar program on scientific research to date, and welcome in 2012 the 'Knowledge to Action Conference' in Montreal as the concluding event of IPY and the opportunity it presents to transform knowledge and scientific results into policies that will guide our future actions related to the environment and well-being of Arctic communities." Similarly, the Ottawa, Reykjavík, Salekhard, Kiruna, second Iqaluit, and Fairbanks declarations note that science is about cooperation. For example, in the Kiruna Declaration (2013, 5) ministers "agree that cooperation in scientific research across the circumpolar Arctic is of great importance to the work of the Arctic Council, and establish a Task Force to work towards an arrangement on improved scientific research cooperation among the eight Arctic States."

There is also fragmentation, as only four declarations link research to social issues; two suggest it can promote an interest in the region, and one each that research will inform the working groups and be used for safety purposes.

In terms of science infrastructure, there is one relevant similarity and two types of fragmentation. Table 66 shows that nine declarations make reference to formal networks. For example, the Barrow, Inari, and Reykjavík declarations mention only the University of the Arctic (UArctic), while the first Iqaluit, Salekhard, Tromsø, and Nuuk Declarations, and the Rovaniemi Chair Statement also mention other international academic networks. For example, the Iqaluit Declaration (1998, 3) comments on AMAP's Human Health Thematic Data Centre; Salekhard (2006, 3) mentions the Global Earth Observing System of Systems, the International Polar Year, and the Northern Research Forum, and Tromsø (2009, 3,4) mentions the Sustaining Arctic Observing Networks and IASC and the International Polar Year. Nuuk (2011, 7) mentions the Sustaining Arctic Observing Networks and the International Polar Year; and the Rovaniemi Chair Statement (2019, 3) mentions the Sustaining Arctic Observation Network.

	Ottawa 1996	Iqaluit 1998	Barrow 2000	Inari 2002	Reykjavík 2004	Salekhard 2006	Tromsø 2009	Nuuk2011	Kiruna 2013	Iqaluit 2015	Fairbanks 2017	Rovaniemi 2019
Research Stations						X						
Informal networks							X					X
Formal networks		X	X	X	X	X	X	X			X	X

Table 66. Science Infrastructure in the Ministerial Declaration

There is also fragmentation as only the Salekhard Declaration (2006, 3) addresses monitoring stations, while the Tromsø Declaration (2009, 4) and the Rovaniemi Chair Statement (2019b, 2) mention research cooperation which tends to be informal. That said, the Rovaniemi Chair Statement comments on the formalization of cooperation as the Agreement on Enhancing International Arctic Scientific Cooperation is now in force (2019b, 2).

Traditional knowledge is also addressed. There is a striking similarity, as all except the Barrow Declaration mention the need to use traditional knowledge. For example, in the Reykjavík Declaration (2004) ministers "Welcome the continuing contribution of Indigenous and traditional knowledge to research in the Arctic," and in the second Iqaluit Declaration (2015, 6) they "Welcome the recommendations on traditional and local knowledge and recognize the importance of using this knowledge in the work of the Council, instruct the Arctic Council to take relevant actions to implement these recommendations, and note with appreciation the work done by the Permanent Participants to develop their own principles for the use of traditional knowledge."

In contrast to science, little attention is paid to education. As mentioned in the science infrastructure discussion above, the UArctic is a scientific network, but it is first of all an educational network and mentioned in all but the Ottawa, Kiruna, and second Iqaluit declarations, making this a relevant finding. There is also substantial fragmentation, as only the Ottawa and Fairbanks declarations and the Rovaniemi Chair Statement broach the topic of educational attainment. The Ottawa Declaration makes reference to education in passing, and it is also unclear if the education being discussed is about education for northerners or rather about educating the public on the Arctic. The Declaration states that "the Arctic Council is established as a high level forum to: [1](d) disseminate information, encourage education and promote interest in Arctic-related issues" (Ottawa Declaration 1996, 1–2). In contrast, the Fairbanks Declaration (2017, 4) states that it will "encourage the advancement of equal access to good education at all levels" and that ministers "Welcome the initiative concerning preschool education practices aiming to raise the living standards of Arctic Indigenous peoples while maintaining their cultures and languages" (2017, 4). In the context of Indigenous peoples, the Rovaniemi Chair Statement (2019b, 9) continues with education with "the call to promote Indigenous languages in education."

For the **Implementation** indicator, each declaration addresses implementation in similar ways. Although the declarations do not have a specific "recommendation" list, the different points in declarations uses action-oriented language like, but not limited to, "encourage," "commit," or "request." For example, the Reykjavík Declaration (2004, 1) states the Arctic Council ministerial meeting will "Recognize the need for raising the profile of the Arctic internationally."

In terms of budgets, the Arctic Council itself does not provide an operating budget. Instead, "all projects or initiatives are sponsored by one or more Arctic States" (Arctic Council, 2015c), as well as through funding from other sources. For ex-

ample, the Inari Declaration (2002, 3) states the Arctic Council will "welcome multilateral and bilateral financial support of Russian NPA-Arctic and the projects derived from it as well as projects aimed to eliminate pollution in the Russian Federation." Moreover, in kind funding is recognized through the hosting of working groups and secretariats. For example, the second Iqaluit 2015 Declaration (2015, 12) expresses "appreciation to the Kingdom of Denmark for hosting the Indigenous Peoples' Secretariat for more than two decades, reaffirm[s] the decision taken by Permanent Participants to relocate it to Tromsø, Norway, and note[s] the decision to host it with the Arctic Council Secretariat." The Council also approves the budget for the Arctic Council Secretariat. For example, the Rovaniemi Chair Statement (2019,10) states that the Ministerial "meeting approved the Arctic Council Secretariat budget for 2020 and 2021."

With the exception of the Ottawa Declaration, all declarations address follow-up measures to a certain degree. For example, declarations can follow up on the work done during the chair, such as in the first Iqaluit Declaration (1998, 2) in which ministers "Welcome the SAOs' Report to the First Ministerial Meeting of the Arctic Council and adopt the recommendations contained within the Report." Similarly, in the second Iqaluit Declaration (2015, 10) they "Welcome the Guide to Oil Spill Response in Snow and Ice Conditions in the Arctic and the further efforts to implement the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic, request continuous efforts to further cooperation on oil spill preparedness and response." Finally, the Rovaniemi Statement by the Chair (2019, 6) notes that "the meeting welcomed the Guidelines for Implementing an Ecosystem Approach to Management of Arctic Marine Ecosystems." This shows progress and development of the management system over time, even if it appears to have evolved slowly.

In terms of evaluation, the Barrow Declaration comments on the achievements of the SDWG. In particular, in the Declaration, Arctic states' ministers "Note with satisfaction the results achieved by the Sustainable Development Working Group established at the last Ministerial Meeting, including the Arctic Children and Youth initiative, the Arctic Telemedicine and cultural and eco-tourism projects and the coastal fisheries project under the Council's Sustainable Development Program" (Arctic Council 2000, 3). This reads as a successful evaluation of that work. However, there is not much by way of structures to evaluate the work of the Council or its working groups through the declarations themselves. Instead, evaluation appears to take place two years later with the SAO Report to Ministers following the conclusion of the subsequent chair. That report outlines the achievements of the working groups for the previous two years and often the work of the groups is linked back to previous declarations. For example, the 2019 SAO Report to Ministers states that "In follow-up to the Fairbanks declaration 2017 (e.g., see paragraphs 11, 14-17, 20, 23–26 of the declaration), ACAP has, inter alia, undertaken the following work over the course of 2017-–2019" (Arctic Council 2019c, 17).

As a conclusion, this section shows, not surprisingly, that regarding the content of the declarations they tend to prioritize issues around International Cooperation, Governance, Human Dimension and Environmental Protection, to be the most-quoted indicators across time. They all mainly deal with – directly or indirectly - the two main functions of the Arctic Council: environmental protection and sustainable development. Under the Human Dimension indicator there is also a focus on ensuring issues of the health and wellbeing of Northerners. The economy and infrastructure are also discussed, although not to the same extent as the other issues.

Part III:
Permanent Participants' Documents

When the Arctic Council (AC) was established in 1996, the eight Arctic State 'Members' unanimously agreed to recognize six Indigenous Peoples Organizations as 'Permanent Participants' (PPs) in the Council. According to The Ottawa Declaration (1996), the position of PPs "equally is open to other Arctic organizations of Indigenous peoples[14*] with a majority Arctic Indigenous constituency, representing: (a) a single Indigenous people resident in more than one Arctic State; or (b) more than one Arctic Indigenous people resident in a single Arctic state".

The eight Arctic states first recognized the Indigenous peoples of the Arctic in 1991, with the signing of the Arctic Environment Protection Strategy (AEPS). According to the AEPS, the eight Arctic states agreed "to continue to promote cooperation with the Arctic Indigenous peoples and to invite their organizations to future meetings as observers" (Declaration on the Protection of the Arctic Environment, 1991, 2). Inuit and Saami representatives had, in fact, participated in the preparatory meetings for the AEPS in 1989–1990 (e.g., Heininen 1992). In contrast, the Ilulissat Declaration (2008), based on the ministerial meeting of the five Arctic Ocean coastal states in May 2008, does not recognize the six Permanent Participants or other Arctic Indigenous peoples.

The Arctic Council has aimed, since its establishment, to enable the Arctic Indigenous peoples—as permanent residents of the region—to contribute to the circumpolar debate in terms of their traditional knowledge, policy and political perspectives, and insights into environmental protection and sustainable development—the latter being the Council's two main focuses. This has been evidenced in ministerial and plenary meetings of the AC, where the Senior Arctic Officials (SAOs) representing the six Indigenous Peoples Organizations (IPOs) sit down at the same table with the representatives of the member states. These Indigenous peoples' representatives also have the right to take the floor and express their opinions and proposals, a right that is not afforded to the representatives of the AC observer countries and to other permanent observers, whose mandate is only to be present and to observe.

The six Indigenous Peoples Organizations with the status of a Permanent Participant of the Arctic Council are: the Aleut International Association (AIA), connecting Aleut from the USA and the Russian Federation; the Arctic Athabaskan Council (AAC), connecting Athabaskan from Canada and the USA; the Gwich'in Council International (GCI), connecting Gwich'in from Canada and the USA; the Inuit Circumpolar Council (ICC), connecting Inuit from Canada, Greenland/DNK, the Russian Federation and the USA; the Russian Association of Indigenous Peoples of the North (RAIPON), connecting all Indigenous peoples in the Russian Arctic; and the Saami Council (SC), connecting Saami in Finland, Norway, the Russian Federation, and Sweden.

Of these organizations, only the Arctic Athabaskan Council and the Inuit Circumpolar Council have written and adopted a specific Arctic policy into their portfolio of governance documents; the Gwich'in Council International has produced a report on environmental impact assessments; and the Saami Council has published declarations on the Arctic. Thus, a proper intercomparison of the documents cannot be performed in this section, as each document type serves different purposes, and, unlike the national policies, are not coded in the study. The documents of these four Permanent Participants of the Arctic Council (Athabaskan, Inuit, Gwich'in, and Saami) are, however, analyzed below—they provide valuable insights into their different approaches to Arctic governance and geopolitics, with Indigenous rights and self-determination being frequently highlighted in them. They also provide politically diverse and academically interesting approaches to Arctic security issues, for example, food safety, and the connections between human rights and peace, security, and development.

---

14   Footnote (*2), one of two in the Declaration, states: "the use of the term 'peoples' in this Declaration shall not be construed as having any implications as regard the rights which may attach to the term under international law" (1996, 3).

Arctic Athabaskan Council

The Arctic Athabaskan Council (AAC) has produced three short Arctic governance documents,[15] as follows:

1. *Improving the Efficiency and Effectiveness of the Arctic Council: A Discussion Paper (AAC 2007), a short discussion paper on the Arctic Council and its development from its March 2007 meeting;*
2. *A special paper, Europe and the Arctic: A View from the Arctic Athabaskan Council (AAC 2008) based on the September 2008 Arctic Conference, "Common Concern for the Arctic," supported by and organized in cooperation with the Nordic Council of Ministers and held in Ilulissat, Greenland.*
3. *The most recent, the 2017 AAC's Arctic Policy (AAC 2017).*

Here we analyze and compare two of these documents: the 2017 *AAC's Arctic Policy* and the 2008 *Europe and the Arctic: A View from the Arctic Athabaskan Council*. The *AAC's Arctic Policy,* adopted in 2017 by the Arctic Athabaskan Council, has ten pages (excluding maps and pictures) and covers the following:

i) It explains (a) the expected outcomes of international policy initiatives regarding the Arctic, and (b) the thematic areas and current process of Canada's 2017 Arctic Policy Framework development which is aimed at replacing Canada's Northern Strategy (2009) and the Statement on Canada's Arctic Foreign Policy (2010).

ii) It refers to a joint Statement on Climate, Energy and Arctic Leadership by the USA and Canada (President Obama and Prime Minister Trudeau) in March 2016, and a USA–Canada Joint Arctic Leaders Statement in December 2016 to launch actions ensuring a strong, sustainable and viable Arctic economy and ecosystem.

iii) It sets out the nine principles of partnership of a new Shared Arctic Leadership Model (by Mary Simon Indigenous and Northern Affairs Canada INAC 2017) to provide advice on two important topics: 1) "New ambitious conservation goals for the Arctic in the context of sustainable development"; and 2) "The social and economic priorities of Arctic leaders and Indigenous peoples living in remote Arctic communities" (2017, 3).

iv) The document covers the following thematic areas of Canada's Arctic Foreign Policy: Economy and Trade; Defence, Safety and Security; Environmental and Scientific Cooperation; and Social and Cultural Cooperation.

The 2008 document *Europe and the Arctic: A View from the Arctic Athabaskan Council* (AAC 2008) (eight pages, excluding maps or pictures), relates to the AAC's view on the relations between Europe and the Arctic, wider international cooperation, and international treaties and organizations relevant to the Arctic.

The **(Re)mapping and (Re)defining the Arctic** indicator is discussed in both the 2008 and 2017 documents. The 2008 paper states that the Athabaskan people have traditionally "used and occupied up to 3 million kms² of territory in North America" and that "[AAC] represents internationally Athabaskan peoples and communities" (2008, 2) in this territory as well as within the Arctic Council. There is, additionally, an internal definition of the Arctic as a 'home' to the Athabaskan and other aboriginal peoples of the region, as AAC International Chair Bill Erasmus (2008) wrote to the European Union. Moreover, the AAC recognizes that "it has been clear for many years that decisions made outside the Arctic have a significant bearing on what takes place within the region, for both good and ill" (2008, 2). It further states that in 2003 the United Nations Environment Programme (UNEP) "effectively characterized the Arctic as the world's barometer of environmental change and urged states worldwide to heed the reading on the barometer" (2008, 3) and also "to amend the UNFCCC [United Nations Framework Convention on Climate Change] to embed the Arctic-as-global-barometer principle" (2008, 7). This so-called barometer refers to the rapid decline of multi-year sea ice in the Arctic Ocean, which could mean, as the 2008 document speculates, that the Arctic Ocean is soon destined to become like North America's Great Lakes—frozen over in winter and completely thawed in summer.

The 2017 Arctic Policy, on the other hand, states that the AAC is "an international treaty organization established to defend the rights and further the interests internationally of American and Canadian Athabaskan members First Nation governments in the eight-nation Arctic Council and other international fora" (2017, 4–5). It further states that the AAC also "seeks to foster a greater understanding of the shared heritage of Athabaskan peoples of the Arctic North America" (2017, 5). They have lived in Arctic and sub-Arctic Alaska (USA) and Yukon and Northwest Territories of Canada for at least 10,000 years and occupy about 3 million square kilometers of this territory (2017, 5).

Concerning the **Human Dimension** indicator, the 2008 paper notes briefly that the AAC "represents internationally Athabaskan peoples and communities in sub-Arctic Alaska and northern Canada" (2008, 2). While the 2007 discussion paper states clearly that the AAC is "one of six 'permanent participants' to the Arctic Council" (AAC 2007), the 2017 Arctic Policy states that "The Arctic Athabaskan Council (AAC) is an international treaty organization established to defend the rights and further the interests internationally of American and Canadian Athabaskan members… [and] authorized 'Permanent Participant' in the Arctic Council." (2017, 4–5).

---

15   There are also two more recent documents which we will mention in the report: *AAC and Arctic EIA: Good Practice Recommendations for Environmental Impact Assessment and Public Participation in the Arctic*; and *AAC - Arctic Resilience Action Framework*.

The 2017 document also includes a special section on social and cultural cooperation emphasizing "a number of factors that put stress on Northern Indigenous people's health, languages, and social well-being.... [including] struggles with building new housing,… food availability". The section also stresses that climate change is "increasing hazards for those… harvesting on the land" and "can bring new disease vectors… as well as contaminants". Recommendations for Canada's Arctic foreign policy include to support, among other things, "human health and mental wellness", to "encourage and enable conferences and exchanges at both the academic and community level", and to "provide seed funding to allow Indigenous organizations and communities to develop programming designed to work in their specific circumstances" (2017, 6).

The **Governance** indicator is well represented in both documents and addresses different governance topics. According to the 2017 policy, "Forms of political and cultural organization vary, depending upon the place of residence of a particular Athabaskan people." Also, "in Alaska, Athabaskan peoples have organized themselves in accordance with federal and State statutes which provide funding for government operations including the Indian Reorganization Act for tribal governments" (2017, 5).

The negotiated agreements referred to are based on the Arctic Athabaskan Council's strategic objectives "to defend the harvesting rights and interests of Athabaskan peoples, communicate Arctic Council activities… and promote the evolution and strengthening of the Arctic Council to address and balance the competing issues of environmental protection and sustainable development" (2017, 5).

The 2008 paper addresses issues of self-governance and self-determination, stating that "land-claim agreements… provide a basis for Athabaskan peoples to own land and natural resources and to chart their own paths in the two nation states in which they reside" (2008, 2). Furthermore, the document comments on regional governance structures, such as the Arctic Council and the United Nations Convention on the Law of the Sea (UNCLOS) in a pan-Arctic context. Regarding the Arctic Council, the 2008 document states that, "importantly, strengthening the Arctic Council may require giving it a more formal, authoritative, and legally-binding foundation. Of interest may be the draft Arctic convention prepared by Donald Pharand and published by the Canadian Arctic Resources Committee (CARC) in 1991" (2008, 5). As for UNCLOS, in a bigger picture, "all five Arctic Ocean rim states need to apply the science-based UNCLOS process to determine the geographical extent of national rights to the offshore seaward of exclusive economic zones (EEZ),… this is exactly what the five rim states agreed in Ilulissat [in 2008]. At the end of this process… only a small zone around the North Pole will remain 'common property'" (2008, 6).

Concerning governance of natural resources, the 2008 paper states that the AAC states are "committed to the principle that development in the Arctic be environmentally, socially and culturally sustainable no matter how the UNCLOS process unfolds. It is our view that the need for additional legal instruments, and

the application of global agreements in our region, be evaluated from this perspective" (2008, 7). The views of the AAC "are similar to those of Canadian Inuit… that the Northwest Passage is 'internal waters' to Canada" (2008, 6).

Although, the 2017 AAC Arctic Policy is, first of all, meant as a policy paper on the "harvesting rights and interests of Athabaskan peoples" (2017, 5), it also deals with the **International Treaties and International Cooperation** indicator. For example, it includes recommendations that "Canada's Arctic Foreign Policy communicate fundamental information about Canada's modern treaties, land claims and self-government agreements as a fundamental element of our Arctic Foreign Policy" and also "embed the need for input from and consultation with Canadian Arctic Indigenous peoples when negotiating trade treaties in its Arctic Foreign Policy" (2017, 9). The 2008 paper defines the Arctic Council as "the key intergovernmental forum for co-operative action in the circumpolar Arctic and in conveying Arctic perspectives to international and global bodies. A 'high level' forum but rarely a political decision-making body, the council does excellent technical work and informs and enables states to adopt progressive and environmentally and socially responsible policies, if they wish." Furthermore, the fact that six IPOs, including AAC, "are 'permanent participants' to the council… enables the region's permanent residents to contribute traditional knowledge as well as policy and political perspectives to circumpolar debate" (2008, 3). Among the recommendations to Global Affairs of Canada for the international dimension of a new Arctic Policy framework is to "explore opportunities for expanded Canadian diplomacy and leadership in multilateral and bilateral forums and ways in which AAC leaders can effectively engage" (2017, 5) in several fields from the economy and trade to cultural cooperation.

The 2008 paper, which has a greater focus on international cooperation than the 2017 paper, first defines that the AAC "participates in the Arctic Council… the UN Framework Convention on Climate Change (UNFCCC) and the Stockholm Convention on Persistent Organic Pollutants (POPs)" (2008, 2); it then recognizes the success of a few international agreements involving the AAC, such as the Convention on Long-range Atmospheric Pollution (1998) of the United Nations Economic Commission for Europe (UNECE) and the Stockholm Convention on Persistent Organic Pollutants (POPs) of UNEP (2001). It also refers to UNEP's effective characterization of "the Arctic as the world's barometer of environmental change" (2008, 3). With respect to the growing interests of the European Union (EU) towards the Arctic and its development of an Arctic policy, the 2008 paper stresses that "that [the term] 'common concern' is not confused with 'common property'. As Athabaskan peoples acquired legally recognized property rights in 1971… AAC is well aware of the difference" (2008, 7). The AAC believes "strongly that member and observer states use the Arctic Council as a forum in which to engage China and we welcome ideas from European states and the EU about how best to do so" (2008, 5). Here, the hope is expressed that the European AC observer states, as well as the European Union, will support the AAC's goal "that the Arctic Council be strengthened to take a 'hands on' role in conveying

Arctic perspectives, concerns and interests on climate change, contaminants, biodiversity conservation and other issues to international and global bodies" (2008, 4).

The **Environmental Protection** indicator shows that the AAC takes environmental protection seriously, even if the issue is only briefly mentioned in the two documents; for example, the 2017 document comments on the Tlicho Aquatic Ecosystem Monitoring Program. The 2008 document also recognizes the role of UNCLOS in environmental protection, but takes a cautious approach as the AAC "is committed to the principle that development in the Arctic be environmentally, socially and culturally sustainable no matter how the UNCLOS process unfolds" (2008, 7). The 2008 document also explains that environmental protection requires management of the Northwest Passage as Canadian internal waters, which "makes sense from a practical, environmental management and regulatory perspective… [and] is the best means to protect the area's fragile natural environment" (2008, 6). Additionally, with regard to environmental protection and pollution, the document states the hope that the European observer states and the EU will support the AAC's goal of strengthening the Arctic Council "to take a 'hands on' role in conveying Arctic perspectives, concerns and interests on climate change, contaminants, biodiversity conservation and other issues to international and global bodies" (2008, 4).

The **Pollution** indicator is briefly mentioned in both documents, although each identifies different pollutants. For instance, the 2017 policy comments on the presence of POPs and atmospheric mercury, while the 2008 paper mentions contaminants linked to the biodiversity convention. Approaches to pollution problem-solving are addressed only in the 2017 policy, which mentions the Stockholm Convention on POPs.

The **Climate Change** indicator comes straight to the forefront in the 2017 policy, which states that "the Indigenous peoples of the North are dealing with the effects of climate change on a daily basis. Work by the Arctic Council on the Arctic Climate Impact Assessment (ACIA) 2004 provided a broad brush examination of climate change in the Arctic" (2017, 7). The AAC has observer status at the UNFCCC.

The starting point of the 2008 paper, which places more attention on climate change than the 2017 policy, is: "the rapid decline in recent years of multi-year sea ice in the Arctic Ocean has attracted considerable attention worldwide" (2008, 6) with UNEP having characterized the Arctic as "the world's barometer of environmental change" (2008, 3). The document also mentions that the 2004 ACIA report "has significantly influenced the climate change mitigation and adaptation positions of some non-Arctic as well as Arctic states" (2008, 4). The AAC thus "suggests that a formal adaptation protocol to the UNFCCC be considered which references the Arctic as well as other vulnerable regions of the globe" (2008, 7). Furthermore, the document recognizes the EU's leading role in climate change negotiations and that "the EU may even become the main interpreter of Arctic concerns" (2008, 4). The paper, therefore, notably states that although "the EU's efforts on climate change mitigation… are of

considerable importance to the Arctic… we strike a real note of caution about who is best positioned to be the 'main interpreter of Arctic concerns' to the broader international community". The paper continues: "This is not to defend the undeniably weak positions on climate change mitigation taken, in particular, by the governments of Canada and the United States. Rather than assuming the burden of interpreting Arctic concerns we suggest that Europe continue to… engage with those who live in the region, particularly its Indigenous peoples, and help them interpret and convey Arctic concerns to the world" (2008, 4).

The **Security** indicator is explicitly mentioned in the 2017 policy by the following statement: "Where Canada's defence, security, and boundary issues will be impacting its Indigenous and Northern residents well-being… it is of utmost importance that the residents are consulted and informed of any actions Canada proposes to undertake" (2017, 9). Based on that, the AAC aims to include "defence, safety and security" by providing recommendations on them to the Global Affairs of Canada for the international dimension of a new Arctic Policy framework "to explore opportunities for expanded Canadian diplomacy and leadership in multilateral and bilateral forums and ways in which AAC leaders can effectively engage" (2017, 5) in them.

Without explicitly mentioning sovereignty, the 2008 paper states that "the legal status of the Northwest Passage is an issue of the first political importance, particularly in Canada" (2008, 6), being 'internal waters' to Canada. It is thus important for the maritime boundary disputes between Canada and the USA in the Beaufort Sea to be resolved. Furthermore, "all five Arctic Ocean rim states need to apply the science-based UNCLOS process to determine the geographical extent of national rights to the offshore seaward of Exclusive Economic Zones (EEZ)" (2008, 6). The document notes that flag planting on the Arctic Ocean floor by the 2007 Russian Expedition "has been interpreted—misinterpreted in our view—as a sign of coming conflict" (2008, 6), while noting that outside pressures from this kind of discourse are nothing new.

The **Safety and SAR** indicator is not covered in either document.

The **Economy** indicator is briefly noted by the 2017 policy, stating that "the trade treaties which the Canadian Government negotiates at the International level… can have impacts on treaty rights… [and] intellectual property" (2017, 6). There is thus a "need for input from and consultation with Canadian Arctic Indigenous peoples when negotiating trade treaties in its [Canadian] Arctic Foreign Policy.… [to] recognize the cultural and food security barriers.… [and provide] resources to Arctic universities and institutions" (2017, 7) so as to develop innovative ways of addressing housing in the Arctic North, including energy-efficiency.

The 2008 paper briefly recognizes that there is a strong connection between the aspirations of the EU to be/become a "more visible and important player in the Arctic and Europe's attitude to the wildlife-based renewable resource economy which remains important in many northern communities and to Arctic

Indigenous Peoples" (2008, 5). The document, however, states bluntly that "exempting Indigenous peoples from broader restrictions in trade on wildlife products has not [worked] and will not work [in the future]" (2008, 5).

The **Tourism** indicator is not covered by the two documents.

Concerning the **Infrastructure** indicator, the 2008 paper firmly states that "transcontinental shipping through the [Northwest] passage will… inevitably lead to additional development with impacts further South" (2008, 6). It also shows the AAC's concerns that, due to the rapid warming of the Arctic Ocean, it is destined, as mentioned earlier, to soon become "frozen over in winter and completely thawed in summer – [thus] further 'opening' the region to oil, gas and mineral development and intercontinental shipping" (2008, 6). Among the recommendations for Canada's Arctic Foreign Policy, the 2017 AAC policy asks for "resources to Arctic universities and institutions to develop Arctic innovations that considers and addresses northern housing and energy-efficient infrastructure, renewable energy, food security, community based monitoring, resource development and technology" (2017, 7).

For the **Science and Education** indicator, the 2008 paper briefly notes that having six Indigenous Peoples Organizations as 'Permanent Participants' to the Arctic Council enables "the region's permanent residents to contribute traditional knowledge as well as policy and political perspectives to circumpolar debate" (2008, 3). Further, the AAC is well aware "of the significant contribution of Germany, France and the UK to polar science" (2008, 5). The 2017 policy paper, concerning the Canadian High Arctic Research Station (CHARS) and Polar Knowledge Canada, recommends that Canada's Arctic foreign policy should ensure "to the maximum extent possible, [that] research be co-developed, produced and communicated in full partnership with Arctic Indigenous people" including "Indigenous participation on Canadian delegations" (2017, 8). The aim is to strengthen Arctic [research] links, engaging broadly in dialogue with First Nations, Yukon and Northwest Territories governments, co-management bodies, individuals, and organizations with respect to research plans, instead of the current situation, namely, where all communication is directed via CHARS and providing input or exploring research synergies is impossible.

The **Implementation** indicator is an element in both documents. The 2017 AAC Arctic Policy has several recommendations on each theme and includes three additional recommendations as follow-up to the Arctic Athabaskan Council's policy formulation process regarding how Indigenous northern think-tanks could be used to advise governments on Arctic issues: first, "a co-creation Policy-making group comprised of Indigenous and Northern experts alongside federal and industry experts [should] be created to advance economic development in a sustainable manner within the Territorial North" (2017, 9); second, Canada will establish "an Indigenous Northern based 'think-tank' for research and social science advisors to ensure that Canada's Arctic people have an informed voice and meaningful participation on Arctic decision-making at all levels"

(2017, 9); and third, Canada will "provide multiyear funding to the three Canadian Permanent Participants" (2017, 10) in the Arctic Council.

Correspondigly, as a follow-up, the 2008 paper discusses "seven ideas/initiatives for consideration as policy priorities" (2008, 7). Finally, to note that the document was sent to the [then] President of the European Commission, José Manuel Barroso (on 29 September 2008), and the first of the six points of the letter from the AAC, is that "the Arctic is considered the sovereign territory of eight states, not common property to which interested non-Arctic parties have property rights" (Erasmus 2008).

To sum up

The two AAC documents are strong statements on behalf of Athabaskans and the Arctic Athabaskan Council. They also send strong messages to 'outsiders' from one Arctic nation, which is a minority but proud to live there, regarding the staunch sovereignty of the Arctic states. The 2017 Arctic Policy, in particular, is meant, first of all, as a policy paper on strategic objectives with respect to the "harvesting rights and interests of the Athabaskan peoples" (2017, 5). It shows how strongly protective the AAC is of the sovereignty and rights of the Athabaskan peoples, and it can be interpreted as challenging, if not questioning, the second footnote (see (*2) above) of the Ottawa Declaration (1996), namely, that "the use of the term 'peoples'… shall not be construed as having any implications as regard the rights which may attach to the term under international law" (1996, 3).

It is encouraging to read in the 2008 paper and in the ACIA Report (2004) on mitigation and adaptation of UNEP's characterization of the Arctic as "the world's barometer of environmental change" (2008, 3). The basis of this characterization is the 2007 discussion paper on improving the efficiency and effectiveness of the Arctic Council (AAC 2007), which was the first to recognize that "global interest in the Arctic is growing. Energy and mineral development, pollution, climate change, transportation and other issues in the Arctic are attracting increased attention internationally, and this process continues" (2007, 3). The 2007 paper goes on to state that "decisions made in non-Arctic states and by global institutions have a growing influence on the well-being of Athabaskans who continue to adjust to a rapidly changing world" (2007, 3).

As the nature and purpose of the 2017 and 2008 documents differ greatly, comparing the papers makes little sense. Briefly, among the most striking **similarities** are, i) the dominant areas of the documents are those related to indicators of Governance and International Cooperation; ii) security is explicitly, and evenly, discussed in the both documents; and iii) the Arctic Council itself is highlighted in the documents. The 2008 policy paper defines the Arctic Council as "the key intergovernmental forum for co-operative action in the circumpolar Arctic" (2008, 3), stating its wish to strengthen the Council in its goals (of environmental protection and sustainable development).

The biggest **difference** between the two documents lies in their purposes. The 2017 one is a general policy document by the AAC, which concentrates on the rights, interests and self-determination of Athabaskan peoples as part of the human dimension, and of science and education. The 2008 paper is all about the AAC's view on "Europe and the Arctic," and thus the document very much concentrates on International cooperation, as well as climate change.

Gwich'in Council International

The only Gwich'in Council International (GCI) document which we found for the project was the April 2018 *Impact Assessment in the Arctic: Emerging Practices of Indigenous-Led Review* submitted to Gwich'in Council International. This report is a study on environmental assessment, in particular, an Indigenous-led impact assessment with two research questions. First, the document asks what the key features of this impact assessment are; and second, what the outcomes are there, and how they have worked. To answer these questions, the document uses specific case studies on environmental impact assessment, referring to 'community based assessment.'

The key findings of the Gwich'in study report, consisting of 54 pages, including maps and pictures, are: "Indigenous parties are creatively using legislation and negotiated agreements to give force to Indigenous-led reviews. Indigenous-led impact assessments can be effective with a wide range of primary relationships.... All processes require a clear set of steps defining how the review will be conducted.... Creation of Indigenous-led approach does not negate participation and use of findings from state-led processes.... There are a variety of specific enabling factors that will improve the chances of success of an Indigenous-led impact assessment.... There are distinguishing elements that make Indigenous-led impact assessment attractive, such as the ability to ensure culture, language, and way of life" (Gwich'in Council International 2018, 4–5).

The **(Re)mapping and (Re)defining** indicator briefly defines the Gwich'in territory, with the 2018 document noting that the Gwich'in Council International represents "9,000 Gwich'in in the Northwest Territories (NWT), Yukon, and Alaska as a Permanent Participant in the Arctic Council, the only international organization to give Indigenous peoples a seat at the decision-making table alongside national governments" (2018, 2). However, there is no detailed discussion or definition of the Arctic, only a consideration of "how to establish their own Indigenous-led impact assessment processes over resource development in their homelands" (2018, 7).

The **Human Dimension** indicator explains that "Indigenous parties are creatively using legislation and negotiated agreements to conduct reviews" (2018, 4). "However, even absent these powers, Indigenous-led assessments can successfully occur, especially in high leverage situations" (2018, 42). Furthermore, the document seeks to identify 'enabling factors' contributing to the success of Indigenous-led impact assessment. This

is, in particular, due to the fact that "historically, Canadian Indigenous groups have often not had a meaningful voice in impact assessment" (2018, 10), because, according to Gibson (2017), "Indigenous culture, traditional activities, rights, and title have by and large not been taken into comprehensive… account in the Crown-led and proponent-driven Canadian environmental assessment processes" (2018, 10). Here human capacity critically consists of "three elements related to capacity: funding, human resources, and relationship building" (2018, 38).

The **Governance** indicator reveals that the document is about "Indigenous-led impact assessment," which is mentioned multiple times (e.g., five times in one paragraph on p. 7). Within this context, the study illustrates how Indigenous governments can and have led their own impact assessment processes, how they established their own Indigenous-led impact assessment processes over resource development in their homelands, and how legislation and land claims set clear processes for impact assessment review. The document furthermore states that "where this powerful enabling factor is absent, the nation can seek such clarity through the establishment of a contract (IBA) [Impact Benefit Agreement] to define requirements for consent and impact assessment review" (2018, 42).

Interestingly, the document, which is based on a study commissioned by Gwich'in Council International to inform its participants about "Good Practice Recommendations for Environmental Impact Assessment and Public Participation in the Arctic project" (under the auspices of the Sustainable Development Working Group, SDWG of the Arctic Council) describes in detail the "common characteristics that distinguish Indigenous-led impact assessment." Those characteristics include, among others, "a process derived from and steeped in the culture, traditional knowledge, and stewardship approach of the nation.... legitimate elements of an Indigenous group's overall governance/stewardship rights and responsibilities within its territory.... Indigenous laws and norms.... Indigenous knowledge… brought in systematically through every phase of decision-making.... Cultural values tend to be more broadly defined in Indigenous-led assessment.... [with] more focus on oral discussion of issues.... [and there is] a greater willingness to consider a future without the project if costs are deemed to outweigh benefits" (2018, 13).

This method is about 'self-governance' and 'self-determination', as the document's working definition for 'Indigenous-led impact assessment' indicates: "a process that is completed prior to any approvals or consent being provided for a proposed project, which is designed and conducted with meaningful input and an adequate degree of control by Indigenous parties— on their own terms and with their approval. The Indigenous parties are involved in the scoping, data collection, assessment, management planning, and decision-making about a project" (2018, 10). As a result, and based on the definition of 'Indigenous-led impact assessment,' decision-making is carried out by the Indigenous parties.

The document also mentions the "willingness to support and engage the Indigenous-led review…[and the] pre-existing requirements for Indigenous engagement in both the NWT and Quebec There was also a willing and engaged proponent, which at least partially funded the effort" (2018, 40). Finally, central governments [for example,] "also play a role in supporting Indigenous-led impact assessment… governments and industry may be assets, not opposition… to encourage and support Indigenous-led impact assessment" (2018, 40).

Finally, the report identifies three different 'lessons learned' which are listed in the document. First, "effective Indigenous-led impact assessment includes a clear process for defining how consent will be given." Second, "creation of an Indigenous-led approach should not negate participation [in] and use of findings from the state-led process. In fact, there are high benefits to at least 'shadowing' the state-led processes." Finally, governments and industry may be "assets, not opposition" (2018, 42).

The **International Treaties and International Cooperation** indicator is briefly discussed, first, through the mention that Gwich'in Council International is a "Permanent Participant in the Arctic Council, the only international organization to give Indigenous peoples a seat at the decision-making table alongside national governments" (2018, 2) and second by identifying and proposing a potential "for international comparative work, including and especially significant to the Arctic, that focuses on Indigenous impact assessment processes, particularly those that are being led by Indigenous groups in other jurisdictions" (2018, 43).

The following indicators are not explicitly discussed in the document: **Environmental Protection, Pollution, Climate Change, Security, Safety and SAR, Tourism and Infrastructure.**

The **Economy** indicator is discussed substantially via three case studies of the Indigenous-led impact assessment, that include the Tlicho of the Nico Project (North-West Territories), The Sivumut Project (Quebec), Squamish Nation Woodfibre LNG Project (British Columbia). These all address governance and co-management of resources, but have different relationship models: the Tlicho of the Nico Project is co-managed, the Sivumut Project co-developed, and Squamish Nation Woodfibre LNG Project is independent. As they all are about utilization of natural resources (mining and natural gas), and sustainable development, they are included in the economy indicator here.

The **Science and Education** indicator is not explicitly discussed in the Gwich'in Impact Assessment, but is implicit, given that the document is a study with methods and an ambitious research approach.

To sum up

The *Impact Assessment in the Arctic: Emerging Practices of Indigenous-Led Review* report by the Gwich'in Council International is first of all a study—and an interesting one—on environmental impact assessments, and in particular on Indigenous-led impact assessment. Thus, it is also a study on self-governance and self-determination, how governance is interpreted, and how this plays a more important role in the globalized Arctic region, and possibly in world politics, too. Therefore, the document does not cover, nor is it intended to cover, most of the indicators of this overall analysis. The content of the report is, however, rich and includes both theoretical approaches and case studies. Its value is to examine, discuss and define environmental impact assessment, in particular Indigenous-led, through three case studies with different relationship models: co-managing, co-development, and independently run. Indeed, this report is more than a study of environmental impact assessment in a changing Arctic influenced by grand environmental challenges and big international/global actors from outside of the region. It is also an important contribution and presentation from Indigenous peoples' perspectives to discuss, brainstorm, and (re)define self-governance/self-determination in general, and good practices on impact assessment in the global Arctic, in particular.

Inuit Circumpolar Council

The Inuit Arctic Policy of the Inuit Circumpolar Council (ICC) was adopted in 2010 (ICC 2010) and is currently in its third edition. The 121-page information-rich policy document (including pictures) was edited and revised by Aqqaluk Lynge and Marianne Stenbaek. It has eight sections: I. Goals and Objectives; II. Inuit Rights, Peace and Security Issues; III. Environmental Issues; IV. Social Issues; V. Cultural Issues; VI. Economic Issues; VII. Educational and Scientific Issues; VIII. Implementation and Appendixes.

Another important ICC document is the *Utqiagvik Declaration 2018* (ICC 2018), consisting of 13 pages (with no pictures) by the Inuit of Alaska, Canada, Greenland, and Chukotka, presented at the 13th General Assembly of the Inuit Circumpolar Council on 16–19 July 2018 in Utqiagvik, Alaska. The main themes/sub-titles are: International Indigenous Human Rights and International Partnerships; Food Security; Families and Youth; Health and Wellness; Education and Language; Indigenous Knowledge; Sustainable Wildlife Management; Environment; Sustainable Development' and Communication and Capacity Building.

A General Assembly of the Inuit Circumpolar Council (ICC) is held every fourth year. There are thus several Inuit declarations available, such as the *Kitigaaryuit Declaration* of July 2014 (ICC 2014), the *Nuuk Declaration* of July 2010, and the *Utqiagvik Declaration* of 2006 (ICC 2006). Better known, however, is *A Circumpolar Inuit Declaration on Sovereignty in the Arctic*, adopted by the ICC in April 2019 (ICC 2009), and inspired, perhaps even provoked, by the Illulissat Ministerial meeting and Declaration of May 2008.

In the 2018 Utqiagvik Declaration, the **(Re)mapping and (Re)defining the Arctic** indicator clearly defines, or redefines, the Arctic region by explaining the Inuit as "one Arctic people living in four nations across Inuit Nunaat, our shared homeland, that today encompasses northern Alaska, Chukotka, Canada,

and Greenland" (ICC 2018, 1). The Declaration continues that the Arctic region "poses extreme challenges to connectivity and [that] overcoming these challenges requires political will and infrastructure" (2018, 10); "Inuit are more connected today than ever before due to the advent of the internet and social media" (2018, 11). Finally, "ICC will pursue novel initiatives that foster greater social, cultural, and political exchange between Inuit regions in order to enrich Inuit cooperation and unity" (2018, 12).

The 2010 Inuit Arctic Policy (ICC 2010) makes a more political definition of the region arguing that "the Arctic is the Inuit Homeland and has been inhabited by Inuit for thousands of years" (Inuit Arctic Policy 2010, 26). Hence "Inuit and other Arctic Indigenous peoples are ancient societies using and occupying vast traditional territories which pre-date the creation of modern states" (2010, 21). The "Inuit own or have jurisdiction over half the entire Arctic… [and] we are, in fact, the largest landholders in the world [and] The Arctic has been our home and our sustenance for centuries" (2010, 9). "The Arctic is first and foremost the ancestral homeland of Inuit and other northern peoples" (2010, 22). Overall, the Arctic region and sub-Arctic areas, as well as the entire northern circumpolar world, is said by the Policy to "form a single region in which many states and peoples are found. This region includes the Inuit homeland (Inuit Nunaat), which transcends the geographical boundaries [of the region] (2010, 21) and given that a "large part of the Arctic Ocean is contiguous to Inuit Nunaat, Inuit should therefore be consulted" [on all relevant issues] (2010, 45).

The 2010 Inuit Policy also discusses changes in the Arctic. "The Inuit world has changed profoundly… [and] Inuit Nunaat, our homeland, has become a major force in international and national politics, in climate change research and science, in culture and arts, in minority human rights and models of Indigenous self-government. Arctic Sovereignty is one of our main concerns and is now also an international concern" (2010, 9). Finally, that "The Inuit Circumpolar Council and its Arctic Policy principles have played an important role in this development" (2010, 9).

Concerning the **Human Dimension** indicator the 2010 Policy clearly states how critical it is that "Inuit be recognized and referred to both nationally and internationally as a distinct 'people.' Inuit are not mere 'populations' or 'minorities'" (2010, 13). In recognition of their distinctness, the seventh of November each year has been proclaimed 'Inuit Day' (2010, 11). The 2010 Policy further clarifies: "The Inuit are an integral part of Arctic ecosystems in harmony with… the dynamic processes of Arctic ecosystems" (2010, 34). In terms of Inuit history, "Inuit and other Arctic Indigenous peoples are ancient societies using and occupying vast traditional territories which pre-date the creation of modern states. These first inhabitants of the Arctic have their own laws, customs, institutions, cultures and rights which also pre-date those of Arctic states" (2010, 21). "The archaeological record of the Arctic is the history of Inuit and other northern Indigenous peoples" (2010, 73), but "people have underestimated our adaptability and resilience. We were a rag-tag and young group of Inuit… but we were determined" (2010, 9).

Correspondingly, the 2018 Declaration reaffirms that "Inuit are one Arctic people living in four nations across Inuit Nunaat, our shared homeland" (2018, 1).

The 2010 Policy includes requests to both the Inuit Circumpolar Council (ICC) and to Arctic states regarding subsistence rights. "An Inuit Arctic Policy must recognize that Indigenous 'subsistence' is a highly complex notion" (2010, 29) [and the] ICC shall be greatly encouraged to undertake a comprehensive study on how best to address global forces, such as the 'animal rights' and other destructive movements that aim to destroy Inuit sustainable use of living resources" (2010, 82). This matter is seen as consistent with the "principles of self-government, [given that] Inuit and other Arctic peoples should have direct input in the formulation and implementation of Arctic co-operation agreements" (2010, 22). On the other hand, Arctic States "should recognize that Inuit have the right to engage in traditional contacts and in all forms of cooperation, including economic and social exchanges, and travel and trade across state and other boundaries" (2010, 88), and "trade among themselves regardless of national jurisdictions or boundaries" (2010, 81).

The issue of 'Inuit rights' is an important part of the 2010 Policy, both in general and at the national level (see the chapter on 'Inuit Rights, Peace and Security Issues'). Nationally, the Inuit as "distinct Indigenous peoples… have both fundamental collective and individual [basic] rights"… [that] "must be guaranteed in the national legal system of their respective states" (2010, 13) "across the circumpolar regions, including marine areas, and [that] transcend the national boundaries of Arctic states" (2010, 13). In general, the 2010 Policy strongly states that "Indigenous peoples have the right to the full enjoyment, as a collective or as individuals, of all human rights and fundamental freedoms as recognized in the Charter of the United Nations, the Universal Declaration of Human Rights and international human rights law[s]" (2010, 21). The 2018 Declaration correspondingly reaffirms "that the rights to lands, resources and territories and the right of self-determination [recognized and] affirmed by the United Nation Declaration on the Rights of Indigenous Peoples (UNDRIP) [as an international human rights instrument], applies to our entire homeland, including lands, waters, ice, air space and resources" (2018, 1). Indeed, the 2018 Declaration goes back to the very roots of the ICC—"concern for the security and integrity of the Arctic environment prompted the establishment of ICC" as "the first non-governmental organization to call for the precautionary principle and vocalize the human rights dimension of the implications and impacts of a rapidly changing Arctic environment" (2018, 9).

The 2010 Policy states that some of these human rights exist to "protect and promote Inuit rights and status within each state" (2010, 13). In pursuit of these rights, "Inuit must seek to obtain full participation in all national and governmental discussions and major issues affecting Inuit interests" (2010, 13) which "not only ensures recognition and respect for Inuit rights and interests, but also protects the human and other fundamental rights and freedoms" (2010, 11). The 2018 Declaration echoes this opinion in terms of supporting Inuit "rights and self-determina-

tion on wildlife management issues" (2018, 8) and of directing the ICC "to participate collectively and strategically to ensure the Convention on Biological Diversity (CBD) action plans support and enhance monitoring and sustainable use of Arctic biodiversity" (2018, 8). Furthermore, Inuit aim to "exchange information amongst ourselves to build capacity regarding human rights instruments and apply them to co-management regimes and other governance bodies to advance our food sovereignty and self-governance of land, wildlife and ecosystems" (2018, 8).

It should be recognized that "there is a profound relationship between human rights, peace and development" (2010, 20) in "formulating a comprehensive Inuit Arctic Policy" (2010, 9). This is because, on the one hand, these rights "are considered as individual and collective rights [including both] rights and duties" (2010, 20), and on the other, "severe economic disparities and human rights violations can pose a threat to world peace" while "peaceful relationships and peace are generally vital factors in striving towards social progress and development" (2010, 20). Regarding Inuit subsistence rights, these include "hunting, fishing, trapping, and gathering" (2010, 29), being "both collective and individual in nature. Inuit rights to harvest flora and fauna… are not limited to traditionally harvested species" (2010, 29). The feasibility of creating an "Arctic Environmental Bill of Rights" should be studied in this context (2010, 28).

The 2010 Policy also states that "The harvesting practices of Inuit are a crucial part of their ancestral rights and traditions" (2010, 30). And this economic self-sufficiency also includes a reference to the problems Inuit encounter regarding "animal rights groups" (2010, 33). The ICC is asked to "represent Inuit by promoting their rights and protecting their interests" in relevant international organizations, such as WIPO, the EU, NAFTA, IWC, IUCN, WTO (2010, 82). According to the 2018 Declaration "elements of an overall strategy to counter international anti-harvest and animal rights groups would include [for example].... securing of expanded markets for products of Indigenous harvesting" (2010, 33).

According to the 2010 Policy, rights are also connected to access to resources. For example, the document explains that "Inuit have the right to manage Arctic renewable resources including hydro-power" (2010, 29) and have "extensive rights in inland water areas within their traditional territories, as outlined in agreements with their respective nation states" (2010, 39). They should also "be involved in all aspects of economic development in order to enjoy such fundamental human rights as the right to work and the right to an adequate standard of living" (2010, 79).

The 2010 Policy also speaks to issues of children's rights. In particular, "in ensuring that the rights of Inuit children are clearly recognized, it is beneficial to determine what children's rights already exist at the international level and within the Arctic states concerned" (2010, 58). Here the "right to education is a fundamental right" (2010, 89), which is recognized in the 2007 UN Declaration on the Rights of Indigenous Peoples. Finally, the ICC promises to "work to have the UN Convention on the Rights of the Child fully implemented in regard to all chil-

dren in the Arctic" (2010, 59). Additionally, other international agreements and instruments should be consulted regarding the rights of children, such as the Universal Declaration of Human Rights, International Covenant on Civil and Political Rights, International Covenant on Economic, Social and Cultural Rights, the 1979 Convention on the Elimination of All Forms of Discrimination Against Women, and ILO Conventions.

A fundamental part, even the foundation, of human rights, according to the 2010 Policy, is to "integrate Inuit cultural values and concerns in all aspects" (2010, 11) including creative aspects, given that "the diverse cultures of Inuit… are part of the cultural heritage of all humankind" (2010, 65). Here the ICC can play an important role in circumpolar relations, providing "an ideal forum for Inuit from the various Arctic states to engage in social and cultural relations" (2010, 22). The 2010 Policy emphasizes that "language is central to the continuity of culture and to cultural identity.… the universe… [is] manifested through the Inuit language" (2010, 65), and "the Inuit language should [thus] be a working language in Inuit schools.… [as well as used] at home with [our] children" (2010, 92). The 2018 Declaration echoes this viewpoint, stating that "our languages are the foundation of our culture and identity. Legally protecting and revitalizing those languages is urgent and paramount" (2018, 6). In order for the Inuit language to remain strong, "Inuit language schools and learning institutions need to be established by the appropriate authorities" (2018, 6).

Interestingly, the 2010 Policy argues that, on the one hand, "most of Inuit material culture is derived from the land and sea mammals" (2010, 66) and this "cultural property' includes property of archaeological, ethnological, artistic, literary, scientific, or historical interest and importance" (2010, 71). On the other hand, "non-material cultures are [also] part of the cultural heritage of Inuit. The collective rights of Inuit to those non-material cultures are to be respected and Inuit credited with the full benefits" (2010, 66). For example, "the spiritual expression of a traditional Inuit culture is part of its greatest treasures" (2010, 74) and must be respected and protected (2010, 66). Religious beliefs are not limited to organized religions" (2010, 76), as 'cultural property' also "merits adequate protection, foremost because of its cultural, spiritual, and educational value and use" (2010, 71). This means that "cultural sites of particular significance to Inuit should be protected through regional, national, and international measures" such as the UNESCO Convention on the Safeguarding of Intangible Cultural Heritage and the UN Convention on Cultural Diversity (2010, 74). One of the goals of the 2018 Declaration is to "support communities who are working to reclaim formal recognition of their original place names" (2018, 12). Overall, the 2010 Policy stresses that "Inuit have a right to the protection of their intellectual property. In particular, special attention is required to substantially reduce or eliminate the trade of counterfeit Inuit art or other objects and products" (2010, 88).

Inuit rights also includes supporting families and youth. The 2018 Declaration considers equality as "the unique needs and challenges based on gender in Inuit communities" (2018, 5).

Correspondingly, the 2010 Policy argues that with respect to "threats of violence in the home, special measures must be implemented both in regard to women and men… [and] when possible, safe houses should be located in each community" (2010, 55). Health and well-being are also considered important: the chapter on "Sexual Equality and the Changing Roles of Women and Men in the Arctic" argues on behalf of greater equality for the Inuit, including education about AIDS and other sexually transmitted diseases. To open the doors to equality of opportunity, the Inuit and other distinct peoples may need to be treated differently, with the obstacles which they alone face for no justifiable reason needing to be eliminated" (2010, 54–55). Moreover, "dissemination of hate literature, incitement to violence, and other forms of promoting racial, religious, or other prejudices must be effectively prohibited throughout the Arctic" (2010, 77).

Health is also addressed in the 2018 Declaration. "Healthy Inuit families are central to the sustainability of our communities" (2018, 4). While food security will be discussed under the Security indicator, this means more broadly that "Inuit health and wellness must be approached in a holistic way that recognizes that physical and mental health cannot be addressed separately and solutions should build upon the knowledge and strengths found within our communities" (2018, 5). The 2018 Declaration commits to taking "full and effective action to prevent suicide among Inuit" (2018, 1) and to "advocate for infrastructure and Inuit-specific interventions that will address family violence" (2018, 5).

One of the priorities of the 2010 Policy is "improving the quality of life in Inuit communities" (2010, 11) and to "improve the quality of life in Arctic communities" (2010, 19), namely "issues of food security, unemployment, housing shortages and many chronic health issues" (2010, 25), and "a right to safe drinking water" (2010, 39. Moreover, "if the right to health as a fundamental human right is to have real meaning in the Arctic, a comprehensive strategy must be devised and carried out" (2010, 51). "Health is more than the absence of disease. It refers to the state of the whole person and has a direct bearing on the development of the individual and her or his quality of life" (2010, 51). "An approach which addresses a wide range of basic needs, such as nutrition, education, housing, water and sanitation, medical care and social services, must be developed if health goals are to be achieved" (2010, 51–52). "The well-being of children is vital to all Inuit. Children represent the future of the Arctic" (2010, 55). For example, as Inuit youths are facing chronic unemployment, childhood abuse and violence, and a high suicide rate, "the education system and its ability to prepare them for the labour market" is important (2010, 59). Moreover, Inuit Elders are mentioned "as traditional leaders [who] must be encouraged and permitted to re-establish a leadership role and participate in decision-making" (2010, 64). "Traditional knowledge, be it cultural, environmental or ecological, should be part of the curriculum in schools" (2010, 64).

All in all, the 2010 Policy fully supports "traditional Inuit adoption and encourage states to legally recognize Inuit traditional adoption" (2010, 53). Moreover, it is "of primary importance that Inuit values and traditions with respect to family planning and treatment of children be given full recognition by the Arctic states concerned" (2010, 54). "Inuit health and social service organizations must ensure the creation or improvement of services in Inuit communities" (2010, 64).

Finally, the 2010 Policy briefly mentions migration, stating that "mobility rights are generally recognized throughout Inuit regions" (2010, 81).

The core of the **Governance** indicator here is undoubtedly 'self-governance'/'self-determination.' The 2010 Policy (in its chapter on self-government) states that Inuit "as Indigenous peoples… have the right to exercise sufficient control over matters affecting their traditional territories, communities, and interests. An integral part of this right of self-determination within states is the right to self-government", consistent with "recognized rights and principles applicable to Indigenous peoples under international law" [so that they can exercise] "adequate powers of self-government within their traditional territories" (2010, 15). Finally, "the rights to lands, resources and territories and the right of self-determination, affirmed by the UN Declaration on the Rights of Indigenous Peoples (UNDRIP), applies to our entire homeland, including lands, waters, ice, air space and resources" (2018, 1).

The 2010 Policy claims that "there is insufficient recognition and respect for Indigenous societies and rights in some countries, inadequate protection of the Arctic environment, and often, the imposition of centralized state policies unsuited to Arctic conditions and needs" (2010, 22) and that "state government policies that continue to deny Indigenous peoples their full rights to non-renewable resources and that treat such peoples as obstacles to development are colonial and out-dated" (2010, 36). Instead, states should actively "promote Inuit self-reliance [and] the Inuit Arctic Policy must elaborate a comprehensive Arctic economic strategy" (2010, 79). For example, "a vital step towards achieving full and meaningful employment… must be the formulation and implementation of a comprehensive training and education strategy designed especially for the Arctic" (2010, 83). "Where lacking, direct political representation by Inuit in national and regional political institutions should be actively sought, in order to obtain a more adequate government response to Inuit concerns" (2010, 13).

"Consistent with principles of self-government, Inuit and other Arctic peoples should have direct input in the formulation and implementation of Arctic co-operation agreements" (2010, 22) and be involved "when devising policies and implementing international conventions or other agreements" (2010, 40). The term 'self-government' is mentioned several times and the establishment a "committee to examine the state of Inuit rights for self-determination as recognized in international law" is proposed (2010, 16). The committee should also ascertain how to secure these rights within Inuit Nunaat (2010, 16). Finally, it is proposed "to establish a comprehensive Inuit Arctic Policy… in regard to matters of economic, social, cultural, environmental as well as political concerns", "to achieve a broad consensus on

the priorities, policies, and principles to be advanced in Inuit… regions", and "to encourage co-ordination of policy-making and decision-making in the international community" (2010, 11).

According to the 2010 Policy, "self-regulation is a key element in the relationship between Inuit and harvested resources" (2010, 30) and "an integral part of the cultural relationship between Inuit and the subsistence harvest" (2010, 34) "if fundamental principles of self-government are to be respected" (2010, 34). Furthermore, "Inuit traditions, customs, and rules relating to harvesting and resource management should be an integral part of any Arctic renewable resource management regime" (2010, 34).

Correspondingly, the 2018 Declaration states that "Inuit have a right to self-determination in all facets of life, including in the promotion of Indigenous Knowledge and research" (2018, 7). To achieve this, it is necessary "to advance self-determination and recognition of Indigenous Knowledge… [and to] instruct ICC to engage with appropriate international fora" (e.g., AC, UNFCCC, CBD, IPCC) (2018, 7). Furthermore, "sustainable wildlife management is an important element for achieving Inuit food security. Inuit have rights in national and international agreements that protect Indigenous hunting and fishing activities…. [which] affirm Inuit rights to self-determination" (2018, 7). As far as sustainable development is concerned, the Inuit know that "economic development and social and cultural development must go hand-in-hand, resulting in self-sufficiency, which is an essential part of greater political self-determination" (2018, 10). The 2018 Declaration recommends continued sharing of "our unique knowledge and experiences with each other to advocate for the utilization and equity of Indigenous Knowledge within wildlife management practices… and support our rights and self-determination on wildlife management issues" (2018, 8).

The 2010 Policy recognizes that "multilateral and transnational cooperation among Arctic and other states is a prerequisite to the development of a circumpolar system of marine management" (2010, 43), and insists that Arctic states' "policies regarding the management and development of the seabed and its resources must be established in collaboration with Inuit" (2010, 43). In addition, "ship-owners and oil drilling rig owners should be subject to strict liability for ocean pollution (2010, 48) as "increased exercise of Inuit offshore rights in the Arctic is crucial for the survival, development and future of Inuit" (2010, 40). Also, "comprehensive Arctic marine management and development policies… must meet the social, cultural, political, and economic needs and priorities of Inuit" (2010, 42).

Concerning public consultations and environmental impact assessments, the 2010 Policy states that "proposed projects subject to environmental and social impact assessment must include potential economic impacts as an integral part of the overall assessment" (2010, 80) and, for example "study the socio-economic, environmental and cultural impacts of the opening of the north polar sea routes on our communities" (2010, 82). "Environmental and social impact assessment procedures must be mandatory for proposed defence related projects… in particular, the siting, construction, and operation of military bases, installations, and facilities" (2010, 18). "National security restrictions… must not be used as a means of avoiding a full and open process of impact assessment" (2010, 19). Overall, "Inuit and other Arctic peoples must be assured timely access to relevant information and full participation in the impact assessment process" (2010, 19), for example, through an Arctic Environmental Bill of Rights, as mentioned above.

According to the 2018 Declaration, [Inuit] "self-determination and recognition of Indigenous Knowledge" (2018, 7) are crucial. The ICC should also be directed "to advocate its positions on contaminants through the implementation and effectiveness monitoring regimes" of for example, UN Stockholm Conventions on POPs and UN Minamata Convention on Mercury (2018, 9). The Declaration (2018, 10) refers to the 2017 Report of the Pikialasorsuaq Commission, 'People of the Ice Bridge: The Future of Pikialasorsuaq' should be adopted. The main objective here should be "improving the self-sufficiency of Inuit over time with the overall objective of aligning economic development and [the Inuit] cultural way of life" (2018, 10).

The **International Treaties and International Cooperation** indicator plays an important role here—both Inuit documents greatly appreciate and emphasize international cooperation, and note, for example, that "multilateral and transnational cooperation among Arctic and other states is a prerequisite to the development of a circumpolar system of marine management" (2010, 43).

The 2010 Policy is clearly committed both to international cooperation and to international organizations and treaties which promote "international understanding and co-operation in Arctic matters through collaborative, co-operative research; informational, cultural, and educational exchanges; and international agreements" (2010, 11). It states that "cooperation, information sharing, and solidarity among northern peoples are increasingly vital" and that "multilateral forums, such as the Arctic Council, are required in the Arctic" (2010, 22). It is important for Inuit and other northern peoples to "work together to ensure that… key Arctic issues and concerns are made the focus of the international community. This is particularly important in this age of climate change" (2010, 22). Young people should also be encouraged to pursue activities "that emphasize the need for international peace, co-operation, and understanding" (2010, 61). Inuit have a right to be involved in international agreements and treaties as they are often "concluded between states on matters that directly affect Inuit rights and interests" (2010, 14). Such "treaties and other agreements for cultural and other forms of Arctic cooperation between states should involve Inuit in the policy formulation, negotiation, and implementation stages" (2010, 68). It is also vital that Inuit "have formal and direct representation in international policy and law-making forums relating to Indigenous peoples' interests or Arctic concerns" (2010, 14).

According to the 2018 Declaration, "self-determination and recognition of Indigenous Knowledge" need to be advanced and,

in this context, the ICC should be instructed to engage in the "appropriate international fora" (e.g., the AC, UNFCCC, CBD, IPCC) (2018, 7). The Declaration calls for participation in "Arctic science and research," namely, "contributing to activities that achieve partnerships and reflects the utilization of both Inuit Knowledge and science" and thereby advancing Inuit self-determination, for example, in the framework of the "Inuit review of the consultation process of the Arctic Council Arctic Science Cooperation Agreement" (2018, 7). The Declaration further urges the ICC "to promote the interconnectedness of drivers of change and the interrelated impacts and implications on our health, economy and environment in high level political discussions and decision-making at fora" (2018, 9). The ICC should be mandated to "participate actively in the operationalization of the United Nations 'Local Communities and Indigenous Peoples Platform'… and build capacity for Indigenous peoples to engage in the [UNFCCC]" (2018, 9). To achieve these goals, the ICC is urged "to promote sustainable economic and business development" through the AC and its working groups, the UN agencies and its collaborations with economic development fora and networks, including the Arctic Economic Council" (2018, 11). One of the actions needed is to "improve capacity to fully engage in the work of the Arctic Council at [SAO] and Working Group [WG] levels" (2018, 2)—an important forum for achieving the aims of "Inuit—The Arctic We Want" (2018, 1–2).

Both the 2010 Policy and the 2018 Declaration broadly discuss the indicator of international cooperation in the context of, for example, human rights, Inuit youth and children, peace and security, environment and climate change, wildlife management, science and research, and Inuit rights. Both also include (long) lists of major and minor international agreements and treaties, important and relevant for Inuit, and also forums, where Inuit act or are asked to act.

The 2010 Policy ties together Inuit rights and international cooperation, beginning with the UN Declaration on the Rights of Indigenous Peoples, which is frequently referred to, as are other UN declarations. "It is of utmost importance that Inuit, together with the ICC, work towards having all countries endorse the UN Declaration on the Rights of Indigenous Peoples" (2010, 15) and for the ICC to "work for the implementation of Article 31" (2010, 33). The ICC having NGO status within the United Nations "provides Inuit with increased opportunities" and ICC "participation in the Arctic Council and in the UN Permanent Forum on Indigenous Issues significantly advances Inuit interests" (2010, 14). As a result, (i) "Inuit and other northern peoples have a responsibility to respond to the call of the United Nations for concerted and comprehensive action on the part of the world community. In this regard, the Inuit Arctic Policy should clearly support the overall goal established by the UN General Assembly [GA] of general and complete disarmament under effective international control" (2010, 16); and (ii) the ICC "should use its Permanent Participant status in the Arctic Council to promote legal and administrative reforms to strengthen the Council and increase the ability of Inuit to participate fully in the Council internationally" (2010, 14). "Inuit and other Indigenous peoples must have a stronger voice at the

Arctic Council and be adequately funded to participate fully" (2010, 15). Finally, the Policy recognizes "the NGO… status of the ICC within the United Nations… ICC participation in the Arctic Council and in the UN Permanent Forum on Indigenous Issues" (2010, 14) which significantly advances Inuit interests and provides increased opportunities. For example, "the common heritage of humankind principle… must not be applied in a manner that may in effect deny or diminish Inuit offshore rights" (2010, 35), while "in addressing navigational, economic and environmental concerns, reference should be made to the 1982 UNCLOS]" (2010, 47–48).

Correspondingly, the 2018 Declaration first, acknowledges "the value of each ICC General Assembly Declaration as instrumental for guiding action on our shared priorities and for monitoring ongoing issues" (2018, 2) and also the importance of the ICC's "advocacy work and participation in decision-making processes and… [in strengthening] Inuit rights throughout Inuit Nunaat and globally" (2018, 2). Second, it encourages the "ICC to enhance Inuit participation and capacity within the United Nations General Assembly" (2018, 3), and to implement the 2030 Sustainable Development Goals in Inuit Nunaat—for example, to "support the mandate of the Expert Mechanism on the Rights of Indigenous Peoples (EMRIP) and to defend the rights of the Inuit at the United Nations Human Rights Council (UNHRC) and expand its mandate to engage with states" (2018, 3). The UN agencies and organizations referred to are: UNEP, UNESCO, WHO, IMO, FAO, as well as the UN 2030 SDGs.

The 2010 Policy also notes international agreements and organizations relevant to health and social well-being: the UN Declaration on the Rights of Indigenous Peoples (UN 2007), and the rights of Inuit children under the 1989 Convention on the Rights of the Child.

The 2010 Policy chapter on "Peaceful and safe uses of the Arctic" (2010, 19–20) emphasizes that "when formulating the Inuit Arctic Policy, the various meanings of 'peaceful purposes' under international law, should be carefully examined" (2010, 20), and refers to the UN Declaration on the Rights of Indigenous Peoples. It further states that the Arctic Council and other international forums "have already taken important steps on specific issues, for example, in regard to safety navigation, search and rescue, environmental monitoring and disaster response and scientific cooperation, which are relevant also to the Arctic Ocean" (2010, 45). "In addressing navigational, economic and environmental concerns, reference should be made to the 1982 [UNCLOS]" (2010, 47–48). For its part, the 2018 Declaration states that "to support food security in Inuit Nunaat" (2018, 4), the ICC must be directed to "advocate for the enforcement of the International Marine Organization Polar Code… and phase out heavy fuel oil (HFO) in order to minimize impacts on marine mammals and fish and to prevent disruption of seasonal hunting, and for safety and environmental protection" (2018, 4).

In the context of environmental protection and climate change, the following list of international bodies and agreements is included in the 2010 policy: CITES, IUCN, IWC, NAMMCO;

and WHO, NAFTA and EU; and UNCLOS and ILO; and the AC UN Declaration on the Rights of Indigenous Peoples; the 1998 POPs Protocol to the UN/ECE Convention on Long-range Transboundary Atmospheric Pollution, Stockholm Convention 2001 on POPs, and the Kyoto Protocol to the 1992 UNFCCC.

The 2010 Policy also takes a more global scale and perspective by proposing that the "ICC should establish a committee to examine the state of Inuit rights for self-determination as recognized in international law, including the right to self-government, and recommend options to the ICC General Assemblies, to secure these rights everywhere in Inuit Nunaat" (2010, 16). This is prompted by the fact that "Indigenous peoples and their vital economic issues are often excluded from the structural arrangements and institutionalized practices and policies of states at the bi-national and international level [particularly with respect to the GATT and the Canada–US Free Trade Agreement]. Such exclusions of Indigenous peoples may in effect be contrary to the 1985 International Convention on the Elimination of All Forms of Racial Discrimination and the 1978 UNESCO Declaration on Race and Racial Prejudice" (2010, 86).

Referring to International Covenant on Economic, Social and Cultural Rights and the UN Declaration on the Rights of Indigenous Peoples, the 2010 Policy also notes that "Inuit should co-operate with the World Intellectual Property Organization (WIPO)" (2010, 73); "the UNESCO Convention on the Safeguarding of Intangible Cultural Heritage and the UN Convention on Cultural Diversity should be respected" (2010, 74), and "cultural sites of particular significance to Inuit should be protected through regional, national, and international measures… [as] some sites have already been protected as UNESCO Heritage Sites or national parks" (2010, 74). The 2018 Declaration mostly refers to the traditional international level by reaffirming that "the interrelated, interdependent and indivisible rights of Inuit" (2018, 2) "to lands, resources and territories and the right of self-determination" (2018, 1) "are recognized and affirmed in the UN Declaration on the Rights of Indigenous Peoples (UNDRIP) as an international human rights instrument" (2018, 2), and mandates the "ICC to strengthen its role within other international, multinational and bilateral fora including the European Union (EU)" (2018, 3).

With respect to the **Environmental Protection** indicator, the 2010 Policy recommends that "the circumpolar Arctic should be the world's barometer of environmental health and Inuit should support resolution 22/11 Sustainable Development of the Arctic" adopted by UNEP in 2003 (2010, 27). Further, the ICC should commit to participating in future COP conferences "to ensure that any international agreements on climate change recognize the unique... issues faced by Inuit" (2010, 26). The 2010 policy emphasizes the protection of "the delicate Arctic environment, including marine and other resources upon which Inuit depend" (2010, 11), as well as the need to, to "identify the mounting and diverse threats to ecological processes, biological diversity, and the future of Inuit harvesting" (2010, 34). "The integrity and abundance of fresh water resources in the Arctic must be protected as one of its most important resources" (2010,

38). Environmental protection also includes protecting wildlife and recognizing the "continuing significance of whales, polar bears, seals, and other marine mammals" (2010, 31) given that "most of Inuit material culture is derived from the land and sea mammals" (2010, 66). The document also recognizes that the need for environmental protection and development should be balanced in order to "protect the delicate environment, including the marine and other resources" (2010, 11) and to provide "adequate laws and enforcement procedures… to protect the many facets of the Arctic environment" (2010, 28). To reach these environmental objectives, the Inuit Arctic Policy "should support the punishment of crimes against the environment… [and] encourage studies on the feasibility of creating an Arctic Environmental Bill of Rights" (2010, 28) as well as to ensure the protection of sea ice "as a habitat and platform for marine mammals and other biological resources" (2010, 42). "In cases where fresh waters, plants, wildlife and their habitats… [are degraded], Inuit have a right to full and fair compensation" (2010, 39). "Conventions concerning migratory birds, sea mammals, polar bears, fish and other animals should be regularly examined from an Inuit perspective" (2010, 31), and "wildlife, in particular, requires an ecologically based system of management… [where] habitat management should be a key part of species management" (2010, 34) with respect to "[implementing] the Convention on Biological Diversity" (2010, 28).

The 2010 Policy particularly emphasizes the Arctic marine environment. While "the conservation of marine resources [is] fundamental to the maintenance of global ecological health and stability", the Inuit should also be recognized as "a primary user of marine life" (2010, 42). This means that the prevention of pollution is important, especially oil spills. The Inuit policy should also "support an express ban of any burial of radioactive wastes in the sea bed" (2010, 44) and "in light of all the above risks, the construction or use of nuclear reactors anywhere in the Arctic must be prohibited" (2010, 20).

The 2010 Policy also notes that as "Inuit Traditional Knowledge has provided critical information about climate change in Arctic ecosystems, completing scientific knowledge … [it] should be incorporated… into… the UN system or by the IPCC" (2010, 23). Further, the ICC, in cooperation with national Inuit leaders, "should call on the international community, particularly the G20 countries, to use an International Climate Change Adaptation Fund to aid Arctic regions in developed countries" (2010, 23) and also "work to have the following human rights conventions respected due to their relevance for Climate Change" (including UN Universal Declaration of Human Rights, ICESCR, ICCPR, ILO Convention 169, UNDRIPs) (2010, 26). The ICC also "recognizes the on-going need for Inuit to be actively engaged with the circumpolar and international processes [including UNFCCC, CBD, UNPFII, AC] and international science bodies (e.g., ICSU, IASC, IASSA)" (2010, 25).

The 2018 Declaration requires support for "Sustainable Wildlife Management [and urges the] ICC to support the [CIWN] to link activities on various bi-lateral and international wildlife activities including [CAFF, IUCN, CBD]". The ICC should be

directed to "participate collectively and strategically to ensure the [CBD] post-2020 action plans support and enhance our monitoring and sustainable use of Arctic biodiversity and for the Convention on Biological Diversity". The ICC should also "collaboratively identify opportunities for our collective engagement in the United Nations Convention on the International Trade of Endangered Species (CITES) Rural Communities to safeguard the distinct rights of Inuit as an Indigenous Peoples" (2018, 8).

Correspondingly, the 2010 Policy requires that the "ICC should participate in international bodies, in particular the Convention on the International Trade of Endangered Species (CITES), the [IUCN], the [IWC], and the [NAMMCO] to defend the right of Inuit to harvest marine mammals and to trade their products on a sustainable basis". ICC should also be directed to use and, where appropriate, "lobby international and regional bodies such as the [WTO], the [NAFTA] and the [EU] to help promote trade of Inuit goods and services world-wide in ways that do not adversely affect Inuit hunting, fishing and gathering rights" (2010, 30).

The 2018 Declaration has an even more comprehensive approach, stating: "Our environment continues to undergo profound, rapid and unpredictable change. Our communities witness and suffer the effects of these changes and respond by sharing our knowledge, adapting our communities, working with researchers and negotiating national, bilateral and international agreements to reduce or eliminate the causes of these changes where possible. We know that the Arctic environment is unique and plays a fundamental role in global climate change regulation. Our culture is dependent on the land and sea. Therefore, the sustainability of the Arctic environment and its living resources is crucial to our communities and a focus on supporting families and Inuit society" (2018, 8–9).

The 2018 Declaration also makes clear that the issue of sustainability and living resources is crucial to Inuit communities. "Sustainable wildlife management" (2018, 7–8) is needed to achieve food security for the Inuit to support families and Inuit society. "Inuit have rights in national and international agreements that protect Indigenous hunting and fishing activities" (2018, 7) and "ICC was the first non-governmental organization to call for the precautionary principle and vocalized the human rights dimension of the implications and impacts of a rapidly changing Arctic environment" (2018, 9). According to the Declaration, the following are Inuit goals: "to advance self-determination and recognition of Indigenous knowledge" (2018, 7); "[to] instruct ICC to share research and actions that build climate change resilience and to share and showcase the adaptation and innovative mitigation responses, including… monitoring the movement of animals due to climate change" (2018, 9); and [to] "direct ICC to participate collectively and strategically to ensure the [CBD] post-2020 action plans support and enhance our monitoring and sustainable use of Arctic biodiversity" (2018, 8).

Both documents include brief notions on the **Pollution** indicator. According to the 2010 Policy the following pollutants are recognized: "acid rain and snow, mercury pollution, pesticides,

[PCBs], [POPs], radionuclides, and other toxic and persistent substances" (2010, 38) are in many instances "from transboundary sources" (2010, 40) "outside the Arctic" (2010, 38). On ocean contamination in general, "of particular concern to Inuit are vessel noise, ship tracks, and oil spills and their consequences on marine mammal migration" (2010, 45). A particular concern is that "transboundary nuclear pollution could [be] devastating" and "even if nuclear technology is excluded from the Arctic, circumpolar regions may still be adversely affected by nuclear accidents arising from outside the Arctic" (2010, 48). Considering these pollutants, it is "important to identify and effectively address the principal sources of oil pollution in marine environments" (2010, 44)…. [and] to recognize that by far the principle source of oil pollution in the world's oceans are not accidents… but intentional 'operational' discharges" (2010, 45) "from ships (e.g., deballasting), ocean dumping of wastes or major spills from offshore drilling rigs" (2010, 44). Also, "it must be recognized that military activities in circumpolar seas can pose unacceptable environmental and other security risks to Inuit and the Arctic" (2010, 44). The Policy includes international and local, pan-Arctic perspectives on pollution: "the international trade and development policies of Arctic and other developed countries require closer scrutiny. Toxic products… are being supplied to less developed countries that are not in a position to properly store and dispose of toxic substances" (2010, 88) and "mining activities can be a major source of water pollution within circumpolar regions" (2010, 40).

In terms of approaches to problem solving, the 2010 Inuit Arctic Policy first states its concerns about transnational pollution. A "clean and safe Arctic environment cannot be assured without effectively controlling pollution hazards both in and outside the Arctic" (2010, 48) for example] by strongly promoting "the need to keep the Arctic environment safe from [POPs] and heavy metals" (2010, 39). Second, international co-operation and management, such as international agreements on acid rain, impact assessment procedures, participate in the mitigation of GHGs including SLCFs, such as Black Carbon, and are all necessary measures. The following international bodies are mentioned as being relevant to this issue: AC, CITES, EU, ILO, IUCN, IWC, NAFTA, NAMMCO, UNCLOS, WHO, as well as the following international treaties: UN Declaration on the Rights of Indigenous Peoples, 1998 POPs Protocol to the UN/ECE Convention on Long-range Transboundary Atmospheric Pollution, Stockholm Convention 2001 on POPs, Kyoto Protocol to the 1992 FCCC. The 2010 Policy on nuclear pollution holds that the ICC "should support an express ban of any burial of radioactive wastes in the seabed and insist that nuclear states assume the full responsibility and costs of dealing with the wastes they generate" (2010, 44). "As long as nuclear power continues to be used by some countries, the international community has a duty to protect peoples and the global environment from accidental transboundary harm" (2010, 48). "Special measures must be devised to deal with any possible consequences of accidental transboundary pollution by radioactive material in the Arctic, as well as with international terrorist activities" "involving radioactive materials, transport of plutonium and other radioactive substances in or over the Arctic should be prohibited" (2010, 49).

The 2018 Declaration proposes actions needed "to advance self-determination and recognition of Indigenous Knowledge" (2018, 7). The ICC should be directed "to advocate its positions on contaminants through the implementation and effectiveness monitoring regimes [e.g., POPs, UNs Minamata Convention on Mercury]… recognize the importance of short-lived climate forcers such as black carbon" (2018, 9) and "support national and global programs that safeguard our marine ecosystems and wildlife from marine litter and micro-plastics" (2018, 10). It is also necessary to "advance self-determination and recognition of Indigenous Knowledge" (2018, 7) and "direct ICC to advocate for Inuit-led environmental monitoring and management of Inuit Nunaat (marine and terrestrial) and adopt in principle, the report, *People of the Ice Bridge: The Future of Pikialasorsuaq,* and establish a committee to advance the implementation of the recommendations" (2018, 10). Finally, the declaration states that "these initiatives should be undertaken with an objective of improving the self-sufficiency of Inuit over time with the overall objective of aligning economic development and [the] cultural way of life" (2018, 10).

According to the 2010 Policy, "climate change is a major danger" (2010, 38) and "the ICC believes in preventing dangerous climate change that will adversely affect Inuit livelihoods" (2010, 23). It thus recognizes the **Climate Change** indicator, though this is not among the major themes in these Inuit documents. "The overriding concern is the increased melting of ice and other potentially detrimental effects of climate change on the oceans and waterways" (2010, 47). There are "potential impacts of climate change on the culture, health, spirituality and economy of Inuit throughout the Arctic" (2010, 23). "Inuit should work towards making international organizations recognize the impact of climate change on Inuit and put resources in place to help Inuit adapt" (2010, 23) by "[minimizing] climate change impacts", "[stabilizing] greenhouse gas (GHG) concentrations" (2010, 23), "[devising] an overall policy on sea ice in circumpolar regions" (2010, 42), and "the effects of climate change on sea ice [have] to be taken into consideration" (2010, 42).

The 2018 Declaration starts with a notion about the Arctic environment being 'unique' and playing "a fundamental role in global climate change regulation. Our culture is dependent on the land and sea" (2018, 9). It goes on to say that "loss of multi-year sea-ice and thawing permafrost are leading to enhanced cycling of contaminants that may have adverse impacts throughout the food web" (2018, 4). For example, there are changes in temperatures, sea ice coverage and movement, thawing permafrost. Moreover, the "arrival of new species is resulting in a need to adjust hunting strategies and ways of storing food" (2018, 4). It is not surprising, therefore, that mitigation and adaptation are mentioned in both documents. The 2010 Policy explains that "adaptation processes should deal with issues of food security, unemployment, housing shortages and many chronic health issues" (2010, 25) and "participate in the mitigation of [GHG emissions], including [SLCFs], such as Black Carbon, in order to limit global temperature rise" (2010, 25). As a result of these impacts on the population,

"immediate financial assistance should be provided to assist Arctic communities already significantly affected by climate change" (2010, 25).

Similarly, the 2018 Declaration states the need to instruct the ICC "to share research and actions that build climate [change] resilience and to share and showcase the adaptation and innovative mitigation responses, including… monitoring and movement of animals due to climate change, erosion and community relocation" (2018, 9). The "Inuit and other northern peoples should work together to ensure that… key Arctic issues and concerns are made the focus of the international community" (2010, 22). "Traditional knowledge should be recognized as having validity and the Inuit should make representation to the IPCC to develop a complementary assessment on climate change and Indigenous peoples" (2010, 23).

The 2010 Policy ties together climate change and human rights, and brings them onto the international / global stage, stating that ICC should "work to have… human rights conventions respected due to their relevance for Climate Change [e.g., the UN Universal Declaration of Human Rights, ILO Convention 169]" (2010, 26). "The ICC, in cooperation with national Inuit leaders, should call on the international community, particularly the G20 countries, to use an International Climate Change Adaptation Fund to aid Arctic regions in developed countries [and to commit themselves to participate in future COPs]" (2010, 23).

The **Security** indicator is explicitly discussed in both the 2010 Policy and the 2018 Declaration. The 2010 Policy has a substantial sub-chapter on *Arctic and Global Security* (2010, 16–19) "promoting peace, and global security (2010, 18)… [and fostering] peaceful diplomacy and the use of appropriate and safe technologies in circumpolar regions" (2010, 11). The document says bluntly that although national defence and foreign policy issues are "traditionally the domain of state governments", but "policy-making concerning Arctic and global security is too crucial to exclude northern communities and should not be left solely to experts within the military and government" (2010, 16). Furthermore, "For true Arctic security to be achieved, there must be greater global security. New concepts of common security are urgently needed that incorporate environmental, health, social, cultural, and economic aspects" (2010, 16). The goal of this must be the attainment by "general and complete disarmament under effective international control… [here] is essential that the concept of an Arctic zone of peace be formally accepted by Arctic states and others as an explicit and political objective" (2010, 18). For example, "it must be recognized that military activities in circumpolar seas can pose unacceptable environmental and other security risks to Inuit and the Arctic" (2010, 44).

The 2010 Policy thus proposes that "environmental and social impact assessment procedures must be mandatory for proposed defence related projects… In particular, the siting, construction, and operation of military bases, installations, and facilities must be subject to impact assessment" (2010, 18). Moreover, "security shall not only be defined in military terms. In this context, respect for the rights, values, and perspectives of the Arctic's

Indigenous peoples in vital" (2010, 16) and "national security restrictions should only apply where strictly necessary and must not be used as a means of avoiding a full and open process of impact assessment" (2010, 19).

The 2010 Policy also states that, for the Inuit, "Arctic Sovereignty is one of our main concerns and is now also an international concern" (2010, 9). Of fundamental importance is that the Inuit Arctic Policy should recognize "a profound relationship between human rights, peace and development". "The human rights of peace and development are considered as individual and collective rights: they include both rights and duties" (2010, 20). It is important to take them into account when formulating a comprehensive Inuit Arctic Policy, and ensuring that there is "a uniform, consistent meaning of 'peaceful purposes' under the Inuit Arctic Policy" (2010, 20). Within the Arctic region is "the Inuit Homeland [Nunaat]... inhabited by Inuit for thousands of years. Therefore, its inhabitants should be involved in and can contribute significantly to the issues of Arctic Sovereignty" (2010, 26). "The Treaty of Amity, Commerce and Navigation of November 19, 1794 (the Jay Treaty) between the [USA] and the [UK] promised to allow Indigenous peoples free passage and trade across the U.S.–Canada border". "Similar steps must be taken in relation to borders in other Arctic states within Inuit Nunaat" (2010, 88).

The 2018 Declaration also has a special perspective on food security which "is central to Inuit identity and way of life" and "will be promoted and endorsed in all aspects of ICC's work" (2018, 1). "Inuit food security is multi-faceted and reflective of interconnecting elements, such as language, child development, mental and physical health, high cost of transportation, economic development and management. The Arctic's living resources and the ability of our hunters to harvest and process these resources are fundamental to food security and is core to Inuit identity" (2018, 3). "Recognizing the health of our people are connected to the health of the animals and overall environment, climate-related changes provide both opportunities and challenges that contribute to food security or insecurity" (2018, 4). Both 'food security' and 'food sovereignty' are defined. To achieve "food security will require holistic approaches, Inuit innovation, and depends on the capacity to mobilize governments, regional stakeholders and community residents" (2018, 4). To support food security in Inuit Nunaat and achieve food sovereignty the following actions, inter alia, are needed: "Urge ICC to continue its work to enhance food security through research and advocacy... Direct ICC to address components of food security that will aid in enhancing self-governance across Inuit Nunaat... Direct ICC to advocate for the enforcement of the International Marine Organization Polar Code... and phase out heavy fuel oil (HFO) in order to minimize impacts on marine mammals and fish and to prevent disruption of seasonal hunting, and for safety and environmental protection" (2018, 4).

As measures to "achieve real and lasting security in the Arctic" (2010, 22) and solve problems across the jurisdictional boundaries of the Arctic states, the 2010 Policy recognizes first, "international cooperation" (2010, 18); and second, that "northern peoples should encourage the development of new notions of common security" (2010, 22) and "encourage activities of youth that emphasize the need for international peace, co-operation, and understanding" (2010, 61). Suitable means "should be devised to promote awareness and informed discussion in northern communities of the dangers of nuclear weapons" "to teach students... the values of disarmament, non-violent resolution of conflicts, and world peace" (2010, 16). The 2010 Policy urges that "the concept of an Arctic zone of peace be formally accepted by Arctic states and others as an explicit and political objective" (2010, 16). Such a "zone of peace must foster international cooperation for solely peaceful purposes and must be free of nuclear weapons; testing of nuclear and other weapons of mass destruction must not be permissible; as a general rule, the safeguarding of the Arctic environment must take precedence over military exercises and activities; peacetime military activities [including low-level and supersonic flight testing and training] that disrupt or undermine the territories, communities, rights, and security of peoples must not be allowed... and international, circumpolar, and national systems of verification pertaining to arms control must be encouraged" (2010, 18). Furthermore, for these purposes "it would be beneficial to devise an Arctic foreign policy as an integral part of the overall Inuit Arctic Policy" which is not "limited to defence-related issues but should be made consistent with environmental, social, and other aspects of the overall Inuit Arctic Policy" (2010, 18). The fundamental issue here is that "the Inuit circumpolar homeland... must only be used for purposes that are peaceful and safe" (2010, 19). "Testing, use, manufacture, production, installation, or acquisition of any nuclear weapons within the Inuit circumpolar homeland must be prohibited" (2010, 20). Finally, on this issue, the 2010 Policy states: "Severe economic disparities and human rights violations can pose a threat to world peace... peaceful relationships and peace are generally vital factors in striving towards social progress and development" (2010, 20).

The 2010 Policy outlines a few interests and concerns with respect to the **Safety and SAR** indicator First, the Inuit have a "right to safe drinking water" (2010, 39). "The integrity and abundance of fresh water resources in the Arctic must be protected as one of its most important resources" (2010, 38). Second, "an Arctic waters management regime [should] address conflicting uses [shipping, hydroelectric power, inter-basin transfers, mining, oil and gas developments]" (2010, 39), "Tanker traffic, in the Arctic, is highly risky and should be prohibited" (2010, 47). Third, due to domestic violence and vulnerability of Inuit children "the right to protection against external risks likely to endanger health. Special attention should be devoted to occupational health and safety" and "domestic violence must be eliminated" (2010, 52). Finally, as mentioned earlier, transboundary nuclear pollution "could have devastating environmental, health, economic, and cultural impacts in the Arctic" (2010, 68). Special measures for dealing with such occurrences and with "the dangers of terrorist attacks using radioactive materials" should be put in place (2010, 49).

The 2010 Policy acknowledges that international forums, like the Arctic Council, "have already taken important steps on spe-

cific issues, for example, in regard to safety navigation, search and rescue, environmental monitoring and disaster response and scientific cooperation" (2010, 45). It concludes, however, that "a clean and safe Arctic environment cannot be assured without effectively controlling pollution hazards both in and outside the Arctic" (2010, 48), and proposes infrastructure and capabilities to increase safety. For example, "a system of registration should be implemented for all tankers and ships sailing in the Arctic waters in order to track them in case of accident" (2010, 47), also "an urgent need to develop upgraded navigational or hydrographic charts for Arctic marine areas, according to the highest standards", and "critical… to develop a proven capacity for immediate and effective response to any oil spill" (2010, 47). For nuclear safety "the international community has a duty to protect peoples and the global environment from accidental transboundary harm" (2010, 48). "Special measures must be devised to deal with any possible consequences of accidental transboundary pollution by radioactive material in the Arctic" "involving radioactive materials, transport of plutonium and other radioactive substances in or over the Arctic should be prohibited" (2010, 49).

While the 2018 Declaration is brief and focuses on 'food security' as "central to Inuit identity and way of life" (2018, 1). It also seeks, as mentioned earlier, to "advance emergency response, and phase out heavy fuel oil (HFO) in order to minimize impacts on marine mammals and fish, and to prevent disruption of seasonal hunting, and for safety and environmental protection" (2018, 4).

The 2010 Policy includes a substantial chapter concerning the **Economy** indicator, *Economic Issues* (2010, 79–88) which emphasizes "the importance of an economic base in the North, and the continuing [human] right of Inuit to participate in the management and development of the Arctic and its resources" (2010, 11). The Policy also states that "It is of utmost importance to emphasize that the lack of economic opportunities and developments have critical implications for the future of Inuit society and culture. Inuit should be involved in all aspects of economic development in order to enjoy such fundamental human rights as the right to work and the right to an adequate standard of living" (2010, 79).

Therefore, active promotion is needed of "Inuit self-reliance… Inuit Arctic Policy must elaborate a comprehensive Arctic economic strategy" (2010, 79) including "an overall strategy to counter international anti-harvest and animal rights groups" (2010, 33). "At the regional level, action must be taken in every Arctic community towards establishing a viable base for community development…. including key elements [such as] adequate infrastructures… and business and management training" (2010, 80). For enterprises doing business in Arctic regions, "consideration should be given to establishing principles or norms to guide [their] conduct…. promotion of innovation and transfer of technologies appropriate to the Arctic; and reinvestment of profits in local regions" (2010, 81). Furthermore, "multinational corporations and others involved in Arctic economic development must respect all applicable aspects of the overall Inuit Arctic Policy" (2010, 81).

The 2010 Policy also requires renewable resources to be managed and "protected in a manner that maintains ecological balance, respects Inuit resource rights, and sustains the renewable resource needs of Inuit, both now and in the future" (2010, 33). Only development that is "culturally-appropriate" should be promoted (2010, 27). "Inuit and other Indigenous peoples must have clear priority in terms of access to and use of Arctic renewable resources for subsistence purposes, including inter-community trade" (2010, 31). "An Inuit Arctic Policy on renewable resources and Inuit subsistence practices must take into account the devastating effects that international anti-harvest and animal rights groups continue to have on Inuit communities, culture, and economies. A comprehensive strategy must be developed and implemented to effectively counter these opposing forces" (2010, 33).

Regarding non-renewable resources, "Inuit rights include the right to manage Arctic non-renewable resources and to fully participate in, and benefit from, policies and projects associated with resource development" (2010, 36). This involves a few essential principles: (i) "The overall prosperity of each state is affected by the economic growth of its various parts. [Thus] if the Arctic regions are to contribute to strengthening the economies of their respective states, Inuit have to be included as full and active partners in northern development matters" (2010, 79); (ii) "Inuit and the circumpolar regions must substantially benefit from Arctic offshore resource development [with] revenues generated from approved offshore projects [being] directed towards [safeguarding] the marine environment [and directly benefiting] Inuit communities" (2010, 43); (iii) "multinational corporations and others involved in Arctic economic development must respect all applicable aspects of the overall Inuit Arctic Policy" (2010, 81); (iv) the ICC should "promote the redefinition of hunting and harvesting activities by Indigenous peoples as a profession" (2010, 31) and "subsistence hunting, fishing, and trapping rights must be assured for both economic and cultural reasons" (2010, 80).

Establishment of full and meaningful employment is a primary goal in the Inuit regions under the 2010 Inuit Policy. "An employment-intensive economic growth, which includes both subsistence and wage-earning activities, must be a clear priority" (2010, 82–83). The Policy recognizes that "the adequacy and costs of air transportation in the circumpolar region have a direct effect on economic development…. air transportation problems are… economic development problems [and have to be] dealt with in a coordinated and comprehensive manner" (2010, 84).

According to the 2018 Declaration "employment and wealth creation are building blocks for autonomy and… equitable, sustainable economic development and employment must be a priority" (2018, 10). Under the heading, *Sustainable Development,* the Declaration argues: "Our economy is changing rapidly with growing international interest in marine shipping, commercial fisheries, tourism and natural [resources] development. Economic development is central to the sustainability of Inuit communities…." The Declaration acknowledges that "economic

development and social and cultural development must go hand-in-hand," which results in self-sufficiency— "an essential part of greater political self-determination" (2018, 10). To achieve these goals, the ICC is urged to first "promote sustainable economic and business development" through the Arctic Council and its Working Groups, the UN agencies, and the Arctic Economic Council (2018, 11). Second, the ICC is directed to "advocate for our rights to fresh water," and "utilize Indigenous Knowledge to advise all future processes of the Central Arctic Ocean Moratorium on Commercial Fisheries" (2010, 11).

A major question here is how economic activities are or should be regulated. The 2018 Declaration concludes that the Inuit "have experienced international trade bans and treaties that prevent us from exercising our rights to use Arctic living resources with serious impacts on our culture, health and economies" (2018, 7). It directs the "ICC to advocate for policies that facilitate cross-boundary Inuit trade, employment, and travel, across our circumpolar homeland,…. [and] urge ICC to support the formation of an International Association for Inuit Businesses" (2018, 11).

The international level is also important here, in particular, because "Indigenous peoples and their vital economic issues are often excluded from the structural arrangements and institutionalized practices and policies of states at the bi-national and international level… particularly evident in regard to… [the GATT] and the Canada–U.S. Free Trade Agreement (FTA)" (2010, 86). The 2010 Policy states that "ICC should participate in international bodies, in particular the Convention on the International Trade of Endangered Species (CITES), the [IUCN], the [IWC], and the [NAMMCO] to defend the right of Inuit to harvest marine mammals and to trade their product on a sustainable basis…." (2010, 81–82). Moreover, where appropriate the ICC should lobby "international and regional bodies [e.g., WTO, NAFTA, EU] to help promote trade of Inuit goods and services world-wide in ways that do not adversely affect Inuit hunting, fishing and gathering rights" (2010, 30). Promoting "the removal of international and national trade barriers that affect all forms of Inuit livelihood, in consultation with affected Inuit" (2010, 82) is another main objective with the aim of facilitating "transnational trade and travel by Inuit throughout Inuit Nunaat" (2010, 86). "Elements that should be considered in formulating the international dimensions of an Inuit/Arctic economic strategy include: … organize multilateral talks on international trade and development issues affecting the world's Indigenous peoples [through GATT]"… request relevant UN organs to carry out a "special study and consideration of the economic rights and concerns of Indigenous peoples in Arctic regions"… make continued representations in the EU and European countries "in regards to the seal hunt and… seal products, possibly through consultation with WTO " (2010, 87).

The **Tourism** indicator is very briefly noted by the documents: the 2010 Policy states that "resource management and economic development must be based on a common approach" as must eco-tourism (2010, 35). The 2018 Declaration briefly notes the rapid changes in the economy "with growing inter-

national interest in marine shipping, commercial fisheries, tourism and natural resources development" (2018, 10). The Declaration urges the "ICC to compile Arctic tourism best practices, and develop an ICC Statement on Tourism to help guide tourism initiatives," (2018, 11) as part of overall actions to achieve the goals of sustainable development.

The main focus of the **Infrastructure** indicator in the two documents, is telecommunications. The sub-chapter *Communications, News Media, Information Technologies* of the 2010 Policy (2010, 68–71) notes that the "communications media are a fundamental dimension of life in every society" (2010, 68) and "satellites make communications possible in the Arctic" (2010, 70). Particularly, "the relationship and significance of communications, mass media, and other information technologies to Inuit language and cultural development must be recognized" (2010, 68). The Policy suggests the "ICC should work to ensure that broadcast and telecommunications regulatory agencies governing circumpolar regions recognize the special needs and challenges of the Arctic with respect to geographic isolation, language and culture" (2010, 71). It also proposes that "Arctic education systems should provide both Inuit youth and adults with concrete opportunities to familiarize themselves with new and existing forms of communications, mass media, and information technologies in the Arctic" (2010, 69–70). This should be facilitated by the "establishment of a pan-Arctic news agency and Arctic radio and television network… or by [use] of the Internet" (2010, 70). To support telecommunication and ICT, and infrastructure in general, the 2010 Policy urges adaptation to the inevitable changes and "to accelerate technology transfer" (2010, 25) for instance, "remote sensing and data gathering by satellites [which] already serve as a new global information system within the international community" (2010, 70). As part of adaptation assistance, the "ICC should work towards…incorporating support for small-scale, green energy technology" (2010, 25) and "action must be taken in every Arctic community towards establishing a viable base for community development, [including] adequate infrastructures" (2010, 80).

The 2018 Declaration states that in an interconnected world, "connectivity or broadband, is crucial to provide societal benefits" (2018, 10) and "Inuit are more connected today than ever before due to the advent of the internet and social media. However, practical measures should be taken that enhance communications with and between Inuit" (2018, 11). The ICC should thus "pursue novel initiatives that foster greater social, cultural, and political exchange between Inuit… to enrich Inuit cooperation and unity…. [and] develop a comprehensive four year communications strategy and action plan" (2018, 12). The 2018 Declaration lists the activities needed to achieve these goals. The ICC should "advocate for high capacity broadband internet, share best practices and engage in international discussions on broadband development in Inuit Nunaat" (2018, 11) in order "to support knowledge sharing and communication of Inuit innovation and best practices around mental health and wellness" (2018, 5) and "urge the use of the internet to increase availability of Inuit language program-

ming through television, radio, and other platforms, as well as the connectivity of residents in Inuit communities" (2018, 11).

The 2010 Policy document recognizes "that aviation is not a privilege but a necessity in the circumpolar region [as]…the only means of year-round transport between Inuit communities, regionally, nationally, and internationally" (2010, 84). "Adequate and safe systems of transportation, including air transport infrastructures, must be developed and upgraded throughout the circumpolar region" (2010, 86).

The 2018 Declaration explicitly mentions the need for adequate housing in the list of "the most important needs of families" (2018, 4), while the 2010 Policy mentions a "wide range basic needs… [which] must be developed if health goals are to be achieved" (2010, 51–52).

The 2010 Policy has a substantial chapter on *Educational and Scientific Issues* (2010, 89–96). Scientific research for the purposes of the Inuit Arctic Policy, "refers to all basic and applied research in respect to the Arctic" (2010, 93). The chapter provides an interesting contribution to the **Science and Education** indicator by recognizing "that the physical, biological and health sciences, as well as social, behavioral and human sciences, can all potentially contribute in significant ways to information and knowledge about the Arctic… both 'western scientific' opinion and Inuit knowledge and experience have validity and, therefore, should be utilized" (2010, 93). Significant efforts should be made by Arctic states, according to the Policy "to involve Inuit when determining the content of international agreements in regard to cooperative northern research" (2010, 96) and "of scientific research affecting the Arctic, particularly when it affects their communities or Inuit rights and interests" (2010, 93). In terms of cooperative research involving different organizations, the ICC is asked to "develop a clearinghouse that will help record and protect the traditional knowledge of Inuit and facilitate information exchange between all Inuit in Inuit Nunaat" (2010, 94). Also, Inuit need to be actively engaged on an ongoing basis with the circumpolar and international processes including international science bodies (e.g. ICSU, IASC, IASSA) (2010, 25, 96). "Collaboration with institutions such as the Inuit Center for International Understanding and the University of the Arctic should be encouraged" (2010, 92). "Large international Arctic research undertakings such as the… IPY should be urged to more fully include Inuit and other Arctic inhabitants" (2010, 96).

The 2018 Declaration requires actions "to protect Inuit Nunaat and guide academic institutions, governments, and researchers in the conduct of the Inuit Nunaat research… enhance ICC's work with Arctic research efforts" for example, via AMAP, SAON, IASC, EU (2018, 9). Interestingly, the Declaration requires that "during high-level ministerial processes," Inuit views and concerns should be addressed regarding how research in the Arctic should be conducted and also that "ethical approaches for research in the Arctic advance Inuit self-determination in research" should be highlighted (2018, 9).

The 2010 Policy recognizes "that Arctic scientific research can potentially provide vital information pertaining to a rapidly growing number of activities and subject matters of interest and concern in Inuit Circumpolar regions" (2010, 93). Therefore, "the number of cultural, educational, scientific, and athletic exchanges among Inuit from the various Arctic regions and states" (2010, 68) should be increased and "the Inuit Arctic Policy should ensure that a key aspect of research involves community-based research (CBR)" (2010, 95). "As traditional leaders, elders must be encouraged and permitted to re-establish a leadership role and participate in decision-making" (2010, 64). "Traditional knowledge, be it cultural, environmental or ecological, should be part of the curriculum in schools " (2010, 64), "include both traditional ecological knowledge, environmental and cultural knowledge" (2010, 94) and "be recognized as having validity" (2010, 23). As "Inuit Traditional Knowledge has provided critical information about climate change impacts in Arctic ecosystems, completing scientific knowledge… [it] should be incorporated into and made the focus of complimentary assessments through the UN system or by the IPCC" (2010, 23).

The 2018 Declaration is more straightforward stating that "Inuit have a right to self-determination in all facets of life, including in the promotion of Indigenous Knowledge and research" (2018, 7). Here 'Indigenous Knowledge'— "a systematic way of thinking applied to phenomena across biological, physical, cultural and spiritual systems"—is recognized as a way of life, that "goes beyond observations, ecological knowledge, and research, offering a unique 'way of knowing'…. [Therefore,] recognizing the work that ICC has done to advance the understanding and utilization of Indigenous Knowledge, it is important to continue this work" (2018, 7). The Declaration suggests focusing on advocating for Inuit driven research and monitoring. In order, however, "to protect Inuit Nunaat and guide academic institutions, governments and researchers" (2018, 9) the ICC needs to be instructed " to support knowledge sharing and communication of Inuit innovation and best practices around mental health and wellness.… and link Indigenous Knowledge and action with scientific research" (2018, 5), "call for an Inuit review of the consultation process of the Arctic Council Arctic Science Cooperation Agreement" (2018, 7), and "utilize Indigenous Knowledge to advice all future processes of the Central Arctic Ocean Moratorium on Commercial Fisheries" (2018, 11).

The 2010 Policy calls for Inuit research priorities to be identified and considered and for Arctic objectives to be fully taken into account along with national and international considerations. Moreover, it is seen important "to ensure that research and data on fresh water management issues are generated on an ongoing basis" (2010, 40), and that "research priorities should be determined in conjunction with Arctic Inuit and other Arctic peoples" (2010, 45). The Policy also makes it clear that "international cooperation in health and social research programs concerning the Arctic should be encouraged…. [and] determined in collaboration with the local people and communities involved" (2010, 53). Furthermore, "environmental education processes should be devised and implemented" (2010, 27) and

"governments and relevant private institutions should be urged to support Inuit research centers for the coordination and practice of Arctic research" (2010, 95).

The 2010 Policy further states that "large international Arctic research undertakings such as the [IPY] should be urged to more fully include Inuit and other Arctic inhabitants" and "close cooperation should also be developed with national research funding agencies" (2010, 96). Among others, the ICC is asked to "develop a close liaison with bodies within the [UN] and other international organizations interested in Arctic research," such as ICSU, IASC, AMAP, IIASA (2010, 96).

The 2018 Declaration requires that the Inuit Nunaat be protected and that "academic institutions, governments, and researchers [be guided] in the conduct of the Inuit Nunaat research [through the enhancement of] ICC's work with Arctic research efforts, such as [AMAP, SAON, IASC, EU]". Moreover, Inuit views and concerns on how research in the Arctic should be conducted should be addressed during high-level ministerial processes and ethical approaches for research in the Arctic to "advance Inuit self-determination in research" should be highlighted (2018, 9).

As previously mentioned, the 2010 Policy explains that "education and training have a vital and on-going role to play in teaching Inuit youth" (2010, 35), and "to meet the specific needs of Inuit and other aboriginal women must be made accessible on a regional or local basis" (2010, 55). "Culturally appropriate education is the key to healthier and more prosperous Inuit communities and to a better future for all Inuit" (2010, 89). Based on the UN Expert Mechanism in the Implementation of Rights of Indigenous Peoples to Education "educational institutions should [thus] be established in the Arctic and encouraged to provide educational and scientific opportunities over a broad spectrum of potentials. In addition, the practical questions of funding for ambitious programs… should be addressed" (2010, 90).

As "children are the most valuable Inuit resource and represent future leaders of Inuit... a comprehensive education policy should be formulated and implemented in collaboration with Inuit communities (2010, 89). "The knowledge and experience of Inuit elders and other traditional knowledge should be utilized in informing Inuit students and developing their skills" (2010, 36). "Eligibility for training programs should be based on aptitude for the particular skills rather than on educational requirements" (2010, 91). Education is also mentioned in the context of *Social Issues* as a "crucial component of a major youth strategy" (2010, 61) in which "education programs and other means should be used to promote acceptance of the principle of non-discrimination, as well as understanding, tolerance, and respect for different religions and for religious freedoms" (2010, 77).

In general, therefore, "educational, scientific and other terminology should be standardized within the Inuit language and further developed on a regular basis… to meet the present and future needs of Inuit society" (2010, 66) and they should also be "made fully accessible for handicapped persons" (2010, 92).

Finally, the 2010 policy calls for "the best strategies for allowing the greatest amount of choice in education and research among inhabitants of generally small and isolated Arctic communities [to] be explored and implemented [either by] tele-education and/or courses over the Internet, or through such institutions as the University of the Arctic" (2010, 90). The Arctic states are also asked to "establish a university in its Arctic regions; at the moment only Canada does not have an Arctic university" (2010, 92).

The 2010 policy also demands the establishment of "principles or norms to guide the conduct of enterprises doing business in Arctic regions [that] should relate [among other things] to: Inuit training and management development programs [and] use of the local language" (2010, 81). Employment and training programs and strategies "should take into account the Inuit way of life, and generally support ongoing Inuit cultural development through the introduction of culturally appropriate programs…. [while receiving] adequate community and financial support" (2010, 83–84).

The 2018 Declaration states that "the model of education introduced and utilized to this day has had limited success… [and therefore] effective education requires new pedagogies that reflect our values, culture and languages." For example, "for our language to remain strong the Inuit language must be the primary language of instruction in our schools….—language and education supports our culture, and Inuit hunting, gathering and food practices are a way [in] which our culture is taught". To strengthen education the ICC is called on to "support an Inuit Education Committee with membership from all Inuit regions," for example, the ICC 2018 Education Summit in Greenland supported "the development and implementation of Inuit-focused educational initiatives, pedagogies, assessment and evaluation practices, curricula, teaching materials and resources" (2018, 6).

The **Implementation** indicator is mentioned explicitly in both documents. According to the 2010 Policy the "ICC should work towards having the Inuit Arctic Policy taken into account by all levels of government throughout the circumpolar world, as well as by Arctic residents and other users of Arctic resources…. [Moreover,] public policies and programs of government, and international agreements, should be aware of the ICC Inuit Arctic Policy" (2010, 99). To follow up, there should be "discussions of the Inuit Arctic Policy by Inuit from the various Arctic states; at the ICC general assemblies, a multi-year work plan should be prepared, major areas of priority and concern should be identified for further work…. Inuit organizations at all levels should ideally be involved" (2010, 100). Finally, "it should always be remembered that the Inuit Arctic Policy is a 'living and resilient document,' adaptable to ongoing changes in Inuit Nunaat" (2010, 100). "To ensure that the ICC Inuit Arctic Policy is achieving the desired effect, its implementation must be monitored by the ICC" (2010, 99).

The 2018 Declaration includes a list of implementation items for each main theme, prefaced by words such as 'Mandate,' 'Direct,' 'Urge,' 'Support,' 'Develop,' 'Instruct,' 'Engage,' 'Facilitate.' 'Encourage.' Neither a budget nor follow-up mechanism are men-

tioned. Finally, with respect to the creation of an Arctic zone of peace mentioned under the 2010 Policy, the 2018 Declaration gives a mandate to the ICC "to initiate diplomatic talks for the purpose of laying the groundwork for negotiations to declare the Arctic as a Peaceful Zone" (2018, 3).

To sum up

The two Inuit ICC documents are rich and substantial, with the 2010 Inuit Arctic Policy being particularly full and rounded. The documents are strong statements by Inuit themselves, on the Inuit as a nation or distinct people, as well as on the Arctic region of the Inuit, that is, "The Arctic We Want" (ICC 2018, 1). The table of contents of the 2010 Policy (ICC 2010a), is impressive, covering many relevant themes: Inuit Rights, Peace and Security, Environment, Social Issues, Culture, Economy, Education and Science. Reading these substantial thematic chapters gives the impression of a nation that is proud, knows what it wants, and knows how to accomplish that. Take, for example, the 2010 Inuit Policy (i) to "achieve real and lasting security in the Arctic" (2010, 22) and to solve problems across the jurisdictional boundaries of the Arctic states through international cooperation and having greater global security; and (ii) that "northern peoples should encourage the development of new notions of common security" (2010, 22) and "activities of youth that emphasize the need for international peace, co-operation, and understanding" (2010, 61). This honest and holistic approach is not usually part of national conversations and hardly exists in state policies.

The Utqiagvik Declaration (ICC 2018) has a very precise lists of issues required, making frequent use of words such as 'Direct,' 'Urge,' 'Support,' and 'Instruct'. At the same time, it covers all relevant issues from food security, families and health to environment and communication.

As was the case with the two Athabaskan Arctic Council documents, the nature and purpose of the two ICC documents differ greatly, and are thus not really intercomparable. That being said, the most striking **similarity** is the domination of the Human Dimension indicator, which is clearly the major indicator in these documents. The Governance and International cooperation indicators, which are the second-most dominant indicators, are also almost even between Athabaskan and Inuit indicators. This clearly shows how much the ICC, like other small nations, depend on international cooperation and international agreements to protect the people and enhance their rights. All in all, the two documents are in balance, as most of the indicators are fairly even, when the texts are measured quantitatively.

The main **difference** comes from the status of the two documents. The 2010 Policy is a comprehensive policy paper and the 2018 Utqiagvik Declaration is the declaration of an assembly held every fourth year.

Based on the latest (2010) Inuit Arctic Policy and the declaration of the latest (2018) ICC general assembly, it is clear that the policy priorities of the ICC, representing Inuit across the circumpolar Arctic, are as follows:

- the health and well-being of the Inuit people and, in particular, their children;
- the governance of their homeland, Inuit Nunaat, meaning the rights of Inuit to their self-government;
- being active in international cooperation, and being supported by international agreements and organizations.

When taking into consideration this and the emphasis on international agreements and organizations, which are noted several times in the documents, it is rather clear that 'self-government' does not mean here only Inuit interests or Inuit nationalism. It should be interpreted more widely to mean and emphasize the importance of international cooperation, including international organizations, in particular the UN and the AC, for protecting and supporting small (Indigenous) nations, and international agreements, such as UN Declaration of the Rights of Indigenous Peoples (referred to many times), as international legal regimes to be relied upon.

Saami Council

The Saami Council did not have an official Arctic policy or strategy for the Arctic, although, according to Asa Larsson-Blind, president of the Saami Council, this has been discussed among Saami politicians, until early autumn 2019. *The Sami Arctic Strategy* was adopted in September 2019 by the Saami Council as to "serve tool for implementing long-term and sustainable programs that improve access for the Sami people to the same opportunities that are afforded to other Arctic inhabitants. The strategy also shines the path towards decolonizing Sami society and aims at securing the Sami people's right to self-determination now and for future generations" (The Sámi Arctic Strategy 2019, 3).

The *Sami Arctic Strategy / Sami Arktalas Aigumusat / Samisk Strategi for Arktiske saker. Securiting enduring influence for the Sami people in the Arctic through partnerships, education and advocacy* (10 pages, attachment of 13 pages, no pictures) is with the five substantial chapters, which can be interpreted to indicate the priority areas: Acting as a robust and reliable partner on Arctic Sami issues, Ensuring the right to choose, Addressing climate change and environmental protection, Deploying Sami Indigenous knowledge and science as a catalyst for Sa'pmi part forward, and The Saami Council as a partner in policy-making and decision-making on Arctic issues. Each of them includes a separate list of measures.

Another recent Saami policy paper on the Arctic, or actually on the Saami land, Sápmi (in Finland, Norway, Russian Federation, and Sweden), is the Tråante Declaration (2017) adopted at the 21st Saami Conference, by representatives of the Saami Council member organizations. The conference took place on 9–11 February 2017 in Tråante (Trondheim), Norway on the occasion of the centennial jubilee of the first national Saami Conference. Prior to the Tråante Declaration official policy statements on the Saami territory have been adopted by the Saami Council every fourth year at the Saami conferences (e.g., in 2013 in Murmansk, Russia, and in 2008 in Rovaniemi, Finland).

The 2017 Tråante Declaration (7 pages, no pictures) states: "The Saami people have the rights described below [i.e., in the declaration]. All requirements and positions presented below are in line with current or… rapidly developing rules of international law. [The Saami people] commits to work for these rights to be realized, and requires that States inside Sápmi to do the same" (2017, 2). This statement is short and clear and permeates the entire declaration which has strong, substantial and concentrated messages.

This document is interpreted and analyzed here as an official policy document of the Saami people based on two facts (downloaded from internet, pages not marked when quoted): (i) the Saami Council member organizations come from the four countries of Finland, Norway, the Russian Federation and Sweden, where the Saami live, and thus the Council is eligible to represent all the Saami people; (ii) at the 20th Saami Council Conference in 2013 the representatives of the Saami Council's member organizations confirmed their membership of the Council "by ratifying the Declaration by their highest representative bodies" as mentioned in the Murmansk Declaration (2013), which is also included the analysis.

The 2013 Murmansk Declaration (4 pages, no pictures) says a great deal about 'responsibility'— both state and corporate responsibility—which ties into human and Saami rights. The document also, unlike the 2017 Declaration, discusses the changing climate and the environment. These two declarations are interpreted and analyzed here as official policy documents of the Saami people based on two facts: (i) the Saami Council member organizations come from the four countries of Finland, Norway, the Russian Federation and Sweden, where the Saami live, and thus the Council is eligible to represent all the Saami people; (ii) at the 20th Saami Council Conference in 2013 the representatives of the Saami Council's member organizations confirmed their membership of the Council "by ratifying the Declaration by their highest representative bodies," (2013, 1) as mentioned in the 2013 Declaration.

For the **(Re)mapping and (Re)defining the Arctic** indicator, the 2013 Declaration emphasizes that "the Saami people has inhabited its traditional homeland— Sápmi —since time immemorial and long before national borders were drawn" (2013, 1). Thus, for the Saami the Arctic is their traditional homeland. Correspondingly, the 2017 Declaration goes deeper: on the cover of the document it is clearly stated that the basis for the life "Sápmi the legacy of our mother, the Sun and our father, the Earth. Lands and waters where we have lived in all times, before national boundaries divided our country" (2017, 1). The states inside Sápmi "shall [thus] support and under no circumstances counteract the Saami people and the Saami nation's efforts to establish a common Saemiedigkie [Saami Parliament]" (2017, 2). The Declaration also deals with geographical Saami place names, with States officially being asked to "recognize

and highlight the Saami traditional names of mountains, lakes, rivers and other places, as well as communities" (2017, 6). Finally, according to the 2019 Arctic Strategy the traditional Sami land is defined as Arctic region, and "All Sápmi is included, when the Saami Council address Arctic questions… The Arctic strategy will support the Saami Council's relations to the global discussion" (2019, 3).

The **Human Dimension** indicator is already focused on by the cover of the 2017 Declaration, which addresses Saami rights clearly by stating that "the Sami are an independent people; like other people, we have the right to our lives and to decide on matters concerning us"[16] (2017, 1). Furthermore, "a central element of the Saami people's right to self-determination is the right to define which individuals are included in the Saami people, Saemiedigkie and the nation" (2017, 3). Under the *Constitution and Common Saami Parliament*, as well as historically, the Saami themselves have decided on their destiny and lives; the Saami right to self-determination is "rooted in the Saami people, who make up a nation…. The Saami have always had these rights and others cannot define or deprive the Saami of them" (2017, 6).

Echoing this, the ultimate goal of the 2019 Strategy is stated that "Sápmi is recognized and that Saami people are treated as equals by the greater society… [as] rights Indigenous peoples have under international law, shall guide the work of the Saami Council in the Arctic" (2019, 3, 5). Furthermore, the measures of the Strategy include that the Council "should advocate the right of Indigenous peoples to give or withhold their free, prior, and informed consent in non-coercive negotiations prior to activities being established and developed on their customary lands" (2019, 6).

The Strategy highlights an importance of the Human Dimension, when dealing with resources stating that resource development proposals for the Saami area "must serve the needs of the Sami people today without compromising the ability of the Sami people to meet their needs in the future. And the projects must meet the legal international standards that protect Indigenous peoples…. [and] promote the physical and mental health of communities and individuals within Sápmi" (2019, 8). As well as, when dealing with culture and language, as "Culturally and linguistically appropriate services are respectful of and responsive to the beliefs, practices and needs of the Sami People. Cultural competency is crucial as a resource for health care providers and educational institutions (and others) to improve their knowledge and understanding of culture, kanguage, and helath literacy." (2019, 10).

The 2017 Declaration also states that the Saami people "have a right to the best attainable standard of health, including mental health" (2017, 6) and states are therefore asked to "provide health care that is linguistically and culturally appropriate to the

---

16   The 2017 Declaration uses both 'Sami' on the cover and 'Saami' in the rest of the text, and the 2019 Strategy uses 'Sami'. We use here 'Saami', as it has been used in general (e.g., the name of the Saami Council).

Saami," and, even more, they "should implement this right… [avoiding] discrimination and marginalization of the Saami people" (2017, 6). Correspondingly, the 2013 Declaration also reiterates that "as people, the Saami have the right to self-determination, including the right to determine our economic and social development" (2013, 1). It contains an ultimate aim and demand that "Saami traditional livelihoods should be safeguarded, and their rights recognized and implemented in all levels of national legislation efficiently" (2013, 4). Interestingly, this declaration is very specific in that it demands that states should acknowledge that Saami rights to fish rivers, in particular "fishing in border-rivers has since time immemorial been carried out jointly between Sami communities irrespective of citizenship and borders" (2013, 4).

Concerning the **Governance** indicator, the 2019 Strategy states that "The Sami people have the right to self-determination", and as mentioned earlier, "shines the path towards decolonizing Sami society and aims at securing the Sami people's right to self-determination now and for future generations" (2019, 5, 3). The whole section *Acting as a robust and reliable partner on Arctic Sami issues* much indicates, even demonstrates, the main aim of the Strategy "to establish the Saami Council as an active partner for the civil Sami society, governments, NGOs, IGOs, and others that, though international cooperation, will build a strong and sustainable Sapmi in the Arctic" (2019, 3). This is, first of all, meant to strengthen the self-determination of Sápmi, and self-governance by the Saami.

Similarly, the 2017 Declaration straightforwardly states that the Sami have acquired the right to manage their territory through long-term use. The Saami "have the knowledge and cognizance of the conditions of life in these areas…. To enable the Sami people to live in a responsible way… mercenary states in Sápmi must cease to impede our right to self-determination" (2017, 1). This quotation, as well as the first statement that "the Saami people[s] have the rights described below" (2017, 2) show very well, under this indicator, the emphasis on self-determination on the part of the Saami people. This is not surprising, given the Saami's current situation and main trends affecting the Arctic Indigenous peoples.

The States in which the Saami live, are asked—even demanded—by the 2017 Declaration to "accept that the right to self-determination… is a right to exercise effective influence on the outcome of those things that are essential to the Saami people" (2017, 3). Under the title *Self-determination: Constitution and common Saami Parliament,* the Declaration continues by stating that "the right to self-determination is a right other than the right to consultation… the Saami people will [and] should not be subordinate to the will of the Nordic and the Russian people" (2017, 3). This right is extended to (traditional) knowledge and (traditional) cultural expressions, and therefore the 2017 Declaration states: "The Saami have the right to decide about Saami traditional knowledge and traditional cultural expressions…. [and] States should implement these rights through legislation" (2017, 6).

Interestingly, the work for self-determination is said to begin by establishing "a Saemiedigkie representing all Saami who belong to the Saami nation. The States shall respect Saemiedigkie as the institution though which the Saami Peoples' rights to self-determination mainly is exercised…. Meanwhile States shall respect that the Saami people—like other Nordic peoples—exercise their rights to self-determination [which] means that in issues of local and regional nature Saami decisions will be made on local or regional level" (2017, 2).

The **International Treaties and International Cooperation** indicator plays a growing role in the documents. While the 2017 Declaration states that Saami traditional knowledge and traditional cultural expressions in those states should be implemented "through legislation… as well as by international agreements and international cooperation… [in particular] in relation to the tourism industry" (2017, 6). The 2019 Strategy in general emphasizes an importance of international cooperation, when defining the Saami Council as an active partner for several actors (the Saami society, governments, NGOs, IGOs) "though international cooperation", and in particular, that as a Permanent Participant in the Arctic Council, the Council "also sits at the decision-making table on Arctic issues" (2019, 3–4).

Though, the 2013 Declaration briefly responds to the **Environmental Protection** indicator, there is nothing explicit in the 2017 Declaration about this topic. Unlike, the 2019 Strategy includes a short section on climate change and environmental protection for example stating that the Saami people "have for millennia depended on, and adapted to, the environment" (2019, 6). One of the measures under *Resource development on Sami land* is to "Promote the recommendations in the 'Arctic Environmenatal Impact Assessment and Meaninful Engagement in the Arctic' report (2019) and call for holistic approach and meaningful engagement in Environmental Impact Assessment and similar strategic planning processes in Sápmi" (2019, 9).

There is nothing explicit on the **Pollution** indicator in the 2017 Declaration. Also the Strategy is brief here including the measures to "enhance the Saami Council's efforts in the Arctic Council Indigenous Peoples Contaminat Action Program (IP-CAP) Expert Group under ACAP" (2019, 6).

Likewise, there is nothing explicit on the **Climate Change** indicator in the 2017 Declaration. Correspondingly, the 2019 Strategy includes a short section on climate change and environmental protection, as mentioned earlier. Among the measures of this section is to "develop a climate and socio-economic model for Sápmi focusing on the impacts of climate change, the economic and societal costs of climate change damages, risk mitigation, and adaptation" (2019, 6).

Nothing is explicitly mentioned about the **Security** indicator in either of the documents.

The **Safety and SAR** indicator is noted by the Strategy, as first, the above-mentioned measure mentions "the impacts of climate change, the economic and societal costs of climate change damages, risk mitigation"; and second, one of the Saami Indigenous knowledge section measures is to "understand the impacts – both ecological aand societal – of extreme weather events" (2019, 7). Furthermore, one of the measures of the *Deploying Sami Indigenous knowledge and science as a catalyst for Sápmi part forward* section mentions food security among the issues to "perform integrative analyses of sustainability and actionable adaptation policies and challenges for Sami communities" (2019, 7).

Interestingly, the 2013 Declaration identifies economic activity as a safety issue for the Saami. "Resource extraction in the Saami territories today carries huge risks and little advantages…. [and] pollution constitutes serious possible pressures to the Saami livelihoods and its food security" (2013, 3). The Declaration calls "for a moratorium on further resource extraction in Sápmi until the states with Saami populations have…. a regulatory framework in place… and installed effective remedies for violations of Saami rights" (2013, 2).

The **Economy** indicator is a substantial topic in the both declarations and it is bound, rather tightly, to the Saami rights to land, water and natural resources. The 2017 Declaration, entitled *Saami rights to land, water and natural resources*, builds on the Conference's first statement "The Saami people have the rights described below" (2017, 2) by explaining, or stating, that "Saami use of land, water and natural resources constitute the foundation of the Saami culture, identity and society. Sápmi is the land and water that the Saami have owned and possessed by traditional use" (2017, 3). This is followed by an interpretation that "intrusion, such as mines, hydropower, wind power and other 'green energy' and infrastructure, steals land from Sápmi and thus causes the Saami living space to decrease" (2017, 3).

Under the title *Saami holders of rights to land, water and natural resources,* the 2017 Declaration continues that "the Saami people have the right to own, use, develop and control the lands, territories and resources in the areas they possess and have possessed due to traditional ownership, use, disposal or otherwise obtained…. [in particular] Saami reindeer herding is a central part of the Saami culture and is in big parts of Sápmi the basis for maintaining and developing the Saami language, Saami culture and the Saami way of life" (2017, 4). Clearly, the Saami appear to have their own economies that are in conflict with other forms of economic development. Finally, the document state that this Saami right "to land, water and natural resources is not limited to the areas that the Saami traditionally have used and continually [use]," (2017, 4) meaning that the Saami have a vested interest in what happens outside of their traditional territory.

The section *The Saami Council as a partner in policy-making and decision-making on Arctic issues* of the Strategy includes two sub-sections which directly deal with the Economy indicator. The "Resource development on Sami Land" sub-section states that resource development proposals for the Saami area "must

serve the needs of the sami people today without compromising the ability of the Sami people to meet their needs in the future… [and] promote the physical and mental health of communities and individuals within Sápmi" (2019, 8). Among the measures is to "Develop a toolkit for Sami communities for natural resource projects on Indigenous land… combined with training cpurses to empower communities" (2019, 9). Correspondingly, the "Economic growth on Sami premises" notes that "Sami traditional subsistence living is an old form of entrepreneurship. Sami products were, and still are, important commodities on both national and international markets… Reindeer husbandry plays a crucial role in Sami societies, but other ways of life are also important to protect, such as traditional gathering culture and te use of marine products." It also proposes to organize a Sami Business Summit "at which Sami entrepreneurs and potential investors can meet and share ideas, innovations, and new technologies" (2019, 9).

Interestingly, the 2013 Declaration, with regard to industrial activities on Saami land, includes a special section under the title *Corporate responsibility* with the starting point that although "states are primarily responsible for ensuring respect for Saami rights, the private sector too has a responsibility to respect, protect and fulfill human rights. Business must not use inadequate state regulation as an excuse for not respecting Saami human rights" (2013, 2). The 2017 Declaration continues this under the title, *The Green colonialism* and states that "the foregoing considerations apply correspondingly in relation to the 'Green Nordic industry', including wind power, hydro power, wave power, etc.… Saami livelihoods— including reindeer herding— are among the 'greenest'" (2017, 4–5).

The **Tourism** indicator is explicitly noted by the 2017 Declaration, which places special emphasis on tourism, namely, that "states must coordinate with the Saami people around the development of tourism related to the Saami culture, including within Sápmi… [and] ensure that the tourism industry operates in a cultural, social, and economically sustainable manner" (2017, 5). Furthermore, states should implement the rights to *Traditional knowledge and traditional cultural expressions* through legislation, as well as by international agreements and international cooperation, in general and in particular "in relation to the tourism industry" (2017, 6). Finally, the Sami Parliaments with the tourism industry are asked "to compile guidelines on appropriate conduct, to ensure that the Saami culture, the Saami society, way of life and nature is respected" (2017, 5).

Correspondingly, the *Deploying Sami Indigenous knowledge and science as a catalyst for Sápmi part forward* section of the Strategy very briefly mentions tourism among the fields to have more research "to understand the consequences of continued resource development, including risk-based assessments" (2019, 7).

There is nothing explicitly mentioned about the **Infrastructure** indicator in the 2017 document. Unlike, the Strategy briefly mentions hydro- and wind-energy projects, forestry and railway tourism among the fields to have more research "to understand the consequences of continued resource development, including risk-based assessments" (2019, 7).

The **Science and Education** indicator is largely discussed in the 2017 Declaration and the 2019 Strategy. The 2017 Declaration concentrates on *Traditional knowledge and traditional cultural expressions*, as this traditional approach "will constitute the basis for the management of the area's resources" (2017, 1). "The Saami have the right to decide about Saami traditional knowledge and traditional cultural expressions…. States should implement these rights through legislation... as well as by international agreements and international cooperation" (2017, 6). This is extended to include the Saami language, as "all Saami children have the right to education, including early childhood education, in and on Saami and otherwise adapted to the Saami culture…. Within the traditional Saami areas, the right to education in and on Saami is absolute…. States are required to effectively implement this right" even outside traditional Saami areas so that "children have rights to receive education in and on Saami and Saami culture" (2017, 5).

Correspondingly, the 2019 Strategy emphasizes knowledge and science, as well as ties them together with climate change and other Arctic changes, and clearly states that "there is a need for new knowledge about how these changes affect the Arctic… The Saami Council believes that the best way of producing these tools is through respectful use and acknowledgement of Sami Indigenous knowledge" (2019, 6–7). The measures include for example, "Build constructive relationship between procucers and users of knowledge, including Sami Indigenous knowledge, in order to improve undwerstandiing of the vulnerability and resilience of Arctic environment and Sami socities… Assess the diverse impacts of climate chage and human activities on Arctic biodiversity… Examine the role of institutions, resources, and traditional and emerging economies as factors and instruments of sustainable development" (2019, 7).

Concerning the Science and Education indicators there is a continuity, since the 2013 conference calls to "seek strengthen and support the establishment of knowledge of Indigenous issues… for traditional knowledge and research in Sápmi… [and] expand already existing institutions of higher education in such a manner that a Saami or Indigenous university can be established," (2013, 4) is echoed in the following statement from the 2017 Declaration (entitled *Academia and research)*: "Research that is relevant for the Saami is useful for both the Saami and the majority society [therefore] Saami self-determination in research relevant for the Saami [should] be strengthened" (2017, 7). Finally, all research institutions are recommended to "cooperate with the Saami community regarding ethical rules applicable for Saami research" (2017, 7).

Furthermore, the Strategy also includes an attachment, *Building Knowledge in Sapmi – A List of Knowledge Gaps and Research Needs* with lists of identified knowledge gaps and ideas for further research on the following topics: Data and demography, Cultural heritage and history, Indigenous Peoples Rights connected to land amd territories, Environment, climate change and ecosystem services, Animal health and ethics, Indigenoius knowledge, Sami languages, Health and well-being, Entrepreneurship, business and industry in Sapmi, and Duodji: Art and cultural expressions.

This attachment (to identify knowledge gaps and ideas for further research) clearly indicates an explicite **Implementation** of the strategy. The objectives of this kind of list is said to be twofold: "i) To provide guidance for Sami institutions, students and politicians to make priorities for their knowledge production and identify research topics. ii) To provide guidance for Sami institutions to identify topics when seeking collaborfators in Arctic research" (2019, 7). Unlike, the 2017 Declaration does not explicitly mention implementation or evaluation, although it does include de facto follow-up by stating that the rights of the Saami people include commitments "to work for these rights to be realized, and requires that State inside Sápmi do the same."

To sum up

The nature and status of these two Saami documents—a declaration of a Saami conference and the first Saami strategy on the Arctic—is different, although they both are official policy documents of the Saami Council in the 2010s. It thus makes sense slightly to compare them.

The most striking **similarity** is the dominance of the Human Dimension indicator. This conclusion has been reached not just due to the quantitative measuring (of indicators), but more due to the strong wording of the declarations on behalf of human and Saami rights. This is already clear from the cover of the Tråante Declaration – the message of this short text is very powerful. In addition of the explicit text, the focus on Indigenous (human) and other Saami rights is expressed by connecting 'responsibility' —both state and corporate responsibility—with (Saami) human rights. The Strategy continues by stating that the Saami Council "should advocate the right of Indigenous peoples to give or withhold their free, prior, and informed consent in non-coercive negotiations" (2019, 6).

The second similarity is that the Economy indicator, and also the Science and Education indicator, is not only explicitly noted, but also discussed in detail in both documents. Third, the Security and Infrastructure indicators are not explicitly mentioned. Finally, it is surprising how little the environment, climate change and pollution are explicitly noted by the declarations.

The first **difference** in the content of these two Saami documents is that the 2017 Declaration concentrates on self-determination, under the Governance indicator. The second difference is that the Environmental protection, Pollution, Climate change, and Safety & SAR indicators are explicitly noted only in the Strategy. The third one is the strong emphasis on implementation by the 2019 Strategy, which also expands the Saami Council's relations to global.

All in all, the two Saami documents are strong statements (i) on human rights, which also belong, and are actually required to belong, to Saami people, and (ii) on the right to self-determination, including solid argumentation, concrete proposals and demands to the states (where the Saami live). The 2017 Declaration argues for strengthening Saami self-determination in research: "Research that is relevant for the Saami is useful for

both the Saami and the majority society," (2017, 7) and the 2019 Strategy continues this a substantial lists of knowledge gaps and research needs. All this shows mature thinking, and aims to create a win–win situation. Interestingly, the term 'self-determination' is used instead of 'self-government,' and is a term frequently used in ICC policy, as discussed earlier.

Finally, it is interesting and refreshing to read how the 2017 Declaration discusses the greening of Nordic industry, calling it *the Green colonialism* (including wind power, hydro power, wave power, etc.), while Saami livelihoods (including reindeer herding) are noted to be among the '"greenest" ones. To define these so-called alternative energy sources as 'green energy' "is a paradox" (2017, 5) according to the document.

Comparing and Discussing the Documents

The previous sections provide an overview of the contents of the policy documents of the four Indigenous peoples' organizations (IPOs) and Permanent Participants of the Arctic Council—the AAC, the Gwich'in Council International, the ICC and the Saami Council—and how they have recently developed. To gain a more holistic picture of the state of Arctic governance of the 21st century, and better understanding of how the region is currently being governed, there needs to be a comparison of these papers to see how they combine and contrast with each other.

Although some of the national policy documents, which are still current, were released between 2009 and 2013, most of the documents studied here are much more up to date. With the exception of the 2010 Inuit Arctic policy, the three others were released between 2017 and 2019.

A real comparative study, where policy papers are compared indicator by indicator does not make much sense in this case, however. The policy papers highlighted here are rather fragmented, and do not cover the indicator fields in full detail. They also come from different directions, being Arctic strategies, or declarations, and a study. They are thus neither coded and with figures, nor quantitative comperation included. Instead, we can make a slight comparison, by way of a discussion, to identify a few of the similarities and differences between the most current policy papers of the four PPs. We also discuss here some of relevant findings with possible have implications for Arctic governance and development of the entire region.

The **(Re)mapping and (Re)defining the Arctic** indicator is explicitly discussed in all the documents. The AAC Arctic Policy 2017 has a traditional definition of the Arctic region inhabited by the Athabaskan peoples for centuries on both the Canadian and US sides, "occupying" about three million square kilometres of territories. However, the AAC is defined as "an international treaty organization", (AAC 2017, 4) which defends the rights and interests of Athabaskan First Nation members internationally. It should also be noted that the 2008 *Europe and the*

Arctic: A View from the Arctic Athabaskan Council refers to the UNEP's characterization of the Arctic as "the world's barometer of environmental change" (AAC 2008, 3).

The Gwich'in report notes that the Gwich'in live in the Northwest Territories, Yukon, and Alaska, and that the GCI is a Permanent Participant of the Arctic Council. Although it gives no detailed definition of the Arctic, it does discuss how to establish an "Indigenous-led impact assessment processes over resource development in their homelands" (Gwich'in Council International 2018, 7).

The Inuit Arctic Policy 2010 clearly defines that the Inuit, as one Arctic people living in four nations across Inuit Nunaat, are a part of a connected world. Even more relevant that the Arctic is the Inuit Homeland—a "shared homeland" (ICC 2010).

Based on the narrative on the cover of the Saami Tråante Declaration (2017, 1) the basis for the life is 'Sápmi', the traditional homeland of Saami, "the legacy of our mother the Sun and our father the Earth", where the Saami have lived long before national boundaries divided these areas. The Declaration also demands that states officially recognize and use the Saami traditional names of mountains, lakes, rivers and places. And according to The Saami Arctic Strategy the traditional Sami land is defined as Arctic region, and "All Sápmi is included, when the Saami Council address Arctic questions" (2019, 3).

It is thus fair to conclude that there is a relevant key similarity in this indicator, in how the different Indigenous groups define the Arctic region. The documents all make clear that their territory, 'homeland' is where their respective populations live, and that this spans traditional state boundaries, although in different ways.

The **Human Dimension** indicator also emphasizes self-identification, which is explicitly discussed in all the documents. The AAC policy (i) emphasizes social and cultural cooperation due to growing stress on Northern Indigenous people's health, languages and social well-being, including housing, food availability, and climate change; and (ii), includes recommendations for Canada's Arctic Foreign Policy to support, among others, human health and mental wellness.

The Gwich'in 2018 report emphasizes that identifying 'enabling factors' will contribute to the success of Indigenous-led impact assessment, and that human capacity critically consists of "three elements related to capacity: funding, human resources, and relationship building"Gwich'in Council International 2018, 38. The report also emphasizes the Arctic Council is "the only international organization to give Indigenous peoples a seat at the decision-making table alongside national governments" (Gwich'in Council International 2018, 2).

The ICC policy is precise in stating that Inuit should "be recognized and referred to both nationally and internationally as a distinct 'people'" (ICC 2010, 13) and that they are an integral part of Arctic ecosystems. Furthermore, the Arctic states are re-

quired to recognize the Indigenous right to 'subsistence' that Inuit rights to manage resources of the Inuit homeland are much emphasized, as well as strong relationships "be recognized and referred to both nationally and internationally" and "are considered as individual and collective rights" (ICC 2010, 13, 28). Last but not least, human health and well-being (of Inuit children), and non-material cultures are part the Inuit cultural heritage.

The Saami Tråante Declaration (2017) defines the Saami as "an independent people", who like other people have "the right to our lives and to decide on matters concerning us", (2017, 1) including "the best attainable standard of health" (2017, 6). Correspondingly, The Sámi Arctic Strategy states that "Sápmi is recognized and that Saami people are treated as equals by the greater society… [as] rights Indigenous peoples have under international law, shall guide the work of the Saami Council in the Arctic" (2019, 3, 5). A central element of the Saami right to self-determination is "the right to define which individuals are included in the Saami people, Saemiedigkie and the nation" (2017, 3).

There is a striking similarity between these documents in that, in general, they all address issues broadly surrounding Indigenous individual and collective rights, although in different contexts. Some of them also address issues around health, and relations between Indigenous people and states. There are also a few differences; for example, the ICC aim to build a strong relationship between human rights, peace and security, and development is highlighted.

The **Governance** indicator is explicitly discussed in all the documents. The AAC policy (AAC 2017) recognizes differences in political and cultural organizations, depending on the location of residence of Athabaskan People. Among AAC's strategic objectives, as mentioned, the document defines defense of the harvesting rights and interests, and strengthening of the Arctic Council "to address and balance the competing issues of environmental protection and sustainable development" (2017, 5).

The Gwich'in report, being about 'Indigenous-led impact assessment' places the emphasis on governance, with 'self-governance' and 'self-determination' being the main pathways. The report looks at how Gwich'in can "establish their own Indigenous-led impact assessment processes over resource development in their homelands", (Gwich'in Council International 2018, 7) and links this to legislation and land claims.

The ICC policy is very precise in its view that an integral part of the right of self-determination within states is "the right to self-government… recognized rights and principles [are] applicable to Indigenous peoples under international law…. [Indigenous peoples should have the right to exercise] adequate powers of self-government within their traditional territories" (ICC 2010, 15). Supported and affirmed by the UN Declaration on the Rights of Indigenous Peoples, these rights to lands, resources and territories, as well as to self-determination, applies to the Inuit Homeland, "our shared homeland" with jurisdiction "over half the entire Arctic" (ICC 2010, 9). The policy also recognizes

the NGO status of the ICC within the UN, for example, the UN Permanent Forum on Indigenous Issues, as well as its participation in the Arctic Council.

Likewise, the Saami policy documents are precise in stating that the Saami people have always had "the right to manage their territory" (Tråante Declaration 2017, 1), and "have the right to self-determination" (The Sámi Arctic Strategy 2019, 5). And, in order to be able to live in a responsible way "mercenary states in Sápmi must cease to impede [the Saami] right to self-determination" (2017, 1).

Again, all the policy documents explicitly discuss governance, both broadly and in detail. There are some differences: the Gwich'in report is clearly about aiming for 'Indigenous-led impact assessment' and mentions the process and methods of achieving this; the Saami documents use the term 'self-determination'; and the ICC policy documents use the term 'self-government'.

The **International Treaties and International Cooperation** indicator is explicitly discussed in all the documents. The AAC Arctic Policy, as a policy paper on the "harvesting rights and interests of Athabaskan peoples" (AAC 2017, 5) includes recommendations that treaties, land claims and self-government agreements be a fundamental element of Canada's Arctic foreign policy. The Arctic Council is defined as a key international forum for Indigenous Peoples Organizations, including the AAC, and on how best to engage with non-Arctic states, such as China and European states, including the EU. Only a few international agreements and organizations are mentioned.

The Gwich'in report 2018 mentions the status of Gwich'in Council International as a Permanent Participant of the Arctic Council and only deals with international cooperation by proposing an international comparative work on Indigenous impact assessment processes.

The ICC 2010 policy begins by promoting international understanding, and ties Inuit rights with international cooperation, emphasizing the importance of the UN Declaration on the Rights of Indigenous Peoples (UNDRIP). The ICC policy promotes cooperation, information sharing, and solidarity among northern peoples, as well as multilateral forums, such as the AC. According to the ACC, these are greatly needed in the Arctic, particularly in this age of climate change. In addition, the document includes long lists of international agreements and international organizations, on which the ICC preferentially depends to protect Inuit peoples and their rights.

The Saami Strategy 2019 clearly emphasizes an importance of international cooperation, when defining the Saami Council as an active partner "though international cooperation", and in particular, its status as a Permanent Participant in the Arctic Council, "the decision-making table" on Arctic issues.

The main similarity here is that all the Indigenous documents explicitly, though briefly, note the importance of international

cooperation. Most of them look to international agreements and international organizations, such as the United Nnations and the Arctic Council (instead of the gatherings of the five littoral Arctuc states, when searching for support for Indigenous peoples and their rights.

The **Environmental Protection** indicator is explicitly noted in the AAC, ICC and Saami documents, although to a limited extent. For example, environmental protection is briefly mentioned in the AAC policy with respect to research projects on ecosystem monitoring.

Similarly, The Saami Strategy briefly states that the Saami people "have for millennia depended on, and adapted to, the environment", (2019, 6) as well as calls for holistic approach and meaningful engagement in Environmenatal Impact Assessment in Sápmi.

Unlike, the ICC documents include substantial discussion on the issue. The ICC 2010 policy even emphasizes the protection of the fragile Arctic environment, in particular marine and other resources, on which Inuit and the future of Inuit harvesting depend. Conservation of marine resources for Inuit is seen as a fundamental factor in maintaining global ecological health and stability.

Environmental protection is not explicitly covered by the Gwich'in report, though it is all about Indigenous-led impact assessment.

The **Pollution** indicator is explicitly, though briefly, mentioned in the AAC, ICC and Saami documents. For instance, the AAC Arctic Policy notes some of the pollutants affecting the region, such as POPs, and that the Stockholm Convention on POPs is a problem-solving tactic. The ICC policy also identifies a range of pollutants and argues that pollution outside the region must be addressed. The Saami Strategy briefly mentions the Saami Council's efforts in the Arctic Council Indigenous Peoples Contaminat Action Program (IPCAP) Expert Group under ACAP.

In contrast, pollution is not explicitly discussed in the Gwich'in document.

Similarly, the **Climate Change** indicator is explicitly discussed in the AAC, ICC and Saami documents. The first two documents explain that climate change poses a significant challenge and major danger to their respective populations and ecosystems, and express that climate action is required at an international level through processes, like the Arctic Climate Impact Assessment, or the UNFCCC (AAC), or through human rights conventions (ICC).

Correspondingly, the Saami Strategy proposes a measure to "develop a climate and socio-economic model for Sápmi focusing on the impacts of climate change, the economic and societal costs of climate change damages, risk mitigation, and adaptation." (2019, 6). Unlike, the Gwich'in document is not explicit about this topic.

The **Security** indicator is explicitly discussed only in the AAC and ICC documents: The AAC 2017 policy recognizes that security issues impact Indigenous peoples' and other residents' well-being, and therefore includes recommendations on 'Defence, Safety and Security' for a new Arctic Policy framework for Canada.

The ICC Policy has a special sub-chapter promoting the importance of peace, and global security, and peaceful diplomacy for the Arctic region. This illustrates that peace and security are understood in a comprehensive way, including military and food security, and that specific features, such as (environmental) impacts of traditional security and the military, are recognized.

The Security indicator is not covered by the Gwich'in report and the Saami documents, showing the striking difference between these Indigenous policy documents—two of them explicitly discussing security including defence— ICC even in detail —and the rest not.

The **Safety and SAR** indicator is explicitly, though briefly, mentioned in the ICC and Saami documents. The former one demands a right to safe drinking water, as well as nuclear safety, and underlkines that important steps are taken by international organizations and forums with regard to safety navigation. The latter document includes economic and societal costs of climate change damages and risks related to climate change, and risks of extreme weather events, as well as food security among the issues when analyzing sustainability and actionable adaptation policies and challenges for Sami communities.

The **Economy** indicator is explicitly discussed and mentioned in all the documents, although in different ways. The AAC policy, for example, explicitly mentions the economy in regard to trade in the context of treaty rights and intellectual property. It also recognizes the need for input from Canadian Indigenous peoples when the Canadian Government is negotiating trade agreements at international level. The Gwich'in report extensively discusses the economy via the Indigenous-led impact assessment case studies (Tlicho of the Nico Project, The Sivumut Project, and Squamish Nation Woodfibre LNG Project, which deal with resource governance and sustainable development).

The ICC policy considers the protection and management of renewable resources through the maintenance of ecological balance to be very important; it therefore emphasizes right of Inuit to participate in the management and development of the Arctic and its resources. It also calls for the promotion of "Inuit self-reliance"— explicitly mentioned in the document is the need for Inuit Arctic Policy to elaborate a comprehensive Arctic economic strategy to potentially include "full and meaningful employment" (ICC 2010, 82), and air transportation.

Based on the Saami right to own, use, and develop its own lands and resources, resulting from their traditional ownership, the economy plays an important role in the 2017 Declaration. In particular, Saami reindeer herding is interpreted as a central part of the Saami culture, as are maintaining and develop the

languages, culture and the entire Saami way of life, as well as among the 'greenest', unlike the *Green colonialism*. Correspondingly, two sub-sections of the Saami Strategy directly deal with the Economy indicator by stating that resource development proposals for the Saami area should consider "the needs of the Sami people today without compromising the ability of the Sami people to meet their needs in the future", (2019, 8) and considering Saami traditional subsistence living as "an old form of entrepreneurship" (2019, 9). In this context, finally, the proposal of a Sami Business Summit is interesting.

All the documents unsurprisingly recognize and emphasize the rights of Arctic Indigenous peoples to use and utilize, and to manage, the resources of their homelands. An interesting difference is that the Gwich'in report has detailed case studies.

The **Tourism** indicator is explicitly mentioned only by the ICC and Saami documents. The ICC 2010 policy briefly states that common approach to resource management and economic development "also applies to eco-tourism" (2010, 35). Tourism is a special concern of the Saami 2017 Declaration, which states that the development of tourism related to the Saami culture and within the Saami areas should be coordinated by states in order to "ensure that the tourism industry operates in a cultural, social, and economically sustainable manner" (Tråante Declaration 2017, 5). The Sami Parliaments are also asked to compile guidelines on tourism to respect the Saami culture and way of life, and nature.

Neither the AAC document nor Gwich'in one explicitly discuss this topic.

The **Infrastructure** indicator is explicitly discussed in the AAC and ICC documents, although with different foci. For instance, the AAC policy stresses that innovative solutions are needed to address northern housing and energy-efficient infrastructure, renewable energy, and food security. The policy recommends that Canada's forthcoming Arctic foreign policy provides resources for Arctic universities and institutions to develop these innovations. In contrast, the ICC 2010 Arctic Policy stresses that communications and media, including satellites, are of fundamental importance, as they make communications possible in the Arctic; it is particularly important that the relationship of these, together with information technologies, with the Inuit language and cultural development be recognized. The document also explicitly mentions, unlike the others, that air transportation a necessity in the large Arctic regions, as "the only mean of year-round transport between Inuit communities, regionally, nationally, and internationally" (ICC 2010, 84).

Correspondigly, the Gwich'in 2018 and Saami 2019 documents briefly mention issues (directly or indirectly) dealing with infrastructure.

The **Science and Education** indicator is explicitly discussed in all documents, in particular in the Gwich'in report, which should be defined as a scientific paper. The AAC policy makes recommendations for Canada's Arctic foreign policy to ensure,

by large extent, that research will be co-developed, produced and communicated in full partnership with Arctic Indigenous people. The ICC policy recognizes Arctic research as providing vital information for a growing number of activities, subjects, and interests in Inuit communities, in particular community-based research; it also requires 'traditional knowledge' to be included in school curricula as it has provided critical information about climate change.

Correspondingly, The Saami Strategy emphasizes knowledge and science, as well as ties them together with climate change and other Arctic changes, and clearly states that "there is a need for new knowledge about how these changes affect the Arctic" (2019, 6). The document includes several measures directly concerning Indigenous knowledge, as well as science and education.

The first similarity of this indicator is, not surprisingly, an emphasis on 'Traditional knowledge', and the second one, that scientific findings should be produced and developed further in partnership with Indigenous peoples.

The final similarity between the four Indigenous policy documents is that the **Implementation** indicator is explicitly included, at least de facto, by all the documents. For instance, as a follow-up of the Arctic Athabaskan Council's policy formulation process, the AAC Policy includes three additional recommendations on how Indigenous northern think-tanks could be used to advise governments on Arctic issues. For the Gwich'in report, in addition to the short list of recommendations, the report proposes further work on monitoring and Indigenous impact assessment, and stresses that "this costs money" (2018, 43).

The Inuit Arctic Policy (ICC 2010, 99) is defined as a 'living and resilient document'; to achieve its desired effect "its implementation must be monitored by the ICC". Finally, while the Saami Declaration includes de facto follow-up by emphasizing rights of the Saami to include commitments to realize these rights, and requires that "the States inside Sápmi do the same", the 2019 Strategy includes an explicit attachment *Building Knowledge in Sapmi – A List of Knowledge Gaps and Research Needs* with identified knowledge gaps and ideas for further research.

As a conclusion, this section shows that the policy documents of these four Indigenous peoples' organizations, as Permanent Participants of the Arctic Council, are rather fragmented. They do not cover all the indicator fields in full detail, as they come from different directions. There is a striking similarity that all policy documents explicitly address issues broadly surrounding Indigenous (individual and collective) rights, although in different contexts, and governance both broadly and in detail, as well as the importance of international cooperation. Unlike, environmental protection, pollution and/or climate change are not explicitly covered by all documents. Unsurprisingly, all the documents emphasize the rights of Arctic Indigenous peoples to use / utilize the resources of their homelands, as well as the importance of 'Traditional knowledge'.

Finally, at the end of the full scientific report, as conclusions and synthesis of the different parts of this study, this analysis of these Indigenous peoples' policy documents - as well as those of the national strategies and policies of the Arctic states and the AC observer countries, and the Arctic Council Ministerial declarations - will be used as a foundation for new and emerging trends of Arctic governance and geopolitics from the points of view of all these categories of Arctic actors or stakeholders.

Part IV:
Strategies and Policies of the Observer States

When the Arctic Council (AC) was established in 1996, eight Arctic States became 'Members' of the Council, and six Indigenous Peoples Organizations became 'Permanent Participants' (PPs). No more categories were created. However, in the Joint Communique on the Establishment of the Arctic Council (1996), the governments of the Arctic countries also recognized the need to provide an opportunity for "non-Arctic countries, governmental and non-governmental organizations with Arctic interests to participate actively, as Observers, in the work of the Council, and to draw on their experiences." Following on from this, the Declaration of the First Ministerial Meeting of the Arctic Council in September 1998 (the Iqaluit Declaration) approved observer status for i) several intergovernmental organizations, such as the IASC, UNEP, and the Nordic Council; ii) international non-governmental organizations, such as the WWF; and iii) four non-Arctic states—the Federal Republic of Germany, the Netherlands, Poland, and the United Kingdom of Great Britain and Northern Ireland (UK).

Germany, Poland, and the UK were already observers at the very first ministerial meeting of the Arctic states in June 1991 in Rovaniemi, Finland, when the 1991 Arctic Environmental Protection Strategy (AEPS) was signed. Other AC observers were the ICC, the Saami Council, and the USSR Association of Small Peoples of the North (later accorded PP status and named the Association of Indigenous Minorities of the North, Siberia, and the Far East of the Russian Federation (RAIPON)), as well as the UN-ECE, UNEP, and IASC. Germany, Poland, and the UK, together with Japan and the Netherlands, were also present at the establishing ceremony of the Arctic Council in Ottawa in September 1996.

Observer status in the Arctic Council is open to non-Arctic states, inter-governmental and inter-parliamentary, global and regional, and international non-governmental organizations. There are certain criteria for admitting observers, namely, they should i) "accept and support the objectives of the Arctic Council; ii) recognize Arctic States' sovereignty, sovereign rights, and jurisdiction in the Arctic; iii) recognize that an extensive legal framework applies to the Arctic Ocean including, notably, the Law of the Sea; and iv) respect the values, interests, culture and traditions of Arctic Indigenous peoples and other Arctic inhabitants" (Arctic Council 2015b).

Observers are reminded that "decisions at all levels in the Arctic Council are the exclusive right and responsibility of the eight Arctic States with the involvement of the Permanent Participants." (Ottawa Declaration 1996). They are then invited to the meetings of the Arctic Council (once observer status has been granted) to observe its work, which is their primary role. Observers are further expected to "make relevant contributions through their engagement in the Arctic Council primarily at the level of Working Groups," and they are also informed that they "may propose projects through an Arctic State or a Permanent Participant," although financial contributions from observers to any given project may not exceed the financing from Arctic States. Finally, in Council meetings "observers may, at the discretion of the Chair, make statements after Arctic states and Permanent Participants, present written statements, submit relevant documents and provide views on the issues under discussion."

Thus in the AC meetings—the Ministerial and SAO Plenary meetings—observers, unlike the Permanent Participants, do not per se have a right to take the floor and give statements or provide views, but they may be allowed to do so. They have, first of all, a mandate to be present and to observe, and to attend the meetings of the Working Groups. The observer status only allows to participate in the Arctic Council SAO and Ministerial meetings, not necessary in other meetings by the Arctic states, such as the Ilulissat Ministerial by the five littoral states of the Arctic Ocean in 2008.

In spite of these restrictions and the narrow mandate, the position of (permanent) observership at the Arctic Council has become attractive, and several non-Arctic states, IGOs, and international NGOs have applied for this status. By the 11th Ministerial Meeting of the Arctic Council in May 2019 a total of 39 states and organizations—13 non-Arctic states, 14 intergovernmental and inter-parliamentary organizations (e.g., NCM, SCPAR, UN-ECE, UNEP), and 12 international non-governmental organizations (e.g., IASC, Northern Forum, UArctic, WWF)—had been approved as Arctic Council observers. The non-Arctic state observers are (with the year of approval) France (2000), Germany (1998), Italian Republic (2013), Japan (2013), Netherlands (1998), People's Republic of China (2013), Poland (1998), Republic of India (2013), Republic of Korea (2013), Republic of Singapore (2013), Spain (2006), Switzerland (2017), and the United Kingdom (1998).

Of the observer countries, the following have approved an Arctic policy or strategy (with the year it was announced): France (2016), Germany (2013), Italy (2015), Japan (2015), Netherlands (2014), People's Republic of China (2018), Republic of Korea (2013), Spain (2016), and United Kingdom (2013 and 2018). Each state has one document relating to the Arctic,

apart from the UK, which has two. The Netherlands document, *Strategy for the Netherlands Polar Programme 2016–2020,* and the Spanish document*, A* Spanish Polar Strategy*,* focus on the Arctic and Antarctic. As Germany released its newest, up-dated strategy in August 2019, it is not analyzed here.

Of the remaining non-Arctic observer states, Poland is in the process of finalizing a report. India does not have a strategy per se, but sets out the main objectives of the Indian research in a short paper *India and the Arctic* on the Arctic region and the Arctic Council (see Indian Ministry of External Affairs website for public diplomacy (India MEA 2013). Switzerland also has an Arctic science document, which is not a strategy as such (Switzerland. Swiss Federal Department of Foreign Affairs 2015).

Other observers of the Arctic Council have also released documents. For example, the Northern Forum (2019) released its new *Development Strategy 2030* in April 2019. As these documents do not have the status of a national strategy or policy, they are neither coded nor analyzed here.

Also the European Union (EU) has an official policy / strategy on the Arctic since 2008, when the first EU Communication on the Arctic has adopted. Building on this communication and other initiatives the 2016 Joint Communication "sets out the case for an EU policy that focuses on advancing international cooperation in responding to the impacts of climate change on the Arctic's fragile environment, and on promoting and contributing to sustainable development, in particularly in the European part of the Arctic" (European Commission 2016, 2). Behind is that the Union "has a strategic interest in playing a key role in the Arctic Region" (ibid). As the EU does neither have, yet the status of a (permanent) observership of the Arctic Council, nor it is state, these documents are neither coded nor analyzed here.

France

The document *The Great Challenge of the Arctic —The National Roadmap for the Arctic,* was approved and launched in 2016 by the French Ministry of Foreign Affairs and International Development (France MAEDI 2016).

The 60-page document, including several maps and pictures, is a collaboration between the French ministries of Defence, Ecology, Sustainable Development and Energy, Education and Research, and Finance, working "under the aegis of the Ministry of Foreign Affairs and International Development" (2016, 12). Their goal was "to draft a 'National Roadmap for the Arctic' identifying, ranking, and coordinating France's priorities with regard to the Arctic" (2016, 12). The seven chapters are entitled: Scientific research and cooperation; Economic opportunities and cooperation; Defence and security issues; Protecting the Arctic marine environment; France's presence

in international forums on the Arctic; The European Union and the Arctic region; and National interests and the common interest in the Arctic region. The work has four main areas, which are seen as the French priorities: i) identifying France's interests in the Arctic; ii) enhancing the legitimacy of France in Arctic affairs; iii) working to balance national and general interests of Arctic Ocean governance; and iv) promoting protection of the fragile Arctic marine ecosystem (2016, 12).

The Roadmap explicitly notes that "France already has political and economic interests in the Arctic (Total, Engie, Technip, Thales, etc.) which are bound to grow" (p. 11). France has a long-standing relationship with the Arctic, with its famous French polar explorers and scientists and the country having a permanent scientific base in Svalbard since the 1960s (e.g., Plouffe 2012). Furthermore, the title of the concluding chapter reveals France's national interest there, "France, an Arctic player" (2016, 3).

France received the status of permanent observership at the Arctic Council in 2000 (Arctic Council 2015b).

The substantial **(Re)mapping and (Re)defining the Arctic** indicator provides a fairly good understanding of how France defines and would like to map the Arctic. France defines the Arctic "as an ocean surrounded by continents" (2016, 6). A document subchapter has a list of different definitions of political and administrative boundaries in the Arctic (2016, 21–22), The document also explains that "the Arctic Ocean, a unique and fragile marine environment," (2016, 39) "has been severely affected by climate change [which] is a key component in the regulation of the planet's climate" (2016, 10). The Arctic is also described as being "a region with very few inhabitants" (2016, 29), but also a "home to some forty ethnic communities" (p. 22). The Arctic is "also defined as one of the seven 'socio-cultural regions' of the world recognized by the UN Permanent Forum on Indigenous Issues" (2016, 22). Finally, in the Roadmap, the Arctic is defined as "an ecologically sensitive area," which find itself in a situation, "where economic opportunities and environmental and climate challenges are inextricably linked" (2016, 60).

The French Roadmap also notes that "the Arctic is both far from France and near to it" (2016, 4). This means that "from France, the Arctic Ocean… seems like a natural extension of the North Atlantic, which laps at the western shores of our country…. Until recently, however, the Arctic seemed far away because it remained, if not untouched, at least largely preserved from the changes caused by people. But the Arctic is [now] feeling the full force of climate change" (2016, 4), and "is the canary in the coal mine for the climate change occurring all over the world" (2016, 9). The Arctic is "a worldwide concern" (2016, 11), the Roadmap states, and France is "an Arctic player" (2016, 3).

Figure 18 shows how many quotes are assigned to the different indicators, as a percentage of the total number of coded quotes (rounded to the nearest whole number) in the document.
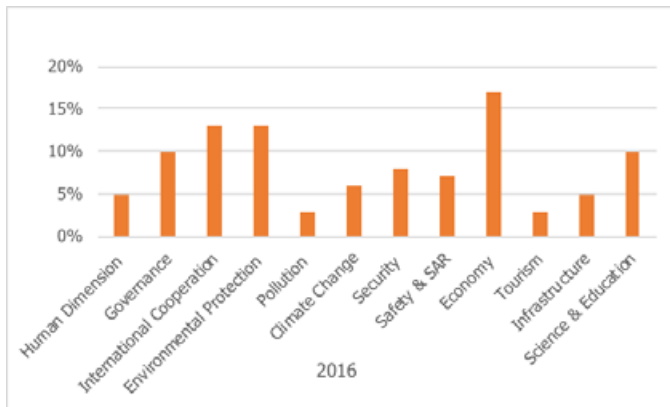
Figure 18. France 2016

Note: The percentages in each indicator are rounded to the nearest whole number and represent the percentage of the total number of quotes coded for each document.

The **Human Dimension** indicator accounts for 5% of the total coded quotes of the French *National Roadmap for the Arctic* (see Figure 18). The indicator is a dual one. On the one hand, "the Indigenous populations of the North" (2016, 17) are mentioned several times, and their ways of life, rights, and Indigenous languages, are discussed, although their health and well-being are less mentioned. For example, the Arctic Indigenous peoples "claim specific rights that are more than human rights or minority rights…. These rights have been set out in the International Labour Organization Convention No. 169 and in the United Nations Declaration on the Rights of Indigenous Peoples, which is not legally binding" (2016, 30). The document also explains that some of the Indigenous communities cross international borders: for example "the Sami people… the only Indigenous population in the 'European Arctic'… [who] inhabit the northern territories of Finland, Norway, Northwest Russia (Murmansk Oblast) and Sweden; the Inuit people live in the northern territories of the United States, Canada, Greenland and the Russian Federation (Kola Peninsula)" (2016, 29)[17].

On the other hand, the document notes that "the Arctic can be described as the juxtaposition of northern territories with very small populations (approximately 4 million individuals) that have a wealth of natural resources in countries where the main economic, political and population centres are, with the exception of Iceland, located much further south" (2016, 22). Only "10% of the Arctic population… consists of Indigenous populations who have been living in… the Arctic for more than a thousand years in some cases…. [This is] in contrast to the average figures for the whole Arctic region, in Nunavut (Canada), and in Greenland (Denmark), [where] Indigenous inhabitants are in the majority and Westerners are in the minority" (2016, 29).

The **Governance** indicator accounts for 10% of the total coded quotes of the *National Roadmap* of France (see Figure 18). The Roadmap identifies an increase in "collective governance issues

that potentially concern the international community… [due to] the current process in which coastal states are consolidating their sovereignty in their northern regions (maritime border disputes, extension of the continental shelf, legal status of polar straits, national security issues, etc.)" (2016, 10). One of the main areas of this work are efforts "to balance national and general interests of Arctic Ocean governance" (2016, 12). This focus is on the five Arctic coastal States (Canada, Denmark, Norway, Russia, United States) of the Arctic Ocean which "by virtue of their sovereignty and their jurisdiction over large areas of the Arctic Ocean… are on the front line in the face of these challenges" (2016, 4). Here the Roadmap notes that:

1) These five states solemnly stated in the 2008 Ilulissat Declaration that under the terms of the United Nations Convention on the Law of the Sea, "governance issues in the Arctic Ocean require balancing the interests of the coastal states with those of other states" (2016, 10);

2) "Maritime boundaries between neighbouring coastal countries are defined through an advanced bilateral or trilateral negotiation process… including a historic treaty between Russia and Norway in 2011" (2016, 33);

3) "The coastal states' claims to the continental shelf extending more than 200 nautical miles offshore are addressed as part of a UN process under the terms of the Convention" (2016, 33);

4) "The central Arctic Ocean… is a maritime space where each state has control and jurisdiction over its own vessels. France, working alongside the European Commission, intends to assert its obligations and rights in discussions on the regulation of future activities in the central Arctic Ocean…. As a maritime power, France… is committed to preserving freedom of navigation in the Arctic seas" (2016, 57);

5) "France will [thus] work with other directly and indirectly concerned states to promote a balance between national interests and the common interest in the Arctic Ocean, which, year after year, reveals a new inter-oceanic connection between the North Atlantic and the North Pacific" (2016, 60);

6) The five Arctic coastal states [thus] signed in 2015 a "Declaration Concerning the Prevention of Unregulated High Seas Fishing in the Central Arctic Ocean," and "the European Commission was invited… to participate in the five Arctic coastal states' negotiation of a draft legally binding agreement on preventing illegal fishing in the central Arctic Ocean" (2016, 40). This agreement was signed by nine states and the EU in October 2018.

These points made regarding Arctic Ocean governance underline that "France promotes the principle of the empowerment of the non-Arctic states that are potential users of the Arctic through greater involvement of these states in the planning and

---

17   This is, in fact, mistake, as the Inuit live in the Russian Far East, not on the Kola Peninsula, which is the European part of the Russian Federation.

decision-making processes relating to sustainable and responsible governance of the Arctic Ocean" (2016, 58). The Roadmap, however, notes that "the nature and scale of the issue calls, now more than ever, for greater international cooperation" (2016, 4). International cooperation in the Arctic, including cooperation between the Arctic states, is identified as "a recent initiative stemming from a shared political commitment to overcome the strategic past of the former cold war theatre" (2016, 10). It quotes the famous 1987 Murmansk Speech by President Mikhail Gorbachev: "Let the North Pole be a pole of peace" and "a genuine zone of [...] fruitful cooperation" (2016, 10). It is emphasized that "Russia's participation in regional cooperation bodies and bilateral cooperation programmes means that the Arctic has progressively become a region of cooperation between the eight countries directly concerned" (2016, 33). For example, by the Ilulissat Declaration, the five Arctic littoral states "made a commitment to peaceful settlement of maritime disputes based on the United Nations Convention on the Law of the Sea" (2016, 33).

Although the French Roadmap emphasizes cooperation between the five coastal states of the Arctic Ocean, the Arctic Council is identified as a young organization "which explains why it does not deal with governance issues... [but] plans to adopt a more comprehensive approach, encompassing issues relating to the role of potential non-Arctic users of the region or to economic issues in the Arctic" (2016, 45)). Concerning France's observership within the Arctic Council, "scientific activities relating to the Arctic strengthen its [France's] legitimacy in dealing with Arctic affairs and are an essential condition for the renewal of its observer status" (2016, 19).

'Self-governance' or 'self-determination' are not explicitly discussed in the document, though, as mentioned earlier, the "right to self-determination" is briefly noted as an example of "human rights or minority rights" (2016, 30).

Echoing the previous indicator, international cooperation in the Arctic is largely identified as the **International Treaties and International Cooperation** indicator, accounting for 13 % of the total coded quotes of the *National Roadmap* (see Figure 18, p. 195). This provides a good understanding of how highly valued international Arctic cooperation is in several fields, such as science and research, economy, and environmental protection (e.g., as "adopting processes that ensure an ecological expert assessment" (2016, 41). The same applies when combining different fields, for example, the "regulation of extractive industries' activities [must be] commensurate with environmental risks in the Arctic [or there could be a] complete ban in cases where the risks appear to be too great" (2016, 41). There is also a need for "French companies' compliance with best practices... to mitigate the environmental impact of these industries by preventing and fighting air and sea pollution" (2016, 41).

The two highly focused values of international cooperation which the Roadmap addresses are: i) international cooperation with respect to the Arctic Ocean and the maritime environment and (regional) cooperation between the five littoral states;

and ii) "France's presence in international forums on the Arctic" (2016, 43). Among these international and inter-regional forums, the Arctic Council is identified as "the key political forum for regional cooperation on Arctic issues... [adopting] texts that are not legally binding, but... carry[ing] enough political weight that countries comply with them" (2016, 45). Other international forums identified as dealing with Arctic issues are "the Barents Euro-Arctic Council, on which the European Union sits as a member and France as an observer, and the European Union's Nordic Dimension" (2016, 45). The latter's relation with the European Union are noted (2016, 52–53).

Among the Arctic-related international organizations and agreements identified by the Roadmap are the International Maritime Organisation (IMO) which "drew up a 'Polar Code'"... and a collection of amendments to the SOLAS and MARPOL Conventions on the safety of vessels operating in polar waters." The Roadmap explicitly mentions that "France has played an active role on the Marine Environment Protection Committee (MEPC), the Marine Safety Committee (MSC) and the ad hoc working group that drafted the texts," as well as in the Arctic Regional Hydrographic Commission (ARHC) of the International Hydrographic Organization (2016, 45–46). France has also conducted international scientific cooperation, namely, the International Polar Years, the International Arctic Science Committee, and the European Polar Board, are identified (2016, 17, 20). UNCLOS is also noted. Otherwise, there is no clear global perspective, apart from a mention of mostly Asian observer countries of the Arctic Council.

Concerning France's diplomatic action in, and relating to, the Arctic, the Roadmap focuses on maintaining "a presence in all the relevant forums in order to promote France's interests, maintain the positions of French players and promote a common interest vision" (e.g., on conservation of the environment (2016, 46). The Roadmap includes eight special recommendations on diplomacy, primarily that "France's diplomatic action is based primarily on steady and sustained participation in the Arctic Council... Our action must also aim to enhance France's scientific cooperation through bilateral initiatives and involvement in other technical forums," and, further, "strengthen our links and plan cooperation projects with the Permanent Participants... identify opportunities for synergy with the observers; [and] take an active part in the dialogue between the observers and the Chairmanship of the Arctic Council at 'Warsaw Format' meetings" (2016, 47).

Finally, the Roadmap includes a special chapter on "the European Union and the Arctic" (2016, 49–54) first, emphasizing the EU as "the world's largest maritime economic power (transport, insurance, shipbuilding techniques, tourism, offshore energy production, research) and a key player in the trade of fishery products in the European sub-Arctic and Arctic" ; and second, supporting "EU policy on the Arctic and [adding that it]coordinates its action with this policy... the view [is] that the EU is significantly involved in the Arctic and a key actor in this region" (2016, 51). To implement the coordination with the EU, several objectives are listed in the Roadmap with respect to

supporting EU action in the Arctic, such as the establishment of "a regional fishery management organization and a regional sea convention for the Arctic ocean"; upholding "the principles of international law, particularly in terms of freedom of navigation and the right of innocent passage"; strengthening "the Arctic dimension within the Northern Dimension and the Barents Euro-Arctic Council, especially for environmental and transport issues"; and integrating "the Arctic into long-term planning for the European Energy Security Strategy" (2016, 54). In addition, with reference to the EU's strategic priorities in the Arctic, "combating the effects of climate change; [undertaking]sustainable development; [and]international cooperation" (2016, 52): here, the Roadmap explicitly notes the EU's Northern Dimension.

As mentioned earlier, the Arctic is described in the Roadmap as a "particularly fragile marine environment", and although the region is thought to remain "at least largely preserved from the changes caused by people… [it] is feeling the full force of climate change" (2016, 4). The **Environmental Protection** indicator, accounting for 13 % of the total coded quotes of the French National Roadmap (see Figure 18, p. 195), states that "France will do everything that it can, here in the Far North of the planet, to take action, mobilise its researchers and its businesses, to enable us to preserve this part of the world, which is undoubtedly one of the most beautiful" (2016, 60). In particular, the country is "committed to protecting the Arctic marine environment" (2016, 39). The mission here is twofold: first, "Protection of Biodiversity and Conserving the Environment" including, among others, support of "the process of defining marine protected areas in the Arctic," encouraging "measures to mitigate the impact of shipping on sea mammals; work with the European Union to monitor the sustainable management plan for Arctic fisheries; [promotion of] policy decision-making based on the best scientific knowledge available"; and second, France will "support, within the context of the Common Fisheries Policy, any initiative aimed at establishing a framework for the sustainable management of Arctic fisheries" (2016, 41).

It is also explicitly noted in the Roadmap that "each economic prospect comes with several challenges that are largely related to the key issues in the marine Arctic, which are maritime safety and the environment (search and rescue, fighting pollution)" (2016, 9). This is echoed in the identification of France's multidimensional interests in the Arctic: economic, defence, scientific, influence, etc. At the same time, the document includes a substantial chapter on economic opportunities and France's economic interests in the Arctic, and the foreword remarks that there are new economic opportunities due to climate change.

The **Pollution** indicator, which accounts for 3 % of the total coded quotes of the Roadmap of France (see Figure 18, p. 195), does not recognize any specific pollutants other than oil in the Arctic region. Instead, it notes that "each economic prospect comes with several challenges that are largely related to the key issues in the marine Arctic, which are maritime safety and the environment (search and rescue, fighting pollution)" (2016, 9). Further, commercial shipping, oil spills, and mining are identified as challenges and potential risks, but polluters are named. For problem solving, the document mentions the Polar Code of the IMO, the SOLAS Convention on safety at sea, and the MARPOL Convention on pollution from ships (2016, 39), as well as the Arctic Council's Arctic Offshore Oil and Gas Guidelines which act "to mitigate the environmental impact of these industries by preventing and fighting air and sea pollution," and are applied by French companies, and a "non-binding agreement on preventing and fighting oil spills," adopted by the Arctic coastal states (2016, 41).

The **Climate Change** indicator accounts for 6 % of the total coded quotes of the National Roadmap for the Arctic of France (see Figure 18, p. 195). The Roadmap explicitly notes both mitigation and adaptation: "France will promote or support adaptation by the competent international bodies of international regulations to the new uses of the Arctic Ocean made possible through increased accessibility" (2016, 11). Moreover, "an environmental transformation such as this [climate change] would certainly bring major economic opportunities for the Arctic region, in terms of both shipping and fisheries, but it would also pose immense challenges, such as the need to mitigate the inevitable loss of biodiversity, the increased risk of sea pollution and the impact on the ways of life of Indigenous populations" (2016, 4). Well-known consequences, and "the full force of climate change" (2016, 4), are also identified, among which are "the large decrease in the extent of Arctic sea ice at the end of the summer… [which is] one of the most spectacular manifestations of current climate change" (2016, 9). The decrease in Arctic ice has "strategic consequences" [with] the prospect of regular use of new Arctic shipping routes… growing nearer" (2016, 12). Finally, the region is re-identified as "an important natural laboratory for studying climate change at the global level, making it an area of scientific interest for all of humanity" (2016, 60).

The **Security** indicator, which accounts for 8 % of the total coded quotes of the Roadmap (see Figure 18, p. 195) shows skepticism or caution by reason of its concern that "even though the military role of the Arctic has faded into the background… it offers room for manoeuvre… [and once again has] become a theatre for contradictory ambitions, especially as Russia's strategic stance changes" (2016, 33). These are again shown in the notion that "Russia's participation in regional cooperation bodies and bilateral cooperation programmes means that the Arctic has progressively become a region of cooperation between the eight countries directly concerned. Under the terms of the Ilulissat Declaration of 28 May 2008, these countries [the five littoral states] made a commitment to peaceful settlement of maritime disputes based on UNCLOS" (2016, 33). As mentioned, the Roadmap makes reference to the maxim "Let the North Pole be a pole of peace" spoken by President Gorbachev in his Murmansk Speech in 1987.

As a NATO member state, "France is concerned by the issues of stability and security that could concern the Arctic states that are members and partners of the [NATO] Alliance" (2016, 58). Furthermore, "France's main interests in the Arctic primarily concern its economy, security and the environment, rather than

military and defence issues" (2016, 34). The Roadmap remarks: "the Arctic made its first appearance in the French Defence and National Security White Paper in the section on 'threats and risks amplified by globalization' [because] "the decrease in the extent of sea ice in the Arctic has strategic consequences, and the prospect of regular use of new Arctic shipping routes is growing nearer" (2016, 12). The Roadmap also includes a chapter on defence and security issues (2016, 31–35) with several recommendations on activities in the field, inter alia, to "monitor regional political and military developments and develop in-depth understanding of the area [e.g.,] step up the exchange of oceanographic information between the French navy and its foreign counterparts, possibly by offering information in our possession about other regions of the world"; in order to "support our economic and industrial interests [e.g.,] maintain the technological understanding and know-how needed to design Arctic equipment with due consideration of the operational needs of the armed forces"; to "enhance the legitimacy of France's participation in regional governance through its contribution to the stability and security of the region"; and to "promote outside of the Arctic Security Forces Roundtable a bilateral approach focusing on practical objectives with countries having proven capabilities in the Far North" (2016, 35).

Finally, the Roadmap greatly reflects "France's scientific, economic, ecological ethics, political and defence interests in the Arctic [which] are bound to grow stronger" (2016, 57).

'Sovereignty' is explicitly identified in the Roadmap, as is the "jurisdiction over large areas of the Arctic Ocean" of the five Arctic littoral states (2016, 4). The document is clear in stating that "by virtue of their sovereignty, their sovereign rights and their jurisdiction over vast portions of the Arctic Ocean, the five coastal states are in a special position to respond to the challenges and issues in the Arctic." As an observer country of the Arctic Council, "France recognises the Arctic states' sovereignty, sovereign rights and jurisdiction in the Arctic" (2016, 57).

The **Safety and SAR** indicator accounts for 7 % of the total coded quotes of the Roadmap of France (see Figure 18, p. 195). The Roadmap does not explicitly mention the SAR Agreement, but instead focuses on the Polar Code of the International Maritime Organization, which is "a collection of amendments to the SOLAS and MARPOL Conventions on the safety of vessels operating in polar waters" (2016, 45), and plays "an active role in the process of harmonising national regulations and the new international regulations on shipping in polar waters" (2016, 59). As the Roadmap identifies, "the existing shipping monitoring systems are insufficient in number and do not yet operate as a network…. There is a lack of satellite surveillance [and of] search and rescue capabilities" (2016, 39). Here the document reflects that France "supported the drafting of a Polar Code in the form of amendments to the SOLAS Convention on safety at sea and the MARPOL Convention" (2016, 39). Further, it recognizes a need to "implement the regulatory framework for vessels operating in the Arctic ('Polar Code')", as well as "maintain our involvement in the IMO's work to broaden the scope of the binding Polar Code (Phase II) to include vessels that are not

covered by the SOLAS Convention… [and] ensure that ship-owners comply scrupulously with the provisions of the Polar Code… [as] pleasure cruises, run by specialised French companies, are booming" (2016, 40).

The **Economy** indicator accounts for 17 % of the total coded quotes of the French Roadmap (see Figure 18, p. 195). The document's foreword notes that "an environmental transformation such as this [due to climate change] would certainly bring major economic opportunities for the Arctic region in terms of both shipping and fisheries" (2016, 4). Later the document notes that "France already has political and economic interests in the Arctic (Total, Engie, Technip, Thales, etc.) which are bound to grow" (2016, 11).

Among the main natural resources of the Arctic region the Roadmap includes "gas, oil, wood, nickel, cold-water fish, diamonds, rare earth elements, etc." (2016, 7). In particular, it explains that "in terms of energy security, Europe relies on imports for more than 50 % of its energy, and over two-thirds of its imports are from Russia and Norway, which have large offshore oil fields in the Arctic that are in production or under development" (2016, 51). On the other hand, the Roadmap notes that an environmental transformation, such as melting of sea ice in Arctic waters "would also pose immense challenges, such as the need to mitigate the inevitable loss of biodiversity, the increased risk of sea pollution and the impact on the ways of life of Indigenous populations" (2016, 4). Following on from this, "France has also expressed ecological ethics concerns about the region in its 'Grenelle' environment project… *with the aim of protecting the Arctic environment*'" (2016, 11), while "the Blue Book explained [in 2009] that '*appointing a polar ambassador will underline France's commitment to contributing to an integrated sustainable development plan for this region, where the ecosystem is particularly fragile*' and that the Arctic is '*a worldwide concern*'" (2016, 11).

The Roadmap does, however, note that "France does not currently have any major interests in commercial shipping in the Arctic. If this sector should develop we must ensure that ship-owners comply scrupulously with the provisions of the Polar Code" (2016, 40). It also lists several "French companies in the Canadian, Norwegian and Russian Arctic," such as:

- Areya: uranium exploration project in Nunavut, Bouygues, and Colas
- PPP for the renovation of Iqaluit airport
- Canada Rail (Systra) rail infrastructures related to mining
- Ponant: polar cruise company (in Canada)
- GDF Suez (oil and gas)
- COFELY Fabricom (platform maintenance)
- Technip (underwater engineering)
- Nexans (cables)
- CGG Veritas (underground exploration and oil-related services)
- Seabed Geophysics (collection of seismic data, sale of cables and surveillance)
- Bourbon Offshore Norway (shipping services for offshore oil drilling)

- FROM Nord and Euronor (fishing)
- MA-CGM (commercial transportation)
- Ponant, GNGL
- 66° Nord (Specialised travel companies) (in Norway)
- Total & Technip (oil and gas)
- Ponant (polar cruise company) (in Russia) (2016, 27).

As for economic actors, the Roadmap identifies the EU, the Arctic Council and its new observer countries, and particularly, the Arctic Economic Council. There are also comments about business events, such as the Arctic Business Forum, Arctic Business Council, and Arctic Oil and Gas Symposium, in which French companies are encouraged to participate (2016, 28).

The **Tourism** indicator, accounting for 3 % of the total coded quotes of the National Roadmap (see Figure 18, p. 195), reflects concerns that "the gradual opening of Arctic shipping routes, the increase in commercial shipping traffic (pleasure cruising and, to a lesser extent, cargo)… raises new challenges for France in its capacity as a leading naval power. [Among these challenges are] protection and rescue of ships and passengers, fighting pollution, critical legal issues concerning freedom of navigation, etc." (2016, 34). It states, too, that "pleasure cruises, run by specialised French companies, are booming" (2016, 40). Among the recommendations on economic opportunities and cooperation of the document is to "promote the development of fair trade tourism that respects local populations and encourage French companies operating in the Arctic to hire and train local residents" (2016, 28).

The **Infrastructure** indicator accounts for 5 % of the total coded quotes of the Roadmap (see Figure 18, p. 195). This indicator specifies France's interest in (technical) innovations in the Arctic region "where climate change opens up prospects for economic and commercial development, green growth is a crucial issue… and renewable energy sources, green technology and investment in innovation" (p. 27). Here the Arctic is named "a laboratory for new technologies in information and communication, robotics, automation, airborne systems and sensors" (2016, 27), which requires promotion of "French expertise in environmental technology" (2016, 28).

Concerning transportation, however, France does not have major interests in commercial Arctic shipping. As mentioned earlier, the Roadmap explicitly discusses i) that "the waters of the Arctic Ocean are key components for climate regulation in the northern hemisphere. Their ecosystems are undergoing major changes as a result of [environmental] changes… global warming and increasing pressure from human activity," and therefore, "shipping traffic is increasing… pleasure cruising is developing" (2016, 39); and ii) how "the Northeast Passage reduces the distance from Rotterdam to Yokohama by 40 % compared to the route through the Suez Canal," although, to date, there has been little traffic on the sea route (2016, 25).

The **Science and Education** indicator, which accounts for 10 % of the total coded quotes of the Roadmap for the Arctic (see Figure 18, p. 195), reflects the second-highest priority of France's Arctic

policy, namely, "scientific research and academic cooperation in the Arctic" (2016, 15–20). Linked to this are the long-standing polar exploration and research tradition of France: "France was the first country to set up, in 1963, a scientific research base in… Svalbard, where it shares a permanent base with Germany in the international scientific village Ny-Ålesund" (2016, 17). The document also argues: i) that "in historical terms, the polar regions have had a special place in international scientific cooperation" (2016, 17) for example, "the International Polar Year 2007–2008, which involved several thousand researchers from 63 countries" (2016, 9); ii) that "non-Arctic states must engage in research in the Arctic to obtain official observer status in the Arctic Council" (2016, 18); and iii) that "France's scientific activities relating to the Arctic strengthen its legitimacy in dealing with Arctic affairs and are an essential condition for the renewal of its observer status in the Arctic Council" (2016, 19).

Based on its long-standing polar tradition, France "ranks 9th among scientific countries for publications on the Arctic, whereas it ranks 5th in the world for scientific publications on Antarctica" (2016, 17) France "was the first country to establish in 1963 a scientific research base in Svalbard" (2016, 17). The Roadmap includes a list of ten main scientific interests of France in the Arctic, as well as recommendations on research. Among the ten main scientific interests, which mostly relate to natural sciences are: "Arctic and global atmospheric variability," "water cycle and land ice," the "changing ocean," "Arctic terrestrial ecosystem dynamics," "Indigenous societies and global change," and "sustainable development in the Arctic" (2016, 19). Correspondingly, recommendations (2016, 19, 20) include raising "France's profile by building up the community of French scientists working on the Arctic and, more specifically, by ensuring that the development of the Arctic project that involves France's research bodies… [especially] the Paul-Emile Victor Polar Institute (IPEV), the national agency that provides resources for French scientific activities in the polar regions."

There are also recommendations to "build up France's scientific role in the Arctic Council working groups and task forces, by bringing in French human and social science specialists in particular… [and] ensure that France participates fully in international scientific organisations, such as the International Arctic Science Committee"; to "develop the European aspects… of French scientific research on the Arctic, as part of the European Union research and innovation programme (Horizon 2020), and at the institutional level, through the European Polar Board (EPB) and its initiatives (e.g., the EU-PolarNet project)"; [to] "promote France's scientific expertise in human and social sciences and the teaching of Arctic languages in France to the Arctic states"; and [to] "develop research contracts with businesses that may be interested by economic opportunities in the Arctic." Finally, the document notes that "all of these initiatives require development of French Arctic research with strong institutional and scientific support" (2016, 20) (see Implementation indicator).

The Roadmap mentions that "with regard to human and social sciences… France is one of the few countries in the world that teaches Inuktitut (the language of the Inuit in Canada) at the Na-

tional Institute of Oriental Languages and Civilisations (INAL-CO)" (2016, 19), and asks for the promotion of "France's scientific expertise in human and social sciences and the teaching of Arctic languages in France to the Arctic states" (p. 20). Although the Roadmap comments that "France has a long-standing tradition of internationally recognised scientific work in human and social sciences (anthropology, ethnography, etc.) related to the Indigenous populations of the North" (2016, 17), traditional knowledge is not explicitly mentioned.

Concerning research funding the EU is mentioned "as both a key player and a major donor, in the field of Arctic research" through the 7th Framework Programme for Research and Technological Development, the Creative Europe, Horizon 2020. and other research, development. and innovation programmes (2016, 51).

Finally, the Roadmap directs attention to a growing need for satellites, as "new activities and rapid change in the Arctic stemming from global warming mean that satellites and space programmes are bound to become helpful tools in the following areas: telecommunications; maritime safety and navigation aids… environmental surveillance… sustainable management of marine resources" (2016, 26).

The **Implementation** indicator is explicitly noted by the French Roadmap for the Arctic, as it is interpreted as providing "a working framework and [setting] guidelines and priorities, which should make it possible in the coming years to align and prioritise action on Arctic issues and challenges that concern France, with a broader focus on sustainability and the common interest" (2016, 12). This is related to "France's growing interest in the new scientific, environmental and economic issues in the Arctic, and that of the international community [which has given rise to] a national initiative to coordinate Arctic research" (2016, 17). Indeed, each of the substantial, thematic chapters—on science, economy, defence, environmental protection, international cooperation and diplomacy— has a (longer or shorter) list of recommendations (several being referred to earlier). For example, the last recommendation on Diplomacy states that "France's diplomatic network in the Arctic states and in the Arctic Council observer states must play its full role in implementing the National Roadmap for the Arctic" (2016, 47).

Although the document does not include any figures for budgeting, the recommendations on research are finalized by the firm statement that "all of these initiatives require development of French Arctic research with strong institutional and scientific support: allocating operating grants for the coordination structure based on the Arctic project and the Paul-Emile Victor Polar Institute; placing greater priority on the main scientific issues relating to the Arctic defined by the Arctic project in the other research funding agencies" (2016, 20).

To sum up

Based on the quantitative measuring of our 12 indicators, Economy is the highest major priority of the Arctic policy of France according to the French National Roadmap for the Arctic. This interpretation is supported, too, by its substantial chapter on the economy, which explicitly identifies new economic opportunities in the Arctic and notes that French companies are already present there, such as Total in the Yamal LNG Project. However, as mentioned earlier, the Roadmap has two sides to it, as it also places an emphasis on the immense environmental challenges present in the Arctic, such as the inevitable loss of biodiversity, the increased risk of sea pollution, and societal impacts on Indigenous and local populations. This poses a classic question about national policies and strategies, namely, which of the two is the priority in an Arctic heavily impacted by climate change: the environment or the economy? The main conclusion here might be 'both–and' rather than 'either–or', an approach that reflects the realities of life rather than environmental politics, especially in the case of the Arctic.

It is noteworthy that both 'sovereignty' and 'defence' are explicitly discussed. The Roadmap comes down firmly on the side of the sovereign rights and jurisdiction of the five Arctic coastal states, and it is clear that France recognizes the Arctic states' sovereignty. The Roadmap also discusses defence and security issues, which are excluded from the Arctic Council agenda; it notes that the security of the Arctic states is of concern to NATO and promises that France will contribute to Arctic stability remaining strong.

France's national Arctic policy is also a strong statement on behalf of the EU and its Arctic policy and the latter's legitimate involvement in and presence there. A little surprisingly, the EU's Northern Dimension is identified as playing a role in the Arctic, and the EU's membership of the Barents Euro-Arctic Council is explicitly noted.

It can be concluded that the French Roadmap emphasizes the interests of both France and the EU in the Arctic. The national and general interests of Arctic Ocean governance are clearly expressed, but it is not clear if they are in balance. Environmental protection is, however, high on the agenda. Regarding the legitimacy of France's involvement in Arctic affairs, this is impossible to measure; it is thus unclear as to whether actual legitimacy exists, especially legitimacy that is in any way enhanced. Finally, according to the Economy and Security indicatorss, there is, in fact, a greater focus on economy than the official priorities reveal, therefore better reflecting, perhaps, France's focus on national interests in the Arctic and Arctic affairs.

Germany

Germany released its strategy, *Guidelines of the Germany Arctic Policy: Assume Responsibility, Seize Opportunities*, in 2013 with 19 pages of text, published by the Federal Foreign Office. While the 2013 strategy does not explicitly state priorities, the document opens with a list of 11 issues that the federal government seems to be interested in. Broadly, these include economic development, environmental protection, research, technology, maritime governance, peace and stability, Indigenous rights, international cooperation, and EU involvement in the region (German Federal Foreign Office 2013, 1–2).

In August 2019, Germany released a new adopted Arctic Policy Guidelines in its Cabinet with the aims to "work towards worldwide climate and environmental protection" and "environmentally-friendly technology", and for the rights of the Arctic Indigenous population, free and responsible research, and finally, for "the future of the Arctic" (German Government, August 2019). However, due to its late release the up-dated Arctic policy document is not included this analysis.

Germany was accepted into the Arctic Council as an Observer at the 1998 Iqaluit Ministerial meeting (Arctic Council 2015b).

The **(Re)mapping and (Re)defining the Arctic** indicator provides insights into how Germany understands the region. There is a focus on the Arctic waters. The document explains that "the heart of the Arctic—that is, the area within the Arctic Circle—is the Arctic Ocean" (2013, 4) and that "the Arctic comprises not only the Arctic Ocean, which is bordered by the continents of Europe, North America, and Asia, but also the northernmost areas of the Atlantic Ocean (i.e., the Norwegian Sea and the Greenland Sea), to which the Arctic is connected via the Fram Strait, as well as Baffin Bay, the Nares Strait and, finally, the Bering Strait, which connects the Arctic with the Pacific Ocean" (p. 4). Within the context of the Arctic waters, the document also recognizes that "climate change is bringing about a fundamentally new geographic constellation" (2013, 4). As for the Arctic states, the strategy remarks that "the Arctic also includes parts of the landmass of Russia, the United States (Alaska), Canada, Denmark (the autonomous Danish-dependent territory of Greenland), Norway (including Spitsbergen) and Iceland" (2013, 4), thus leaving out Sweden and Finland.

Considering the comments about the potential changes to the region, the federal government "views the Arctic as a region in transition" (2013, 1). Moreover, the strategy asserts that "due to global warming and the rapid increase in the melting rate of the polar ice sheets, the Arctic is of steadily growing geopolitical, geoeconomic and geo-ecological importance for the international community" (2013, 1). At the same time, the strategy also describes the region in terms of the environment. For example, with climate change, the Arctic is "the earth's 'early warning system'" (2013,5), and it remarks that the Arctic is "an ecologically significant and sensitive region" (2013, 7).

The 2013 German Guidelines primarily call the region the "Arctic," although they do once use the term "High North" (2013, 5).

Figure 19 shows how many quotes are assigned to the different indicators, as a percentage of the total number of coded quotes (rounded to the nearest whole number) in the document.
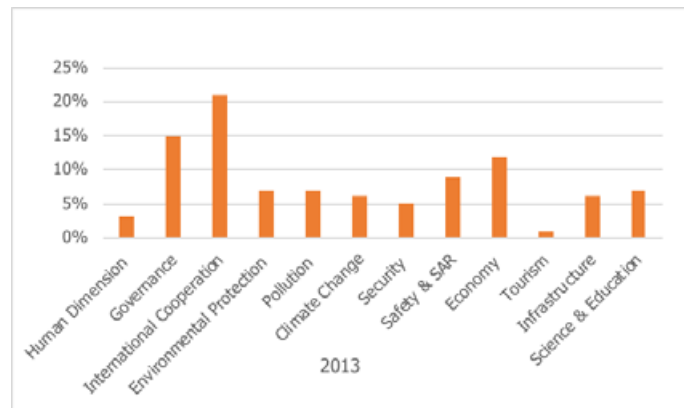
Figure 19. Germany 2013

Note: The percentages in each indicator are rounded to the closest whole number and represent the percent of the total number of quotes coded for each document.

Not too much has been captured in the **Human Dimension** indicator, which accounts for 3 % of the total code quotes (see Figure 19), perhaps because Germany is geographically outside the region. That being said, the *Guidelines* recognize that "approximately ten percent of the four million people in the Arctic belong to the more than 30 groups of Indigenous peoples who inhabit the Arctic region" (2013, 4). As such, the *Guidelines* recognize "the special situation of Indigenous peoples in the Arctic and campaigns for the protection of their right to a free and self-determined life in their homeland" (2013, 2). This seems to mean that "attention must be paid to respecting the Indigenous peoples' territorial claims, ensuring that they share in the profits of Arctic economic development, and that they can adapt to the significantly changed living conditions" (2013, 11) and to recognize that "conflicts may arise, for example when countries bordering the Arctic Ocean assert claims to territorial sovereignty in this region" (2013, 11).

The **Governance** indicator, which accounts for 15 % of the total coded quotes for the *Guidelines* (See Figure 19), confirms Germany's commitments to "existing international agreements and treaties that are of relevance for the Arctic" (2013, 19). The Guidelines further explain that Germany also advocates for the creation of an "agreed international political and legal framework" in the Arctic (2013, 4) and that "The Federal Government backs preventive action that aims to avoid conflicts through confidence-building measures, cooperation and coordination, and works to settle disagreements through consensual solutions based on existing legislation" (2013, 10). Furthermore, Germany believes that "increased use should be made of existing structures in regional and multilateral institutions [in the Arctic], to promote scientific collaboration and international cooperation with a view to tackling challenges and seizing economic oppor-

tunities in the Arctic region" (2013, 11). At the same time, Germany argues that "legally-binding regulations are required for the exploration and development of mineral resources", as well as "sustainable development of living marine resources" (2013, 11, 6). The Guidelines explains that "This includes, among other things, setting high environmental standards, developing multinational strategies for protecting the environment in the event of accidents, and establishing a binding regime concerning environmental damage and liability" (2013, 11). Moreover, "high safety and environmental standards are an absolute prerequisite for shipping and maritime transport in the Arctic region" (2013, 8). For these purposes, "the Federal Government is ready to embark on maritime-sector cooperation (e.g. in the area of polar technology) with countries bordering the Arctic Ocean" (2013, 1). With regard to "issues concerning shipping in the Arctic, the International Maritime Organization (IMO) is the foremost body for multilateral cooperation" (2013, 13). Furthermore, "Germany supports efforts to ensure that existing shipping regulations, as well as the environmental and safety standards of the International Maritime Organization (IMO), are equally implemented for all vessels, regardless of their flag state" (2013, 8).

The Guidelines also address the situation of Indigenous populations and protection of their "right to a self-determined and free life in their homeland." In this connection, "attention must be paid to respecting the Indigenous peoples' territorial claims, ensuring that they share in the profits of Arctic economic development, and that they can adapt to the significantly changed living conditions" (2013, 11).

The **International Treaties and International Cooperation** indicator, which accounts for 21% of the total coded quotes (see Figure 19, p. 201), reflects the fact that the German Federal Government "support international cooperation in all areas of Arctic research through the International Arctic Science Committee (IASC), which is based in Potsdam… It is the leading forum for cooperation among all states and scientific bodies involved in Arctic research" (2013, 10). The Federal Government also "remains committed to international and regional conventions—in particular the United Nations Convention on the Law of the Sea, the MARPOL Convention, the conventions for the protection of the marine environment and on biological diversity, and the Spitsbergen Treaty—which form the legally binding framework for states' rights and obligations with respect to the Arctic." Furthermore, the Government "supports an active EU Arctic policy and is working to ensure horizontal coherence on Arctic issues within the Common Foreign and Security Policy, as well as in the domains of research, environmental protection, energy and raw materials, industry and technology, transport, and fisheries" (2013, 1, 2).

Germany favors multilateral cooperation on Arctic issues, first and foremost in the Arctic Council. The Federal Government is also "aware of the global consequences of developments in the Arctic region, including their political, economic and environmental significance, and Germany is therefore prepared to do its share as an observer country" in the Arctic Council (2013, 13).

Germany recognizes the relevance of important international conventions that are connected to the Arctic and "In Germany's view, the most central body for Arctic policy is the Arctic Council, which was established in 1996 and is the only regional forum dealing with Arctic issues" (2013, 12). According to the German Arctic Guidelines, "the significance of the Arctic Council as a forum for international cooperation is steadily increasing—to the same extent that interest in the region is growing. With its increased workload and importance, the Arctic Council is becoming more and more institutionalised, and the issues it deals with are gaining in scope" (2013, 12-13). However, "the body still does not address any questions related to security" (2013, 13). Still, the Arctic Council "represents a unique opportunity for balancing regional and international interests in the Arctic through multilateral cooperation" (2013, 13). Germany also addresses the SAR Agreement as "the first binding international agreement drawn up exclusively for the Arctic… [which] represents progress towards setting up a specially-tailored legal regime for the region. For the same reason, Germany welcomes the Agreement on Cooperation on Marine Oil Pollution, Preparedness and Response in the Arctic" (2013, 13). Germany aims to further strengthen its observer status in the Arctic Council and is "interested in increasing Germany's ad hoc participation in Arctic Council working groups" (2013, 1, 2).

Furthermore, Germany considers UNCLOS as particularly important, as it "contains obligations for the protection of the marine environment. All states parties are bound to prevent, reduce and control pollution of the marine environment… The UNCLOS is a valuable instrument for delimiting maritime boundaries and clarifying the resulting development rights. However, the regulations set out therein are limited in scope, and they do not resolve all issues related to the Arctic" (2013, 12). The Federal Government also mentions in the strategy the support of "the Barents Euro-Arctic Council (BEAC) as a suitable framework for addressing in detail Arctic issues specific to the Barents Sea" (2013, 16). On the international level, Germany "favours and supports an active role by the European Union in Arctic policy, as set out in the European Union strategy for the Arctic" (2013, 15). Specifically, "a close coordination must be ensured between the Northern Dimension policy (ND) and the continually developing Arctic policy of the European Union" (2013, 15). The Federal Government is "working to ensure strategic integration of, and horizontal coherence on, Arctic issues with respect to the EU's Common Foreign and Security Policy, as well as to the domains of environmental protection, research, industry and technology, energy and raw materials, transport, and fisheries" (2013, 19).

The **Environmental Protection** indicator, which accounts for 7% of the total coded quotes for the document (see Figure 19, p. 201) identifies Germany's environmental actions. As mentioned earlier, the Arctic is considered an "ecologically significant and sensitive region" (2013, 7). Therefore, "safeguarding the Arctic's unique environment, living conditions and biological diversity, also through establishing protected areas, is a high priority for the Federal Government. It stresses the importance, from a global point of view, of protecting the Arctic environ-

ment through circumspect and precautionary action" (2013,18). The *Guidelines* further asserts that "particularly in the Arctic, precautionary action must be taken to protect the environment. The lack of absolute scientific certainty is no reason to delay action, if there is a danger of severe or lasting damage being done" (2013, 4-5). This includes finding a balance between economic activities and environmental protection (see: 2013, 1, 4, 6, 14).

As mentioned, protected areas and biodiversity are important. Indeed, "the Federal Government … supports efforts to pinpoint ecologically and biologically unique areas, and to establish a representative and coherent network of marine protected areas, with a view to safeguarding biological diversity in the Arctic" (2013, 7). This means respecting the Convention on Biological Diversity, the Convention for the Protection of the Marine Environment of the North-East Atlantic (2013, 7), and recognizing that "other problems are created by the introduction of invasive species or by increased soot deposits stemming from the burning of heavy fuel by ships" (2013, 7).

The **Pollution** indicator, which accounts for 7 % of the total coded quotes (see Figure 19, p. 201) identifies different pollutants that are affecting the Arctic. The policy identifies the following pollutants throughout the document: greenhouse gases, methane, soot, black carbon, sulphur, nitrogen oxide, and shipping waste (2013, 5, 7, 14, 18). Some of the causes of pollution, therefore, are "the exhaust generated by the burning of fossil fuels [and]the burning of heavy fuel by ships (2013, 7).

The *Guidelines* addresses pollution prevention through discussions on formal structures. This includes the IMO's Polar Code that "sets out technical requirements for ships and crews. It also contains a chapter dedicated to the environment, with binding regulations regarding waste and wastewater that go beyond those introduced by the International Convention for the Prevention of Pollution from Ships (MARPOL Convention)" (2013, 14), by UNCLOS where "all states parties are bound to prevent, reduce and control pollution of the marine environment" (2013, 12), and by "the Agreement on Cooperation on Marine Oil Pollution, Preparedness and Response in the Arctic, which was signed by Arctic Council members in May 2013" (2013, 13).

The **Climate Change** indicator, which accounts for 6 % of the total coded quotes (see Figure 19, p. 201) identifies issues associated with climate change. The *Guidelines* remarks that "already today, the consequences of climate change in the Arctic are dramatic. The Arctic region is currently warming at twice the rate of other areas on the planet, compared to the global average" (2013, 5). The *Guidelines* thus outlines a number of consequences associated with climate change. For example, "the consequences are many and diverse: these developments generate both opportunities and risks, and their effect is felt far beyond the Arctic region as such. They touch upon environmental, economic, research and safety issues, and are becoming a focus of foreign and European policy" (2013, 4). Moreover, "the positive economic prospects that are being created by the warming of the Arctic region may also carry considerable risks. Development of Arctic mineral resources and

increased shipping can endanger the environment and health of the Indigenous peoples" (2013, 7), and "global warming is changing the local ecosystems in a major way, and thus significantly impacting the environment, livelihood and culture of the Indigenous peoples" (2013, 11). There are also consequences for Germany, for instance: "not only the shrinking sea ice in the Arctic Ocean, but also the increased melting of the Greenland ice sheet and the thawing of the permafrost that covers a considerable area of the Arctic, have a global effect. This will also directly impact Germany" (2013, 5).

In terms of addressing climate change and global warming, the *Guidelines* states that "efforts to slow the rapid further increase in greenhouse gas emissions have been unsuccessful so far" (2013, 5), which is rather pessimistic. The *Guidelines* does not provide a more detailed discussion around mitigation and adaptation efforts.

The German government does appear to listen to the scientific community, with the document stating that "in recent years, the Arctic summer ice cap has shrunk by an area equivalent to four times the size of Germany. According to model calculations, in 20 to 30 years the Arctic Ocean will be mostly free of ice during the summer months, and therefore increasingly navigable" (2013, 5).

The **Security** indicator, which accounts for 5 % of the total coded quotes (see Figure 19, p. 201) highlights the fact that the Federal Government "backs preventive action that aims to avoid conflicts through confidence-building measures, cooperation and coordination, and works to settle disagreements through consensual solutions based on existing legislation" (2013, 10). While the Federal Government "is convinced that the Arctic must be used for peaceful purposes only, it recognises that security issues do arise in conjunction with developments in the Arctic, and that possible security risks need to be addressed" (2013, 17. The *Guidelines* warns about the "overlapping interests of Arctic countries" which might "trigger a geopolitical race for sovereignty, or for rights to develop the seabed and its natural resources, which would pose an economic, environmental and security policy threat to stability in the region and would also affect Europe's security interests" (2013, 10, 17). Furthermore, "political attention must also focus on the Indigenous population in the Arctic region. Here, conflicts may arise, for example, when countries bordering the Arctic Ocean assert claims to territorial sovereignty in this region" (2013, 11).

Germany also recognizes the key role that the "UNCLOS plays a key role in clarifying usage rights and regulatory powers, by introducing regulations that delimit the coastal areas and maritime zones of the states parties. This can prevent conflict between states over maritime boundaries" (2013, 10-11). The *Guidelines* also mentions potential consequences, as "these developments generate both opportunities and risks, and their effect is felt far beyond the Arctic region as such. They touch upon environmental, economic, research and safety issues, and are becoming a focus of foreign and European policy" (2013, 4). In the *Guidelines*, Germany also mentions the role of NATO. From

the Federal Government's perspective, "NATO's wide-ranging partnership formats, which are open to all countries bordering the Arctic Ocean, provide suitable forums for dealing with Arctic security policy issues. If necessary, this can be supplemented with discussions in other groups, such as the Arctic Security Forces Roundtable, a forum that brings together the security forces of Arctic countries, and in which Germany and other European partners have an observer role" (2013, 17). The Federal Government is further "campaigning for freedom of navigation in the Arctic Ocean (Northeast, Northwest and Transpolar Passages) in accordance with high safety and environmental standards" and also "working hard to ensure free, safe and peaceful passage through Arctic waters in compliance with strict environmental guidelines" (2013, 1,9).

The **Safety and SAR** indicator, which accounts for 9 % of the total coded quotes (see Figure 19, p. 201), shows that safety was addressed primarily in the context of maritime transit as there are concerns about the impact of shipping on the environment. The *Guidelines* states that "the Federal Government is working hard to ensure that environmental protection and sustainability aspects are respected by all economic activity in the Arctic, which includes shipping" (2013, 7). Part of the concern is about oil spills "which may be caused by the operation of vessels, or by the very real risk of maritime accidents" (2013, 7). There are also concerns about existing rescue capabilities. For instance, the *Guidelines* comments that "a Northeast Passage that is ice-free year round would be the shortest shipping route between the ports of Europe's Northern Range and East Asia. Here, the advantages of shorter shipping routes must be weighed against several factors: the sea ice's unpredictability, the fact that, as of yet, there is insufficient emergency rescue capacity, and the lack of Arctic-capable cargo ships" (2013, 8). There is also concern about cruise ships as "already today, cruise companies are looking towards the Arctic, both as a destination and a future sea route. Yet there still is a very large risk of collision with sea ice or icebergs" (2013, 8).

To help address these concerns, the *Guidelines* discusses different safety agreements. The primary focus is on the IMO because of its "environmental and safety standards" (2013, 8); it also notes that Germany would like "to have the Arctic either wholly or in part dedicated a special area" (2013, 14). The *Guidelines* further recognizes that not all maritime areas are the same and that "IMO environmental and safety standards must be re-examined on a regular basis and adapted to the polar regions (also through development of the Polar Code), to meet the special challenges posed by the Arctic environment" (2013, 8). Aside from the IMO, the *Guidelines* also recognizes that "the Agreement on Cooperation in Aeronautical and Maritime Search and Rescue in the Arctic, which was signed by Arctic Council members in February 2011, is the first binding international agreement drawn up exclusively for the Arctic" (2013, 13).

In terms of capabilities, the focus remains on Germany's work with the IMO, which makes sense as Germany is not on the Arctic Ocean. To this end, "the Federal Government is campaigning within IMO to achieve better maritime surveillance, infrastructure expansion, and Arctic search and rescue capabilities"

(2013, 9). The *Guidelines* also asserts that "in 2002, IMO drafted guidelines for ships operating in areas of the Arctic Ocean covered by ice. The Federal Government is campaigning for making these guidelines binding and for further adapting them to the special conditions in the Arctic" (2013, 13-14). Additionally, the *Guidelines* states that "sea marks, nautical charts, lines of communication, and outposts need to be established as widely and extensively as possible" (2013, 9).

The **Economy** indicator, which accounts for 12 % of the total coded quotes (see Figure 19, p. 201) reveals a few different types of economic activity. For instance, as a result of climate change, "new opportunities are arising in this connection, for example for fisheries, maritime routes and tourism" (2013, 4) more generally in the region. As for Germany, there are also opportunities to participate in the Arctic economy. For instance, "thanks to the increasing navigability of the Arctic Ocean, there is great potential in the market for innovative shipbuilding that meets high environmental standards. Germany, especially through its shipyards and maritime contractors, is a global leader in this domain. German companies have specialised in building innovative and environmentally-friendly ship propulsion systems, special vessels, including ice class ships, as well as cutting-edge, environmentally-friendly maritime technology" (2013, 9). Additionally, "as one of the world's largest importing and exporting nations, Germany has a strong interest in new passageways to East Asian trading centres. Germany has the third-largest merchant marine in the world and the world's largest fleet of container ships" (2013, 8).

The resource industry is also important to the regional economy, especially considering "some 20 to 30 percent of the world's undiscovered fossil fuels, such as oil and natural gas, are suspected to lie north of the Arctic Circle. The region is also believed to be rich in metals such as copper, nickel, zinc and rare earths" (2013, 6). However, "harsh climatic conditions and the technical challenges that need to be mastered to access Arctic raw materials, as well as the particularly sensitive Arctic environment, are leading to an increased need for specialised technology and know-how. New opportunities are opening up for German companies. There is great potential for German maritime technologies, due to the increasing importance of the sea in the development of raw materials" (2013, 6).

Energy is also of importance to Germany. Indeed, "development of Arctic raw materials, which is already under way, can contribute to energy and raw material security in Germany and the EU" (2013, 18).

As much of Germany's economic opportunity in the Arctic is connected to maritime technology, the government has created a plan to help facilitate these activities. In fact, "the National Master Plan for Maritime Technologies (NMMT) agreed in 2011 aims to help unlock the full potential of these technologies. By driving forward this cutting-edge maritime technology that meets high environmental standards, high-quality jobs are being created and secured in a key future market that is of great strategic importance" (2013, 6).

The *Guidelines* also recognizes the importance of sustainable development. For instance, "Germany's Arctic policy, which is strongly committed to global environmental protection, stresses the importance of developing Arctic resources in a peaceful and sustainable way, by ensuring that the highest environmental standards are met and the principle of precautionary action is adhered to, and by respecting the concerns of the Indigenous population" (2013, 7). The *Guidelines* also explores how Germany can help with this process. For example, "with its know-how in cutting-edge research, sophisticated technology, and high environmental standards, Germany is in a position to support sustainable economic development in the Arctic" (2013, 18). In addition to the principles of sustainable development, economic activities are also regulated through formal structures. The *Guidelines*, in particular, recognizes that the OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic fails to protect fisheries. However, "this domain is addressed by the North East Atlantic Fisheries Commission (NEAFC), which covers almost exactly the same geographic area as the OSPAR Commission" (2013, 15).

In terms of economic actors, the *Guidelines* does not name many. It comments only on "Germany and its companies" (2013, 7) and that "the Federal Government encourages the promotion of investments in parts of the Arctic through the European Investment Bank (EIB)" (2013, 16).

The **Tourism** indicator, which accounts for 1% of the total coded quotes (see Figure 19, p. 201) reflects on new opportunities in connection to increased shrinkage of the Arctic sea ice, "for example for fisheries, maritime routes and tourism." However, "all economic activities in the sensitive Arctic ecosystem must go hand in hand with high economic and safety standards." Furthermore, the policy reflects on the new transit routes. "Cruise companies also stand to profit from such routes. To provide sustainable tourism, however, they must meet the most stringent safety and environmental standards. Already today, cruise companies are looking towards the Arctic, both as a destination and a future sea route. Yet there still is a very large risk of collision with sea ice or icebergs" (2013, 4, 8).

The **Infrastructure** indicator, which accounts for 6% of the total coded quotes (see Figure 19, p. 201) focuses on issues of shipping. In particular, "the Federal Government actively backs the opening of new shipping routes in the Arctic" (2013, 8) and "is campaigning for freedom of navigation in the Arctic Ocean (Northeast, Northwest and Transpolar Passages) in accordance with high safety and environmental standards" (2013, 1). This is likely because "as one of the world's largest importing and exporting nations, Germany has a strong interest in new passageways to East Asian trading centres" (2013, 8). Germany also recognizes that "high safety and environmental standards are an absolute prerequisite for shipping and maritime transport in the Arctic region. Germany supports efforts to ensure that existing shipping regulations, as well as the environmental and safety standards of the International Maritime Organization (IMO), are equally implemented for all vessels, regardless of their flag state" (2013, 8).

The **Science and Education** indicator, which accounts for 7% of the total coded quotes (see Figure 19, p. 201) primarily focuses on science. The *Guidelines* suggests that drivers of research tend to be related to the environment and climate change (see: 2013, 4, 9, 10), although this research serves different purposes. For example, there are economic reasons why the Federal Government "is convinced that, as a partner with vast expert knowledge in the areas of research, technology and environmental standards, Germany can contribute to sustainable economic development in this region" (2013, 1). The Federal Government also sees research as a way to make policy and "is working to guarantee the freedom of Arctic research, based on the conviction that scientific findings are of fundamental importance for Arctic policy" (2013, 1; see also: 18). Research can also inform decision making as "the AWI has significant and broad expertise, also through its collection of long-term data. This knowledge base is made available to inform future discussions on all issues related to the Arctic" (2013, 9).

The *Guidelines* mentions different types of research infrastructure. First, it mentions research institutes such as the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI), and that "together with France, it operates its own Arctic research base on Spitsbergen" (2013, 9), and the Federal Institute for Geosciences and Natural Resources (BGR) (2013, 9–10). Second, there are formal networks such as the IASC (2013, 10) and also the fact that "German institutes participate in research programmes of the EU, the Nordic Council and the Arctic Council. The European Polar Board (EPB) consists of a group of experts of the European Science Foundation which is headquartered in Strasbourg and provides advice on research in polar regions. Similar advisory bodies exist for the Nordic and Pacific countries" (2013, 10). Finally, there are informal networking opportunities like conferences. "Germany has hosted three international Arctic conferences in Berlin: a first in cooperation with Norway and Denmark in 2009, a second with Finland in 2011, and a third with Norway in 2013" (2013, 10).

There is no discussion of traditional knowledge or education.

The **Implementation** indicator reveals that there is no list of recommendations or actionable items. Instead, the summary (at the end of the document) recaps German priorities and makes statements about what the Federal Government is currently doing or where it thinks action should be taken. For example, "the Federal Government is campaigning to ensure free passage by international vessels through Arctic maritime routes, and it fully backs high safety and environmental standards for shipping" (2013, 18) and that "effective action must be taken to close existing loopholes with respect to the Arctic, for example, through the development of the Polar Code by the International Maritime Organization" (2013, 19). There is no mention of a budget for Germany's Arctic work, no follow-up plan, and no evaluation processes.

To sum up

Based on our quantitative analysis, International Cooperation is the most discussed indicator, followed by Governance. This reflects the Germany's interest in being involved in key issues, such as peace and stability, maritime governance, international cooperation, and the EU involvement in the Arctic. Germany highly supports the existence of international agreements which are relevant for the Arctic. At the same time, the Government also advocates for legally binding regulations for sustainable exploration of mineral resources and living marine resources. In Germany's view, it is crucial to maintain high-level cooperation within the Arctic Council as the most prominent body with intergovernmental decision-making process for Arctic policy. Germany recognizes the importance of keeping the Arctic outside potential conflicts and supports preventive efforts to avoid conflicts, for example, in the case of overlapping territorial claims.

Economic development is one of the main issues the German policy seeks to address, and , the Economy indicator is the third most-coded indicator. The indicator recognizes that climate change is opening up new economic opportunities and that Germany has a place in these through shipbuilding and providing technology for the extractive resources industries. These activities, together with tourism, will adhere to sustainable development processes and goals. Tourism is also reflected in the *Guidelines* in connection to the new transit routes, and to the safety and environmental standards that must be met.

While environmental protection is a major issue for Germany, in our quantitative analysis it ranks somewhere in the middle, along with pollution and climate change. However, when these three indicators are looked at together, they are discussed just as much as International Cooperation. The three indicators addressing environmental issues all recognize the negative effects of economic activity on the region. As such, the Environmental protection indicator speaks to the importance of protected areas and biodiversity. The Pollution indicator looks toward international agreements (i.e., the MARPOL Convention and the Marine Oil Pollution Agreement) as mechanisms to address pollution. The climate change indicator does not suggest how mitigation or adaptation efforts could be used.

Indigenous rights, as part of the Human Dimension indicator, is one of the issues Germany's strategy seeks to address, although it is the second least coded indicator. Nevertheless, in the space allotted to this topic, it is argued that rights should be protected through land claim settlements and self-determination.

Research is one of the issues of the German Guidelines, although the Science and Education indicator is in a middle of our quantitative analysis. The indicator focuses solely on research, recognizing the environment and climate change as important areas of research and linking research to environmental protection and economy. To conduct research, Germany uses different types of infrastructure, such as its own Arctic research base on Spitsbergen, run together with France, and through formal research networks, like IASC, and more informally through conferences.

The Infrastructure indicator prioritizes shipping and, in part, speaks to safety issues. The Safety and SAR indicator is concerned with environmental safety, especially from shipping. As such, the indicator notes that the IMO is the key international structure for safety as it sets shipping guidelines and contributes to environmental safety. The policy also recognizes that the Arctic Council's SAR Agreement can help with rescue efforts, but also recognizes that more needs to be done.

Considering the above and the quantitative analysis, it seems, according to the 2013 Arctic Policy, that Germany's main priorities are environmental protection (when accounting for the three indicators on the environment, pollution, and climate change), international cooperation, maritime governance (through the governance and safety indicators), and economy.

Italy

Towards an Italian Strategy for the Arctic—National Guidelines was adopted in 2015 by the Italian Ministry of Foreign Affairs and International Cooperation (MFAIC). It has 21 pages including maps and pictures. The headings of the chapters of the version analyzed (updated in May 2016) are: 1. Italy in the Arctic: A Centenary History, 2. Italy in the Arctic: The Political Dimension, 3. Environmental and Human Dimension, 4. The Scientific Dimension, and 5. Economic Dimension (Italy MFAIC 2015, 2, 3, 7, 10, 15)

As there are no explicit priorities, four headings of these headings can be interpreted as priorities: 1) Political Dimension; 2) Environmental and Human Dimension; 3) Scientific Dimension; and 4) Economic Dimension.

Italy was accepted as a permanent observer of the Arctic Council at the Kiruna Ministerial in May 2013 (Arctic Council 2015b).

The **(Re)mapping and (Re)defining the Arctic** indicator reflects on Italy's Arctic expeditions, and in particular the successful 1926 airship expedition to the North Pole by Umberto Nobile, Roald Amundsen, and Lincoln Ellsworth. The *Guidelines* also mentions the establishment of an Italian scientific base, Dirigibile Italia, in Svalbard (2015, 2, 11).

The Arctic is described, inter alia, as a "complicated" and "vulnerable" region with a "peculiar and sensitive ecosystem," which "each Arctic stakeholder has an interest in respecting" (2015, 16). Moreover, "many Arctic territories are highly fragile due to their natural isolation and vulnerability" (2015,10).

Figure 20 shows how many quotes are assigned to the different indicators, as a percentage of the total number of coded quotes (rounded to the nearest whole number) in the document.
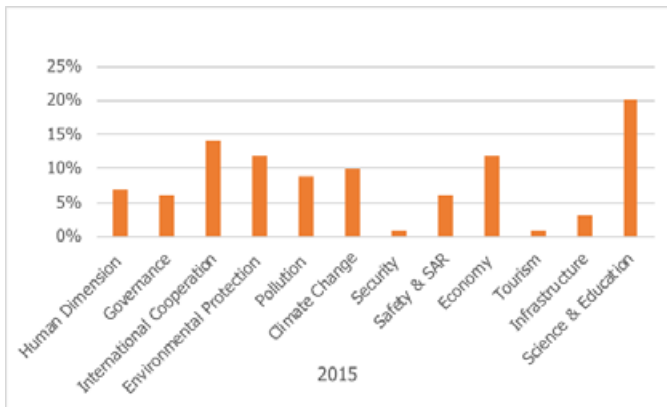
Figure 20. Italy 2015

Note: The percentages in each indicator are rounded to the closest whole number and represent the percent of the total number of quotes coded for each document.

The Italian national *Guidelines* explicitly refer to the **Human Dimension** indicator, which accounts for 7 % of the total coded quotes of the Italian Arctic Strategy (see Figure 20) as follows: by making the human dimension of primary relevance, Italy "considers it to be extremely important to raise awareness on such issues... through a growing, internationally coordinated effort, working in concert with the Arctic States" (2015, 4). This indicator includes two main aspects: "urban areas" and "Indigenous peoples." Given the extreme features and vulnerability of the Arctic "urban development has a role of remarkable importance" (2015, 10). Among the Arctic states, Sweden is said in the *Guidelines* to promote "a holistic approach to sustainable urban development, involving not only architectural and urban design, but also the careful planning of interactions among all relevant subsystems... planning [which] ensures cities' effectiveness and sustainability, thus improving the quality of life of citizens" (2015, 10). Correspondingly, Indigenous people are said to be "the real experts in the Arctic environment, with their unique, millennial heritage of traditions and culture, which should be protected and treasured by all companies operating in the region" (2015, 16).

The **Governance** indicator accounts for 6 % of the total coded quotes (see Figure 20). According to this indicator "the recognized national jurisdictions of the Arctic States are completed and integrated by customary international sea law and by a number of Treaties.... [of which] the most important is the United Nations Convention on the Law of the Sea (UNCLOS)" (2015, 4). Italy's firm confidence in the existing Arctic and international governing structures is also shown. The Arctic Council, with its wide structure of members, permanent participants, observers, and working groups, is considered to be "the main debate forum for the Arctic, where the different features and issues of this complicated region and all viable forms of cooperation are discussed" (2015, 3). Concerning governing structures for the Arctic, the *Guidelines* mention that Italy is one of the original signatories to the Svalbard Treaty. Nothing explicit about self-determination of Indigenous peoples is noted. International legal instruments are mentioned, such as the Convention on Biological Diversity (CBD), the Convention on Long-Range Transboundary Air

Pollution (CLRTAP), the International Convention for the Prevention of Pollution from Ships (Marpol 73/78), and UNCLOS. However, as changes in the Arctic region are global and mainly result from impacts from lower latitudes, the *Guidelines* calls for "a global approach, implying new responsibilities not only for the Arctic States but for the whole international community… [dealing] with the new challenges arising, from global warming to the opening of Polar navigation routes" (p.4). In this context, the Italian Guidelines also notes "the principles and goals of the European Union environmental policy…[and] all relevant international obligations, with special reference to sustainable development" (2015, 19).

As indicated by the previous indicator, the Italian Arctic *Guidelines* reflect international cooperation and agreements. Furthermore, the **International Treaties and International Cooperation** indicator, which accounts for 14 % of the total coded quotes of the strategy (see Figure 20), highlights first, the role of the Arctic Council, where Italy "provides an active contribution in different fields of research thanks to the considerable expertise of its scientific community" (2015, 5); and second, UNCLOS as the most important body for "responsible management of the Arctic Ocean" (2015, 4).

Among the international agreements and relevant operational tools for problem solving in environmental protection, the Italian Guidelines notes the Marpol Convention "on the prevention of pollution from ships… as the key international instrument for its parties, including Italy," and the EU Directive 2013/30 on offshore safety for establishing "strict rules for the construction and management of extraction facilities as well as technical and financial requirements for the granting of licenses to oil and gas operators" (2015, 8). A short list of other "main international instruments dealing directly or indirectly with atmospheric pollution and climate change" (2015, 8) follows, such as the United Nations Framework Convention on Climate Change, Vienna Convention for the Protection of the Ozone Layer, Montreal Protocol on Substances that Deplete the Ozone Layer, Convention on Long-range Transboundary Air Pollution (CLRTAP). In addition to the above-mentioned international agreements, the *Guidelines* also mentions the International Convention for the Safety of Life at Sea (SOLAS), Urban Development (HABITAT III), and the global negotiation process in the framework of the Paris Climate Agreement.

The **Environmental Protection** indicator accounts for 12 % of the total coded quotes of the Italian Guidelines (see Figure 20). Italian institutions are "ready to put their expertise at Arctic States' disposal, by cooperating in the framework of the Arctic Council to ensure that the highest standards of safety and environmental protection are applied to exploration and extraction of oil and gas in the Arctic" (2015, 6). Here the focus is "on crucial Arctic environmental issues," including, among other things, protection of biodiversity, prevention of air pollution, reversal of climate change, marine conservation, environmental risks posed by transport by sea, tourism, mining (2015, 7). Of special concern is the protection of the region's biodiversity, which is defined as "one of the most vulnerable of our planet" (2015, 9).

In the context of economic activity and the environment, the Arctic is also said to represent "a huge technology and management challenge for all companies…. [offering] opportunities to explore new mineral resources… [however] its environmentally sensitive and remote areas require exceptional safety measures" (2015, 18). Moreover, "cooperation and exchange of experiences with Arctic States can and must also offer development opportunities for Italy in some fields, such as sustainable urban environment, which is one of the priorities of the Italian Ministry of Environment" (2015, 7).

Under the subtitle "Air pollution and climate change" the Italian Guidelines refers to the **Pollution** indicator, which accounts for 9 % of the total coded quotes of the strategy (see Figure 20, p. 207). The *Guidelines* recognizes [the challenges of] Short Lived Climate Forcers (SLCFs), such as methane, tropospheric ozone, hydrofluorocarbons (HFCs) and black carbon, as well as, at international level, ship emissions, and "environmental risks posed by transport by sea, tourism, mining and harbour operations" (2015, 7) which are also polluting the Arctic.

The **Climate Change** indicator, which accounts for 10 % of the total coded quotes of the Italian Arctic Strategy (see Figure 20, p. 207), reflects that "Italian presence in the Arctic is motivated also by global warming, which has severe repercussions on the region, and the new, urgent challenges it poses" (2015, 3). The explicitly mentioned reason for this is that "Italy bears a number of similarities with the Arctic… especially the Alps" (2015, 7) given that "the Italian mountain areas and the Arctic region both suffer from geographical, social and technological isolation" (2015, 7).

The *Guidelines* states that "Italy is deeply committed to studying climate change through the work of its research agencies" (2015, 16), and lists "the priorities and actions set out by the scientific community and by international scientific (ICSU, IASC, EPB) and political (Arctic Council, European Commission) coordinating bodies to deal with climate change" (2015, 12). One of Italy's aims is to increase "the spatial and temporal extent of the Arctic observation system" and promote "the study and knowledge" of the complexities "of the Arctic system" (2015, 12). The *Guidelines* states that the main international agreements and mechanisms, mentioned above, such as the United Nations Framework Convention on Climate Change and the Intergovernmental Panel on Climate Change (IPCC), also deal with climate change.

Interestingly, an Italian company, Eni is explicitly noted, even highlighted, in the *Guidelines* as having "extraction programs in Norway and Russia and implementing some remarkable projects aimed at improving safety conditions of transport by sea (against oil spills), mitigating its environmental impact and safeguarding Indigenous communities in a rapidly changing ecosystem hit by climate change" (2015, 3). Further, the *Guidelines* states that "Eni acknowledges the scientific evidence on climate change as exposed in the IPCC 5th Assessment Report (AR5), which defines [as]'extremely likely' the link between climate change and human activities" (2015, 17).

The **Security** indicator, accounting for 1 % of the total coded quotes of the strategy (see Figure 20, p. 207), is brief. It notes, first, that large areas in the Arctic "are subject to national sovereignty. Italy fully respects these sovereign rights" (2015, 4); and, second, that "the Arctic Council today goes beyond its original concept of an inter-Arctic consultation forum. It has become a vehicle for regional stability, whose increasing relevance is proved not least by the growing number of its Observer countries—including some European Union Member States and various Asian countries" (2015, 3–4).

The **Safety and SAR** indicator accounts for 6 % of the total coded quotes of the *Guidelines* (see Figure 20, p. 207). Although this indicator does not explicitly note SAR, it recognizes growing sea trade in Northern waters as a "major challenge as it entails a growing risk of accidents and environmental damage connected to possible oil spills." In this connection, Italy relies the 2013 EU Directive no. 30/2013/EU "on safety of offshore oil and gas operations" with "proposals aimed at consolidating safety standards" (2015, 5). The EU Directive states that "the serious environmental concerns relating to the Arctic waters require special attention to ensure the environmental protection of the Arctic in relation to any offshore oil and gas operation, including exploration, taking into account the risk of major accidents and the need for effective response" (2015, 6), especially given the growing volumes of trade through Northern sea routes. Moreover, the company Eni has "remarkable projects aimed at improving safety conditions of transport by sea (against oil spills), mitigating its environmental impact and safeguarding Indigenous communities in a rapidly changing ecosystem" (2015, 3).

The **Economy** indicator, accounting for 12 % of the total coded quotes of the *Guidelines* (see Figure 20, p. 207) shows Italian interests in energy and sustainable use of resources. For example, "urban sustainable development is one of Italian national priorities" (2015, 10) as, too, is support for "an eco-sustainable management of Arctic fisheries stocks," which should be taken into account and applied by commercial fishing" (2015, 16).

Among the explicitly noted economic actors are "companies with offshore activities in the Arctic (Canada, Greenland, Iceland, Norway, Faroe Islands)" (2015, 11), and in particular the Italian company Eni (covering two pages). "Eni's approach to Arctic activities" is said to be based on key principles, such as "activities… to be performed in ice-free offshore areas only and assisted by satellite iceberg control and remote monitoring of all drilling activity," and "operations… to be conducted only during periods of the year when repercussions on the marine environment (in particular, on mammals) are minimal"… "local inhabitants have to be involved and informed" (2015, 18).

The **Tourism** indicator only accounts for 2 % of the total coded quotes of the *Guidelines* (see Figure 20, p. 207) being noted twice: first, with respect to activities which pose environmental risks for the Arctic ecosystem; and second, the comparison between the Arctic and the Alps as having particularly fragile ecosystems (2015, 7).

The **Infrastructure** indicator is also brief and accounts for 3 % of the *Guidelines*' total coded quotes (see Figure 20, p. 207). Investments in renewable energy and development of "green" products are noted, although the *Guidelines* mainly focuses on innovations, such as promoting "innovative organizational structures in scarcely populated areas" (p. 10). Furthermore, it mentions Italy's capacity "to combine advanced technology and the preservation of its environmental and cultural heritage [as] its added value to economic growth and sustainable development in the Arctic" (2015, 16).

The **Science and Education** indicator is clearly priority number one of the Italian Arctic *Guidelines,* accounting for 19 % of the total coded quotes (see Figure 20, p. 207). Expeditions to the North Pole are noted as "the first Italian scientific missions in the Arctic region" (2015, 2), and it is easy to understand why this indicator is the most extensive of the whole Arctic strategy of Italy. Under "Environmental and Human Dimension" the *Guidelines* highlight that "a major role is to be played by scientific and technological research, in which Italy excels" (2015, 7). Indeed, Italy's contribution to Arctic research is rich and includes several elements and activities, such as the Svalbard scientific station (Dirigibile Italia), opened in 1997 in Ny-Ålesund, for multidisciplinary research; and also *OGS Explora* as an "Ocean-going Multipurpose Research Vessel classified as ice class IB" (2015, 12) for collecting data in the Arctic waters. Here Ny-Ålesund, as an international hub for Arctic research, is identified as playing an important role by enabling and enhancing "the study of the complex interconnections between biological phenomena and physical, chemical, dynamical and radiation processes" (2015, 11).

The *Guidelines* includes two pages of information about how the Italian scientific community, supported by the national research agencies (CNR, ENEA, INGV, OGS) and in line with international efforts, will reinforce Italian presence in the Arctic by:

A) Promoting Italian participation in Arctic research giving prominence to national scientific and technological excellence

B) Expanding the Italian presence in the pan-Arctic observation system, mainly through bilateral agreements

C) Reinforcing internationalization

D) Participating in the action to strengthen European Arctic infrastructures promoted by the European Commission, Arctic countries and also Mediterranean countries like France

E) Creating synergies between the activities of Italian research agencies in the Arctic and PNRA (National Antarctic Research Programme) activities

F) Promoting and strengthening the collaboration among national actors (Agencies, Universities), including the first Italian Master's course dedicated to Arctic issues offered by MFAIC and Ministry of the Environment and Protection of Land and Sea (2015, 6)

G) Promoting activities of technological innovation and experimentation (2015, 13–15).

Finally, the *Guidelines* provides a concrete example of implementing the interplay between science, politics and business, the recently reactivated *Tavolo Artico* (Arctic Table), as "an informal, open-ended consultation group on the Arctic," including "members from academic, scientific and business communities" (2015, 6).

The **Implementation** indicator is not explicitly mentioned in the strategy document.

To sum up

The Science and Education indicator is the most substantial in the Italian Arctic *Guidelines*. In particular, the *Guidelines* strongly addresses how the Italian scientific community, "supported by the national research agencies… and in line with… international efforts," is committed to the overall national goal "to reinforce Italian presence in the Arctic" (2015, 13). The list is long and impressive.

Related to and supporting this, the International Cooperation indicator takes up a big share of the *Guidelines*, emphasizing the importance of both international cooperation in general and international agreements. It also highlights the role of the Arctic Council and of UNCLOS, as the most important bodies for the management of the Arctic Ocean.

Further, closely related the two above-mentioned indicators, the *Guidelines* focuses on Arctic environmental issues, including protection of biodiversity, prevention of air pollution, reversal of climate change, marine conservation, environmental risks posed by transport by sea, tourism, and mining. Of special concern is biodiversity of the Arctic ecosystem. If taken together, the three indicators, Environmental protection, Pollution, and Climate change, could easily be interpreted as another priority, a dominant one, of the strategy.

Based on our quantitative measuring the Economy indicator is almost equal to that of Environmental protection (for example, the 'Eni and the Arctic' subchapter alone covers two pages). Interestingly enough, the Economy indicator would become even more substantial, if some of Eni's remarkable projects "aimed at improving safety conditions of transport by sea (against oil spills), mitigating its environmental impact and safeguarding Indigenous communities in a rapidly changing ecosystem hit by climate change" (2015, 3), were to be included as part of economic and commercial activities in the Arctic. Here we face the same difficulty in measuring, as in the case of France.

The explicit mention of the *Tavolo Artico* as an informal group on Arctic issues is interesting, given the important role of the science–politics–business interplay in Arctic research and geopolitics, and as an important precondition for high geopolitical stability.

Finally, when comparing the de facto priorities to our coding and analysis, it can be concluded that Italy does, indeed, have a presence in the Arctic first of all by having the scientific and economic dimensions as the focus, andincluding the political dimension via international cooperation, and also on the environmental dimension. The human dimension is, however, less of a focus, though Italy does give this dimension more attention than most of the observers.

Japan

Japan's Arctic Policy was adopted and announced by the Headquarters for Ocean Policy of the Government of Japan in October 2015. It was launched at the same time at the Arctic Circle Assembly in Reykjavik, Iceland.

Japan's brief (11-page) policy document is structured around three main chapters: I) Background and Purpose of Basic Policy; II) Need to Address Arctic Issues, and III) Specific Initiatives. The "Need to Address Arctic Issues" chapter includes the following major subchapters as the main themes, if not priorities of the policy: i) Global Environmental Issues, ii) Indigenous Peoples of the Arctic, iii) Science and Technology, iv) Ensuring the Rule of Law and Promoting International Cooperation, v) Arctic Sea Route, Natural Resources Development, and National Security (Japan The Headquarters for Ocean Policy 2015, i).

As discussed in its Policy, Japan has previously shown interest in the Arctic region, and in particular the Arctic Ocean and Northern sea routes (e.g., the International Northern Sea Route Project, INSROP), scientific research (the first non-Arctic state to join the IASC), and Russian Far East. The strategic and comprehensive focus areas of the Basic Plan on Ocean Policy, adopted by the Japanese Cabinet in 2013 are:

1) observation of, and research on, the Arctic from a global perspective
2) international cooperation on the Arctic
3) examination of the feasibility of the Arctic Sea Route" (2015, 2)

The aim of Japan's Arctic Policy "is… to define policy for more specific measures (2015, 2) from the standpoint of a 'Proactive Contribution to Peace.'" It is based on principles such as international cooperation, national security, environment, transportation, science and technology, and "a multidisciplinary perspective with contributions from industry, academia, and the government... [with the aim of making] Japan an important player that contributes to the international community through its action to Arctic issues" (2015, 2).[18]

The substantial subchapters are interpreted as the priorities, though there are quite a few of them: 1) Global Environmental Issues; 2) Indigenous Peoples of the Arctic; 3) Science and Technology; 4) Ensuring the Rule of Law and Promoting International Cooperation; 5) Arctic Sea Route; 6) Natural Resources Development; and 7) National Security (2015, i).

Japan gained Observer status of the Arctic Council Japan at the Kiruna Ministerial Meeting in Sweden in May 2013 (Arctic Council 2015b).

The **(Re)mapping and (re)defining the Arctic** indicator is brief, defining the Arctic as a "home to about four million people, including Indigenous peoples" (2015, 3).

Figure 21 shows how many quotes are assigned to the different indicators, as a percentage of the total number of coded quotes (rounded to the nearest whole number) in the document.
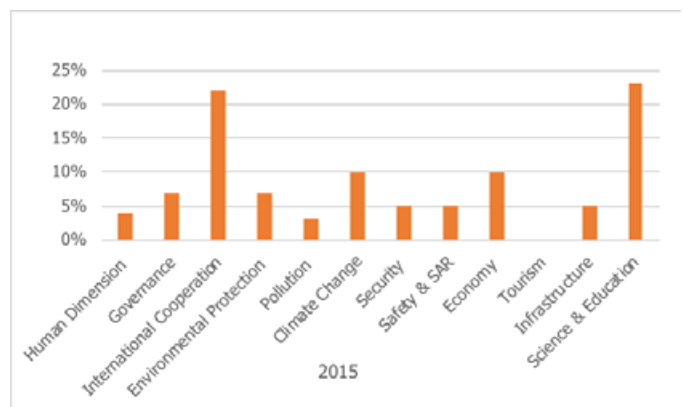
Figure 21. Japan 2015

Note: The percentages in each indicator are rounded to the closest whole number and represent the percent of the total number of quotes coded for each document.

The **Human Dimension** indicator accounts for 4% of the total coded quotes of Japan's Arctic Policy (see Figure 21). It states that "Indigenous peoples are easily affected by environmental change and expanded economic activity in the Arctic" (2015, 3) and that there is thus a need to "respect the right of Indigenous peoples to continuity in their traditional economic and social foundations" (2015, 2). Here the Policy requires Japan to "examine how [it] can contribute to achieve sustainable development of which Indigenous peoples can see benefits while protecting the foundations of traditional cultures and lifestyles" (2015, 3).

---

18 Based on this background, the Policy notes that "Japan will: Make full use of Japan's strength in science and technology from a global viewpoint; Give full consideration to the Arctic environment and ecosystem, which is fragile, with a lower ability to recover; Ensure the rule of law, and promote international cooperation in a peaceful and orderly manner; Respect the right of Indigenous peoples to continuity in their traditional economic and social foundations; Pay full attention to security developments in the Arctic; Aim for economic and social compatibility with climate and environmental changes; and Seek possible economic chances for the use of the Arctic Sea Route and for the development of resource by implementing the following initiatives" (2015, 2).

The **Governance** indicator, which accounts for 7 % of the total coded quotes of Japan's Arctic Policy (see Figure 21, p. 210), reflects Japan's promise to "ensure the rule of law, and promote international cooperation in a peaceful and orderly manner," and to respect the rights of Indigenous peoples, as mentioned earlier (2015, 2). Discussions on this indicator are twofold. First, the Arctic Ocean, which, like other oceans, is "subject to international laws, including the United Nations Convention on the Law of the Sea.… Freedom of navigation and other principles of international law [in the Arctic Ocean] must be respected" (2015, 5). Concerning living marine resources, the Policy states that Japan will "participate actively in discussions with coastal and other states toward the formulation of rules for preservation and management of fishery resources in high seas of the Arctic Ocean toward sustainable use on a scientific foundation" (2015, 8). Second, regarding the Arctic Council: "Japan will further strengthen its contributions to the work of the council… [and] also examine further contributions that can be made through policy dialogues with the AC chair, member states, and others" (2015, 8). The Policy also notes that it is "important for Japan [also] to participate actively in international forums other than the AC, and to initiate constructive discussions based on its scientific knowledge when necessary" (2015, 5).

The **International Treaties and International Cooperation** indicator accounts for 22 % of the total coded quotes of Japan's Arctic Policy (see Figure 21, p. 210). One of the three strategic and comprehensive focuses of the Basic Plan on Ocean Policy of the Japanese Government is international cooperation, and this is also one of the three specific initiatives of the Arctic policy. It is thus no wonder that this indicator is one of the most dominant overall of the Policy. The Policy notes that Japan's Arctic policy has been established "from the standpoint of a 'Proactive Contribution to Peace' based, among other things, on principles of international cooperation" (2015, 2). Indeed, the term 'international community' is explicitly mentioned a few times, as is the fact that "Japan is an important player [contributing] to the international community through its action [on] Arctic issues" (2015, 2). It is also noted that Japan should participate actively "in the international debates regarding the drafting of new rules" (2015, 6) and respond "to global issues regarding the Arctic and formulation process of international rules for the Arctic" (2015, 8); moreover, it should become involved "in discussions with coastal and other states toward the formulation of rules for preservation and management of fishery resources in high seas of the Arctic Ocean toward sustainable use on a scientific foundation" (2015, 8). Concerning research and development, the Policy proposes to "establish research and observation stations in the United States, Russia, and other Arctic states, and promote closer international cooperation through observations in the Arctic and joint research projects" (2015, 7).

Other international agreements and forums identified in the Policy, in addition to the Arctic Council and the Arctic Economic Council, are the International Maritime Organization (IMO), which has developed the 'Polar Code,' as well as treaties such as the International Convention for the Safety of Life at Sea (SOLAS), International Convention for the Prevention of Pollution from Ships (MARPOL), International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) (2015, 8), and the United Nations Convention on the Law of the Sea.

The Japanese Arctic Policy has a global approach. It correctly reminds us that "Japan has played a leading role in formulating the Kyoto Protocol, the Aichi Biodiversity Targets, and other agreements through which the international community has responded to global environmental problems such as global warming and the loss of biodiversity" (2015, 3). In the Arctic, Japan is thus required to "make the best use of its strengths, engage in active international cooperation, and enhance collaboration between stakeholders in comprehensive, cross-disciplinary research" (2015, 4).

The **Environmental Protection** indicator, accounting for 7 % of the total coded quotes of Japan's Arctic Policy (see Figure 21, p. 210), seems not to have the same priority in the Policy as climate change. The Arctic is recognized as being a vulnerable environment with fragile ecosystems and low resilience, and sensitive to global warming. Indigenous peoples are recognized as being "easily affected by environmental change and expanded economic activity in the Arctic" (2015, 3). Linking the Environmental Protection indicator with global environmental issues, the Policy notes that "changes in the Arctic and their influence on the Earth as a whole must be understood with a comprehensive and wide-ranging perspective, considering the climate, material cycles, biodiversity, and the effects of human activities" (2015, 4).

The **Pollution** indicator, which accounts for 3 % of the total coded quotes of Japan's Arctic Policy (see Figure 21, p. 210), identifies greenhouse gases as pollutants. It also briefly pinpoints that "development and expanded economic activity will result in pollution of the air and water, such as leaking and discharge of pollutants from ships into the Arctic Ocean" (2015, 3) and that this is problematic.

The **Climate Change** indicator accounts for 10 % of the total coded quotes of Japan's Arctic Policy (see Figure 21, p. 210). The Policy opens with the statement that "the Arctic environment is responding very sensitively to global warming… Over the past 35 years, the Arctic sea ice extent in the summer has declined by nearly two-thirds" (2015, 1). It goes on to express concerns that "environmental changes in the Arctic will accelerate global warming, lead to global sea-level rise, increase the frequency of extreme weather events, and adversely affect ecosystems," recalling the "risk that rapid change in the Arctic environment will have a drastic and irreversible impact on the foundations of the lives of Indigenous peoples and others who live in such harsh environment" (2015, 1). Furthermore, the Policy seems to focus more on consequences than solutions, warning that, "if effective mitigation measures are not taken, and if global warming continues to accelerate at the maximum pace, a nearly ice-free Arctic Ocean in the summer by the mid-century is likely" (2015, 1). Furthermore, "the mechanisms of environmental change in the Arctic are still not sufficiently understood… the impact of global warming is amplified to a greater extent in the Arctic

than in any other regions on the Earth" (2015, 1). Finally, Japan, having played a leading role in the Kyoto Protocol and other agreements dealing with global warming has already proposed "advanced efforts in both mitigation and adaptation" (2015, 3).

The **Security** indicator, which accounts for 5 % of the total coded quotes of the Policy (see Figure 21, p. 210), notes that one of the aims of Japanese Arctic policy is to "pay full attention to security developments in the Arctic" (2015, 2). The Policy points out that "some Arctic states, with a view toward securing their national interests and protecting their territories, have become active in the area of national defense. Moves toward expanding military presence may have an impact on the international security environment." (2015,1). The Policy further warns that "factors such as opening of new shipping routes and the development of natural resources may become a cause for new friction among states." These factors may thus become factors that "change the international security environment, not only in the Arctic but for the surrounding states including Japan." The Policy further advises that close attention be paid "to moves by the states concerned and also to promote cooperation with the Arctic and other states" (2015, 6).

The Policy document also explicitly identifies that "land areas in the Arctic are under the sovereign authority of the states in the region… [and that a] large part of the Arctic Ocean consists of the territorial waters of the coastal states… with sovereignty or sovereign rights to exclusive economic zones (EEZ) and continental shelves" (2015, 1). It is thus important "to prevent moves to strengthen military presence in the region from leading to tension and confrontations" (2015, 6).

The **Safety and SAR** indicator accounts for 5 % of the total coded quotes of the policy (see Figure 21, p. 210). Regarding "the use of ports and other infrastructure along the [sea] route, and the status of services and regulations of coastal states," the Japanese Policy warns that the Arctic Sea Route is not ready yet for safe and reliable use" (2015, 6). It recommends that "Japan should participate actively in the international debates regarding the drafting of new rules… [on] the effect of [increasing] shipping on the marine environment and on securing the safety of navigation" (2015, 6). SAR is not explicitly mentioned. The 'Polar Code,' developed by the IMO, is emphasized as "a binding international framework to specify standards for maritime safety in polar seas, protection of the marine environment, and the manning, certification, and training of sea farers" (2015, 8).

The **Economy** indicator accounts for 10 % of the total coded quotes of Japan's Arctic Policy (see Figure 21, p. 210). Given the Arctic's "vulnerability to environmental changes" (2015, 2) Japan needs to examine how to contribute to the achievement of sustainable development that will benefit Indigenous peoples "while protecting the foundations of traditional cultures and lifestyles" (2015, 3). Japan has an advantage in the field of sustainable development through its foresight and through policy which is… "based on science and technology" (2015, 2). Japan's aim is "to play a leading role for sustainable development in the Arctic in the international community (2015, 2).

With respect to natural resource development, the Policy explicitly identifies mineral resources, which in the extreme cold and sea ice of the Arctic region "should be addressed steadily over the mid and long term [bearing in mind] continued diversification of resources supplies…progress in resources development technology in sea ice regions, cooperative relationships with coastal states, and factors such as …private sector [needs]" (2015, 6) It also identifies marine living resources, in particular, unexploited marine living resources, the development of which needs to be promoted "through due cooperation with the coastal states and [in order to]secure the need for food security in balanced manner while ensuring the sustainability of the resources based on scientific evidences" (2015, 6). Finally, the Policy promises to "continue financial support for Greenland Petroleum Exploration Co., Ltd. which is participating in an exploration project in an ocean area northeast of Greenland, via the Japan Oil, Gas, and Metals National Corporation (JOGMEC)" (2015, 9).

The **Tourism** indicator is not explicitly mentioned in Japan's Arctic Policy.

The **Infrastructure** indicator accounts for 5 % of the total coded quotes of Japan's Arctic Policy (see Figure 21, p. 210). Not surprisingly, this indicator explicitly discusses the Arctic Sea Route, which, if sea ice on the Arctic Ocean decreases will "be established along the coasts of Russia and neighboring states… a voyage between Asia and Europe will [then]become about 40 % shorter than a voyage via the Suez Canal" (2015, 6). The feasibility of the Arctic Sea Route is identified as attracting mounting interest from the international community. The Arctic Sea Route, in terms of sustainable use, is also related to a specific Japanese initiative to identify its different (natural, technical, systemic, economic) challenges, and to promote the "preparation of an environment for its utilization by Japanese shipping companies and others, by constructing systems to support maritime navigation such as a system to predict sea ice distribution and one to forecast weather" (2015, 9).

The **Science and Education** indicator accounts for 23 % of the total coded quotes of Japan's Arctic Policy (see Figure 21, p. 210). This is another dominant indicator of the Japanese Arctic policy, parallel to International Treaties and Cooperation. The Policy notes clearly that in 1991 "Japan became the first non-Arctic state to establish an observation station in the Arctic… [and] the first non-Arctic state to join the International Arctic Science Committee (IASC)" (2015, 3–4). In 2015 "the Arctic Science Summit Week (ASSW), the most important international conference on Arctic research, was held in Japan" (for the first time in Asia) (2015, 4). Outcomes from these activities are also noted, for example, "observation data and scientific knowledge from Japan have made major contributions to understanding the environmental changes in the Arctic… Japan has conducted satellite, ocean, and land observations and simulations at a high level, and has received a high evaluation from the international scientific community" (2015, 4). The Policy does, however, state that "scientific understanding of the Arctic is still inadequate" (2015, 4). Another aim of Japanese activities in the Arctic, and

scientific cooperation with other Arctic actors, is that "the Arctic environment is responding very sensitively to global warming, and Arctic Ocean sea-ice is decreasing at a pace exceeding scientific predictions" (2015, 1).

The list of specific initiatives, under the Research and Development title, is long: from "promotion of Arctic research to contribute to policy-making and problem-solving" to the "establishment of research a network" (2015, 7). Of major note is the Japanese Arctic research vessel being used as a "new international Arctic research platform, with functions to enable participation in international Arctic observation projects using equipment such as autonomous underwater vehicles" (2015, 7). Among other interesting initiatives are: i) to "conduct work to strengthen observations using advanced satellites, observatory stations, and research vessels," which are one of the country's strengths, in order to "acquire and analyze scientific data to further clarify the mechanisms of changes in the Arctic environment"; and ii) to establish research and observation stations in the United States, Russia, and other Arctic states, and promote closer international cooperation through observations in the Arctic" (2015, 7).

Except for three lists of specific initiatives, there is nothing explicitly mentioned about **Implementation.**

To sum up

The Japanese Arctic Policy document includes two dominant indicators: i) science and education and ii) international cooperation.

Science and technology relates particularly to research and development within the international science community. The theme is well represented among specific initiatives, including promotion of Arctic research, the contribution to policymaking and problem-solving, and concrete proposals, such as the new Arctic research vessel. Supporting this, international, worldwide cooperation is one of the strategic and comprehensive focuses of the Basic Plan on Ocean Policy. The Policy identifies and highlights the Polar Code as the most important international means to increase maritime safety. The Environmental protection indicator explicitly notes sustainable use of resources and growing concerns due to global warming. The list of specific initiatives under sustainable use mainly concerns economic activities, the Arctic Sea Route, and (mineral and marine living) resources. Correspondingly, whaling is not explicitly noted with respect to marine living resources, although it is relevant, probably because it is too sensitive an issue for Japan, which resigned from the IWC in 2019.

Interestingly, although the Arctic is identified as being a home to Indigenous peoples, the Ainu people, a Japanese northern Indigenous people, living in the northernmost part of Japan, are not explicitly noted. Discussion by the Japanese of their own experiences in working with Indigenous peoples could have contributed substantively to the Human dimension and Indigenous peoples.

Finally, comparing the results of the coding and analysis to the de facto priorities, it can be concluded that Science and Technology, Promoting International Cooperation, Natural Resources Development, and the Arctic Sea Route (economy), and Global Environmental Issues, including climate change, are much in focus. There is less of a focus on Indigenous Peoples, Governance, and National security.

The Netherlands

The Netherlands released its first strategy on the Arctic, in Dutch, in 2009 with the release of the *Poolpositie-NL: Nieuw Nederlands Polair Programma (NNPP) 2010–2014* by the Netherlands Organisation for Scientific Research (The Netherlands NWO 2009). This strategy was evaluated through the *Evaluation of the (New) Netherlands Polar Programme 2009–2014* (NWO 2014b). During this time frame, *The Netherlands and the Polar Regions, 2011–2015* policy framework was released, including a five-page English summary (see: The Netherlands NWO 2011). The current Dutch strategy was released in 2014 and is entitled *Pole Position - NL 2.0: Strategy for the Netherlands Polar Programme 2016-2020*, consisting of 33 pages including appendices, tables, and photos, and addressing both the Arctic and Antarctic. Many of the quotes in the analysis are thus applicable to both poles, and Arctic specific issues are identified where possible.

The new strategy is "an updated continuation of the Master Plan," and while focusing on research "as one of the building blocks, this Strategy Plan will contribute to the total polar policy of the Dutch government" (The Netherlands NWO 2014a, 5). The current 2.0 Strategy Plan is analyzed here and outlines some clear priorities.

"The Strategy Plan creates a framework for Dutch research in two important and rapidly changing areas on earth. It presents new lines for future polar research and continues on points that merit continuation. Continuously amassing knowledge about the polar regions and the changes occurring there is necessary in order to deal properly with the changing conditions and to ensure that the Netherlands continues to play a role in international (polar) issues" (2014a, 5).

"In addition to the national economic priority areas policy, the NWO also strives for similar alignment of Dutch polar research with international polar research agendas of the European Polar Board (EPB), the Scientific Committee on Antarctic Research (SCAR), the Arctic Council (AC) and the International Arctic Science Committee (IASC)" (2014a, 7). Finally, "the ambition of this strategy plan is the continuation of a long-term basis of financing for the Netherlands Polar Programme" (2014a, 7). Clearly, this strategy is focused on the Netherland's contributions to polar research.

The **(Re)mapping and (Re)defining the Arctic** indicator provides insights into how the region is discussed by the Netherlands. The Strategy Plan is different from others in that it fo-

cuses on both polar regions, the Arctic and Antarctic. Thus, the document often uses the term "polar" when speaking more generally and then differentiates between the Arctic and Antarctic, as needed.

In terms of defining the Arctic, the Strategy Plan primarily does so in the context of where the Netherlands has research interests. For example, the document states that "the precondition that the NPP's activities were preferably to be concentrated in the geographic areas of the Antarctic Peninsula in the south and on Spitsbergen and Greenland in the north was formulated in the NPP. This does not exclude research in other areas" (2014a, 13). The Strategy Plan further explains that "the choice of Spitsbergen, and Ny-Ålesund in particular, is based on the presence of the Dutch polar station there. The choice of Greenland is primarily based on the importance for the Netherlands of research into the melting of the Greenland ice cap" (2014a, 13). At the same time, the Strategy Plan also remarks that "this geographic focus can be expanded depending on the size of the NPP budget. For example, one could consider the Russian Arctic region as a focus area, considering existing efforts by Dutch scientists there and the Dutch business community's interest in that part of the North polar region" (2014a, 13).

As for the government ministries' participation in polar affairs, the Strategy Plan states that "the Netherlands Polar Programme (NPP) is a financing programme that invests in scientific research into the polar regions. It is supported financially by the Ministries of Foreign Affairs, Education, Culture and Science, Infrastructure and the Environment, Economic Affairs and by the NWO" (2014a, 7).

Figure 22 shows how many quotes are assigned to the different indicators, as a percentage of the total number of coded quotes (rounded to the nearest whole number) in the document.
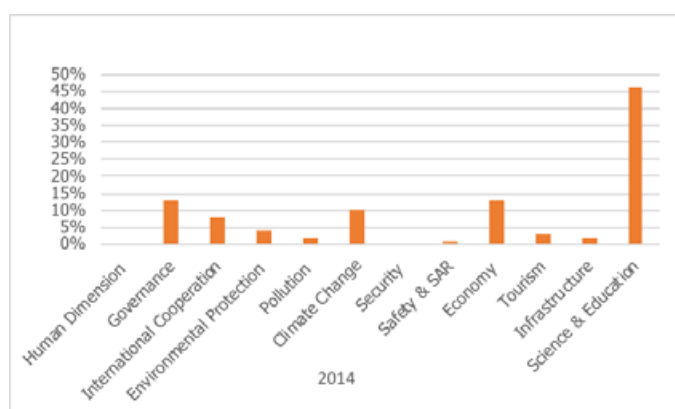
Figure 22. The Netherlands 2014

Note: The percentages in each indicator are rounded to the closest whole number and represent the percent of the total number of quotes coded for each document.

The **Human Dimension** indicator is not addressed in the strategy.

The **Governance** indicator is rather brief in the Strategy Plan and accounts for 13 % of the total coded quotes (see Figure 22). First and foremost, it addresses the need for the Netherlands to "be able to influence international management regimes for both polar regions. In order to acquire that influence, to maintain it and, especially, to elaborate it properly, the Dutch government must be adequately informed about the state of affairs in the polar regions, the imminent changes, and solutions to possible problems. For this, conducting clearly visible and valued scientific research under the Dutch flag and being able to make results available that are relevant to policy has turned out to be essential" (2014a, 7).

According to the Strategy Plan "the policy-driven framework is geared toward application and policy relevance. In the policy-driven framework, research must be relevant for policy established by the participating ministries. The challenge here is to fit the research extensions of the various ministries' working areas into a collective, future-oriented approach to the policy" (2014a, 11). The Strategy Plan further states that "the increasing human activities in the polar regions will require further international consultation, governance and regulation. Knowledge of the changes that the various local communities in the Arctic region are undergoing (have undergone) and knowledge of the local political, social and legal situation is also particularly important for Dutch organisations and companies that wish to operate in the Arctic region" (2014a, 16).

The **International Treaties and International Cooperation** indicator, which accounts for 8 % of the total coded quotes (see Figure 22) reflects throughout the document that the Netherlands supports relevant "international regulations and the maintainability of existing treaties and/or the need for new treaties," in order to "manage the polar regions" (2014a, 9). The Netherlands further highlights the relevance of international collaboration as a prerequisite for the Dutch polar research. The Strategy Plan especially emphasizes scientific cooperation in the Arctic with Russian, Norwegian and Belgian institutions and scientists (2014a, 19, 24). It also refers mainly to the importance of "science-driven research, which should include the effectiveness of existing law—e.g., by a study of the way in which existing international treaties are implemented and enforced in practice in national law and enforcement" (2014a, 16). The government also supports the scientific research as it "can be important to the Dutch business community and to the Dutch government" (2014a, 7). The Strategy Plan also highlights the relevance of the European Polar Board (EPB), which "is an advisory body of the European Science Foundation and is part of the European Polar Consortium." Since 2015, the EPB has been an independent entity, with its Secretariat hosted by the Netherlands Organisation for Scientific Research (NWO) in The Hague (2014a, 20).

The **Environmental Protection** indicator does not capture much information, accounting for 4 % of the total coded quotes (see Figure 22), but it does recognize the importance of the polar environments. Indeed, the Strategy Plan states that "the poles are extremely sensitive to changes in climate: they form the heartbeat of our climatic system" (2014a, 9). It is not there-

fore surprising that elements of the Dutch research agenda address environmental issues. For example, the research topic on sustainable exploitation notes that "*the development of clear preconditions for sustainable exploitation and conservation of biodiversity and environmental quality are important in this*" (2014a, 15). Additionally, the research topic on polar ecosystems "the focus of **policy-driven research** includes the impact of changes in polar regions on migratory birds" and "protecting biodiversity" (2014a, 15). There will also be policy-driven research in the research theme on the social, legal, and economic landscape addressing "the implementation of protection of biodiversity and wilderness values in the polar regions in treaties and permit systems" (2014a, 16).

The **Pollution** indicator also does not capture too much information on pollution, accounting for 2 % of the total coded quotes (see Figure 22, p. 214). It does, however, note that in the "ice, climate and rising sea level" research topic "important topics for **science-driven research** within this theme include... "studies of greenhouse gases, atmospheric tracers collectively referred to as 'air pollution 'and 'aerosols'" (2014a, 14,). Moreover, under the research topic for 'polar ecosystems' in this theme, the focus of **policy-driven research** includes: research into the provenance and behaviour of contaminating substances such as persistent organic pollutants (POPs) and heavy metals that end up in the polar region via air and sea flows" (NWO 2014a, 15). These two quotes identify regional pollutants and also the Netherlands' approach to problem solving through research.

The **Climate Change** indicator, which accounts for 10 % of the total coded quotes (see Figure 22, p. 214), identifies a number of consequences of climate change. The Strategy Plan recognizes, for example, that "climate change in the polar regions has huge physical, ecological, social and economic consequences far beyond those regions" and that "what is now becoming visible in the polar regions in an accelerated manner is generally seen to be a precursor to what the Netherlands is facing in a derivative form" (2014a, 9). Indeed, "potential effects include changes in storm tracks, shifts in precipitation patterns, changes in the frequency and intensity of cold polar air flowing to lower latitudes, a rise in sea level, loss of biodiversity and the resulting degradation of fish populations, shifting vegetation boundaries and diminishment of the existing agricultural acreage" (2014a, 9). At the same time, the strategy also recognizes the economic opportunities that climate change may bring. For example, "the continuous retreat of Arctic sea ice gives room for shipping lanes from the Netherlands that may be 40 % shorter than the routes now in use" and "the tourist sector can expand" (2014a, 9). Additionally, "exploration into raw materials that are present in the North Pole region such as oil, gas and minerals will become technically and economically feasible. This also goes for new and shifting fishing grounds" (2014a, 9).

The Strategy Plan does not mention plans for mitigation or adaptation efforts. It does, however, briefly mention the IPCC and AMAP (NWO 2014a, 14) and indicates that the scientific community would be heard. In particular, there is a research topic on "ice, climate and rising sea levels" which specifies that

"*the data arising from this is an important source of information for climate models*" (2014a, 14,). Furthermore, science-driven research from the "social, legal and economic landscape" theme will address "global economic consequences from thawing in the polar regions" and "the effect of (climate) change on local inhabitants in the Arctic region" (2014a, 16). Perhaps more importantly, the strategy also explains that "the results of Dutch research into the polar climate system are increasingly finding an audience with (inter)national policymakers. See, for example, the Summary for Policymakers in the most recent IPCC report, the AMAP report about Greenland, the recommendation by the Terlouw Commission and the most recent report from the Advisory Council on International Affairs (AIV). In "The Future of the Arctic Region" (September 2014)" (2014a, 14).

The **Security** indicator is not reflected in the strategy at all.

There is not much in the strategy regarding the **Safety and SAR** indicator, which accounts for 1 % of the total coded quotes (see Figure 22, p. 214). However, the Strategy Plan does recognize that increased economic activities could pose safety risks, and that risk management is needed for ecosystems and species; risk management, safety and social impact for local communities; and risk management and safety for the companies and their employees themselves" (2014a, 16). The Strategy Plan states that "these activities must be structured and performed within the preconditions of safety and sustainability." (REF?)The expected increase in maritime operations in the Arctic (coastal) areas and in tourist activities in both polar regions will necessitate research into methods and technologies for managing the risk and safety of such operations.

The **Economy** indicator, which accounts for 13 % of the total coded quotes (see Figure 22, p. 214), identifies polar/polar-related economic activities. The Strategy Plan notes that "changes in the polar regions, primarily in the North Pole region, increase the economic importance for the Netherlands because of the new opportunities that these changes create for the Netherlands. The desire to take advantage of natural resources, as well as the northern transport routes that will open up, make this area extremely interesting to the Dutch business community" (2014a, 20). Indeed, "the Netherlands has a strong maritime and offshore services sector specialised in complex, specific systems and operations" (The Netherlands NWO 2014a, 16), and, of course, there are new opportunities foreseen for tourism (2014a, 9).

In terms of resource utilization and energy, the climate change indicator notes that access to natural resources, such as oil and gas, will likely improve (2014a, 9). To that end, the Strategy Plan quotes the *Shell* website and notes that "developing the Arctic could be essential to securing energy supplies for the future, but it will mean balancing economic, environmental and social challenges" (Shell 2014a, 16). It is not surprising, therefore, that sustainable development or rather 'sustainable exploitation' is one of the Netherlands' research themes, although the Strategy Plan does comment on "increasing global demand for natural resources, interest in mining activities and fisheries is increasing in the polar regions. New transportation routes and new op-

portunities for polar tourism are also opening up" (2014a, 15). However, there is no specific mentioning oil and gas (unlike minerals). Regardless of industry, the northern economy will be of benefit to the Netherlands. Certainly, the "business community forecasts for the coming 10 years indicate an expected general increase in economic activity in various forms. With that, there is talk of rapidly developing business (on a scale of billions of euros) with the growing need for 'polar expertise' and influence in the region" (2014a, 7). Based on this, it seems that even though the Netherlands is not located in the Arctic, the country has much to offer.

In terms of how northern economic activities are being prioritized, the strategy demonstrates synergies between the business and scientific communities. In the context of polar expertise and the strategy's research areas, "scientific research can be important to the Dutch business community and to the Dutch government that (usually together with other countries) shoulders responsibility concerning the permissibility and concrete substantiation of these developments within the frameworks of applicable international treaties. The topics within the NPP have many overlaps with a number of the economic priority areas" (2014a, 7): these have been identified as "Water, Energy and Transport" (2014a, 7). For example, under the sustainable exploitation research topic, "Policy-driven research within this theme should provide information about the capacity of and environmental effects on the polar regions when using natural resources, conducting maritime operations and using the area for transport." Important topics within this theme include:

- "Research that contributes to proper management of fish and marine krill populations;
- Mining in cold regions and the associated environmental problems;
- Research that contributes to knowledge of the local (territorial), social, legal, economic and political frameworks under which companies operate (this topic overlaps with theme 4)" (2014a, 15).

The Strategy Plan also comments that "polar research is a motor for technological development. In the near future, research into specific equipment and technologies and knowledge about safe and environmentally friendly ways of working in low temperatures will be essential. Collecting data in extreme weather conditions and at extremely remote locations makes the design of specific equipment and methods necessary" (2014a, 20).

The **Tourism** indicator, which accounts for 3 % of the total coded quotes (see Figure 22, p. 214) recognizes that the tourist sector can expand. As a consequence, "the number of maritime operations will increase strongly through the years, along with the pressure to implement more permanent facilities (such as harbours, tourist facilities, etc.) in the polar regions." At the same time, "the expected increase in maritime operations in the Arctic (coastal) areas and of tourist activities in both polar regions demands research into methods and technologies for managing the risk and safety of such operations." Furthermore, "due to the current and predicted decrease in sea ice in polar regions, in combination with the increasing global demand

for natural resources, interest in mining activities and fisheries is increasing in the polar regions. New transportation routes and new opportunities for polar tourism are also opening up" (2014a, 9, 15, 16).

There is not much in the Strategy Plan about the **Infrastructure** indicator which accounts for 2 % of the total coded quotes (see Figure 22, p. 214), all of which are connected to climate change. For example, the strategy notes that shipping times will likely be shorter (2014a, 9), and "as a consequence, the number of maritime operations will increase strongly through the years, along with the pressure to implement more permanent facilities (such as harbours, tourist facilities, etc.) in the polar regions" (2014a, 9). The focus appears to be on maritime infrastructure.

For the **Science and Education** indicator, which accounts for 46 % of the total coded quotes (see Figure 22, p. 214), the emphasis is on science and not education. Regarding the Netherlands science agenda, "with regard to research, this strategy plan combines 'space for science' and 'space for policy'" (2014a, 11). Within this context, there are four key drivers of the Netherlands' scientific agenda that address both science and policy. These are reflected in the Strategy Plan's research themes, which are: "4.1. Ice, climate and rising sea levels; 4.2. Polar ecosystems; 4.3. Sustainable exploitation; 4.4. Social, legal and economic landscape" (2014a, 14–16). These themes cover drivers such as climate change, ecosystems, environmental protection, economic development, and the effect of these on people and communities. It is important to note that the Netherlands does not necessarily determine these areas by itself; "when formulating the themes, the Grand Challenges as identified by the European Commission were included" and "the objectives of the European Polar Board, Europe's strategic advisory body for scientific policy in the polar regions (EPB), the Arctic Council, the Antarctic Treaty and the International Arctic Science Committee (IASC) were included in the formulation of the research themes in this strategy plan" (2014a, 13).

One of the main functions of this research agenda is the creation of knowledge. The strategy states that "*the NPP helps generate knowledge about the polar regions – knowledge that provides us insight into how our planet works and how it will react to the imminent changes, and knowledge that contributes to safe, responsible decisions with respect to the conduction of activities in the polar regions*" (2014a, 5). There is a fifth research theme in addition to those mentioned above that seeks to generate interdisciplinary knowledge: '4.5. Transcending the themes' whereby "connections between fields of research occur in various areas. These so-called cross-cutting issues connect the four themes... This interdisciplinarity within the Dutch polar research community can be strengthened by formulating research questions that either fall within various themes or that connect the themes" (2014a, 17).

In addition to creating knowledge, there appear to be four other purposes served by the research. i) Research provides a better understanding of the poles and their implications for the Netherlands. For instance, "knowledge about changes in the

polar regions and the consequences of these for the Netherlands remains strategically important" (2014a, 7); ii) Research can help with economic development. Along these lines, the Strategy Plan states that "the topics within the NPP have many overlaps with a number of the economic priority areas" (NWO 2014a, 7) and "in the near future, research into specific equipment and technologies and knowledge about safe and environmentally friendly ways of working in low temperatures will be essential" (2014a, 20); iii) It helps support policy, as "the results of Dutch research into the polar climate system are increasingly finding an audience with (inter)national policymakers" (2014a, 14). However, there can be a disconnect between research and policy as "the questions that the ministries wish to see answered for purposes of policy support are not always the same questions that science itself generates: after a policy-driven call for proposals, the most important and urgent policy questions do not always generate the most excellent research proposals. Conversely, the most excellent research proposals do not always address the most important and urgent policy questions" (NWO 2014a, 11); iv) "this knowledge can also provide solutions. Changes in the polar regions —and, particularly, in the area around the North Pole—also provide opportunities for the Netherlands. Which opportunities and which threats arise in and due to a world of ice that is rapidly changing?" (NWO 2014a, 7).

The Strategy Plan mentions different types of science infrastructure. There are research stations in the Arctic. In particular, the document notes that "since 1995, the Netherlands has rented a modest research facility in Ny-Ålesund. This research facility enables Dutch scientists to participate in international research activities and to use other research facilities present at Ny-Ålesund" (2014a, 24). The facility is, however, in need of renovation, and the Kings Bay Marine Laboratory cannot provide all the services needed. This means, however, that "there is now an excellent opportunity for building a new accommodation in Ny-Ålesund in collaboration with AWI and IPEV (AWIPEV)" (2014a, 24). The Strategy Plan also recognizes other infrastructure in the Arctic, such as the Svalbard Integrated Arctic Earth Observing System (SIOS) where "the Dutch research station in Ny-Ålesund can make an important contribution to this initiative" (2014a, 20). Additionally, the German Alfred-Wegener-Institut für Polar- und Meeresforschung (AWI) "has also made research facilities available at the Koldewey Station on Spitsbergen" (2014a, 23) and "the Belgian Princess Elizabeth Base may be an interesting terrestrial fieldwork location for Dutch scientists" (2014a, 19). The Strategy Plan acknowledges the importance of these other facilities and states that "the Netherlands will have to contribute proportionally to the maintenance/construction/rental of our international partners' Arctic and Antarctic logistical and infrastructural facilities, if we want to be able to maintain our privileged collaboration with them" (2014a, 19). Moreover, the "polar research requires facilities such as research vessels, weather stations, satellites, drilling rigs, data and knowledge centres and the Netherlands will have to contribute to this in its collaboration with other countries" (2014a, 27).

In addition to physical infrastructure, the Strategy Plan also recognizes scientific networks and international cooperation. In particular, "Dutch polar research is conducted from areas of its own strength and uses international collaborative partnerships that have been carefully built up" (2014a, 13). To this end, "polar research in the Netherlands has long-term collaborative partnerships in place with the British Antarctic Survey (BAS) and the German Alfred-Wegener-Institut für Polar- und Meeresforschung (AWI)" (2014a, 19). The Netherlands also participated in a PolarNet proposal and "the University of Groningen coordinates the Dutch involvement in this consortium" (2014a, 20). The Strategy Plan also notes that in the case of the research agenda in the Dutch topic of transcending themes, "the European Polar Board has also designated these two basic threads [acquiring fundamental knowledge of the polar regions, and monitoring and/or long-term research] as being hugely important for the European research agenda Horizon 2020" (2014a, 17), which could potentially expand the Dutch scientific network.

There are also other research networks of importance to the Netherlands. In particular, the strategy notes that "the important activities and organisations for the polar region are

- Contract with the University of Groningen's Arctic Centre concerning management of the Dutch Polar Station on Spitsbergen
- European Polar Board
- International Arctic Scientific Council (IASC)
- Workgroups in the Arctic Council (AC)
- European Framework programmes" (2014a, 21)

As mentioned, the Netherlands collaborates with Norway (see: 2014a, 19), but there is also potential for other collaborations. For example, the Strategy Plan mentions Russia as a potential collaborator and "its large territorial presence in the North Polar region…Dutch research efforts already present in Northern Russia… further collaboration with Belgian scientists might be important for the Netherlands" (2014a, 19). Partnering with Belgium would make sense considering their research station mentioned above.

Research funding is also important. The "NPP's financing is subdivided into three Clusters. Curiosity-driven—or science-driven—acquisition of knowledge about the consequences of changes in the polar regions is included in the NPP's Cluster I. Cluster II is structured in order to generate policy-driven and application-oriented knowledge. The intended collaboration with private partners is also included in this" (NWO 2014a, 11). The third cluster is a little different as it "is intended primarily for financing work for and contributions to international organisations" (2014a, 11).

There are two main ways funds will be awarded. First, "open rounds of competition will be held for the entire area of polar research, with a call amount of approximately €2 million, for which interested polar scientists may submit proposals. This concerns a programme for promising, but relatively small-scale, top research (one Ph.D. or postdoc scientist)" (2014a, 25). Second, "there is a provision to award a number of new

core programmes (each a total of €1–3 million for 5 years). The research proposals must fit within the four indicated themes" and can seemingly be for research and policy driven research (2014a, 25). There is also "the possibility of coordinating with international calls [which] will be reviewed each time an opportunity presents itself" (The Netherlands NWO 2014a, 26).

The **Implementation** indicator does not identify a particular list of recommendations or action items, but it does provide much information on the Netherlands' research funding and made suggestions for improvement. The Strategy Plan is clear that "the Netherlands Polar Programme (NPP) is a financing programme that invests in scientific research into the polar regions" (2014a, 7). The NWO considers the amount of money allocated in the past and suggests that more is needed. The strategy states that "the ambition of this strategy plan is the continuation of a long-term basis of financing for the Netherlands Polar Programme. In 2009, the Terlouw Commission evaluated the NPP and recommended financing on a scale of €6.5 million per year. That level of financing was not achieved in the time period 2011–2015. Considering the high costs, mainly for the logistical and infrastructural facets within polar research, and the need to be able to make multiple-year financial commitments to our international partners, NWO is calling for an effective and ambitious growing polar research programme… to achieve a proper first alignment with the economic priority areas, NWO considers budget growth to €10 million per year necessary" (2014a, 7–8).

The Strategy Plan also provides a comparison with the UK, another Observer country, to suggest that not enough funding is currently being provided. In particular, the Strategy Plan states that "the Netherlands Polar Programme invested €3.7 million per year in polar research and policy support in the 2011–2015 period. NWO contributes €0.75 million per year to this. By way of comparison: the UK maintains an expensive logistical infrastructure and invests approximately €60 million annually in polar research" (2014a, 27).

The Preface to the strategy notes that the current Strategy Plan is a follow-up to the previous one. In particular, the Preface states that "in 2010, at the request of Ronald Plasterk, the Minister of Education, Culture and Science at that time, the Master Plan for Pole Position - NL was published, in which plans were elaborated for the New Netherlands Polar Programme (NNPP) for the period 2010–2014. The 2016–2020 Scientific Strategy Plan… is an updated continuation of the Master Plan" 2014a, 5). This contributes to strategic implementation, as well as demonstrating policy continuity.

There is also follow-up in the sense that the Netherlands Polar Committee carries out a number of duties in relation to administering the program. For example, "the NPC's primary tasks are: writing the calls for proposals necessary for the NPP; representing and promoting the interests of Dutch polar research in national and international committees and organisations; monitoring the progress of NPP research; making recommendations about national and international developments in po-

lar research; encouraging, initiating and coordinating national and international scientific activities in the polar regions; organising an annual polar symposium; functioning as a national point of contact for issues related to the NPP" (2014a, 29). While this is not follow-up to specific tasks, it ensures the tasks are completed and that the program functions.

Two forms of evaluation are also discussed in the strategy: the first is evaluation of the polar program overall. For example, the Strategy Plan references the evaluation document identified at the start of this discussion on the Netherlands. In particular, it notes that "the 2014 NPP evaluation showed that the various stakeholders considered NPP's execution in the period from 2009-2014 to be very much professionalised. This provides encouragement for continuing the existing way of working, in which the necessary adjustments will be made to certain components" (2014a, 25).

The second is the way in which research proposals are evaluated for funding. Both the science (cluster I) and policy (cluster II) streams have their own evaluation process. The strategy states that "research proposals are submitted and evaluated within one of the two assessment frameworks. In this manner, financiers have influence on the direction of the NPP's movements" (2014a, 11). Moreover, "for both frameworks, NWO, the executive party and co-financier of the programme, ensures that all of the research to be financed is of high scientific quality. For both Cluster I and Cluster II, only those proposals whose final evaluations of scientific quality are in the category 'very good to excellent' make the grade" (2014a, 11). Furthermore, "the ranking of proposals within this framework is based on two sets of criteria (scientific versus policy) with a 50–50 weighting formula for scientific excellence versus importance for policy. If a decision must be made about awarding policy-driven research proposals, then the members of the IPO issue a proposal for a decision, after which the NWO-ALW's divisional board makes the formal decision" (2014a, 30).

To Sum Up

As mentioned at the start of the discussion on the Netherlands' Strategy Plan, there are three priorities: 1) increase research and polar knowledge; 2) align research priorities with international polar research agendas; and 3) provide "long-term basis of financing" for research (2014, 7). It is not surprising, therefore, that the Science and Education indicator is the most coded indicator, followed by the Economy and Governance ones. International cooperation is then discussed in connection with the polar research, and the document highlights collaboration with other Arctic states' research institutions.

The Science and Education indicator provides a detailed overview of the Netherlands' approach to polar research. Importantly, it notes that research is about both science and policy. Two of the research priorities are "Ice, climate and rising sea levels" and "Polar ecosystems" (2014, 14, 15), which largely focus on environmental and climate change issues. It is thus not surprising that both the Environmental Protection and

Climate Change indicators discuss research, as does the Pollution indicator.

Other research priorities are "Sustainable exploitation" and the "Social, legal, and economic landscape." There is little in the Strategy Plan about people, as evidenced by the lack of quotes coded to the Human Dimension. In contrast, both of these priorities are concerned with economic activities, which is evidenced by the Economy indicator being one of the second most discussed indicators. Tourism, as part of the economy sector, is briefly mentioned in connection to the increased maritime operations and the need to research technologies for risk and safety of such operations. This indicator also discusses new opportunities in the Arctic for the Netherlands, especially in relation to extractive resources and shipping. Considering these connections, it is understandable that the Strategy Plan states that "scientific research can be important to the Dutch business community" (2014, 7).

The Safety and SAR indicator is connected to both the Science and Education, and Economy indicators as a range of regional economic activities demands research for managing the risk and safety of such operations. The Infrastructure indicator is connected to the Economy indicator as there will be a need for more maritime infrastructure.

As for financing, the Implementation indicator concerns funding sources.

People's Republic of China

China's Arctic Policy was published in January 2018 by the State Council Information Office of the People's Republic of China. The Chinese Government's white paper was issued for, among other reasons, "to elaborate on its policy goals, basic principles and major policies and positions regarding its engagement in Arctic affairs" and the Arctic (People's Republic of China. The State Council 2018, 2).

Those policy goals, according to the Chinese Arctic Policy, are: "to understand, protect, develop and participate in the governance of the Arctic, so as to safeguard the common interests of all countries and the international community in the Arctic, and promote sustainable development of the Arctic" (2018, 4). Correspondingly, the basic principles of how "China will participate in Arctic affairs" and implement the policy goals are stated to be: 'Respect', 'Cooperation', 'Win–win result', and 'Sustainability' (2018, 4–5).

The contents for the policy document (10 pages, no pictures, in PDF from website) is as follows: Foreword; I. The Arctic Situation and Recent Changes, II. China and the Arctic; III. China's Policy Goals and Basic Principles on the Arctic; IV. China's Policies and Positions on Participating in Arctic Affairs: i) Deepening the exploration and understanding of the Arctic, ii) Protecting the eco-environment of the Arctic and addressing climate change, iii) Utilizing Arctic Resources in a Law-

ful and Rational Manner, iv) Participating Actively in Arctic governance and international cooperation, and v)Promoting peace and stability in the Arctic; and Conclusion (2018, 1).

The policy goals of the Chinese Arctic Policy are thus interpreted as the main priorities 1) "to understand, protect, develop and participate in the governance of the Arctic"; 2) international, global cooperation and the international community in the Arctic; and 3) sustainable development of the Arctic (2018, 4). These are well supported by the four basic principles.
The People's Republic of China was accepted as a permanent Observer of the Arctic Council at the Kiruna (Sweden) Ministerial in May 2013 (Arctic Council 2015b).

The **(Re)mapping and (Re)defining the Arctic** indicator reveals that the Chinese Arctic Policy is substantial and exact when defining and mapping the Arctic region, which is "situated at a special geographical location [and refers] to the area of land and sea north of the Arctic Circle totaling about 21 million square kilometres [including] the northernmost landmasses of Europe, Asia and North America adjacent to the Arctic Ocean and the relevant islands, and a combination of sea areas within national jurisdiction, high seas, and the Area in the Arctic Ocean" (2018, 2). Furthermore, "the continental and insular land territories… cover an area of about 8 million square kilometres," and "the Arctic Ocean covers an area of more than 12 million square kilometres." (2018, 2). The indicator also identifies that the region has "a unique natural environment and rich resources, with most of its sea area covered under thick ice for most of the year" (2018, 2), as well as "abundant resources, but a fragile ecosystem" (2018, 7).

Finally, the Arctic Policy clearly states that "China is an important stakeholder in Arctic affairs," followed, first by a simple explanation that, "geographically, China is a 'Near-Arctic State,' one of the continental States that are closest to the Arctic Circle"; and second, that "China is also closely involved in the trans-regional and global issues in the Arctic [and] has long been involved in Arctic affairs" (2018, 3).

Figure 23 shows how many quotes are assigned to the different indicators, as a percentage of the total number of coded quotes (rounded to the nearest whole number) in the document.
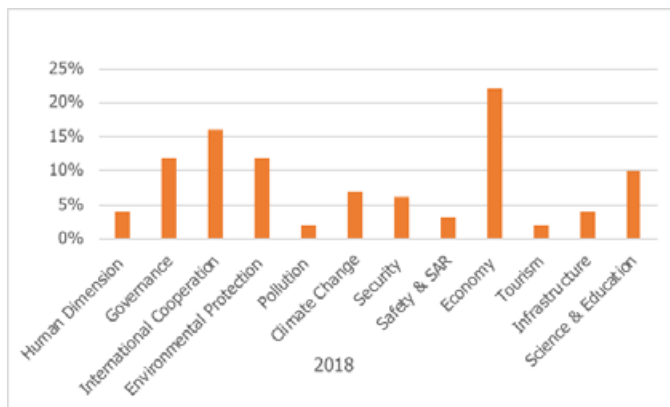
Figure 23. People's Republic of China 2018
Note: The percentages in each indicator are rounded to the closest whole number and represent the percent of the total number of quotes coded for each document.

The **Human Dimension** indicator, accounting for 4 % of the total coded quotes of China's Arctic Policy (see Figure 23) explicitly discusses residents of the Arctic region, and in particular, the Indigenous peoples. "China will… contribute to the economic and social development of the Arctic, improve the living conditions of the local people and strive for common development" (2018, 4). It is especially noted that "to protect the Arctic, China will actively respond to climate change in the Arctic, protect its unique natural environment and ecological system… and respect its diverse social culture and the historical traditions of the Indigenous peoples" (2018, 4).

Following on from the above-mentioned principles, the policy identifies: i) "the key basis for China's participation in Arctic affairs, [namely] …that respect should be reciprocal. [This] means all States should… [also] respect the tradition and culture of the Indigenous peoples" (2018, 4). It next identifies ii) "'cooperation' as an effective means for China's participation in Arctic affairs. [This] means establishing a relationship of multi-level, omni-dimensional and wide- ranging cooperation… [in which] all stakeholders are encouraged to take part in cooperation on… cultural activities" (2018, 4). Correspondingly, the third principle iii) a "'win–win result' is the value pursuit of China's participation in Arctic affairs. Itmeans all stakeholders in this area should pursue mutual benefit and common progress in all fields of activities. Such cooperation should… [also] accommodate the interests of local residents including the Indigenous peoples" (2018, 5). Finally, the fourth principle, iv)'Sustainability' is "the fundamental goal of China's participation in Arctic affairs… promoting the sustainable development of the Arctic by ensuring the sustainability of environmental protection, resource utilization and human activities in the area… realizing harmonious coexistence between man and nature…and intergenerational equity" (2018, 5).

The **Governance** indicator accounts for 12 % of the total coded quotes of the Arctic Policy (see Figure 23). This indicator first notes that "there is no single comprehensive treaty for all Arctic affairs"; and second, identifies that "the Charter of the United Nations, the United Nations Convention on the Law of the Sea

(UNCLOS), the Spitsbergen Treaty and other treaties and general international law govern Arctic affairs at present" (2018, 2). It notes, too, that "in 1925, China joined the Spitsbergen Treaty and started to participate in addressing Arctic affairs" (2018, 3). It later states that "China is committed to improving and complementing the Arctic governance regime… China takes an active part in the international governance of the Arctic… upholds the current Arctic governance system with the UN Charter and the UNCLOS as its core, plays a constructive part in the making, interpretation, application and development of international rules regarding the Arctic, and safeguards the common interests of all nations and the international community" (2018, 8).

Furthermore, "China supports efforts to formulate a legally binding international agreement on the management of fisheries in the high seas portion of the Arctic Ocean… supports the establishment of an Arctic fisheries management organization or making other institutional arrangements based on the UNCLOS" (2018, 8).

The *Policy* does not explicitly note 'self-governance' or 'self-determination,' but clearly states that "China respects the sovereign rights of Arctic States over oil, gas and mineral resources in the areas subject to their jurisdiction in accordance with international law, and respects the interests and concerns of residents in the region" (2018, 7). The document also discusses Chinese involvement "in the trans-regional and global issues in the Arctic, especially in such areas as climate change, environment, scientific research, utilization of shipping routes, resource exploration and exploitation, security, and global governance" (2018, 3). Final, it states that "China enjoys the freedom or rights of scientific research, navigation, overflight, fishing, laying of submarine cables and pipelines, and resource exploration and exploitation in the high seas, the Area and other relevant sea areas, and certain special areas in the Arctic Ocean, as stipulated in treaties such as the UNCLOS and the Spitsbergen Treaty, and general international law" (2018, 3).

Following on from this, the **International Treaties and International Cooperation** indicator, which accounts for 16 % of the total coded quotes of China's Arctic Policy (see Figure 23), emphasizes that China "stands for steadily advancing international cooperation on the Arctic" (2018, 8), and works "with the international community to safeguard and promote peace and stability in, and the sustainable development of, the Arctic" (2018, 2). Furthermore, "as an important member of the international community, China has played a constructive role in the formulation of Arctic-related international rules and the development of its governance system" (2018, 3). Final, the document explicitly mentions an aim "to strengthen such [international] cooperation under the Belt and Road Initiative according to the principle of extensive consultation, joint contribution and shared benefits and emphasized policy coordination, infrastructure connectivity, unimpeded trade, financial integration, and closer people-to-people ties" (2018, 8).

At a global level, "China actively participates in the formulation of rules concerning the global environment, climate change,

international maritime issues, and high seas fisheries management, and fulfills all its international obligations in accordance with the law… promotes global cooperation in tackling climate change, and upholds the principles of equity, common but differentiated responsibilities, and respective capabilities… advocates stronger international cooperation in maritime technology and a globally coordinated solution to reducing greenhouse gas emissions from maritime transport" (2018, 9). At a regional level, China "takes part in Arctic intergovernmental mechanisms… as an accredited observer of the Arctic Council, highly values the Council's positive role in Arctic affairs, and recognizes it as the main intergovernmental forum on issues regarding the environment and sustainable development of the Arctic" (2018, 9). Correspondingly, at bilateral and multilateral levels, "China promotes practical cooperation in all fields," such as climate change, scientific expeditions, environmental protection, shipping routes, resource development, submarine fiber-optic cables, cultural exchanges" (2018, 9).

Cooperative partnerships are proposed with the Arctic states and non-Arctic States. Of the Arctic states, it is first proposed, with the United States, to "set up an annual dialogue mechanism for bilateral dialogues on the law of the sea and polar issues"; secondly, with Russia, China has "been conducting dialogues on Arctic issues"; thirdly, with Iceland, China has "signed the Framework Agreement on Arctic Cooperation… [as] the first intergovernmental agreement on Arctic issues between China and an Arctic State" (2018, 9). Of the non-Arctic States, "bilateral dialogues on the law of the sea and polar issues [are identified] with the United Kingdom and France," and "high-level trilateral dialogues on Arctic issues [with Japan and the Republic of Korea] to promote exchanges on policies, practices, and experience regarding Arctic international cooperation, scientific research, and commercial cooperation" (2018, 9). China has also participated in platforms on Arctic governance and international cooperation, such as The Arctic: Territory of Dialogue, The Arctic Circle, Arctic Frontiers, and in particular, the China–Nordic Arctic Research Center (CNARC) "promoting exchanges and cooperation among the stakeholders" (2018, 9).

Among major international agreement and organizations, as mentioned earlier, are identified first of all, the UN Charter and UNCLOs, the International Maritime Organization (IMO) at global level, and at regional level, Spitsbergen Treaty, Arctic Council and University of the Arctic.

The **Environmental Protection** indicator accounts for 12 % of the total coded quotes of China's Arctic Policy (see Figure 23, p. 220). This indicator notes that the Arctic "has abundant resources, but a fragile ecosystem" (2018, 7), and "is home to several endangered species of wild fauna and flora from around the globe" (2018, 6). At the same time, commercial activities "may also pose a potential threat to the ecological environment of the Arctic… [which] is now undergoing rapid changes" (2018, 2). Furthermore, "the natural conditions of the Arctic and their changes have a direct impact on China's climate system and ecological environment, and, in turn, on its economic interests in agriculture, forestry, fishery, marine industry and other sectors" (2018, 3).

China is thus "closely involved in the trans-regional and global issues in the Arctic, especially in such areas as climate change, environment, scientific research" (2018, 3). China "follows international law in the protection of the natural environment and ecosystem of the Arctic and conservation of its biological resources, and takes an active part in addressing the challenges of environmental and climate change in the Arctic (2018, 6)… China always gives top priority to resolving global environmental issues, earnestly fulfills its obligations under relevant treaties, and discharges its responsibility of environmental protection… [for example] China's emission reduction measures have a positive impact on the climatic and ecological environment of the Arctic" (2018, 6). Finally, the Arctic Policy notes that China "is committed to properly protecting Arctic biodiversity and advocates transparent and reasonable exploration and utilization of Arctic genetic resources… [and] hopes to strengthen cooperation with the Arctic coastal States on the research, conservation, and utilization of fishery resources" (2018, 8).

In terms of international law in general, UNCLOS and the Arctic Council are identified as the international bodies regarding environmental protection and sustainable development. The Arctic Policy does not explicitly reflect on monitoring, except for noting that China "requires its enterprises to observe the laws of the relevant States and conduct risk assessments for resource exploration, and encourages them to participate in the exploitation of oil, gas and mineral resources in the Arctic, through cooperation in various forms and on the condition of properly protecting the eco-environment of the Arctic" (2018, 7).

The **Pollution** indicator, accounting for 2 % of the total coded quotes of China's Arctic Policy (see Figure 23, p. 220), is briefly noted and mentions greenhouse gases and carbon (2018, 9), "ship discharge, offshore dumping, and air pollution" (2018, 6), and, in general, polluting of the marine Arctic environment, are also identified. The *Policy* also states that respects all the legally binding agreements adopted by the Arctic Council (2018, 9). China promises support to "the Arctic coastal States in their efforts to reduce pollutants in the Arctic waters from land-based sources… [and] commits itself to raising the environmental responsibility, awareness of its citizens and enterprises" (2018, 6).

The **Climate Change** indicator accounts for 7 % of the total coded quotes of China's Arctic Policy (see Figure 23, p. 220, p. 222). This indicator is not one of the most substantial, although the *Policy* clearly states that "to protect the Arctic, China will actively respond to climate change in the Arctic, protect its unique natural environment and ecological system" (2018, 4). Further, although mitigation is not explicitly noted, the *Policy* states that "China's emission reduction measures have a positive impact on the climatic and ecological environment of the Arctic" (2018, 6). Due to the existing and potential climate change consequences, it is obvious that "the Arctic natural environment is now undergoing rapid changes" (2018, 2). The policy identifies first of all, that "global warming in recent years has accelerated the melting of ice and snow in the Arctic region" (2018, 1); second, that "fish stocks have shown a tendency to move northwards due to climate change and other factors… the Arctic has the potential

to become a new fishing ground in the future" (2018, 7–8); and finally that, "the Arctic shipping routes are likely to become important transport routes for international trade" (2018, 7).

Again, in addition to international cooperation on climate change and international law in general, such the UN Charter, the *Policy* notes that China "also promotes global cooperation in tackling climate change, and upholds the principles of equity, common but differentiated responsibilities, and respective capabilities [and] urges developed countries to fulfill their commitments under the UN Framework Convention on Climate Change, the Kyoto Protocol, and the Paris Agreement, and provides support to fellow developing countries in addressing climate change" (2018, 9).

The **Security** indicator accounts for 6 % of the total coded quotes of China's Arctic Policy (see Figure 23, p. 220). As "promoting peace and stability in the Arctic" is one of the priorities of China's Arctic Policy, and peace is a core of security/security studies, it is natural that this indicator is greatly focused upon in the *Policy*. The document notes, first, that "peace and stability in the Arctic provides a significant guarantee for all activities in the region, and serves the fundamental interest of all countries including China" (2018, 10); second, it promises "to work with the international community to safeguard and promote peace and stability in, and the sustainable development of, the Arctic" (2018, 2); and finally, it appeals to others, calling "for the peaceful utilization of the Arctic and commits itself to maintaining peace and stability, protecting lives and property, and ensuring the security of maritime trade, operations and transport in the region" (2018, 10).

Clearly, China is considering reinforcing cooperation with the Arctic States in many fields, such as maritime and air search and rescue, and information sharing so that it can handle security challenges properly, for instance, maritime accidents; it is also considering involvement "in the trans-regional and global issues in the Arctic, especially in such areas as climate change, environment, scientific research, utilization of shipping routes, resource exploration and exploitation, security, and global governance" (2018, 3). Moreover, "as a permanent member of the UN Security Council, China shoulders the important mission of jointly promoting peace and security in the Arctic" (2018, 3), and "supports the peaceful settlement of disputes over territory and maritime rights and interests by all parties concerned in accordance with such treaties as the UN Charter and the UNCLOS and general international law" as well as supporting efforts "to safeguard security and stability in the region" (2018, 10).

As already mentioned in the Governance indicator, sovereignty is explicitly noted, as the *Policy* first identifies that sovereignty over the land territories and waters of the Arctic region (covering about 8 million square kilometres) belongs to "Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the United States, respectively… [and that the] coastal States have within their jurisdiction internal waters, territorial seas, contiguous zones, exclusive economic zones, and continental shelves in the Arctic Ocean" (2018,2). Second, it identifies that "China

respects the sovereign rights of Arctic States over oil, gas and mineral resources in the areas subject to their jurisdiction in accordance with international law, and respects the interests and concerns of residents in the region" (2018, 7). At the same time, and limited to the previous quotations, the document identifies that "the Arctic Ocean covers an area of more than 12 million square kilometers, in which coastal States and other States share maritime rights and interests in accordance with international law… [and] certain areas of the Arctic Ocean form part of the high seas and the Area" (2018, 2) (meaning the above-mentioned that of the Arctic Ocean). It also states that "China enjoys the freedom or rights of scientific research, navigation, overflight, fishing, laying of submarine cables and pipelines, and resource exploration and exploitation in the high seas, the Area and other relevant sea areas, and certain special areas in the Arctic Ocean, as stipulated in… international law" (2018, 3).

The **Safety and SAR** indicator, which accounts for 3 % of the total coded quotes of the policy (see Figure 23, p. 220), briefly notes that "China attaches great importance to navigation security along the Arctic shipping routes. It has actively conducted studies on these routes and continuously strengthened hydrographic surveys with the aim of improving the navigation, security and logistical capacities in the Arctic" (2018, 7). In addition, China promises to abide by the Polar Code and support the IMO "in playing an active role in formulating navigational rules for the Arctic." It calls "for stronger international cooperation on infrastructure construction and operation of the Arctic routes" (2018, 7).

The **Economy** indicator accounts for 22 % of the total coded quotes of China's Arctic Policy (see Figure 23, p. 220). This indicator clearly shows the general ambivalence of Arctic development in the 21st century. This is shown in the short sentence, "the Arctic has abundant resources, but a fragile ecosystem," and the close-following statement that "China advocates protection and rational use of the region and encourages its enterprises to engage in international cooperation on the exploration for and utilization of Arctic resources by making the best use of their advantages in capital, technology and domestic market" (2018, 7). This approach is supported by the two policy priorities: "deepening the exploration and understanding of the Arctic", and "utilizing Arctic resources in a lawful and rational manner" (2018, 1).

Among commercial activities in the Arctic explicitly identified in the *Policy* are "global shipping, international trade and energy supply," which "bring about major social and economic changes, and exert important influence on the way of work and life of Arctic residents including the Indigenous peoples" (2018, 2). Other activities are "the exploitation of oil, gas, and mineral resources" as well as other non-living resources (2018, 7), and tourism. In general, "the utilization of sea routes and exploration and development of the resources in the Arctic may have a huge impact on the energy strategy and economic development of China, which is a major trading nation and energy consumer in the world." (2018, 3). Finally, the "Polar Silk Road" initiative is identified as the Chinese tool for conducting economic activities in the Arctic, in particular in transportation and shipping. The

Policy notes that China encourages "its enterprises to participate in the infrastructure construction for these routes and conduct commercial trial voyages in accordance with the law to pave the way for their commercial and regularized operation" (2018, 7).

This results, on the one hand, from China's involvement "in the trans-regional and global issues in the Arctic, especially in such areas as climate change, environment, scientific research, utilization of shipping routes, resource exploration and exploitation, security, and global governance" (2018, 3), and, on the other hand, "the freedom or rights of scientific research, navigation, overflight, fishing, laying of submarine cables and pipelines, and resource exploration and exploitation in the high seas," which China is also said to enjoy (2018, 3). All this is happening under, and integrated into, the basic principles. For instance, under 'Cooperation,' resource utilization is put together with cultural activities (2018, 4), and while 'Sustainability,' which is "the fundamental goal of China's participation in Arctic affairs… means promoting the sustainable development of the Arctic by ensuring the sustainability of environmental protection, resource utilization and human activities in the area" (2018, 4). Finally, the *Policy* vows that China "attaches importance to the sustainable development and biodiversity protection of the Arctic" (2018, 6).

Following on from the previous indicator, the **Tourism** indicator, accounting for 2 % of the total coded quotes of the policy (see Figure 23, p. 220), identifies 'Arctic tourism' as "an emerging industry [with China being] a source of tourists to the Arctic" (2018, 8). Indeed, "participating in developing tourism resources" is one of the sub-themes of utilizing Arctic resources, where China: i) "supports and encourages its enterprises to cooperate with Arctic States in developing tourism in the region, and calls for continuous efforts to enhance security, insurance, and rescue systems to ensure the safety of tourists in the Arctic"; ii) "conducts training for and regulates Chinese tourism agencies and professionals involved in Arctic tourism, and endeavors to raise the environmental awareness of Chinese tourists"; and iii) "advocates low-carbon tourism, ecotourism, and responsible tourism, and hopes to contribute to the sustainable development of Arctic tourism" (2018, 8).

Concerning the **Infrastructure** indicator, which accounts for 4 % of the total coded quotes of the policy (see Figure 23, p. 220), the focus is on shipping and technical innovation and on the Belt and Road Initiative (BRI). The two first as activities are connected to the BRI. The *Policy* further notes that China "hopes to work with all parties to build a 'Polar Silk Road' through developing the Arctic shipping routes" (2018, 7), and furthermore, "advocates stronger international cooperation in maritime technology and a globally coordinated solution to reducing greenhouse gas emissions from maritime transport" (2018, 9). The *Policy* ends by stating that "on the basis of the principles of 'respect, cooperation, win–win results and sustainability,' China, as a responsible major country, is ready to cooperate with all relevant parties to seize the historic opportunity in the development of the Arctic… [and to] advance Arctic-related cooperation under the Belt and Road Initiative, so as to build a community with a shared future for mankind and contribute to peace, stability and sustainable devel-

opment in the Arctic" (2018, 10). Finally, by standing for steadily advancing international cooperation in the Arctic, the policy notes that China "has worked to strengthen such cooperation under the Belt and Road Initiative according to the principle of extensive consultation, joint contribution and shared benefits and emphasized policy coordination, infrastructure connectivity, unimpeded trade, financial integration, and closer people-to-people ties" (2018, 8).

The *Policy* also notes that "the availability of technical equipment is essential to understanding, utilizing and protecting the Arctic," and therefore that "China encourages the development of environment-friendly polar technical equipment, actively participates in the building of infrastructure for Arctic development,… [and, for example] promotes technology innovation in Arctic oil and gas drilling and exploitation, renewable energy development, navigation and monitoring in ice zones, and construction of new-type icebreakers" (2018, 6). It is a long list of aims of technical innovation.

The **Science and Education** indicator, accounting for 10 % of the total coded quotes of China's Arctic *Policy* (see Figure 23, p. 220), identifies that the *Policy* interprets the Arctic as holding "great value for scientific research" and that therefore "to explore and understand the Arctic serves as the priority and focus for China in its Arctic activities" (2018, 5). Following on from this, and in order to understand the Arctic, "China will improve the capacity and capability in scientific research on the Arctic, pursue a deeper understanding and knowledge of the Arctic science, and explore the natural laws behind its changes and development, so as to create favorable conditions for mankind to better protect, develop, and govern the Arctic" (2018, 4). Finally, international cooperation on Arctic research is noted as being actively promoted; the document pushes "for an open and inclusive international monitoring network of the Arctic environment, supports pragmatic cooperation through platforms such as the International Arctic Science Committee, [and] encourages Chinese scientists to carry out international academic exchanges and cooperation on the Arctic" (2018, 5–6).

China began to conduct research in the Arctic in 1999, and since then "has organized a number of scientific expeditions in the Arctic, with its research vessel Xue Long (Snow Dragon) as the platform… In 2004, China built the Arctic Yellow River Station in Ny Alesund in the Spitsbergen Archipelago. By the end of 2017, China has carried out eight scientific expeditions in the Arctic Ocean" (2018, 3). By using its research vessel and stations as platforms, "China has gradually established a multi-discipline observation system covering the sea, ice and snow, atmosphere, biological, and geological system of the Arctic" (2018, 3). Among multi-disciplinary research topics identified are "Arctic geology, geography, ice and snow, hydrology, meteorology, sea ice, biology, ecology, geophysics and marine chemistry" (2018, 5). An aim is to make "a greater effort to advance research in the fields of natural science, climate change and ecological environment, accelerate the development of basic subjects such as physics, chemistry, life science and earth science." (REF?) Furthermore, the *Policy* undertakes that China will "strengthen

social science research including Arctic politics, economy, law, society, history, culture and management of Arctic activities, and promote innovation in both natural and social sciences" (2018, 5).

The *Policy* also states China's aim "to strengthen personnel training and public awareness of the Arctic, support higher learning and research institutions to train professionals specialized in natural and social sciences on the Arctic… and publish cultural products on the Arctic to improve public knowledge" (2018, 5). Finally, as part of international cooperation on Arctic research the *Policy* "encourages Chinese higher learning and research institutions to join the network of the University of the Arctic" (2018, 6).

The **Implementation** indicator is not explicitly noted in the policy document.

To sum up

Of all the Arctic policies of non-Arctic states and AC observer countries, the Chinese Arctic interests and policy has been internationally the most discussed and speculated upon, already before the *Policy* was launched, as well as studied, examined and discussed after the launch (e.g., Jakobson and Peng 2012; Kopra 2013; Lanteigne 2016; QIN and LI 2017; Heininen 2017; Lim 2018).

The *Policy* does not have a very plentiful amount of text but is densely worded and takes a holistic approach. Based on our quantitative measuring, the Economy indicator is the highest priority of China in the Arctic and among Arctic activities. It is not surprising that the Belt and Road Initiative plays, as in general in China's foreign (economic) policy, an important role in China's Arctic policy.

The second most-coded indicator is International Cooperation, although it could be interpreted as being more a means than a priority per se. Therefore, and taking into consideration quality, it is fair to identify the Environmental protection indicator and/or that of Governance as the second priority. In particular, as mitigation is not explicitly mentioned in the climate change indicator, the document notes that "China's emission reduction measures have a positive impact on the climatic and ecological environment of the Arctic" (2018, 6). Here the Arctic *Policy* of China reveals the general ambivalence about how states, in particular non-Arctic states but also some Arctic states, consider Arctic development in the 21st century of globalization: "the Arctic has abundant resources, but a fragile ecosystem" (2018, 7), and at the same time commercial activities "may also pose a potential threat to the ecological environment of the Arctic… [which] is now undergoing rapid changes" (2018, 2). Therefore "China advocates protection and rational use of the region and encourages its enterprises to engage in international cooperation on the exploration for and utilization of Arctic resources by making the best use of their advantages in capital, technology and domestic market" (2018, 7).

In the long run very relevant, even fundamental, is that the Governance indicator notes that the sovereignty of the land territories and waters of the Arctic region belong to the Arctic states, and these coastal states "have within their jurisdiction internal waters, territorial seas, contiguous zones, exclusive economic zones, and continental shelves in the Arctic Ocean" (2018, 2) which China respects, while at the same time, identifying that China enjoys "the freedom or rights of scientific research, navigation, overflight, fishing" (2018, 3) and other activities and resource exploitation in the high seas in general, including certain special areas in the Arctic Ocean. It is a little surprising that Science and Education, although the first field under the title "Deepening the exploitation and understanding of the Arctic," (2018, 5) is addressed in greater detail.

The Human dimension is explicitly noted as meaning the interests of local residents, including the Indigenous peoples, who are mentioned a few times, and also "the safety of tourists in the Arctic" (2018, 8). All in all, based on the official Arctic policy, China is explicitly committed to maintaining peace and stability in the Arctic, as well as environmental protection there.

Finally, comparing the results of the coding and analysis to the de facto priorities it can be concluded from the two first policy goals, that the focus is on governance of the Arctic, and international, global cooperation, including the international community in the Arctic. The third goal, sustainable development of the Arctic, is less of a focus, as economy is the most quoted indicator. Again, it is important to take into consideration that this indicator includes sustainable development.

Republic of Korea

The Arctic Policy *of the Republic of Korea* was adopted in December 2013 based on the Government's decision on a plan to implement "a comprehensive Arctic policy and follow-up measures" (Republic of Korea Ministry of Oceans and Fisheries 2013, 4). The vision of the Policy, also called "the Master Plan" (15 pages including pictures), is to "contribute to sustainable future of the Arctic by enhancing cooperation with the Arctic states and relevant international organizations in the areas of science, technology and economy" (2013, 5). The Policy "aims for the ROK to: a) strengthen international cooperation; b) build a foundation for polar scientific research; and c) create new business areas (by participating in the Arctic Council and its Working Groups)" (2013, 5).

These three aims are also included the Policy as the following policy goals: "1. Build a cooperative Arctic partnership, 2. Enhance scientific research activities for the Arctic, 3. Explore new business opportunities in the Arctic" (2013, 6). Finally, based on these goals, "from 2013 to 2017, thirty-one key plans will be established to meet the following four major strategic goals: a) strengthening international cooperation with the Arctic region; b) encouraging scientific and technological research capacity; c) pursuing sustainable Arctic businesses; and d) securing institutional foundation" (2013, 5).

The three policy goals: 1) Build a cooperative Arctic partnership; 2) Enhance scientific research activities for the Arctic; and 3) Explore new business opportunities in the Arctic (2013, 6), are interpreted as the priorities.

The Republic of Korea was accepted as a permanent observer of the Arctic Council at the Kiruna Ministerial in May 2013 (Arctic Council 2015b).

The **(Re)mapping and (Re)defining the Arctic** indicator does not exist in the Korean Arctic Policy, as there is no definition either of the Arctic (region) or its (special) features.
Among stakeholders mentioned as being involved in the preparation of the policy are six ministries: "Ministry of Oceans and Fisheries (MOF), Ministry of Foreign Affairs (MOFA), Ministry of Science, ICT and Future Planning (MSIP), Ministry of Trade, Industry and Energy (MOTIE), Ministry of Environment (MOE), Ministry of Land, Infrastructure and Transport (MOLIT) - Korea Meteorological Administration (KMA)," as well as "national research institutes, such as the Korea Maritime Institute (KMI)" and "Korea Polar Research Institute (KOPRI)" (2013, 4).

Figure 24 shows how many quotes are assigned to the different indicators, as a percentage of the total number of coded quotes (rounded to the nearest whole number) in the document.
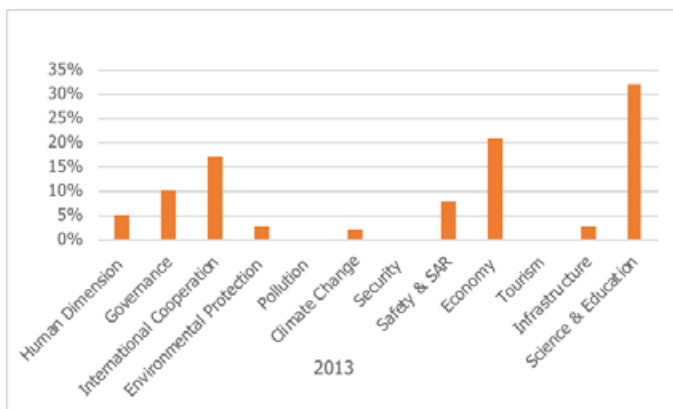
Figure 24. Republic of Korea 2013
Note: The percentages in each indicator are rounded to the closest whole number and represent the percent of the total number of quotes coded for each document.

The **Human Dimension** indicator accounts for 5 % of the total coded quotes of Arctic Policy of the Republic of Korea (see Figure 24). The Policy identifies the melting of the Arctic ice as posing "serious challenges to the livelihoods of residents in the Arctic. It also states that "the increase in human activities may also affect the marine ecosystem… and threaten the livelihoods of residents, including the Indigenous peoples of the Arctic" (2013, 3). There is a special focus on cooperation with Indigenous peoples through cooperation projects "to preserve the Arctic's unique history, culture and traditional knowledge" (2013, 8).

The **Governance** indicators, which account for 10 % of the total coded quotes of Arctic Policy of the Republic of Korea (see Figure 24), provides one of the major strategic goals of the Policy aimed at "securing [an]institutional foundation" (2013, 15). To implement that goal, the Policy promises to "Establish [an] institutional base to develop a national polar policy" and "build [a] polar information service center" (2013, 15). The Arctic Council is described as a "great opportunity to promote shared interests and cooperation in the Arctic" (2013,3). Among the ROK's major goals here is an of expansion of "activities in the Arctic Council and its bodies" (2013, 6), and establishment of "a plan to increase the participation of Korean experts in the six Working Groups" of the AC (2013, 8).

It is thus not surprising to find that the **International Treaties and International Cooperation** indicator, which accounts for 17 % of the total coded quotes of Arctic Policy of the Republic of Korea (see Figure 24), is highlighted in the document. This is because "enhancing cooperation with the Arctic states and relevant international organizations in the areas of science, technology and economy" (2013, 5) is making a contribution to the sustainable future of the Arctic: so, too, is strengthening "cooperation with the region's major fisheries organizations that are associated with the Arctic and its adjacent seas" (2013, 13), and cooperating in "Ship Safety and Marine Environmental Protection" (2013, 8).

Cooperation, both internationally and with bodies of the Arctic Council, is explicitly identified, in the Policy, particularly after ROK gained observer status in the Council, for example, ROK cooperation in the Arctic Hydrographic Commission (ARHC) which ensures provision of "safe nautical charts on the uncharted waters of the Arctic" (2013, 10). Finally, the Policy *notes* that ROK joined the Svalbard Treaty in 2012. Other explicit references in the document are the ROK's intention to: i) "pursue cooperation with Arctic coastal states and nearby nations to carry out Arctic spatial information development projects" (2013, 10), for example, hosting international seminars with, and inviting experts from, the Arctic coastal states; ii) "cooperate with Observer States"; iii) in particular, "increase cooperation activities that contribute to achieving a sustainable Arctic with observer states such as China and Japan"; and iv) "encourage participation in international forums and consultative society such as the Arctic Frontier and Arctic Circle, etc." (2013, 8), as a part of the goal of participating in "the cooperation programmes of the Arctic-related organizations."

Concerning the **Environmental Protection** indicator, which accounts for 3 % of the total coded quotes of the document (see Figure 24), the ROK Policy is brief and a little ambivalent, pointing out that "the melting of the Arctic ice will provide new opportunities for growth," while also posing "serious challenges to the livelihoods of residents in the Arctic and its biodiversity…. However, the increase in human activities may also affect the marine ecosystem, a vulnerable part of the environment, and threaten the livelihoods of residents, including the Indigenous peoples of the Arctic" (2013, 3). Finally, marine environmental protection and ship safety are explicitly mentioned, together

with "the feasibility of the Arctic Sea Routes" (2013, 6), and "research on ways to improve the monitoring of the surrounding environment of the NSRs (Northern Sea Routes)" (2013, 9).

The **Pollution** indicator is not explicitly noted in the Arctic Policy of the Republic of Korea.

The **Climate Change** indicator, which accounts for 2 % of the total coded quotes of the policy (see Figure 24, p. 225), is briefly noted. The Policy promises first, to "carry out more researches on climate change in the Arctic" (2013, 6); second, to "develop a model to identify the causes of Arctic climate change by conducting high-definition atmospheric and marine modelling of the Arctic Sea and reproducing a circulation model of the ocean and sea ice" (2013, 10); and third, to "Conduct Research on Climate Change Forecast Using Arctic Science Infrastructure" (2013, 11).

The **Security** indicator is not explicitly noted in the Arctic Policy of the Republic of Korea.

The **Safety and SAR** indicator, which accounts for 8 % of the total coded quotes of the Arctic Policy (see Figure 24, p. 225), shows the interest of the ROK in "Ship Safety and Marine Environmental Protection." This includes the development of "shipbuilding technologies for the Arctic and for different vessel types… and materials technologies" and the setting up of "national safety standards for polar ships, in preparation for the Polar Code" (2013, 8). The discussion in the section, 'Pursue sustainable Arctic businesses,' includes the goal of developing "shipbuilding and safety technology for polar-class vessels [including] core technology for safe navigation in the polar region" and "for safe navigation of ice class ships along polar routes and relevant testing technology" (2013, 14). There is also a promise in the Policy to develop "a safety training course that teaches the basics of glaciers, emergency responses, and survival methods for crews that board polar operating vessels" (2013, 12).

The **Economy** indicator accounts for 21 % of the total coded quotes of Arctic Policy of the Republic of Korea (see Figure 24, p. 225). The Policy explicitly seeks to "explore new business opportunities in the Arctic" (2013, 6) as a policy goal of the ROK. With respect to resource utilization, the Policy proposes among other things, to "pursue joint research with Arctic states in the fields of resources development, cargo shipping infrastructure, transshipment ports, and the commercial use of NSRs (2013, 12)… lay the foundation for sustainable arctic resource exploration cooperation" by launching "joint exploration of minerals and geological survey with resource-related public entities and institutes" (2013, 13); and "develop offshore plant technology for deepwater resources development" (2013, 14). Under scientific and technological research, it is proposed to introduce capacity to "conduct gas hydrate exploration and deep drilling in the Arctic Sea with Arctic States" (2013, 9).

Sea transportation and navigation is one of the main economic fields identified. For example, the Policy seeks to "establish and implement follow-up measures to the pilot navigations along the Arctic Sea routes…provide consulting services and market research support to make it easier for Korean maritime logistics companies to enter the Arctic Sea market [and] provide possible incentives for the vessels that use the Arctic Sea routes (2013, 12). This is because "decreasing sea ice creates new business opportunities in the Artic in such areas as resources development and commercialization of the Northern Sea Route" (2013, 3). These new economic opportunities also include energy and cargo transport between Asia and Europe by Korean ship and cargo owners and bulk cargo between Asia and Europe. Another noted field is fisheries where the aim is to "strengthen cooperation with the region's major fisheries organizations that are associated with the Arctic and its adjacent seas," and second, to "establish a project group led by the NFRDI (National Fisheries Research and Development Institute), KOFA (Korea Overseas Fisheries Association), PICES, KMI, and KOPRI, and develop a basic plan to strengthen cooperation" (2013, 13).

The **Tourism** indicator is not explicitly noted in the Arctic Policy of the Republic of Korea.

The **Infrastructure** indicator, which accounts for a small share (3 %) of the total coded quotes of the policy (see Figure 24, p. 225), links the development of cargo shipping infrastructure and transshipment ports as part of pursuing joint research with Arctic states. The Policy aims to establish "a basic plan for ports to prepare for the commercialization of the Arctic Sea routes" (2013, 12), and conduct a "feasibility study and establish plan for building a second research icebreaker" (2013, 11).

The **Science and Education** indicator accounts for 32 % of the total coded quotes of the Arctic Policy of the Republic of Korea (see Figure 24, p. 225). This indicator reflects that scientific research is, without a doubt, the major priority of ROK in the Arctic region and Arctic affairs. The Policy's main goal, namely, to "encourage scientific and technological research capacity" is substantial, providing more concrete goals to be implemented, such as to "support the scientific researches of Arctic stations; build science infrastructure… [and] carry out more researches on climate change in the Arctic" (2013, 6), and finally, to "conduct comprehensive arctic sea research by utilizing ARAON" (2013, 9).[19]

The Policy also explicitly identifies the Dasan Arctic Science Station in Svalbard, established in 2002 (in the same year as ROK joined the IASC), as well as support "to start research on geological, atmospheric, and ecological changes" there (2013, 9). Education is explicitly noted, such as training courses on ice navigation and on safety on glaciers, emergency responses, and survival methods for crews that board polar operating vessels. Finally, the Policy aims to "strengthen cooperation with educa-

---

19 For more detailed information on this, see the presentation "Korea's Scientifc Activities in the Arctic" by Jihoon Jeong, Korea Polar Research Institute at NPARC 2016 meeting in 5 July 2016 at Hokkaido University, Sapporo, Japan.

tional institutions such as the University of the Arctic" (2013, 8). The **Implementation** indicator is de facto included in the policy, as it was adopted based on the Government's decision on a plan to implement "a comprehensive Arctic policy and follow-up measures" (2013, 4). Many points in the document begin with words like 'establish', 'develop', 'pursue', etc. and could therefore be interpreted as action items. Finally, the Policy states that it serves "as a framework for developing consistent policies, and Korea will have a committee that would put into action the above-mentioned three policy goals and review their implementation" (2013, 5).

To sum up

The Arctic Policy of the Republic of Korea has a clear vision and is rich in major goals, policy goals, and action items. It is, however, quite minimalistic and rather technical in nature. According to the policy goals, the three dominating indicators are, not surprisingly, Science and Education, Economy, and International Cooperation. It makes sense that these appear in combination leading to a policy document that is more credible and easier to implement.

In contrast, the Environmental protection, Pollution, and Climate Change indicators are not explicitly reflected, but only briefly and partly ambivalently described, under the twofold notion of i) creating "new opportunities for growth", and ii) posing "serious challenges to the livelihoods of residents in the Arctic and its biodiversity" (2013, 3).

Finally, comparing the coding and analysis results to the policy goals, as priorities, it is concluded that the goals of the Policy are among the most focused indicators in what is a short, straightforward, and precise document.

Spain

The *Guidelines for A Spanish Polar Strategy* (in Spanish and English) was released in 2016. The 35-page document includes four chapters: two introductory ones, one about geostrategic aspects and two more substantial chapters on scientific research, logistics and sectoral issues as action proposals (Spain 2016).

The Spanish Arctic Strategy focuses on Spitsbergen and Greenland. It notes that there are historical reasons for Spain having developed and adopted a polar strategy. The continuing historical presence of Spain in the polar regions started in the 16th century, when "Spanish mariners sailed the coasts of North America, reaching the high northern latitudes of the Pacific… seeking the Northwest Passage and the possibility of establishing new settlements" (2016, 7–8), and when "Spanish whalers from Galicia, Cantabria and the Basque Country was first documented" sailing not only "in northern latitudes higher than

the Labrador Peninsula and Newfoundland," but "in the waters of the Svalbard archipelago" (2016, 8). According to the Strategy, "we should not forget that Spain's pioneering presence in the polar regions is an asset that is still insufficiently known in international forums" (2016, 7). Moreover, "a large number of Spanish researchers increased their involvement in international polar science programmes in the early 1980s" (2016, 4). The Strategy concludes that "Spain has a considerable presence in the polar regions" (2016, 17).

According to the Strategy, the Spanish Polar Committee, created in 1998, is "in charge of coordinating activities in the polar regions" (2016, 6). The Directorate for Technological and Scientific Research of the Ministry of the Economy and Competitiveness is in charge of managing activities in Spain. The National Antarctic Region Research Programme (PNIA) was established in 1988, as a part of the 1988–1991 National Plan for Scientific and Technological Development, in the same year as Spain attained the status of Consultative Party of the Antarctic Treaty (2016, 5).

Except for the mention that polar research, including education, is defined as a "strategic priority for the Spanish scientific system" and, further, that "because Spain has a considerable presence in the polar regions, it should also have a high profile in the forums, initiatives and actions" (2016, 17), there is nothing major in the Strategy that could be interpreted as priorities.

Spain has been an Observer country of the Arctic Council since 2006 (Arctic Council 2015b).

Concerning the **(Re)mapping and (Re)defining the Arctic** indicator, the Spanish Polar Strategy defines that "the polar regions are acquiring an ever greater geostrategic and economic interest due, among other factors, to their location, improved potential of access to their natural resources, tourism, fishing, and maritime traffic" (2016,12). Further, these regions "are… extraordinarily fragile, at least until there is sufficient scientific knowledge to ensure their proper management in a sustainable and environmentally-friendly manner" (2016,13); they are also "among the most sensitive to climate change"(2016,10). Finally, the Arctic Ocean is specially identified as being "surrounded by inhabited continents, where the sovereignty of the coastal states can be clearly felt" (2016, 7).

Figure 25 shows how many quotes are assigned to the different indicators, as a percentage of the total number of coded quotes (rounded to the nearest whole number) in the document.
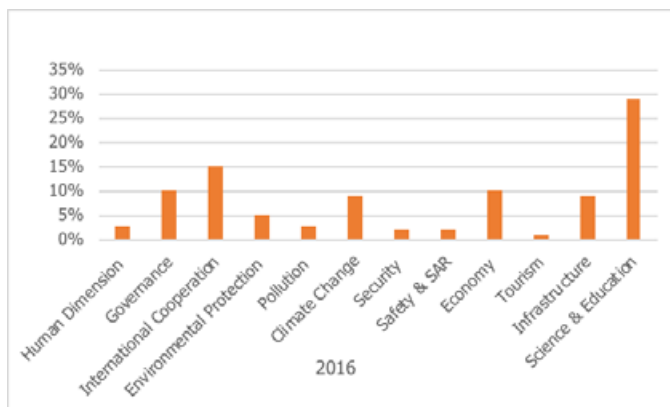
Figure 25. Spain 2016

Note: The percentages in each indicator are rounded to the closest whole number and represent the percent of the total number of quotes coded for each document.

The **Human Dimension** indicator, which accounts for 3 % of the total coded quotes of the Spanish Polar Strategy (see Figure 25), briefly identifies the Arctic regions (North of 60ºN latitude)as "inhabited by Indigenous populations, who are currently facing fast changes in their habitats and their ways of life" (2016, 7). The Strategy maintains that the Indigenous populations "must be taken into account and are entitled to benefit from the activities carried out in their habitat, including respect for their environments and their lifestyles" (2016, 14).

The **Governance** indicators, accounting for 10 % of the total coded quotes of the Spanish Polar Strategy (see Figure 25), capture the fact that "the geostrategic situation is subject to the Arctic countries' sovereignty and jurisdiction, and there is no specific multilateral instrument regulating international spaces, such as the Antarctic Treaty" (2016, 12). Furthermore, the influence of the littoral states of the Arctic Ocean "is compounded by the intervention of organizations, such as the OSPAR Regional Convention and the North East Atlantic Fisheries Commission (NEAFC), and other global organizations like the International Maritime Organization (IMO), with its Polar Code and its MARPOL Convention, the Convention on Biological Diversity, and, above all, the United Nations Convention on the Law of the Sea (UNCLOS), which the Arctic coastal countries have agreed to apply without exception… when they approved the Ilulissat Declaration in 2008" (2016, 12). Here UNCLOS and the IMO's International Code for Ships Operating in Polar Waters are identified as "the natural multilateral framework for managing navigation issues, including polar navigation… [and promoting] the necessary measures for free, safe and environmentally-friendly trans-Arctic maritime transit" (2016, 14).

Inter alia, Spain considers it necessary to "foster peacekeeping, environmental protection and security in the polar regions," as well as maintain a presence there "as an affair of State, and as the basis for its participation in polar activities with all its resources (both civilian and military)" (2016, 13). One important reason is that "any strategic Spanish approach to the fishing industry must consider… that the management of fishery resources is an EU mandate," and that "Spain, as an EU Member State, is now

a member of the NEAFC, whose remit includes Arctic waters" (p. 29). Here, as a general principle guiding Spain's actions regarding fisheries, it is noted that to "ensure the sector's sustainability, which includes respecting the environment and combating illegal, unreported, and unregulated fishing… Spain only carries out fishing activities when permitted by international or national regulations, considering, among other reasons, that protecting the environment is important in order to prevent the pollution" (2016, 29).

The **International Treaties and International Cooperation** indicator accounts for 15 % of the total coded quotes of the Spanish Polar Strategy (see Figure 25). The indicator notes that, in addition to the lifestyles and cultures of the Indigenous Arctic populations, the Strategy supports, "Spain's involvement in all the major polar organizations [in order] to ensure its participation in such fields of special interest as scientific research, environmental protection, natural reserves, energy, industry, resources, polar technologies, bioprospecting, tourism, transport, fisheries" (2016,14). As it has a considerable presence in the polar regions, Spain "should also have a high profile in the forums, initiatives, and actions carried out in the areas of scientific research, technology, sustainable use of natural resources, and freedom of navigation, respecting international and regional regulations and carrying out all of its actions in accordance with the strictest environmental standards" (2016, 17).

The Strategy identifies the major international organizations, where Spain has a member- or observership: i) an Observer country in the Arctic Council, which includes all the Arctic coastal countries as member states and is "gradually gaining in substance and influence at the regional and global levels" (2016, 12). Here the strategy considers that it is in "Spain's geopolitical interest [to have] an Arctic presence and [to maintain] its status as observer country in the Arctic Council" (2016, 14); ii) as a member of the International Arctic Science Committee (IASC) since 2009 ; iii) as a member of the OSPAR Convention; iv) as a member of the European Polar Board (EPB), which promotes coordination among European countries' polar programs, as well as supporting "the expansion to the Arctic of the Convention on Biological Diversity by being involved "in developing the EU's Northern Dimension, in the same way that it promotes an EU Mediterranean policy" (2016, 31). Moreover, Spain is considering becoming a full member of the Barents Euro-Arctic Council (BEAC) to "align with the strategies drawn up by the EU regarding the Arctic" (2016, 14), and to foster the creation, within the framework of the EU Council, of a "specialized commission devoted to polar issues (CPOLAR) as part of the EU's Common Foreign and Security Policy (CFSP); this would serve as a forum for agreement, cooperation and discussion among the EU Member States and for financing all kinds of activities related to the poles" (2016, 14).

The **Environmental Protection** indicator, which accounts for 5 % of the total coded quotes of the Strategy (see Figure 25), clearly identifies the polar regions as being among the most sensitive to climate change and its impacts and consequences, which are "having a far-reaching impact on the region's envi-

ronment and resident populations, and access to its natural reserves" (2016, 10). There is thus a need to protect "the polar environment on the basis of the precautionary principle" (2016, 13). Furthermore, the Strategy alludes to fostering "environmental protection and security in the polar regions" (2016, 13); it also promotes "the implementation of environmental protection and sustainable exploitation policies in the Arctic" (2016, 15) for example, by "promoting the conservation of polar environments and the sustainable use of their natural resources" (2016, 11). Finally, the Strategy states that "exploitation of resources in the polar regions and their transport must be carried out in a stable, sustainable and environmentally friendly manner [and that] a higher priority must be given to maintaining biodiversity and the living conditions of the local populations" (2016, 27).

The Strategy thus reflects the importance of protecting the polar environment by "making use of the best available scientific knowledge at any given moment, including the adoption of the necessary measures to reduce emissions…. [and] using the best scientific knowledge available at any given time" (2016, 13, 15). For example, support for "the creation of protected marine or terrestrial areas [must be] underpinned by the best scientific basis available at any given time" (2016, 15). Support for the protected areas used for the protection of fishing resources must continue, "as long as their definition is based on the best available scientific knowledge and their management is agreed with the major fishery organizations in the region" (2016, 31).

The **Pollution** indicator, accounting for 3% of the total coded quotes of the Strategy (see Figure 25, p. 228), notes that the changes occurring in the polar regions are interpreted by Spain as "an accepted scientific fact [and that they] are induced, primarily, by greenhouse gas emissions." These reach the polar regions due to "atmospheric and oceanic circulation and river runoff, all of which are generated, essentially, outside the polar regions in areas with high-intensity urbanization, industrialization and farming" (2016,9). As there is no "system for preventing and/or addressing the damage produced by marine pollution" (2016, 32), Arctic marine environments must be protected. As a solution, the Strategy offers "the opening of new routes cutting the transit distance… [which will favor] "the proportional reduction of greenhouse gas emissions, although this could be offset by an increase in transaction intensity due to lower logistical costs" (2016, 34).

According to the **Climate Change** indicator, which accounts for 9% of the total coded quotes of the Spanish Polar Strategy (see Figure 25, p. 228), the Strategy refers to the United Nations Framework Convention on Climate Change (UNFCCC) proposal of "a set of measures to address both climate change mitigation and the adaptation to these changes" (p.10), as well as to "the Paris Climate Summit (COP21)" (2016, 10). It also identifies the Arctic as being among the most sensitive regions to climate change, where the effects of climate change "are self-reinforcing," for example, "the heightened thawing of permafrost could trigger substantial emissions of methane and other short-life hydrocarbons, with a greenhouse gas effect that is far more potent than that of carbon dioxide" (2016, 10). These effects are equal to twice "the average recorded worldwide"; they have the effect of "reducing

both the extension and the thickness of the ice, of increasing the seasonal contraction of sea ice, and the melting of permafrost" (2016, 9).

Among other explicitly noted impacts are: i) "the gradual melting of the ice caps," as shown by scientific research, and the effects this will have on "environmental, social, political, geostrategic and economic issues" (2016, 8); ii) "significant environmental changes, which have a direct impact on global climate processes" (2016, 12); iii) "on our planet, polar regions are among the most sensitive to climate change with consequences that… are having a far-reaching impact on the region's environment and resident populations, and access to its natural reserves" (2016, 10); and iv) " intercontinental trade [through the Arctic passages] going to or from ports beyond the Arctic itself will occur in the medium term, possibly after approximately 20 years, if the international scientific community's forecasting models regarding sea ice decline in this polar maritime region are correct" (2016, 32).

These impacts need to take into consideration "the impact of climate change on human populations in the Arctic, including the necessary development of the social and human sciences in an inhabited area with extreme climate conditions and population subjected to fast-moving, radical changes in their environment" (2016, 20). Furthermore, "exploitation of resources in the polar regions and their transport must be carried out in a stable, sustainable and environmentally-friendly manner… a higher priority must be given to maintaining biodiversity and the living conditions of the local populations in these biologically unique areas with such extreme weather conditions" (2016, 27).

The **Security** indicator, which accounts for 2% of the total coded quotes of the Spanish Polar Strategy (see Figure 25, p. 228), identifies the geostrategic situation of the Arctic region as "subject to the Arctic countries' sovereignty and jurisdiction" and remarks that there is "no specific multilateral instrument regulating international spaces, such as the Antarctic Treaty" (2016, 12). Therefore, "scientific research, productive activities and even environmental protection are, in the Artic, under the influence of the coastal countries" (2016, 12). Thereafter, the Strategy, as mentioned earlier, somewhat surprisingly, considers the fostering of; "peacekeeping, environmental protection and security" in the polar regions as a necessity… and that Spain's presence in the polar regions is "an affair of State" (2016, 13).

The **Safety and SAR** indicator, accounting for 2% of the total coded quotes of the Spanish Polar Strategy (see Figure 25, p. 228), notes that "different Arctic routes do not currently have a complete, reliable, accessible system for cartographic information or navigational assistance" and that there is no "a high-seas search and rescue system covering all of the interior seas and straits, nor a system for preventing and/or addressing the damage produced by marine pollution" (2016, 32). It is thus vital to "promote the necessary measures for free, safe and environmentally-friendly trans-Arctic maritime transit, in strict compliance with the 1982 UNCLOS and the IMO's International Code for Ships Operating in Polar Waters (Polar Code), the natural mul-

tilateral framework for managing navigation issues, including polar navigation" (2016, 14).

The Strategy considers that different areas of activity are behind "Spain's sectoral interests in the polar regions." These are related "both to extractive activities and the available natural reserves, new navigable routes, commercial activity in the polar regions, and other fields related to the development of new technologies" (2016, 28), as identified by the **Economy** indicator. This accounts for 10 % of the total coded quotes of the Spanish Polar Strategy (see Figure 25, p. 228). This indicator notes that geostrategic and economic interests in the polar regions are caused, inter alia, by "improved potential of access to their natural resources, tourism, fishing, and maritime traffic" (2016, 12). Furthermore, "exploitation of resources in the polar regions and their transport must be carried out in a stable, sustainable and environmentally-friendly manner [and] a higher priority must be given to maintaining biodiversity and the living conditions of the local populations in these biologically unique areas with such extreme weather conditions" (2016, 27).

Concerning fisheries, the Spanish Strategy is twofold: first, it notes that "Spain only carries out fishing activities when permitted by international or national regulations [because] protecting the environment is important in order to prevent the pollution or deterioration of the fishing grounds from negatively impacting the resources [and] ensure the sector's sustainability, which includes respecting the environment and combating illegal, unreported, and unregulated fishing" (p. 29). Second, it notes that the "fishing industry must consider the fact that the management of fishery resources is an EU mandate, falling under the aegis of its Common Fisheries Policy. It must be taken into account that Spain, as an EU Member State, is now a member of the NEAFC, whose remit includes Arctic waters" (2016, 29).

Finally, the Strategy notes that the status of the Arctic Economic Council (AEC), established in 2014, "has yet to be defined, but… aims to be a forum for cooperation among companies interested in carrying out activities in the Arctic that maintain the highest environmental protection standards…. [and that the AEC] is promoting the development of joint projects with other countries having experience and investment potential regarding Arctic projects, with strict respect for the environment" (2016, 28).

The **Tourism** indicator, accounting for 1 % of the total coded quotes of the Spanish Polar Strategy (see Figure 25, p. 228), is limited and identifies tourism as a field of "special interest," together with other fields and interests, such as scientific research, environmental protection, energy, industry, resources, polar technologies, transport, and support for the lifestyles and cultures of the Indigenous Arctic populations (2016, 14).

The **Infrastructure** indicator, which accounts for 9 % of the total coded quotes of the Spanish Polar Strategy (see Figure 25, p. 228), is all about marine transportation and shipping. The strategy highlights the "two factors favouring the intensification of commercial relations between areas of the Arctic and Spanish ports: Spain straddles major world navigation routes: the Straits

of Gibraltar and the North-South maritime axis. Spain has an overcapacity of turnkey transport and logistical infrastructure" (2016, 32). Furthermore, it identifies that "perhaps the greatest difficulty" will be the inability to duly meet the requirement of regularity demanded by shipping agents regarding intercontinental transport services" (2016, 32) if the Arctic passages cannot stay completely open year-round.

The Strategy remarks that trans-Arctic navigation is a reality, as "cabotage traffic between Arctic countries has been going on for decades, mainly through the Siberian passage, encompassing two major classes of commercial navigation" (2016, 31). Originally, destination or transit ships carried mineral and fishing resources for international distribution. "This flow of commercial traffic is related," according to the Strategy "not only to raw materials, but above all to the intercontinental exchange of semifinished and finished goods (general merchandise), resulting from the consolidation of a global economy" (2016, 32). As a result, the Strategy concludes, or predicts, that "the real impact of the Arctic passages on intercontinental trade going to or from ports beyond the Arctic itself will occur in the medium term, possibly after approximately 20 years, if the international scientific community's forecasting models regarding sea ice decline in this polar maritime region are correct" (2016, 32).

As a permanent opening, the "Northeastern Siberian passage… would lead to a commercial route competitive with the classic southerly routes. Routes crossing the Siberian Arctic connecting ports in the north of China, Japan, and South Korea with the Atlantic coast of northern Europe would offer savings in terms of distance and time with regard to the Malacca/Suez/Gibraltar route" (2016, 33). Here, the Strategy also speculates about possible competition between northern and southern seas routes: "the impact of a fully operational Siberian passage on Spain's logistical positioning in the container market is, unlike that of the Canadian passage, one of facilitating, in the long term, that Spain's Atlantic/Straits of Gibraltar ports could opt to connect with the new transport chains polarized within the North Atlantic arc" (2016, 34). Further, if the western Mediterranean will be competing with the North Atlantic carry goods from Asia, "the key for the southern ports is to improve their land accessibility, an issue addressed in the latest revision… of the Trans-European Transport Network" (2016, 34). All in all, "the opening of new routes cutting the transit distance is going to favour the proportional reduction of greenhouse gas emissions, although this could be offset by an increase in transaction intensity due to lower logistical costs. In any case, it would affect emissions [that are] not within the scope of the EU's current targets, but rather [emissions from] international bunkering, which are being negotiated for inclusion in the mitigation obligations under the UNFCCC" (2016, 34).

The **Science and Education** indicator accounts for 29 % of the total coded quotes of the Spanish Polar Strategy (see Figure 25, p. 228). This indicator is the most substantial part of the strategy and greatly reflective of the main interests of Spain in the polar regions. It identifies the Spanish promotion of "polar scientific research that respects regional legislation and fosters interna-

tional cooperation, out of the conviction that these extreme regions of the Earth, the Arctic and the Antarctic, must be used for peaceful ends and for the sustainable development of the region and of the world" (2016, 10). Spain has had installations in the Antarctic for over three decades, and annually sends expeditions there "representing high levels of development, experience, and findings" (2016, 18). One example is the Oceanographic Research Vessel Hespérides with a "Lloyd Ice Class 1C hull equipped for physical oceanography, hydrography, marine geology and biology and a classification for young ice… to operate in the Antarctic and the Arctic" (2016, 26). Spain's Institute of Geology and Mining (IGME) "is responsible for the National Polar Data Centre" (2016, 26).

As Spain's scientific activity in the Arctic is thus quite recent and the country does not have its own land infrastructure in the region, there is a "need for specific infrastructures and complex logistics, [as] scientific research in the polar regions requires a sufficient level of long-term financing, organization, stability and continuity" (p. 18). Furthermore, "it is necessary to formalize relations with other countries to order to gain access to installations in different geographic areas and to promote research in Arctic waters through oceanographic campaigns using Spanish resources or taking into account the possibility of integrating our oceanographic vessels into Eurofleet" (2016, 21).

The document acknowledges that "scientific cooperation is one of the most effective forms of international cooperation… it can be transformed into essential political capital enabling effective action and supporting the presence of Spain in polar institutions and bodies, enabling it to defend both its own interests and global interests" (2016, 10). Therefore, Spain will advance, among other things, "the development of scientific and technical polar research in the framework of international cooperation" (2016, 13). Moreover, as "participation in international forums is essential to polar research… there must be a strategy for promoting ongoing involvement in international forums based on results assessment and a cost-benefit analysis of the participation" (2016, 24–25), for example, the European Polar Board drafting its Strategic Plan (2016, 19). An example of the best available scientific knowledge and its management could be that "the data collected encompasses not only fishing statistics but also scientific information relevant to studies on biodiversity and biomass evolution" (2016, 30).

The Strategy emphasizes that polar research as a whole is "essential for many branches of science, including environmental earth science and the role of the processes occurring in the environment." For example, due to "our ability to predict the impact of these variations on the local Arctic populations… [we can] foresee the possible effects of these changes in our own latitudes" (2016,10). "The creation of protected marine or terrestrial areas" is also a possibility and would be "underpinned by the best scientific basis available at any given time" (2016, 15). Furthermore, "scientific research in the polar regions is especially important due to the global impact of the processes and discoveries taking place there… the understanding, knowledge and observation of the geological, biological, oceanographic

and atmospheric processes occurring in both the Arctic and the Antarctic are critical to the advancement of our knowledge of the Earth's land and ocean system processes" (p. 18). Finally, due to the isolation of Arctic regions, there is a "need for specific infrastructures and complex logistics…scientific research in the polar regions requires a sufficient level of long-term financing, organization, stability and continuity" (2016, 19).

Due to "the gradual melting of the ice caps as a consequence of climate change" interest in the Arctic and the Antarctic is growing with respect to scientific research and environmental, social, political, geostrategic and economic issues (2016, 8–9). "Scientific research findings are of vital importance to our knowledge of the environmental processes and risks that climate change can bring to our planet," increasing our ability "to foresee the possible effects of these changes in our own latitudes" (2016, 11). The Strategy notes, even emphasizes, that such changes make it important to redefine these extraordinarily fragile regions so that they treated and managed "in a sustainable and environmentally-friendly manner… at least until there is sufficient scientific knowledge" available on how best to manage them (2016, 13). Spain thus wishes to promote "polar scientific research that respects regional legislation and fosters international cooperation, out of the conviction that these extreme regions of the Earth, the Arctic and the Antarctic, must be used for peaceful ends and for the sustainable development of the region and of the world" (2016, 10). The Strategy also considers "polar research to be a strategic priority for the Spanish scientific system, due both to its scientific importance and its high internationalization and repercussions in areas of interest to Spain, both strategically and socio-economically" (2016, 20).

The Strategy identifies many action proposals on scientific research and scientific cooperation in the Arctic…so that Spain can achieve "a high profile in the forums, initiatives, and actions carried out in the areas of scientific research [and] technology" including sustainable use of natural resources, and freedom of navigation (2016, 17). These proposals include, for example, strengthening the Polar Data Centre "to guarantee future access to the data obtained in polar campaigns" (2016, 23); and to establish "a long-term programme to monitor and research relevant aspects of polar science, with the participation of scientists from Spain and other countries… [and also] long-term promotion of research and development programmes" (2016, 23). With respect to fishing resources, the Strategy proposes that Spain should "continue providing the information [it] collects for scientific monitoring of its fisheries, for use within the framework of the different scientific bodies competent in each polar region" (2016, 31), creating "the best possible interaction between the scientific monitoring of Spanish fisheries with the National Polar Data Centre and Spanish polar research circles" (2016, 31)

Finally, this indicator also includes several requests which Spain wishes to promote and facilitate, such as "the involvement of Spanish researchers in the Arctic Council's different working groups (2016, 15) … [as well as] stable financing, the availability of scientific infrastructure in Antarctica, and the use of facilities belonging to other countries as part of international

cooperation agreements, both in the Arctic and the Antarctic—[are all] enabling Spain to develop an internationally renowned scientific programme" (2016,6). The Strategy also requires Spain's scientific effort in the polar regions should be promoted among policymakers and at educational centres, for example, by the "hiring of young researchers by the scientific teams having the highest training capacity, complementing contract calls with specific training programmes" (2016, 25, 26).

The **Implementation** indicator is de facto included in the strategy as the action proposals appear to provide a series of items linked to Spain's aims in polar regions, for example, "the programme should be proactive and invite potentially interested Spanish groups to participate in polar activities and to be subject to the usual evaluation and selection procedures" (2016, 24).

To sum up

The Guidelines for A Spanish Polar Strategy starts with the assurance of Spain's "considerable presence in the polar regions" (2016, 17), a statement reinforced not only by the presence of Spanish mariners and whalers in northern and Arctic waters in the 16th and 17th centuries, but also by the fact that Spain today is a Consultative Party of the Antarctic Treaty. Spain is also a Mediterranean country—almost a metaphor for the 'South' in the European context. Spain's aim is to "foster peacekeeping, environmental protection and security in the polar regions" (2016, 13).

The Strategy places emphasis on polar research, including education, as a "strategic priority for the Spanish scientific system," with polar research highlighted as being a "global geostrategic instrument." Based on the coding and qualitative measuring of the 12 indicators, the Science and education indicator is identified as the main priority of the Polar Strategy of Spain.

Other priorities identified are, on the one hand, maritime transportation along northern sea routes, dealing with the Arctic (a part of the Infrastructure indicator), and with fisheries and the fishing industry (Governance and Economy indicatorss). A combination of these two indicators would suggest that another main priority of Spain's Arctic policy is free navigation in northern waters with better trade access, and involvement in the management of fishery resources, as an EU mandate, in ice-free Arctic waters.

The Strategy has a twofold approach towards climate change vis-à-vis economic activities. It identifies, on the one hand, that "polar regions are among the most sensitive to climate change" and that there are "significant environmental changes, which have a direct impact on global climate processes" (2016, 12), and on the other hand, that the multi-dimensional and far-reaching impacts of climate change include (better) "access to its natural reserves" (2016, 10). This is, of course, true, and the Strategy is not the only Arctic policy document to have this two-dimensional approach, or ambivalence. The two other indicators, Climate change and Economy are rather even in terms of quantitative measuring (see Figure 25, p. 228), while within Action Proposals, scientific research is almost on a par with Logistics

and Sectoral Issues, which mainly consists of fishing resources and navigation. The duality discussed above presents a holistic grand challenge and is a wicked problem. However, in general, a strategy does not have clear priorities, if it does not make a strategic choice between issues, even contradictory ones.

It can be concluded the results of the coding and analysis are convergent with the priorities, as the main focus of the strategy is on international cooperation and polar research.

United Kingdom

Adapting To Change–UK policy towards the Arctic was adopted and signed in 2013 (United Kingdom Foreign and Commonwealth Office 2013), while the updated version, *Beyond the Ice–UK policy towards the Arctic* was adopted and signed in 2018 (United Kingdom Foreign and Commonwealth Office 2018). The 2013 UK Arctic Policy (31 pages, including several pictures) "is intended to be a clear exposition of Government policies towards the Arctic and will be reviewed regularly… it is designed to set the overall direction for further policies towards the Arctic as well as a way of presenting existing policies" (2013, 9). The UK vision on "an Arctic that is safe and secure; well governed in conjunction with Indigenous peoples and in line with international law," will be supported by, among other things, the following principles: i) "respect for the sovereign rights of the Arctic states… for the views and interests of people who live and work in the Arctic… for the environment, its fragility and its central importance to the global climate"; ii) leadership, according to the UK "leadership for Arctic stewardship rests with the eight Arctic states and the peoples within those States… However, it would be wrong to say that the UK should not show any leadership on issues affecting the Arctic"; and iii) cooperation, as "the mix of actors, interests and expertise at play in the Arctic means dialogue and cooperation should be at heart of Arctic policy making" (2013, 7).

Further, the 2013 Policy sets out "for the first time the detail of the United Kingdom's interests in the Arctic, how we will work with Arctic States and the wider international community, and what expertise the United Kingdom can offer to help meet some of the long-term challenges facing the region"; it also "outlines the United Kingdom's legitimate interests in the region, our priorities for practical action and our willingness to show leadership in appropriate areas. It recognises that what happens in the Arctic has a global impact and can be a legitimate concern of people far beyond the Arctic Circle. It commits the United Kingdom to working with international partners to balance the needs of human development with environmental protection. "It does this by setting out "three tenets—covering the human, environmental and commercial dimensions—that between them contribute to the UK's overall vision for the Arctic" (2013, 9).

The updated 2018 UK Arctic Policy, is a review of achievement since the 2013 publication and purports to be based on the same three core principles (2018, 3). The 2018 Policy (33 pages, including pictures and maps) states that the UK "holds fast to

a vision of a Global Britain that is engaged in the world and working with our international partners to advance prosperity and security in the Arctic" and that "UK science and innovation helps advance global understanding of how changes in the Arctic have global consequences and helps to find new solutions to the challenges" (2018 7). The UK has "always been a world leader in Polar affairs," according to the 2018 Policy and "British views have long held sway in the fields of polar science, exploration, diplomacy, business and environmental protection. Even in spite of UK's intended withdrawal from the European Union, the 2018 Framework "reaffirms our intention to remain a significant player in Arctic affairs" (2018, 2).

In addition, the Policy refers to the speech of the First Minister of Scotland, Nicola Sturgeon, in 2016 at the Arctic Circle Assembly where she speaks of tackling climate change and to promote climate justice, noting the Scottish Government's announcement "that it would develop its own Arctic Strategy on devolved matters at the Arctic Circle Forum in Edinburgh in November 2017" (2018, 9). Indeed, the Scottish Government released its first Arctic Policy Framework in September 2019, which understandably is not included this analysis.

According to the 2018 Arctic Policy, UK actions and priorities in the Arctic cover the following three areas: 1) Protecting global influence; 2) Protecting people and the environment; and 3) Promoting prosperity (2018, 4).

The 2013 UK Arctic Policy reflects to the **(Re)mapping and (re) defining the Arctic** indicator by defining that "the area within the Arctic Circle is home to 4 million people. On a slightly wider definition of the Arctic, its population is around 10 million" (2013, 1). There is "no universally agreed definition of the Arctic, but a number of common definitions are in use" (2013, 1: see also "Common definitions of the Arctic" map on p. 2). The Policy also notes that as "one of the most pristine areas of the world" the Arctic is "diverse in terms of its geographic, climatic and human dimensions." Therefore, to understand the region and its ecosystem "it is not particularly useful to see it as a homogenous section of the world entirely covered by ice and snow" (2013, 1).

Furthermore, the region has "a unique environment of global significance. It is an environment that is changing rapidly and will continue to change; [although] that is still not fully understood" (2013, 17). For example, there is "no doubt that the Arctic is on the frontier of global climate change impacts… [and also] seeing more commercial activity… non-Arctic States have long had an impact on the Arctic, for example, as sources of Arctic pollutants" (2013, 4). The 2013 document also identifies that "the Arctic has been connected to the wider world for [a long time] through trade and with pollution" (2013, 1). It therefore has a history of non-traditional activities, such as oil and gas exploitation since the 1960s, as well as being a region is "inextricably linked to global processes, whether they are climatic, environmental, social, legal or economic" (2013, 4). The closeness of UK, as "the northernmost country outside of the eight Arctic States; the northern tip of the Shetland Islands

being only 400 km south of the Arctic Circle…combined with a long tradition of exploration, has given the UK a historic interest in the Arctic that dates back to the voyages of discovery" (2013, 7).

Echoing this, the 2018 Arctic Policy briefly notes, using a map with "Arctic Definitions," that "there is no single Arctic and no universally agreed definition of the Arctic" (2018, 5), and that "the Arctic is not one homogenous landscape" (2018,17). "Different descriptions result in a variation in the number of people… estimates range from four to ten million people. Regardless of technical definitions, the Arctic is a vibrant mix of communities and cultures, languages and traditions; a place where people live, trade and visit." (2018, 5). Furthermore, it is "an area of fascination for many people who first learned about the region from the stories of the early explorers. For others, their passion develops from a desire to protect the landscape and its wildlife" (2018, 5). Finally, the 2018 Policy echoes the 2013 Policy by noting that "although the UK is not an Arctic State, we are its nearest neighbour, with Lerwick in the Shetland Islands closer to the Arctic Circle than it is to London" (2018, 2).

Figure 26 shows how many quotes are assigned to the different indicators, as a percentage of the total number of coded quotes (rounded to the nearest whole number) in the document.
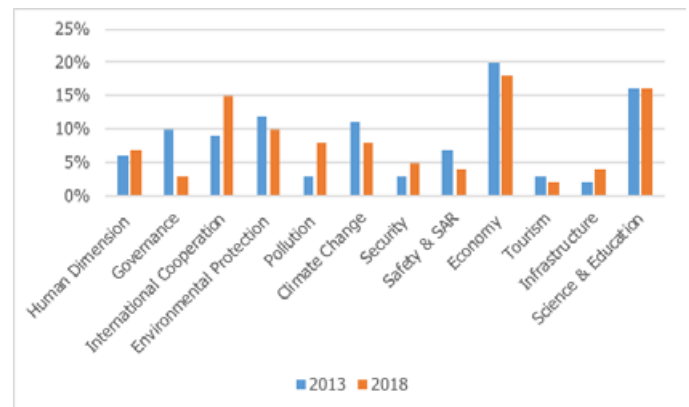
Figure 26. United Kingdom Strategy Comparison
Note: The percentages in each indicator are rounded to the closest whole number and represent the percent of the total number of quotes coded for each document.

The **Human Dimension** indicator accounts for 6 % of the total coded quotes of the 2013 UK Arctic Policy and for 7 % of those of the 2018 UK Arctic Policy (see Figure 26). This indicator is explicitly noted in the chapter "protecting people and the environment" of the 2018 Policy, as it refers to "the importance of taking urgent action to combat climate change and its impacts" based on the UN Global Goals for Sustainable Development. Here the Policy recognizes that "the Arctic is not one homogenous landscape, neither are the people who live there. The traditions and cultures of the Indigenous people differ between each group, as much as they do between the Indigenous people and those who live in the cities" (2018, 17).

This diversity is supported by the statement that "the UK Government will respect the views, interests, culture and traditions of the Arctic Indigenous people" and "the inclusion of Indigenous peoples in the Arctic Council" is welcomed (2018, 17). Finally, among other things, the UK "supports safe, responsible and sustainable tourism in the Arctic that enables visitors to experience the uniqueness of the region, which respects the preserve of local communities while supporting their economy and protects the fragile environment for future generations" (2018, 22).

Correspondingly, the 2013 Policy states in the chapter on the human dimension that the UK will "work towards an Arctic that is safe and secure; well governed in conjunction with Indigenous peoples and in line with international law" (2013 13). Furthermore, it "will respect the views, interests, culture and traditions of Arctic Indigenous peoples and promote the participation of Indigenous peoples in decision-making" (2013, 14). This links to one of the UK's major approaches to the Arctic in terms of "respect for the views and interests of people who live and work in the Arctic and call it home" (2013, 7). Among other things, the Policy also promises that the UK "fully implements the EU-wide policy on trade in seal products," including recognizing a "clear exemption to allow the free trade of seal products from hunts traditionally conducted by Inuit and other Indigenous communities that contribute to their subsistence" (2013, 20).

Non-Indigenous people(s) are only briefly identified as "people who are defined as living in the Arctic estimates range from four to ten million" (2013, 5) and "those who live in the cities" (2013, 17).

The **Governance** indicators, accounting for 10 % of the total coded quotes of the 2013 UK Arctic Policy and 3 % of those of the 2018 UK Arctic Policy (see Figure 26, p. 233), are substantial in the 2013 Policy. The latter notes that the "UK will work towards an Arctic that is safe and secure; well governed in conjunction with Indigenous peoples and in line with international law; where policies are developed on the basis of sound science with full regard to the environment; and where only responsible development takes place" (2013, 7). The phrase "*Promoting good governance of the Arctic through existing fora and legal mechanisms*" (2013, 13) means: i) " that governance of the Arctic rests with the sovereign Arctic States, supplemented and complemented by international agreements and treaties, in particular the UN Convention on the Law of the Sea (UNCLOS)"; ii) that through the 2008 Ilulissat Declaration the five littoral states of the Arctic Ocean "committed themselves to the existing legal framework and to the orderly settlement of overlapping territorial claims. The UK will strongly support moves by the Arctic States that promote governance in conjunction with international law… [and] considers [that] moving towards a specific Arctic Treaty at this time [is] neither necessary nor beneficial" (2013, 13); and iii) that the Arctic Council "has been successful in helping promote practical co-operation and engagement between them, particularly regarding environmental and sustainable development issues" and that UK—as an active observer of the Council—contributes "scientific expertise to many of the Council's Working Groups… [and] will support the Arctic Council as the pre-eminent regional forum for discussing Arctic issues and the stability it provides for discussion amongst Arctic States" (2013, 13)

Concerning exploitation of living natural resources, the UK's overriding principles regarding the management of fishing activity in the Arctic are explicitly discussed in the 2013 Policy, in which the UK "supports the work of Regional Fisheries Management Organisations (RFMOs) in managing fish stocks and marine ecosystems, including in the waters of the Arctic" (2013, 27). Finally, as an active member of the International Whaling Commission, the UK "strongly supports the moratorium on commercial whaling" (2013, 20).

Based on the 2018 Policy, "the UK's primary foreign policy objective continues to be the maintenance of the Arctic as a peaceful and stable region. Integral to this is the recognition that the vast majority of the Arctic region falls within the sovereign jurisdiction of the eight Arctic States. "Their leadership is vital to sustain a safe, secure and peaceful region" (2018, 7). Regarding UNCLOS, it is explicitly noted that: "the rights and responsibilities of Arctic coastal states [provide] an overarching agreement that regulates the various uses of Arctic waters. Continuous decline in Arctic sea-ice will necessitate negotiated agreement to ensure that claims to Continental Shelf under the Arctic Ocean are conducted within international norms and that there is continued cooperation in areas of the Arctic Ocean that are beyond national jurisdiction" (2018, 8). Following on from this, the 2018 Policy concludes that "while there were areas where rules and collaborative mechanisms could be further developed, no major governance gaps exist at present" (2018, 10).

Finally, the Arctic Council, "with its vision for peace, stability and constructive cooperation in the Arctic," is explicitly identified and heralded "for its role in promoting cooperation and coordination between the Arctic states and for ensuring that the Indigenous peoples are central to their discussions" (2018, 7).

The **International Treaties and International Cooperation** indicator, which accounts for 9 % of the total coded quotes of the 2013 UK Arctic Policy and for 15 % of those of the 2018 UK Arctic Policy (see Figure 26, p. 233), reveals that the 2018 policy builds on a global approach, noting that UK "holds fast to a vision of a Global Britain that is respected abroad, engaged in the world and working with our international partners to advance prosperity and security around the world" (2018, 4). Based on its close proximity to the Arctic and connections with the global systems, the UK reaffirms "our commitment to support and work in partnership with the eight Arctic States and the region's Indigenous peoples, to uphold this position" (2018, 7). The bilateral relations with the Arctic States bring "greater depth to our Arctic engagement"; they are "strong and multidimensional... [we work] with them bilaterally and within a multitude of international fora" (2018, 8): they include the 2011 High Level Agreement on the Strengthening of UK and Norwegian cooperation on polar research and cultural heritage,

and also scientific cooperation between the UK Science and Innovation Network (SIN) team and Russian research institutions, together with the project run by the "British Embassy Helsinki to strengthen its policy relationships with Finland on Arctic affairs" (2018, 24).

Diplomatic relationships with the Arctic Council with their "vision for peace, stability and constructive cooperation in the Arctic" and with most of the other multilateral organisations are also discussed in the 2018 Policy, in particular, the UK's participation in the 1st Arctic Science Ministerial meeting in 2016 in Washington, and preparations for the second one in 2018, which explicitly aim "to increase capacity to respond to major societal challenges in the Arctic and encourage further scientific cooperation among [the states]" (2018, 13).

Concerning international agreements and rules-based systems, the 2018 Policy identifies "the importance of negotiated and consensus driven agreements through multilateral organisations [and] treaties," such as UNCLOS, IMO and the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) (2018, 18). These "arrangements continue to provide an additional platform for cooperation and collaboration between the Arctic States and with the wider international community" (2018, 8). The UN Minamata Convention on Mercury is defined as "an important global treaty to protect human health and the environment from the adverse effects of mercury" (2018, 20). Moreover, the Paris Climate Agreement and the United Nations Global Goals for Sustainable Development recognize "the importance of taking urgent action to combat climate change and its impacts; to conserving and sustainably using marine resources; and of life on land." The UK "is firmly committed to delivering the goals at home and around the world" (2018, 4). From a number of international conferences focused on the Arctic, aimed at sharing expertise and experience, the Policy identifies the Arctic Circle Assembly and Arctic Frontiers as "the prominent" ones; these have become significant annual events that bring together academics, civil society, scientists, businesses and governments" (2018, 9).

Correspondingly, the 2013 Policy has an explicit global approach, stating that the inextricable links "to global processes, whether they are climatic, environmental, social, legal or economic" (2013, 4) mean that non-Arctic states, such as the UK, "have legitimate interests and roles to play in finding solutions to many of the most pressing issues facing the Arctic" (2013, 7). Furthermore, "global Arctic policy needs to keep up with the rapid changes being seen in the Arctic and use the scientific evidence available"; here, the UK "will encourage the timely feedback of robust evidence into decision making mechanisms" (2013, 17). The UK also "believes that those aspects of Arctic policy that are either affected by or contribute to wider global impacts are best discussed by open dialogue with a broad range of actors," and that, therefore, the UK "will actively encourage the Arctic Council and other regional fora to further engage non-Arctic countries in Arctic matters of global importance" (2013, 13). The UK's "long-standing aim of working closely and co-operatively with the Arctic States, Indigenous peoples and

others on the issues facing the Arctic therefore remains central to the Government's approach" (2013, 8).

Concerning international agreements and rules-based systems, the 2013 Policy briefly identifies IMO, UNCLOS, SOLAS and MARPOL, noting the UK "does not believe that it will be necessary or appropriate to make fundamental changes to existing international regimes for regulating Arctic, or other, shipping" (2013, 25)

The **Environmental Protection** indicator accounts for 12 % of the total coded quotes of the 2013 UK Arctic Policy and for 10 % of those of the 2018 UK Arctic Policy (see Figure 26, p. 233). The 2018 Policy states that conservation is "of high importance but that this will be maintained alongside the utilisation of Arctic resources" (2018, 10). Based on more than 300 treaties and agreements, "each with an important role in protecting and improving the natural world… [and] playing "an active role in securing a new international agreement for the conservation and sustainable use of marine areas beyond national jurisdiction," the UK's aim is to be "at the forefront of global efforts to protect and improve the natural world, driving the international community to adopt higher standards" (2018, 16). Following on from this, "conserving the Arctic's biodiversity remains a UK priority, for example, the nutrient-rich waters of the Arctic are critically important for as many as 17 different species of whale" (2018, 18).

The links between the UK and the Arctic are not limited to climate and marine systems and marine… [as] "our shared biodiversity includes many migratory birds" (2018, 21). Protected areas are also explicitly identified, although it is noted that the Arctic region "is not about to become a national park, but will continue as a lived in, and managed, environment" (2018, 10). Here "the UK Government considers that the best way to deliver universally accepted marine protected areas in areas beyond national jurisdiction would be through the new Implementing Agreement under UNCLOS. In support of this, the UK will continue to work with other Contracting Parties and the Arctic States through OSPAR to improve and extend the protection offered by marine protected areas in the Arctic region" (2018, 18). Finally, assessment is briefly noted, in particular "monitoring and further research into marine litter is underway" (2018, 19)

Correspondingly, the 2013 Policy includes a chapter on the environmental dimension, and affirms "respect for the environment, its fragility and its central importance to the global climate" (2013, 7); this, in particular, means respect for biodiversity, as the Arctic region is described as "one of the world's most pristine and biologically rich environments" (2013, 19). Based on its geographic location, the UK "shares a common marine and avian biodiversity with much of the Arctic and is thus intrinsically linked to the region with a significant stake in protecting the area's ecosystem," for example, protecting Arctic migratory species (2013, 19). Likewise, the 2013 Policy also explicitly protects certain areas, and the UK is "a strong supporter of the efforts of Parties to the Convention on Biological Diversity to strive for marine protected areas… [and] will support the principle of designating Marine Protected Areas in

international waters, including in the Arctic, where the science supports it" (2013, 20). Finally, ecosystems-based management is said to provide "a flexible approach to managing ecosystems subject to… the rapid changes taking place in the Arctic," where the UK "will encourage experts to engage with the Arctic States and Arctic Council… to help underpin the resilience of Arctic ecosystems and communities" (2013, 19).

The **Pollution** indicator, which accounts for 3 % of the total coded quotes of the 2013 UK Arctic Policy and for 8 % of those of the 2018 UK Arctic Policy (see Figure 26, p. 233), is identified within the 2018 Policy: "the Arctic is becoming increasingly polluted and increasingly visited, while a growing number of non-Arctic nations are looking toward the Arctic as a place for commerce" (2018, 2), and as "the vast majority of litter and pollutants impacting the Arctic originate outside of the region it is essential for us all to take action" (2018, 18). Among pollutants listed are: i) "marine litter, particularly marine plastic pollution [as] a serious and growing threat to our environment" (2018, 19); ii), "a range of chemicals and pollutants that are having a harmful effect on the Arctic environment… for example, the contamination of the environment from mercury is not new" (2018, 20); iii) "noise in our seas and its impact on vulnerable species" (2018, 19), and iv), emissions of black carbon from international shipping, and other "greenhouse gas emissions…the effects of climate change in the Arctic are accentuated by the impact of black carbon" (2018, 26). The 2018 Policy does not explicitly identify who are the polluters.

As for pollution problem solving, the 2018 Policy notes that the UK "has committed to improve the situation [marine plastic pollution] through domestic and international action" (2018, 19), and "will continue to display the same strong leadership shown when we became the 1st country in the world to set legally binding emission reduction targets through the 2008 Climate Change Act" (2018, 4). Moreover, international agreements are identified as important, among them the Intersessional Correspondence Group on Marine Litter, and OSPAR through which the UK and other contracting parties "have developed and are implementing a Regional Action Plan on Marine Litter" (2018, 19); the UN Minamata Convention on Mercury is identified as "an important global treaty to protect human health and the environment from the adverse effects of mercury" (2018, 20); the Polar Code, through the IMO and PAME reduce "risks of use and carriage of heavy fuel oil as fuel by ships in Arctic waters" (2018, 20). Finally, as far as assessment is concerned, the G7 and the UN Environment Programme will "review and propose monitoring methods, share best practice and recommend further research or action" (2018, 19).

The 2013 Policy is brief, noting that "non-Arctic States have long had an impact on the Arctic, for example as sources of Arctic pollutants such as mercury… [and as] contributors to climate change. Conversely, changes in the Arctic also impact on non-Arctic States" (2013, 4). Thus, "actions to reduce Short Lived Climate Forcers, including methane and black carbon (soot), are a crucial complement to reducing emissions of carbon dioxide in tackling climate change" (2013, 18). The UK also

"considers that the Arctic should receive… protection from ship-source pollution… [and] that the expansion of shipping in the Arctic should not have a damaging effect on the environment" (2013, 21). Furthermore, the UK "will build understanding of the climate impacts of black carbon in the Arctic; reduce its domestic emissions of methane," and work with the IMO to reduce emissions of black carbon from Arctic and other shipping and through the UN Economic Commission for Europe's Convention on Long-range Transboundary Air Pollution to address black carbon emissions (2013, 18). Here, UNCLOS "remains paramount in the prevention of pollution from ships [with MARPOL]… All environmental regulations contained in MARPOL apply to ships and fixed or floating platforms in Arctic waters" (2013, 21).

The **Climate Change** indicator accounts for 11 % of the total coded quotes of the 2013 UK Arctic Policy and for 8 % of those of the 2018 UK Arctic Policy (see Figure 26, p. 233). The 2018 Policy records that "for the last fifty years, Arctic temperatures have risen more than twice as fast as the global average" (2018, 15). Possible and potential consequences of the situation are, among others, that "the Arctic may become effectively ice-free in the summer sooner than predicted, perhaps as soon as the late 2030s" (2018, 3); "less sea-ice results in more of the sun's radiation being absorbed by the sea… Similarly, thawing permafrost leads to more warming… emissions of methane and CO_2 increase as soil microbial activity increases" [and there is] "potential damage to infrastructure built on it" (2018, 15). Because of this, the number of voyages between the Northern Sea Route ports and transits have increased rapidly as people's appetite for the unique travel experiences the region has to offer increases, so does the number of visitors" (2018, 22). All this, "known as 'Arctic amplification,' may have profound implications for the regional and global climate, as well as for the people who live in and around the Arctic" (2018, 15).

As far as problem-solving is concerned, although the word 'adaptation' occurs, the main term used is 'mitigation'; the UK has "a strong record of implementing policies that mitigate the release of harmful emissions into the atmosphere" (2018, 16). The Clean Growth Strategy is noted as one of the mechanisms that will set out "how we will meet our climate targets while securing the economic benefits of clean growth for the UK… [and] legislation and action plans developed by the devolved administration [of the UK] complement the UK's emission reduction ambitions. [For example] the Scottish Government has announced plans to encourage an uptake of electric vehicles by phasing out new petrol and diesel cars by 2032" (2018, 16). Concerning international cooperation the 2018 policy refers the UN Global Goals for Sustainable Development and the Paris climate agreement. The UK is "fully committed to it… [but] would have preferred the USA to remain in the Paris Agreement" (2018, 16).

The 2013 Policy states that "climate change is the greatest threat facing the Arctic" (2013, 17), and the UK works with other countries "to build an understanding of the threats posed by climate change and the opportunities for action," for example, by helping to build "mitigation capacity in countries around the

world" (2013, 17). Therefore, there is "no doubt that the Arctic is on the frontier of global climate change impacts [and] inextricably linked to global processes, whether they are climatic, environmental, social, legal or economic" (2013, 4). These processes include "decreasing sea-ice or increasing freshwater entering the Arctic Ocean [that] may have the potential to affect the UK's weather and climate" (2013, 4). Finally, the document proposes that the UK "will play a leading role in diplomatic efforts to avoid dangerous climate change, including through the negotiation of a legally binding global climate change agreement to be agreed in 2015" (2013, 17). As mechanisms, the 2013 Policy identifies the Climate Change Act 2008 for reducing Short Lived Climate Forcers, and working "through the UN Economic Commission for Europe's Convention on Long-Range Transboundary Air Pollution to address black carbon emissions" (2013, 18).

Concerning the **Security** indicator, which accounts for 3 % of the total coded quotes of the 2013 UK Arctic Policy and for 5 % of those of the 2018 UK Arctic Policy (see Figure 26, p. 233), the premise and objective of the 2018 Policy is to maintain "the Arctic as a peaceful and stable region" (2018, 7). Hence, "the vast majority of the Arctic region falls within the sovereign jurisdiction of the eight Arctic States. Their leadership is vital to sustain a safe, secure and peaceful region" (2018, 7). The cooperative and collaborative approach of the Arctic Council is also noted to promote confidence between the Arctic States and their international partners, as well as "the various coastguard agencies of the Arctic States and through the Arctic Coast Guard Forum, which provides a useful arena for cooperation" (2018, 21). Under the sub-chapter "Defence" the policy first speculates whether "increased interest and commercial activity in the region provides potential for heightened tension… [as] Arctic nations may want to enhance their security presence in the region to protect their own territorial and commercial interests" (2018, 21); Second, it states that the UK "remains committed to preserving" this stability and security, and "will work with our international partners and allies through defence engagement, bilateral and multilateral security cooperation," including essential cold weather training exercises and participation in the Arctic Security Forces Roundtable; and finally, "NATO also remains a central plank for cooperation among its Arctic State members" (2018, 21).

The 2013 Policy notes the UK's "respect for the sovereign rights of the Arctic States to exercise jurisdiction over their territory" (2013 7), and that it "remains committed to preserving the stability and security of the Arctic region" (2013, 13). This latter objective "will be pursued through a wide range of defence engagement and bilateral security co-operation with a number of close allies and partners in the region" (2013, 13) in which NATO will play a central role; also central is "the UK's participation in the Arctic Security Forces Roundtable forum, which promotes security co-operation on issues such as situational awareness and search and rescue missions" (2013, 13).

Energy security is explicitly noted by the 2013 Policy *to* ensure "security of supply through a diverse set of sources" (2013, 24).

The **Safety and SAR** indicator, which accounts for 7 % of the total coded quotes of the 2013 UK Arctic Policy and for 4 % of those of the 2018 UK Arctic Policy (see Figure 26, p. 233), links tourism and maritime transport with safety in the 2018 Policy , as both have increased in recent years in the Arctic region. Although, "the majority of visits to the region are trouble-free" visitors are putting a strain "on modest search and rescue capability, and increase the potential for harm to the fragile environment" (2018, 22). The Policy thus notes that "when visiting the Arctic, we want British nationals to be safe and to ensure that all international travellers and operators refrain from harming the Arctic environment" (2018, 22). This will be done, for example, by supporting "the work of the Association of Arctic Cruise Operators and its goal of managing responsible, environmentally friendly and safe tourism in the Arctic and strive to set the highest possible operating standards" (2018, 22). Among international mechanisms for maritime safety are noted the mandatory Code for Ships Operating in Polar Waters, the SAR agreement by the Arctic states, and the Arctic Regional Hydrographic Commission, where UK will continue to seek Associate Membership status at "to maintain close links with other nations in the region and to share the UK's knowledge and expertise of Arctic hydrography" (2018, 25).

The 2013 Policy clearly states that the UK works with the Arctic States and the Arctic Council to promote safety in Arctic shipping. As means and mechanisms, the Policy notes i) that the mandatory Polar Code produces "a clear direction on the design, equipment and, where appropriate, operational methods of shipping"; ii) that the UK welcomes the steps by "the Arctic Council regarding Arctic shipping, particularly the 2011 SAR Agreement; and iii) the UK Hydrographic Office (UKHO) has "considerable experience and expertise in surveying in the Arctic" (2013, 26). Concerning monitoring, the Policy first mentions, "the significant contributions to the Arctic Monitoring and Assessment Programme's 'Snow, Water, Ice and Permafrost' (SWIPA) report" by UK researchers; the "NERC funded Arctic Research Programme (2011–2016) [providing] detailed understanding of how ocean, sea-ice and atmosphere interact and respond under climate change" (2013, 22); and finally, that "the Arctic and Antarctic are experiencing increased levels of shipping resulting in more vessels transiting through hazardous ice-infested waters.… Timely information also reduces costs for ships operating in sea-ice by allowing more efficient routing decisions and reducing the impact of hull damage from sea-ice" (2013, 29).

The **Economy** indicator, accounting for 20 % of the total coded quotes of the 2013 UK Arctic Policy and for 18 % of those of the 2018 UK Arctic Policy (see Figure 26, p. 233), is noted equally in both policy documents. Moreover, it is the most substantial field of the UK Arctic Policy.

The 2018 Policy is searching for a balance with the environment by "promoting the Arctic as a place where economic and commercial development occurs in a sustainable and responsible manner. The 2018 Policy expresses the hope that people of the region benefit from the prosperity that a changing Arctic may

bring [while also] supporting UK companies investing in the Arctic; [the goals are] making them aware of, and connecting them to, the opportunities available" (2018, 4, also 23). At the same time, conservation is defined "of high importance but… will be maintained alongside the utilisation of Arctic resources" (2018, 10). Furthermore, "successful mining operations that meet the needs of customers, investors and local communities require strong governance frameworks and clear human rights policies" (2018, 27). The Arctic is also defined i) as "an area for maritime transport" (2018, 22) and "shipping originating from a destination within the Arctic itself" (2018, 25); ii) as being able to provide transport links through the Barents Sea Transport Plan in cooperation between Sweden, Finland and Russia, where "UK companies will be encouraged to explore opportunities…as these projects develop" (2018, 29); as a provider of energy, with the European Marine Energy Centre (EMEC) in Orkney being defined as "the world's first and only centre providing developers of both wave and tidal energy converters… with purpose-built, grid-connected open-sea testing facilities" (2018, 26); and iii) as providing fisheries, with Iceland's "world-class fisheries industry using efficient, integrated high-tech solutions to ensure the sustainability of its fish stocks, enhance the productivity of its fisheries and maximise the value of its catches" (2018, 27). Based on experience, "the UK Government will continue to adopt a science-led, precautionary and ecosystem-based approach to the establishment and management of any new and emerging fisheries in the Arctic region" (2018, 27).

The regulation of economic activities will be worked on "with the devolved administrations and regulators as part of UK-wide implementation mechanisms that ensure regulatory consistency across the UK for business and industry" (2018, 16). Relevant international mechanisms are identified as i) the Polar Code, an Agreement to prevent unregulated high seas fisheries in the Central Arctic Ocean; ii) the Arctic Economic Council; and iii) participation in initiatives, such as "the Voluntary Principles on Security and Human Rights in the Extractive Industries [and] the Extractives Industries Transparency Initiative, which apply to mines in the Arctic and elsewhere" (2018, 27). Finally, concerning global trade it is explicitly noted that to transport goods between Asia and Northern Europe through the Northern Sea Route "could significantly reduce travel time… thereby reducing costs… The amount of fuel utilised and consequently pollutants emitted into the environment currently, half of the world's volume of trade travels through the South China Sea" (2018, 23).

The 2013 Policy is even more substantial, as its chapter on the commercial dimension explicitly discusses energy security, shipping, tourism, fisheries and bioprospecting, as well as UK commercial expertise. The policy states that "the decision to invest in commercial projects in the Arctic is a matter for the individual companies concerned and the relevant national authorities of the Arctic States in whose jurisdiction they take place" (2013, 23). Therefore, the UK "will encourage UK business to engage directly with the Arctic Council, Arctic States, Indigenous peoples and other actors, as appropriate… [and] will facilitate responsible business activity in the region by UK compa-

nies" (2013, 23). The UK believes that fundamentally": i) Arctic stewardship rests with the eight Arctic States and the peoples within those States" (2013, 8); ii) there must be "responsible development" (2013, 23); and iii) that "the scale of the challenges facing the Arctic is immense and compounded by the speed of the changes." Furthermore, responding "to these changes, while supporting rigorous protection of the environment, is one of the many challenges facing the region and wider world… in turn, the region is seeing more commercial activity," as, due to reductions in sea-ice cover, "large reserves of oil, gas, metals and rare earths… are becoming more accessible with improvements in technology." For example, "interest in exploration and development of the region's offshore oil and gas fields is steadily increasing. There is also the growing possibility of increased mining for mineral and rare earth deposits" (2013, 21).

The 2013 Policy lists the following types of economic activity, in addition to tourism (the next indicator): i) energy, with UK energy security, global markets and the Arctic being tied together (a case study in a box), and the UK's import of natural gas from Norway; ii) "maritime transport, and shipping in particular, is an international, global industry in which the UK has a prominent role" (2013, 25); and iii) concerning global trade "the UK ports and shipping industry, together with the wider UK maritime cluster, are generally well placed to take advantage of any commercial opportunities that expansion of Arctic shipping may present in the short term" (2013, 25).

Among the regulations and regulators of economic activities (in the Arctic) the Policy identifies the International Whaling Commission and the UK "strongly supports the moratorium on commercial whaling" (2013, 20); the EU-wide policy on trade in seal products, which UK "fully implements" (p. 20); UNCLOS; International Convention for the Safety of Life at Sea (SOLAS) and MARPOL (2013, 25); Regional Fisheries Management Organisations (RFMOs) which are "managing fish stocks and marine ecosystems, including in the waters of the Arctic" (2013, 27); and the Nagoya Protocol on Access and Benefit Sharing "which allows fair access to genetic resources in return for a share of the benefits for their use, potentially paving the way for exciting new medicinal and genetic innovations" (2013, 27).

The **Tourism** indicator, accounting for 3 % of the total coded quotes of the 2013 UK Arctic Policy and for 2 % of those of the 2018 UK Arctic Policy (see Figure 26, p. 233), is briefly noted by both documents. As already mentioned, in the 2018 Policy the hope is expressed that "British nationals [should] be safe and… that all international travellers and operators [should] refrain from harming the Arctic environment" (2018, 22), in particular as all forms of tourism to the Arctic, "from small expedition ships to large conventional cruise liners… [have] increased in recent years" (2018, 22). Therefore, the UK supports, as mentioned earlier, "safe, responsible and sustainable tourism in the Arctic that enables visitors to experience the uniqueness of the region" (2018, 22). The UK also supports the goals of the Association of Arctic Cruise Operators of "managing responsible, environmentally friendly and safe tourism in the Arctic and strive to set the highest possible operating standards" (2018,

22). Finally, despite SAR and the legal regimes, "extra caution is required when planning all tourism activities and maritime operations in the Arctic" (2018, 22).

In a subchapter on tourism the 2013 Policy notes that "the Arctic is an increasingly popular destination for British travellers, primarily as passengers on cruise ships but also for those undertaking on-shore activities such as adventure tourism" (2013 26). The Arctic coast of Norway and Svalbard are identified as popular destinations within the region. The challenges to safe tourism posed by "the isolation of certain parts of the Arctic combined with the harsh environment and modest capacity of search and rescue infrastructure… are likely to rise as the opportunities for Arctic tourism continue to increase" (2013 26).

As well as the **Infrastructure** indicator, which accounts for 2 % of the total coded quotes of the 2013 UK Arctic Policy and for 4 % of that of the 2018 UK Arctic Policy (see Figure 26, p. 233), is briefly noted by the two documents. The 2018 Policy identifies the Arctic as "an area of increasing importance for maritime transport", as the number of voyages have rapidly increased, as mentioned earlier. "Although there were only 19 transits across the entire NSR in 2016, there were more than 1700 voyages," which has implications for navigational safety (2018, 22). The European Arctic states prioritize improved transport links via the Barents Sea Transport Plan (2018 29). The policy also notes possible side-effects: first, that "declining Arctic sea-ice could in future open new shipping routes [and that] hostile conditions and a lack of infrastructure will make commercial operations difficult for some considerable time" (2018, 23); and second, that the Polar Silk Road, comprising road, rail and port infrastructure built in partnership with the Arctic states means "potential implementation risks that could be involved in delivering the Belt and Road Initiative" by China (2018, 25).

The 2018 Policy also notes that the European Marine Energy Centre (EMEC) provides "an ideal base for the world-leading test facility with its excellent oceanic wave regime, strong tidal currents, close proximity to sheltered harbour facilities, and a wealth of renewable, maritime and environmental expertise within the local community" (2018, 26). Moreover, "digital connectivity through increased internet fibre cables and good broadband coverage" will benefit developed parts of the Arctic. In the underdeveloped and remote parts of the Arctic, the technological challenge is greater, but could be solved by innovative technical solutions (2018, 29).

The 2013 Policy states its belief that "the UK ports and shipping industry, together with the wider UK maritime cluster, are generally well placed to take advantage of any commercial opportunities that expansion of Arctic shipping may present in the short term" (2013, 25). The UK aims to review over a longer term what can best be done do "to facilitate worthwhile trade opportunities and help ensure that [there is] due regard to safety and the environment" (2013, 25). The "sea routes to and from Asia are becoming increasingly ice-free for more days of the year" which would bring "the potential [for] growing levels of commercial shipping traffic between Europe and Asia over

the coming decades" (2013, 4). Finally, the 2013 Policy notes that UK "supports investment in new infrastructure that would connect Norway's new Arctic gas finds with the existing North Sea pipeline network" to satisfy projected long-term demand for imported gas and our transition to a low-carbon economy in the UK (2013, 24).

The **Science and Education** indicator, accounting for 16 % of the total coded quotes of the 2013 UK Arctic Policy and for 16 % of those of the 2018 UK Arctic Policy (see Figure 26, p. 233), is explicitly and evenly discussed in the both policy documents.

The 2018 Policy states that "the UK research community has a strong record of collaborating internationally and delivering high impact Arctic research; nearly two-thirds of UK Arctic papers have international co-authors, while only three other countries—the US, Russia and Canada—produce more Arctic science papers than UK. High-level agreements, with Arctic States… provide strong frameworks for collaborative research" (2018, 11). The vision of a Global Britain in the Arctic comprises "the UK's world leading science and innovation [and will help] advance global understanding of how changes in the Arctic have global consequences and helps to find new solutions to the challenges" (2018, 4). Further, "as an original observer state, the UK has continued to influence Arctic Council policies by providing scientific analysis and evidence in its working and expert groups" (2018, 7). This is supported on the one hand, by the strong UK science infrastructure, including a summer research station in Svalbard since 1972, the 'blue-water' ships (the RRS James Cook and RRS Discovery), as well as a new ice-strengthened research vessel, the RRS Sir David Attenborough for "year-round access to state-of-the art facilities on this floating, multidisciplinary, research platform" (2018, 28); and finally, the UK Science and Innovation Network (SIN), "operates across the eight Arctic States in support of both UK Government Arctic policy and UK-based scientists and research bodies" (2018, 12). There is also the following research funding by the NERC through the Arctic Research Programme: "£15 million available for research into changes in the Arctic and their possible future consequences worldwide» from 2011–2016 (2018, 15), the Changing Arctic Ocean "£16 million in the 5-year [period] (2017–2022)" on Implications for marine biology and biogeochemistry," and "£2.3m towards funding the UK research community participation in this truly international collaboration [MOSAiC]" (2018, 14).

The 2018 Policy also explicitly notes "that only by learning about the use of traditional and local knowledge from the Indigenous and local communities themselves can changes be properly understood and genuinely sustainable responses proposed… [therefore] "researchers in the UK are committed to listening to, and working with, Indigenous communities, to ensure the best outcomes for local communities and for science," for example, in the Yamal-Nenets region in Russia and among the Inuit in Canada, "It is increasingly recognised that only by learning about the use of traditional and local knowledge from the Indigenous and local communities themselves can changes be properly understood and genuinely sustainable responses pro-

posed" (2018, 17). Educational attainment is also included the 2018 Policy, for example, "by providing educational tools and learning materials, schools can engage their pupils on a wide range of issues that affect the Arctic" (2018, 5), "Discovering the Arctic' telling stories of Arctic people and places," the Model Arctic Council initiative, and via the UArctic consortium and the UK Polar Network (2018, 12).

The 2013 Policy notes that "by its nature, science contributes directly to diplomacy, policy and our understanding of the Arctic, and is the basis of much of our co-operation with Arctic States, the Arctic Council and other actors" (2013, 9). It also states that the UK "will work towards an Arctic that is safe and secure; well governed in conjunction with Indigenous peoples and in line with international law; where policies are developed on the basis of sound science with full regard to the environment" (2013, 7) It also states that "global Arctic policy needs to keep up with the rapid changes being seen in the Arctic and use the scientific evidence available" (2013, 17). As a result, "highly regarded UK science is present in most areas of Arctic research and also helps to underpin good policy, stable governance and responsible commerce" (2013, 8), and the UK "will encourage the timely feedback of robust evidence into decision making mechanisms" (2013, 17). Several examples, plus evidence of UK science in the Arctic, are also included in the 2013 Policy, such as the UK research station in Ny-Ålesund (a summer research facility), "two ice-capable research vessels operated by the British Antarctic Survey," and "a large, active and growing Arctic science community, with at least 77 UK institutions involved in Arctic research, including 46 universities and 20 research institutes" (2013, 10). Moreover, steadily increased funding for Arctic environmental research activities, "with over £50m awarded to 138 individual research projects,…Top class climate research will continue to be funded, for example, through "the Met Office Hadley Centre's Climate Programme and the Natural Environment Research Council's £15 million, five-year Arctic Research Programme, to increase understanding of the changes in the Arctic and their impacts on the global system" (2013, 18).

Innovation in technology is explicitly noted: submarines and more recently satellites (the UK-led European Space Agency satellite Cryosat 2) "demonstrate decreasing sea-ice thickness across the Arctic… [and also] provide insights into how the ocean circulation will alter as sea-ice diminishes over time" (2013, 22); new marine technology will provide insights into how the "ocean circulation will alter as sea-ice diminishes over time… [something which is also confirmed by] sophisticated models of this oceanic circulation developed by other UK researchers" (2013, 22).

This indicator interestingly reveals that UK's Arctic research, according to the 2013 Policy, consists of natural sciences, through the Natural Environment Research Council (NERC) which is

very influential in funding research programs. The Scott Polar Research Institute has a long tradition of social sciences and humanities research, for example, among the Inuit "to bridge their own traditional knowledge with the sciences can be traced back to the needs of 18th century scientific travellers to acquire local knowledge" (2013, 16). The Circumpolar History and Public Policy Research Group at Scott Polar Institute "uses historical, ethnographic, and economic research to explore policy issues and options over a longer timeframe, focusing in particular on science policy, traditional knowledge of northern peoples, and transnational governance" (2013, 16). Furthermore, "polar matters are part of the English National Curriculum for geography at both primary and secondary school" run by the Royal Geographical Society (2013, 5).

The **Implementation** indicator is not explicitly included in either of the UK Arctic Policy documents, nor is there a list of recommendations. The 2013 Framework document is "reviewed regularly" (2013, 9) and updated "on a regular basis… In response to the House of Lords Select Committee Report on the Arctic in December 2015, the Government also [has] committed to keep our approach under review" (2018, 2). This is echoed by the 2018 Policy which is considered to be a review of the 2013 one, given that "it was always the intention of the UK Government that the Framework would receive regular updates" (2018, 3). Another issue is the consideration given by 2018 Policy to the rapid environmental changes in the Arctic region.

To sum up

The United Kingdom was one of the first Arctic Council observer countries, and among the first to launch its own national policy on the Arctic region; it was the only one in our analysis with an updated Arctic policy. Both documents are entitled 'UK policy towards the Arctic.' However, they are actually called 'Framework' (2013) and 'Arctic Policy Framework' (2018). Why the term 'framework' was chosen, and not 'policy' or 'strategy,' is unclear. It has been speculated that this was "in order to de-dramatize the statement and in particular, not to alienate states within the Arctic who might be sensitive about 'outsider' involvement" (Bailes 2013, 11).[20]

In any case, the 2018 Framework, as the UK's Arctic Policy, provides and emphasizes the interpretation that UK has "always been a world leader in Polar affairs where British views have long held sway in the fields of polar science, exploration, diplomacy, business and environmental protection" (2018, 2). Indeed, the UK "is well placed to transfer knowledge and expertise across both polar regions… [and] the UK's wider Antarctic science community is substantial," as the 2013 Policy notes (2013, 11). Brexit is also taken into consideration here, as the Minister of State for the Polar Regions in his foreword to the 2018 document interprets the Framework as reaffirming

---

20 The UK government earlier "to develop an overarching formal Arctic strategy to bring together the diffuse strands of government policy… [it] would also send a clear signal to the Arctic States that while their sovereignty in the region is indisputable, pursuing greater exclusivity in the region is neither constructive nor warranted when so many ramifications of environmental and economic change in the Arctic reach out beyond the region" (Duncan 2012, 132).

"our intention to remain a significant player in Arctic affairs," as the UK leaves the European Union (2018, 2).

This is supported by the projection of a vision of 'Global Britain' in the 2018 Policy that is respected abroad and engaged in the world, while "working with… international partners to advance prosperity and security around the world… [and] in the Arctic" (2018, 4, 7).

Further, the UK will continue to "display the same strong leadership shown" on becoming the first country in the world to set legally binding emission reduction targets through the 2008 Climate Change Act [and] one of the first Arctic Council Observer States" (2018, 4).

The 2013 Policy has an explicitly global approach, stating that the inextricable links "to global processes, whether they are climatic, environmental, social, legal or economic" (2013, 4) also give non-Arctic states, and the UK, "legitimate interests and roles to play in finding solutions to many of the most pressing issues facing the Arctic" (2013, 7).

As mentioned earlier, the 2018 Framework is an updated version of the 2013 policy document, as a result of review. It is thus to be expected that the (Re)mapping and (Re)defining indicator more or less reprises the notion of the 2013 Policy that UK is "the northernmost country outside of the eight Arctic States" and that of the 2018 Policy , namely, the UK as the "nearest neighbour, with Lerwick… closer to the Arctic Circle than it is to London." These remapping and self-identified efforts based on geography are to convince a British audience, as well as audiences outside the UK.

Science and research are much discussed in, and reflected by, the policy documents on an even basis. They are thus, without a doubt, one of the priorities of the UK Arctic policy, as they are the main similarity between the two. Based on our coding and quantitative measuring, the second similarity between the two is the Economy indicator, which is more explicitly and evenly discussed in, and reflected by, the two documents. Furthermore, the quantitative measuring reveals that Environmental Protection and International Cooperation are also among the priorities of the UK's Arctic policy, the former being reflected more evenly by the policies and the latter less so.

Concerning other indicators, other similarities are: the Human Dimension indicator, the combined Environmental Protection and Climate Change indicators and, the Tourism indicator are discussed evenly, as are the indicators and the combined Security and Safety and SAR themes.

The main differences between the two policy documents are as follows: the 2013 Policy puts much more emphasis on the Governance indicator than the 2018 one; the International Cooperation indicator is more explicitly identified in the 2018 Policy than in the 2013 one; the Pollution indicator and the Infrastructure indicator are noted more in the 2018 policy than in the 2013 one.

Taking into considetation the long British tradition of exploration in the Polar regions, including the Arctic; the British voyages of discovery; its national geostrategic and military interests, for example, British strategic nuclear submarines occasionally visiting the Arctic Ocean; colonialism and neo-colonialism, with Canada as a former British colony and current member of the British Commonwealth—the UK strategy is not just about geography, but also history, geopolitics, geostrategy, economics, and science. Is the UK the "forgotten Arctic state," as Duncan (2018) put it?

Finally, after comparing the results of the coding and analysis to the quite broad priorities, they are all concluded to be in focus, in particular Promoting prosperity, and Protecting global influence, including science and international cooperation; also Protecting the environment to a certain extent, but less so Protecting people.

Comparing and Discussing the Strategies

The previous section provides an overview of, and analysis of, the contents of the national Arctic strategies and policies of the nine observer states of the Arctic Council policy, and how they have developed recently. To obtain a more holistic picture of the state of Arctic governance of the 21st century, a better understanding of how the region is currently being governed, and how these policy papers combine with each other, an inter-comparison is needed. What follows is a broader discussion and analysis on each policy document, which is then followed by some relevant findings and summing up of these national policies. Finally, there is a short comparative study and discussion of all the policies.

Interestingly, unlike most of the current national strategies of the Arctic states, released between 2009 and 2013, these documents are much more current, as they were released between 2013 and 2018.

The **(Re)mapping** and **(Re)defining** the Arctic indicator.
Except for the ROK, each national policy of the non-Arctic Observer countries has its own definition of the Arctic and/or its special features, Many remap their geographical position, and even reidentify their relationship with the Arctic.

All the strategies use the term "Arctic," France also uses the term "the North," while the UK comments on a region without a single "universally agreed definition." The Arctic could mean "an ocean surrounded by continents" plus the Arctic Ocean (France); or "the area within the Arctic Circle with the Arctic Ocean as the heart" (Germany); or a "home to about four million people including Indigenous peoples" (Japan); or "a region in transition" (Germany). The Arctic region is defined as "vulnerable" with "peculiar and sensitive ecosystem" (Italy), "extraordinary fragile" (Spain), with "a unique environment of global significance" (UK), and "the [climate change] canary in the coal mine" (France).

A relevant difference between the policies is the self-identification toward the Arctic region, either to include it or not. France, the PRC and the UK do (re)identify themselves vis-à-vis the Arctic: for France the Arctic is "both far from France and near to it." The PRC re-identifies itself as a "'Near-Arctic State.'" The UK is the "nearest neighbour" of the Arctic states.

All in all, the (Re)defining the Arctic indicator shows striking similarities among states, and self-reidentification towards the Arctic region shows relevant differences. (see Figure 27. Current Observer Strategy Comparison, p. 243).

Based on our coding and quantitative measuring (see Table 27, p. 119), the most-quoted indicator in/by the national Arctic policies and strategies of the observer states is Science and Education. In particular, the policies of the Netherlands, the ROK, and Spain—all about 30 % or more—explicitly note and discuss issues on science and scientific cooperation, although there is less about education per se. These are followed by Japan and Italy — both 20 % or more.

The second most-quoted is the International Cooperation & International Treaties indicator, explicitly noted and discussed, in particular, by the policies of Japan and Germany—more than 20 % each—followed by the ROK, PRC, and the UK—all higher than 15 %. The third most quoted indicator is the Economy one; the policies of PRC, ROK, the UK and France—all by more than 17 %—explicitly note and discuss issues on economy/economic cooperation and trade, including sustainable development.

The least-quoted among indicators is the Tourism indicator—between 0 and 3 %—with Japan, for example, not noting it at all. Among the other little-quoted indicators are the Infrastructure, Pollution, Security, Safety and SAR, and Human indicators. Finally, the remaining indicators, Governance, Environmental Protection, and Climate Change, lie in the middle.

However, if the quotations concerning the Environmental Protection, Pollution, and Climate Change indicators are put together, this new indicator would be higher—by 20 % or more (with the exception of the Netherlands, the ROK, and Spain)—than those of the International Cooperation and Economy indicators, and only a little lower than that of the Science & Education indicator.

To conclude, based on quantitative measuring, the top three priorities of these nine policies are Science and Education, International Cooperation, and Economy. If the newly formed Environment, Pollution, and Climate Change indicator is taken into account, the top four indicators accord more or less with the official priorities or policy goals/aims/principles of several national policies. The policy documents of Germany, Italy, Japan, and Spain, however, do not explicitly include priorities/priority areas.

The **Human Dimension** indicator is not among the most-quoted issues of the national policies of the nine Arctic Council's observer countries. All but the Netherlands, however, include

it, and it is particularly mentioned by Italy and the UK (higher than 6 %). These eight policies explicitly note Indigenous peoples of the Arctic, or the North, and comment on their ways of life, rights, and languages. Arctic Indigenous peoples account for "ten percent of the four million people" (Germany), are recognized as being "easily affected by environmental changes and expanded economic activity" (Japan), and are "currently facing fast changes in their habitats and their ways of life" (Spain). There is thus a need for "protection of their rights to a free and self-determined life in their homeland" (Germany) and to "respect the views, interests, culture and traditions of the Arctic Indigenous peoples" and their communities (UK).

The policies of Germany, Italy, PRC, ROK and the UK also explicitly mention people other than the Indigenous populations, meaning the whole population of the Arctic region. France takes into consideration that the "northern territories [have] very small populations," about four million people (Germany, Japan). Interestingly, Italy includes two aspects of the Human Dimension indicator: urban areas and Indigenous peoples. There is thus a need to "protect[ing] people and the environment" (UK) in general, and to realize "harmonious coexistence between man and nature… and intergenerational equity" (PRC).

All in all, there is a striking similarity between those national policies including and explicitly discussing the Human indicator, and it is noteworthy that five (out of nine) recognize the whole population, not only the Indigenous peoples.

The **Governance** indicator is not among the most-quoted issues of the national policies of these observer countries. Referring to the criteria for Arctic Council observership, several policies note the existing governance structures of the Arctic region, and the international agreements relevant to them, such as UNCLOS, the AC and the Spitsbergen Treaty, and commit to keeping the region peaceful and stable (e.g., Japan, UK). They also recognize the national jurisdictions of the Arctic states (e.g., Italy, Spain, UK) and "respect [to] the sovereign rights of the Arctic states" (PRC). The emphasis here is on Arctic Ocean governance, the five littoral states and their influence over the ocean, and also UNCLOS and other international regimes, such as OSPAR, MARPOL, and organizations, like the IMO. It is also stated that increasing human activities in the polar regions "will require further international consultation, governance and regulation" (the Netherlands) and legally binding regulations (e.g., Germany).

All, except the Netherlands, explicitly mention the Arctic Council. It is recognized as the central body for Arctic cooperation (e.g., by Germany), not least due to the legally binding agreements, such as SAR. The Ilulissat Ministerial Declaration is mentioned by France.

A few policy documents note that there is no comprehensive treaty on the Arctic, although UNCLOS plays an important role in Arctic Ocean governance. It is recognized that there are "collective governance issues [that] potentially concern the international community" (France). The term "international commu-
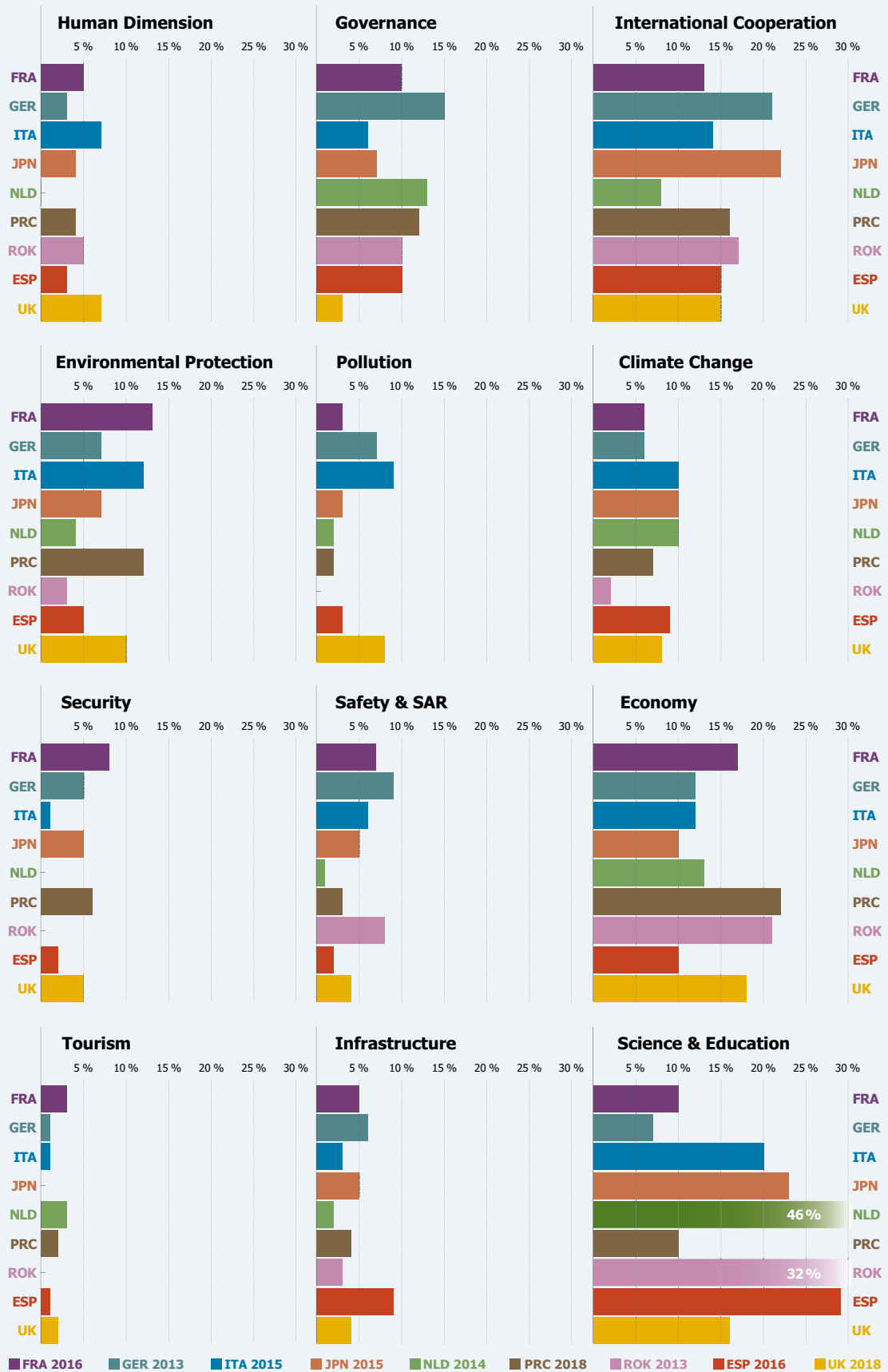
Figure 27. Current Observer Strategy Comparison

Note: The percentages in each indicator are rounded to the closest whole number
and represent the percent of the total number of quotes coded for each document.

nity" is also used by Japan and PRC. The freedom of the seas is included—including rights to scientific research, navigation, overflight, fisheries, laying of submarine cables and pipeline—which motivates non-Arctic (littoral) states to increase their involvement "in the planning and decision-making processes relating to sustainable and responsible governance of the Arctic Ocean" (France). A global approach is reflected by the policies of Japan. The EU and its interests in the Arctic, such as environmental protection and sustainability, is recognized by France as "the world's largest maritime economic power" (France), and by Italy and by Spain as part of the EU's Common Foreign and Security Policy. Only Germany explicitly notes Indigenous peoples' right to self-determination.

Overall, a striking similarity is the observers' recognition of the Arctic Council, and in the twofold interpretation of Arctic/Arctic Ocean governance based on the existing Arctic structures, in particular, the AC and international regimes; and also the universal freedom and rights of non-Arctic states to be involved in Arctic Ocean governance.

The **International Treaties and International Cooperation** indicator is the second-most quoted issue in these national policies. That is why international cooperation in and for the Arctic, as well as international rules for the region based on agreements and treaties on the Arctic/Arctic Ocean, are so greatly emphasized by the national policies; for example, to stand "for steadily advancing international cooperation on the Arctic" (PRC); or to "reaffirm our commitment to support and work in partnership with the eight Arctic States and the region's Indigenous peoples, to uphold this position" (UK).

Following on from the previous indicator, the focus of a few policies (e.g., France) is on international cooperation concerning the Arctic Ocean. "Science-driven research, which should include the effectiveness of existing law" is also reflected (the Netherlands). Being present in relevant international forums on the Arctic is important "to promote France's interests" (France); or to "have a high profile in the forums, initiatives, and actions carried out in the areas of scientific research, technology, sustainable use of natural resources, and freedom of navigation" (Spain). Bilateral relations with the Arctic states will bring "greater depth to our Arctic engagement" (UK).

Among mentioned international agreements and treaties are: UNCLOS (France, Germany, Italy, PRC, UK); UN Charter (PRC); Polar Code (France, Japan); MARPOL (France, Germany, Japan); CBD (Germany, Italy); CLRTAP (Italy); MEPC (France); SOLAS (France, Italy, Japan); HABITAT III (Italy); STCW (Japan); Kyoto Protocol (Japan, PRC); Spitsbergen Treaty (Germany, PRC, ROK); Prevention of Unregulated High Seas Fishing in the Central Arctic Ocean (France); Ilulisat Declaration (France); OSPAR (Germany, Spain, UK); Minamata Convention (UK); UNSDG (UK); Paris Agreement (PRC, Spain, UK); Convention of Protection of Marine Environment of N-E Atlantic (Germany); SAR and two other AC treaties (PRC, Germany).

	FRA 2016	GER 2013	ITA 2015	JPN 2015	NLD 2014	PRC 2018	ROK 2013	ESP 2016	UK 2018
MARPOL	X	X		X					
OSPAR		X						X	X
Paris Agreement						X		X	X
SOLAS	X		X	X					
Spitsbergen Treaty		X				X	X		
UNCLOS	X	X	X			X			X

Table 67. International Agreements and Treaties

Among the international organizations mentioned are: BEAC (France, Germany, Spain); CBSS (Spain); EPB (France, Germany, Italy, Netherlands, Spain); EU (especially by France, EU's CFSP by Germany, EU Mediterranean policy by Spain); EU's ND (France, Germany, Spain); G7 (UK); IMO (France, Japan, PRC, UK); AHDR (ROK); IASC (Germany, Italy, Netherlands, PRC, ROK, Spain); IPCC (Italy, Netherlands); ICSU (Italy); NEAFC (Germany); UN Security Council (PRC); UNEP (UK); UNFCCC (PRC, Spain).

	FRA 2016	GER 2013	ITA 2015	JPN 2015	NLD 2014	PRC 2018	ROK 2013	ESP 2016	UK 2018
EPB	X	X	X		X			X	
EU	X	X						X	
IASC		X	X		X	X	X	X	
IMO	X			X		X			X

Table 68. International Organizations

Among the international forums mentioned are: Arctic Circle (PRC, ROK, UK); Arctic Frontier (PRC, ROK, UK); Territory of Dialogue (PRC).

All in all, it is fragmented how international forums are preferred, as UNCLOS is explicitly mentioned by five policies, IASC by six ones, and IMO by four ones.

The **Environmental Protection** indicator is not among the most-quoted issues of the national policies of the nine Arctic Council's observer countries, and is emphasized by France, Italy, PRC, and the UK (more than 10 % each). The starting point here is, not surprisingly, the consideration of the Arctic as "one of the most vulnerable of our planet" (Italy), an "ecologically significant and sensitive region" (Germany), including a "particularly fragile marine environment" (France), and that "the poles are extremely sensitive to changes in climate" (the Netherlands). Thus, any changes and their impacts "on the Earth as a whole must be understood with a comprehensive and wide-ranging perspective" (Japan); and environmental protection and security are tied and fostered together (Spain). Arctic regional action must also be taken for environmental protection and there

must be "sustainable exploitation and conservation of biodiversity and environmental quality" (the Netherlands). Establishing "a framework for the sustainable management of Arctic fisheries" is defined as important (France). The PRC promises to support the Arctic coastal states "in their efforts to reduce pollutants in the Arctic waters from land-based sources."

Protected areas and/or biodiversity are identified as being important (by France, Germany, Italy, Netherlands, PRC, Spain, UK), although it is not proposed that the Arctic should "become a national park but…continue as a lived, and managed, environment" (UK). Monitoring is not explicitly discussed by most of the policies, except France which would "step up the exchange of oceanographic information between the French Navy and its foreign counterparts." Only the PRC mentions risk assessment.

As a conclusion, protected areas are mentioned by seven policies, and monitoring by none.

The **Pollution** indicator is among the least-quoted indicators of the national policies, with only Germany, Italy, and the UK placing some emphasis on the issue (more than 7 % each). The ROK does not include the indicator. Echoing the previous indicator, it is not surprising that the starting point here is the consideration that "the Arctic is becoming increasingly polluted," and visited (UK). "The vast majority of litter and pollutants impacting the Arctic originate outside the region" (UK); greenhouse gases that reach the polar environments… [are generated] outside the polar regions in areas [through] high-intensity urbanization, industrialization and farming" (Spain). Pollution is "an accepted scientific fact" (Spain), and it "is essential for us to take action" (UK), with problem solving through scientific research (the Netherlands).

A few policies explicitly mention the interdependence and interrelations between the Arctic and global perspective and therefore the UK "will continue to display the same strong leadership shown when we became the 1st country in the world to set legally binding emission reduction targets."

Among explicitly mentioned pollutants are: "pollutants… [that] originate outside the region" (UK); marine litter (PRC, UK); ship discharge, offshore dumping & oil spills, air pollution (France, Germany, Japan, PRC); greenhouse gas emissions (Germany, Netherlands, Spain); plastic (UK); mercury (UK); black carbon (Germany, Italy, UK); SLCFs (methane, HLC, black carbon) (Germany, Italy); sea transport, tourism, mining and harbour operations (Italy); mining (France).

	FRA 2016	GER 2013	ITA 2015	JPN 2015	NLD 2014	PRC 2018	ROK 2013	ESP 2016	UK 2018
Marine litter						✕			✕
Ship discharge, oil	✕	✕		✕		✕			
Greenhouse gases		✕			✕			✕	
Black carbon		✕	✕						✕
Plastic									✕

Table 69. Pollutants

Polluters are not explicitly mentioned in any of the policies. However, it is noted that there are "pollutants… [that] originate outside the region" (UK), and that "expanded economic activities" are resulting in pollution of the air and water (Japan).

All in all, there is fragmentation in pollutants, similarities with polluters, since they are only pointed indirectly, coming from "outside the region".

The **Climate Change** indicator is not among the most-quoted issues of the national policies of these observer countries. Climate change is, however, explicitly and evenly discussed in all the policies (between 6 and 10 %), except for the ROK (only 2 %). The countries note that "the consequences of climate change in the Arctic are dramatic" (Germany), and that the Arctic is warming much faster compared to global average warming (UK); "the Arctic environment is responding very sensitively to global warming" (Japan), and there are also consequences and impacts [of warming in the Arctic] for non-Arctic regions (Germany, Netherlands). The scientific evidence "defines [as]'extremely likely' the link between climate change and human activities" (Italy). Indeed, Italy explains that global warming is one of the motivations for Italian presence in the Arctic. To address warming in the Arctic we must be prepared to make use of "the best available scientific knowledge at any given moment" (Spain).

Potential impacts on economic opportunities of Arctic warming are also recognized by France, the Netherlands, and the PRC.

The scientific community is important in terms of problem-solving in the Arctic (Germany), with the region having become "an important natural laboratory for studying climate change at the global level." The Netherlands in this regard mentions the work of the IPCC and AMAP.

Mitigation is explicitly noted by Japan "if effective mitigation measures are not taken… a nearly ice-free Arctic Ocean… is likely…[and] advanced efforts in both mitigation and adaptation" are needed. Mitigation is also mentioned by France. The UK mentions its "strong record of implementing policies that mitigate the release of harmful emissions into the atmosphere" (UK). Spain notes mitigation and adaptation in the context of UNFCCC.

As a conclusion, adaptation or mitigation are not explicitly noted by Germany, Italy, Netherlands, PRC, and ROK. The PRC uses the term "emission reduction measures" taking place in China.

The **Security** indicator is among the least-quoted issues of the national policies of the nine Arctic Council observer countries. Only France, Germany, Japan, PRC, and the UK explicitly note the issue (more than 5 % each). The Netherlands and the ROK do not refer to security.

Partly reflecting the Governance indicator, several policies refer to the objective of maintaining the Arctic "as a peaceful and stable region" (UK) based on the maxim, "Let the North Pole be a pole of peace" (France). Peace and stability must be promoted in the Arctic, including the security of maritime trade and transport, as stated by the PRC. The fostering of "peacekeeping, environmental protection and security in the polar regions" is mentioned by Spain. The Arctic states and the Arctic Council are identified as the appropriate bodies for promoting mutual confidence in the region (Italy, UK).

There is also concern that the overlapping interests of Arctic states could trigger a geopolitical race for sovereignty or natural resources (Germany). Japan's policy reflects the importance of preventing "moves to strengthen military presence in the region," and of paying "full attention to security developments in the Arctic." A few policies, such as those of Germany and the UK, explicitly note and discuss defence and military-security activities. NATO is mentioned by Germany and the UK, although the military alliance has kept a low profile in the Arctic since the annexation in Crimea. In addition to the Arctic Security Forces Roundtable, "there should be a bilateral approach focusing on practical objectives" (France, Germany), such as cold weather training exercises (UK).

All in all, concerning the global perspective, the UN Charter and UN Security Council are explicitly noted by PRC.

The **Safety and SAR** indicator is quoted a little more than the Security indicator in all the policies. Safety here is primarily defined to mean maritime safety and thus focus on maritime transport and shipping (e.g., Germany, UK). There is an insufficient emergency rescue capacity (Germany). Increased economic activities and tourism could pose safety risks for local communities and the environment (Netherlands, UK).

Concerning international agreements on maritime and other safety measures, the focus is on IMO (France, Germany, Japan, PRC, Spain); SAR Agreement (Germany, UK); the Polar Code (France, Japan, PRC, ROK, Spain, UK); SOLAS and MARPOL (France); the 2013 EU Directive on Safety of Offshore Oil and Gas Operations (Italy); UNCLOS (Spain); and the goals of the Association of Arctic Cruise Operators of "managing responsible, environmentally friendly and safe tourism in the Arctic and [striving] to set the highest possible operating standards" (UK).

	FRA 2016	GER 2013	ITA 2015	JPN 2015	NLD 2014	PRC 2018	ROK 2013	ESP 2016	UK 2018
IMO	X	X		X		X		X	
Polar Code	X			X		X	X	X	X
SAR Agreement		X							X

Table 70. Safety

Finally, food/water safety is not explicitly noted by the policies, except by Japan.

The **Economy** indicator is the third most-quoted issue, as mentioned earlier, and occurs quite evenly in national Arctic policies. In particular, the PRC and ROK focus on economic activities in, and related to, the Arctic (more than 20 % each).

This indicator is a broad one, as among the explicitly identified economic and commercial activities in the Arctic are marine transport (e.g., energy, cargo, tourism) and shipping, fisheries, exploitation of oil, gas, mineral and other non-living resources, energy supply, tourism, and international trade. All these activities are poised to "bring about major social and economic changes, and exert important influence on the way of work and life of Arctic residents" (PRC).

Concerning fisheries, the Spanish strategy is twofold: first, Spain confirms that it will carry out fishing activities in accordance with international/national regulations, and to ensure the sector's sustainability, "which includes respecting the environment and combating illegal, unreported, and unregulated fishing." Second, Spain recalls that the "fishing industry must consider …that the management of fishery resources is an EU mandate… that Spain, as an EU Member State, is now a member of the NEAFC, whose remit includes Arctic waters." The UK Government, based on its experience of the Arctic, undertakes to "continue to adopt a science-led, precautionary and ecosystem-based approach to the establishment and management of any new and emerging fisheries in the Arctic region" (UK 2018).

Furthermore, companies of several non-Arctic states already have "political and economic interests in the Arctic" (France), such as Total and Engie of France, and several other French companies present in the Canadian, Norwegian, and Russian Arctic that are "bound to grow" (France); "Germany and its companies" as well as the European Investment Bank is mentioned by Germany; Eni by Italy; JOGMEC by Japan; Shell by the Netherlands; and the Polar Silk Road initiative by the PRC. Resource utilization is carried out in cooperation with the Arctic states, for example, to "pursue joint research… in the fields of resources development, cargo shipping infrastructure, transshipment ports, and the commercial use of NSRs", or to "develop Offshore Plant Technology for Deepwater Resources Development" (ROK).

This indicator clearly notes the ambivalence of Arctic development in the 21st century. Around "20 to 30 percent of the world's undiscovered fossil fuels… are suspected to lie north of the Arctic Circle" (Germany). The Arctic is a region with a fragile ecosystem, which would "pose immense challenges, such as the need to mitigate the inevitable loss of biodiversity, the increased risk of sea pollution and the impact on the ways of life of Indigenous populations" (France); the rapid and significant changes in the region bring and provide new major economic and business opportunities for and in the Arctic: for example, "shipping and fisheries" (France) as a policy goal of several non-Arctic states, such as France, Germany, PRC, and the ROK. As a result of climate change "new opportunities are arising in this connection, for example, for fisheries, maritime routes and tourism" (Germany). At the same time as advocating "protection and rational use of the region," the PRC encourages "its enterprises to engage in international cooperation on the exploration for and utilization of Arctic resources by making the best use of their advantages in capital, technology and domestic market," for example, for the Polar Silk Road initiative. Interestingly, the UK explicitly defines the implementation of the initiative as having potential risks.

The French Policy points out its "ecological ethics concerns about the region in its 'Grenelle' environment project:… *with the aim of protecting the Arctic environment*" (France). Thus, there is the other side of the coin, which is the main reason why this indicator explicitly includes sustainable development. For example, "urban sustainable development is one of Italian national priorities. The approach to Arctic activities of the Italian company Eni, is based on key principles, such as "operations are to be conducted only during periods of the year when repercussions on the marine environment (in particular, on mammals) are minimal" and "local inhabitants have to be involved and informed" (Italy); there is a need "to examine how we can contribute to achieve sustainable development of which Indigenous peoples can see benefits, while protecting the foundations of traditional cultures and lifestyles" (Japan); "exploitation of resources in the polar regions and their transport must be carried out in a stable, sustainable and environmentally-friendly manner" (Spain).

Further, the Dutch polar strategy demonstrates synergy between the business and scientific community interpreting scientific research to be important "to the Dutch business community and to the Dutch government." The 2018 UK Policy looks for a balance by "promoting the Arctic as a place where economic and commercial development occurs in a sustainable and responsible manner… where the people of the region benefit from the prosperity that a changing Arctic may bring [and which] also supports "UK companies investing in the Arctic; making them aware, and connecting them to, the opportunities available" (UK 2018). And at the same time, conservation is defined "of high importance but… will be maintained alongside the utilisation of Arctic resources" (UK 2018).

Finally, the Arctic Economic Council, established in 2014, is explicitly mentioned by Spain and the UK.

All in all, the policies of the PRC and ROK, in particular, focus on economic activities in, and related to, the Arctic.

The **Tourism** indicator is the least-quoted issue of the national policies of the nine Arctic Council's observer countries, as only France, Germany, the Netherlands and UK have put some emphasis on the issue (between 2 and 3 %). Japan and ROK do not explicitly include the indicator.

New transport routes also mean new opportunities for polar tourism (Germany, the Netherlands). All forms of tourism in the Arctic, "from small expedition ships to large conventional cruise liners" (UK), in particular "pleasure cruises" is on the increase and has been booming in recent years (France, Germany). Correspondingly, tourism is defined to be a field of "special interest" in Arctic affairs (Spain), or 'Arctic tourism' is "an emerging industry" (PRC).

Finally, there is good reason to support "safe, responsible and sustainable tourism in the Arctic (UK) and despite SAR and the legal regimes "extra caution is required when planning all tourism activities and maritime operations in the Arctic" (UK). Further, tourism agencies and professionals, as well as tourists, need training and a regulatory regime (PRC). Providing sustainable tourism means meeting the most strongest safety and environmental standards (Germany).

The **Infrastructure** indicator is one of the least-quoted issues of the national policies of the Arctic Council's observer countries, mentioned only by France, Germany, Japan, and Spain (5 % or more).

In all of the policies, except for Italy, infrastructure means marine transportation, navigation and/or shipping. Germany places strong emphasis on the safety of maritime transport. As mentioned earlier, the Spanish Polar Strategy concerns marine transportation and shipping, which brings a strong global perspective and global scale to this indicator. Aviation is not explicitly mentioned by any of the policies.

The Arctic is "a laboratory for new technologies in information and communication, robotics, automation, airborne systems and sensors" (France). The "development of environment-friendly polar technical equipment… [is vital] in the building of infrastructure for Arctic development" (PRC). Innovation, particularly technological innovation, is explicitly noted by France, Italy, and the UK as an important part of this indicator. Investments in renewable energy and development of 'green' products are mentioned by Italy.

As a conclusion, a striking similarity between the policies is that they all explicitly note marine transportation, navigation and/or shipping, and do not note aviation.

The **Science and Education** indicator is the most-quoted issue area in research and scientific cooperation by the national policies of the Arctic Council's Observer countries. In particular, the policies of the Netherlands, ROK, and Spain focus greatly on scientific research in the Arctic (30 % or more): note that, in the case of the Netherlands and Spain, the actual focus is research on the polar regions.

It is suggested by many of the policies (e.g., Germany, the Netherlands) that research drivers are related to the environment and climate change 'Space for science' (Netherlands); fisheries (Spain).

Traditional knowledge is explicitly mentioned only in the policy documents of the ROK and the UK.

Among the different types of research infrastructure included are: i) research institutes—national (e.g. AWI in Germany) and international (e.g. IASC, EPB); ii) research stations, mostly in Svalbard, by France, Germany, Italy, Japan, Netherlands, PRC, ROK, UK; iii) research vessels and expeditions by Italy, PRC, ROK, UK; iv) new technological equipment (e.g., satellites); v) scientific or science-related international networks and conferences (e.g., IPY by France, ASSW by Japan, Arctic conferences in Berlin by Germany, *Tavolo Artico* by Italy, CNARC by PRC); and vi) research funding/funders—both national funds (e.g., NERC in UK) and international ones (e.g., EU Framework Programmes).

	FRA 2016	GER 2013	ITA 2015	JPN 2015	NLD 2014	PRC 2018	ROK 2013	ESP 2016	UK 2018
Research institutes		✕				✕			
Research stations	✕	✕	✕	✕	✕	✕	✕		✕
Research vessels			✕			✕	✕		✕
Formal networks	✕	✕	✕	✕	✕	✕	✕	✕	
Informal networks			✕			✕	✕		✕
Education & UArctic			✕			✕	✕		✕

Table 71. Research Infrastructure

Education in general is explicitly mentioned only by Italy and the UK, and UArctic (University of the Arctic) by PRC, ROK and the UK.

All in all, in the Science indicator, a striking similarity among documents is mention of the research station in Svalbard.

The **Implementation** indicator is explicitly included in the national policies of France, ROK, and Spain, but not in those of Germany, Italy, Japan, Netherlands, PRC, and the UK.

As a conclusion, this section shows, that based on the used quantitative measuring the indicator most-quoted by the national Arctic policies and strategies of the nine Observer States is the Science & Education indicator, followed by the International Cooperation and Economy indicators. The fourth is the new Environmental Protection indicator (composed of Environmental Protection coupled with Pollution and Climate Change). These top four indicators accord more or less with the official priorities or policy goals/aims/principles of these states' national policies.

Finally, at the end of this research, in a synthesis of the different parts of this study, the national policies of the Arctic Council observer states will be discussed with respect to the national policies of the Arctic states and the policies of the PPs on the one hand, and on the other hand, based on the analyses of these existing policies main themes will be concluded as new and emerging trends of Arctic governance and geopolitics.

Conclusions: Synthesis and Trends

How can one begin to describe, define, and interpret the reality of the Arctic, or even try to (re)shape its politics? There are many different perceptions and discourses and much mis-/disinformation about the Arctic in the media, on the part of policy makers, and among researchers. Traditional images and visions also abound—the Arctic as a homeland for Indigenous peoples, a place on the world's margins, storehouse of resources, military theater of the Cold War, and environmental linchpin for the planet (e.g., AHDR 2004; Contesting the Arctic 2015).

There are Arctic development success stories, such as the maintenance of cultural integrity, technological advances, and political and legal innovations (see, Human Development Report 2004, esp. pp. 229–237). There are trends and megatrends, such as increased urbanization, dependency on financial transfers, and resource exploitation (Nordic Council on Ministers 2011). Narratives also exist on how the development and future of the Arctic region is being (re)constructed.

One widespread narrative is related to development projects throughout the North. These are far from over; they will continue both as new and traditional economic opportunities with different implications for regional development. According to Petrov (2018, p.7), "the *State has controlled the state of the North*" in Russia (formerly the Soviet Union), in Canada, and in several Nordic countries. The State is "the central negotiator… in the 'hegemonic project' of developing the frontier." The bottom line of this particular narrative is "that the evolution of development paradigms (propagated by the State) has always been followed by the transformation of public policies."

Here, the question is if state centrism would still be the right recipe for the Arctic region, when development needs and desires differ. Or do different (regional) development trajectories need to be captured, given that the pathways of different Arctic regions toward sustainability differ one from another? For example, would Indigenous self-reliance in managing renewable resources help maintain ecological balance? Or, would a triangular alliance of government, academia, and private business be beneficial? A successful combination of development pathways, determined by public policy, research, as well as economic action by the public and private sectors, is needed. Strong stakeholder engagement is necessary to reveal those desired futures. For example, the so-called "Oulu phenomenon" came about through the engagement of university, municipal administration, and commercial companies (https://www.ouka.fi/oulu/english/phenomena-from-oulu). The Arctic Circle Assembly (www.ArcticCircle.org), on the other hand, grew from bringing relevant stakeholders together for fruitful dialogues every year and identifying the sustainability indicators needed to guide decision-makers along the right pathways.

As mentioned in the Introduction, the mainstream narrative of international Arctic cooperation is based on the notion of 'constructive cooperation.' The Arctic States, through their commitment to sustainable development and protection of the Arctic environment, recognize the value of high geopolitical stability and are committed to maintaining it through international, mostly functional, cooperation. Behind this lie States' common interests and some important prerequisites for international cooperation (e.g., Heininen 2018). These include the original nature of Arctic militarization as a means of global nuclear deterrence, the high degree of legal certainty, the related policies to avoid armed conflicts, and the positive stance regarding the regional devolution of power. Building on these principles, the Arctic States, supported by Indigenous peoples and local communities, have consciously constructed their own reality of post–Cold War governance and geopolitics.

Related to this is the ardent narrative of 'Our shared homeland' through which the Arctic Indigenous peoples emphasize self-determination, including Greenland self-governance and Indigenous rights. This approach is due greatly to cultural integrity. Cultures and languages have been resilient in the face of rapid and multi-dimensional changes, and the Arctic people's consciousness of their own nationhood is reflected in a growing demand for self-determination and satisfaction of their rights.

Another narrative relates to the increasing use of, and potential race for, Arctic natural resources, as the rising temperatures and melting sea ice expose previously economically non-viable sources of hydrocarbons and other minerals, fishing grounds, hydro power, and even fresh water (e.g., Smith, 2010). Despite the fact that Arctic waters will be icy or slush-covered for decades, decreasing sea ice will open up new economically and technically viable trans-Arctic shipping routes, simultaneously with a growth in industrial interests. This has the potential to lead to growing infrastructure development, increasing pressure on the Arctic ecosystem, and even to emerging conflicts between the Arctic States and major non-Arctic States. The Doomsday scenario is that the sea cover of the Arctic Ocean will rapidly disappear, and that most of the glaciers and permafrost will melt. The significant rise in sea levels, as well as increasing uncertainty, will decrease human and societal security in the Arctic and globally, in particular in coastal areas of developing countries and small island States.

Thus, the question of future development, when defining societal security, is not only about how to tackle resources— either too many or too few—but also how to resolve ethical questions, as well as the role of environmental protection and sustainable development. Key questions of the global climate ethics debate, such as moral responsibility and distribution of burdens and benefits, have recently found their way into Arctic politics (Palosaari and Tynkkynen 2015; also Conference Statement of Parliamentarians of the Arctic Region 2018), as part of the Global Arctic narrative. There are conflicting views, ranging from support for unlimited oil and gas development by State-owned and private oil companies through to the proposal by international environmental organizations for an offshore oil drilling ban. There are also varying views regarding the extent to which stakeholders—governments, companies, communities, and Indigenous peoples—are responsible for mitigating climate change and reducing the related uncertainty, at a time when some are stressing economic growth and others are highlighting the environmental risks of exploitation. The new ethical questions regarding Arctic oil and gas development have a fundamental global dimension, highlighted by an 'Arctic Paradox,' namely, that global warming will open access to resources whose utilization will speed up the changes and the melting of sea ice.

Finally, due to climate change and its implications for global security, there is a narrative that seeks an urgent shift in mind-set toward political ability and the search for a new security paradigm for the Arctic (e.g., Climate Change and Arctic Security 2019). The narrative further holds that an issue-oriented change 'from theory to action' could be facilitated via a co-design approach involving all relevant stakeholders and based on open dialogue and transdisciplinarity. Instead of the 'political inability' of the Arctic states, 'ethics' will be applied and 'political ability' achieved so that strict environmental protection can be adopted. Stricter environmental regulations are possible, even to stop offshore drilling in Arctic seas; resilient solutions and building a 'regional security community' are also possible. However, all this calls for a holistic understanding of the state of the Arctic and its governance and geopolitics, and of what kind of policies stakeholders have adopted, and are designing, for the region and its future development.

Strategies and policies are developed within the geopolitical context of the region, as described earlier in this study. However, as they are generally designed to be in place for a few years, they cannot always account for specific events/issues of world politics as they develop (e.g., Ukraine) (see, Figure 3, Arctic Events - International Events, p. 23). However, to address the issues, they should be able to provide the governance structure that informs States' work. This is where the Declarations of the Arctic Council Ministerials can provide further guidance every two years, not only to the Council, but also to the Member States, the Permanent Participants, and the Observer States and other Observers.

Against a background of significant multidimensional change, it is important, even crucial, for the Arctic States, Indigenous peoples organizations, and non-Arctic States to know what kind of perceptions, visions, and narratives there are concerning the region: this will give them a better understanding of processes taking place in, and impacting, the Arctic now and in future. It would also be politically useful for Arctic stakeholders, as well as the Arctic Council, to know more about new and/or emerging trends in Arctic governance and geopolitics that underpin these processes—this is the final task of our scientific study.

Summary of Priorities of Arctic Policies/Strategies

All the Arctic States, except the United States of America, clearly declare the economy/(socio)economic development to be a priority, and hold climate change or environmental protection as another priority, which is striking. All countries, except Canada and Sweden, state that international cooperation is a priority, which is relevant. As an overall conclusion, a comparison of the current official national strategies and policies shows economy/economic development, international cooperation, and environmental protection to be the overarching priorities of the Arctic States.

On the other hand, according to the coding of different indicators in the present analysis, the most-coded quotes are ordered as follows: Governance, the new Environmental Protection indicator (composed of Environmental Protection coupled with Pollution and Climate Change), Economy, International Cooperation, and the Human Dimension.

The Arctic Council chairmanship programs tend to focus on issues pertaining to the Environmental Protection indicator. In the past few years there has also been a focus on pollutants that contribute to climate change. As for the social aspect, there is an overall focus on health and wellbeing, and also on culture and/or language protection. Gender equality shows up on the agenda every few years or so. Maritime safety, as a part of the Safety & SAR (search and rescue) indicator has also emerged as a safety concern over the past few chairmanship programs.

The content of the ministerial declarations of the Arctic Council tend to prioritize issues around the International Cooperation, Governance, Human Dimension and Environmental Protection indicators, which have proved to be the most-quoted indicators over time. The declarations all mainly deal—directly or indirectly—with the two main functions of the Arctic Council: environmental protection and sustainable development. Under the Human Dimension indicator there is also a focus on issues related to ensuring the health and wellbeing of Northerners. Issues related to the Economy and Infrastructure indicators are also discussed, although not to the same extent as the others.

The policy documents of the four Indigenous peoples' organizations, as among the Permanent Participants of the Arctic Council, are somewhat fragmented. They do not cover all the indicator fields in full detail, as their focus varies. There is a striking similarity in that all policy documents explicitly address issues surrounding the issue of Indigenous rights (individual and col-

lective) as a part of the Human Dimension indicator (although in different contexts), and also those related to the Governance indicator, both broadly and in detail. Moreover, the importance of the International Cooperation (and treaties) indicator is highlighted. Unlike environmental protection, pollution and/or climate change are not explicitly covered by all documents. Unsurprisingly, all the documents emphasize the rights of Arctic Indigenous peoples to use/utilize the resources of their homelands and also the importance of 'Traditional knowledge.'

Based on the quantitative measuring carried out in this study, the indicator most-quoted by the national Arctic policies and strategies of the nine Observer States of the Arctic Council is the Science & Education indicator, followed by the International Cooperation and Economy indicators. The fourth is the new Environmental Protection indicator (composed of Environmental Protection coupled with Pollution and Climate Change). These top four indicators accord more or less with the official priorities or policy goals/aims/principles of these states' national policies.

Finally, in addition to the narratives mentioned above, we present the main themes, as new and/or emerging trends of Arctic governance and geopolitics in the 21st century based on the analyses of the existing Arctic policies and strategies of the Arctic States, Permanent Participants, Observer States, and the Arctic Council chairmanship programs and declarations, as well as their priorities. This information is useful for policy makers and researchers for further discussion in the context of different images and perceptions and the dominant narratives of the Arctic mentioned above.

New/Emerging Trends of Arctic States

1) **State domination.** The Arctic States dominate Arctic geopolitics and governance, and play a crucial role in controlling the region. The new Arctic dynamics has been influenced by the involvement of Indigenous peoples and their demands, which has put human and social issues on the agenda, and by the visibly growing interest of non-Arctic states in the future of the Arctic. This is based on the high level of geopolitical stability and constructive cooperation—in this context, even the Ukrainian conflict has had very limited impact on Arctic cooperation. Thus, the Arctic has become 'exceptional' in world politics, with State sovereignty firmly legitimized.

On the other hand, the intention of Arctic States to dominate in the region is due to globalization and rapidly advancing climate change, which means better access to Arctic resources and better chances for economic activities and development. However, this does not necessarily mean that there is a willingness yet to adopt globalization per se into national Arctic policies—there is more of an interest in accepting a transformation of the Arctic Council from being the leading regional council to becoming a leading international one.

2) **Ambivalence of Arctic development.** Although the Arctic States are searching for a balance between environmental protection and economic activities, and proclaim that there must be such a balance, there is ambivalence when it comes to environmental protection versus economic development. Climate change—due to rapid changes in fragile ecosystems and thereby better access to the Arctic lands—is driving the utilization of resources and economic activities in the public and private sectors. There are environmental initiatives, as well as small steps, such as protected areas and legally binding agreements under the auspices of the Arctic Council, such as the SAR and Oil Spill agreements.

Although one of the narratives mentioned is environmental protection and implementation of sustainability, neither stricter environmental regulations nor an 'Arctic Treaty' are preferred by the Arctic States. It is thus not surprising that most of the States focus their economic activities on the extractive resources (e.g., mining, energy). Tourism, which is not reflected in most of the policies has also been on the increase. This has created an overall sense that infrastructure development should support economic activities, especially in the shipping industry (in spite of safety concerns).

3) **Science in focus.** The role of science is increasing. Mainly due to the pressure of climate change, the Arctic States have learned to use, and have come to depend upon, scientific research for decision-making, including international scientific cooperation. This is despite pollution and environmental protection not being considered a trigger or driver of policy in the 1990s, when the Arctic Council was established. At the same time, there is a growing need and general trend toward increasing access to educational/training programs to prepare Northerners for work in the natural resources sector, although traditionally, the improvement of educational attainment has been more or less neglected in the past.

4) **Political inability.** Mitigate or adapt to climate change? There is no consensus on this question in the current strategies. Some focus on adapting to climate change and others see adaptation as a way of mitigating these changes. That said, just over half of the strategies identify greenhouse gases as a concern and discuss ways of counteracting emissions. Again, no strict environmental regulations are implemented, nor is an 'Arctic Treaty' proposed. Instead, there is 'political inability.'

New/Emerging Trends of AC Chairmanship Programs and Declarations

Chairmanship Programs

1) **Fragmented priorities.** Although environmental protection and sustainable development, as Arctic Council functions, are evenly presented, priorities in the Arctic are fragmented and based on national interests. There are a variety of foci, including recognition of culture, language, tradi-

tional knowledge, wellbeing, (mental) health, and gender equality (although not consistently discussed). Interestingly, food security is generally not a focus of the programs, which is surprising as access to healthy food is integral to health and wellbeing.

2) **Ambivalence of Arctic development.** The search for a balance between the environment and economy (sustainable development) emphasizes living marine resources, blue economy, shipping, and tourism. Yet, despite the consensus that the environment and economy must be balanced, there is little emphasis on international cooperation or sharing best practices in this area. This seems odd, given that what happens in one country can have effects in another.

3) **Transfer of pollutants.** A range of pollutants—POPs, PCBs, mercury and radioactivity, black carbon, methane, marine litter and micro-plastics—are mentioned, and there are some interesting patterns. For instance, the earlier programs barely mention different pollutants, and it is not until Sweden's chairmanship program in 2011 that there were consistent discussions around the different climate change pollutants. Maritime safety, search and rescue, as well as the Polar Code and SAR, are also addressed, although more consistently in the recent programs, suggesting that this has become a more pressing issue, probably as access to Arctic waters increases.

4) **Research vis-à-vis education.** There is not much focus on the purpose of research in the Arctic. Education is explicitly mentioned, both in terms of the University of the Arctic and forms of distance or e-learning. That said, there is a little discussion about improving attainment levels.

Ministerial Declarations

1) **Explicit priorities.** The need for priorities per se and, within them, a transition toward underlining human and social issues (e.g., mental health, wellbeing), governance (in particular Arctic Council procedure), and safety and protection of the Arctic Ocean (e.g., SAR Agreement);

2) **Emphasis on stability.** In preambles to ministerial declarations since the Nuuk Declaration of 2011—and particularly in the 2017 Fairbanks Declaration at which Ministerial the foreign ministers of all eight Arctic States were present for the first time—the wording "Maintaining peace, stability and constructive cooperation in the Arctic" is emphasized. This, at the same time, maintains the commitment of the Ottawa Declaration, which established the Arctic Council, not to deal with military security. Despite this, the role of international cooperation is less emphasized in the declarations. This decline in discussion around international cooperation and international treaties is interesting, especially as worldwide interest in the Arctic continues to grow.

3) **New economic activities.** There is an increase in (new) economic activities, and within them a shift toward renewables

and bio-resources, blue economy, Indigenous food (safety), ecosystem-based management, and support for the Arctic Economic Council as an operational body between the public and private sectors.

4) **Transfers of pollutants.** There are transfers of pollution, in particular from outside the Arctic region, from radioactivity (e.g., AMEC) and heavy metals to black carbon, and methane (as GHGs) and other short-lived climate forcers and micro-plastics. Other pollutants are named in specific treaties relating to the pollutant in question. While the declarations do address new problems as they emerge: (e.g., climate change pollutants and oil, starting with the Tromsø Declaration in 2009), there has also been consistency in terms of concerns about POPs and mercury also continuing to be raised. At the same time, there is little discussion about general shipping waste and oil pollution, which links to the support of new economic activities.

5) **Focus on science.** The focus on science, rather than education is growing, with the exception that the University of the Arctic is explicitly mentioned. That said, education could become an emerging issue, with the Fairbanks Declaration (2017) discussing general attainment and the Rovaniemi Chair Statement (2019) seeking to ensure that "Indigenous languages in education" are addressed.

New/Emerging Trends of Permanent Participants

1) **International treaties on Indigenous rights.** The Permanent Participants seek to support Indigenous peoples and implement their rights (including harvesting rights) through international cooperation and agreements (especially the UN Declaration on Indigenous Peoples Rights) and international organizations (via United Nations bodies and the Arctic Council). International treaties tie Indigenous rights into international Arctic politics through the recognition of Indigenous peoples as legitimate political entities and as part of the internationalized and (digitally) 'connected world.'

2) **Indigenous rights to self-determination and self-government.** 'Indigenous rights,' meaning individual and collective rights (including mental health, children's education) are connected to their right to manage (their own) territory, and use and develop its resources: economy as a means to self-determination/self-governance. Relevant here is 'self-determination' vis-à-vis 'self-governing'—are these synonyms or is there a transition towards self-government, with Indigenous peoples at different stages of nation-building?

3) **Focus on science.** To avoid neocolonialism and the 'green' colonialism (wind, hydro, wave power, etc.), scientific findings should be further produced and developed together and in partnership with Indigenous peoples and incorporat-

ing (Indigenous) knowledge. Development of proper means, such as 'Indigenous-led impact assessments,' as methods and means for both a balance between (competing issues of) environmental protection and sustainable development and self-determination/self-governing are suggested.

New/Emerging Trends of Observer States

1) **Arctic stakeholders.** The Observer States of the Arctic Council are remapping and redefining their geographical and geopolitical position related to the Arctic region, and have their own definitions of the Arctic and/or its special features. Moreover, many of them are re-identifying their relationship with the Arctic, and self-identifying as Arctic stakeholders; this includes adopting, and even updating, their national policies/strategies, or other policy documents on the Arctic.

2) **Global Arctic.** The Observer States recognize the existing governance structures and international agreements, as well as the national jurisdictions of the Arctic States and their (small) populations, as a way of maintaining high geopolitical stability. At the same time, they are implementing international treaties and agreements, in particular the United Nations Convention on the Law of the Sea (UNCLOS), and recognizing international maritime law and globalization of the Arctic (a global Arctic), in order to adopt and maintain universal freedom and rights in Arctic Ocean governance.

3) **Ambivalence of Arctic development.** The fragile Arctic ecosystem is undergoing significant change, where new economic activities are becoming possible. Therefore 'protected areas and/or conservation' are deemed to be of 'high[er] importance,' than strict environmental regulations or an 'Arctic Treaty,' with adaptation and mitigation taking a less important role.

4) **Focus on science.** The Arctic as a 'space for science' leading to emphasis on research—the most quoted issue area—and on research stations within the region (Svalbard). At the same time, 'Traditional knowledge' is less recognized, although the Observer States have committed to respecting the values, interests, and culture of Indigenous peoples and other inhabitants of the Arctic region.

New/Emerging Overall Trends

Finally, based on these lists of new/emerging trends (of Arctic States, Arctic Council chairmanship programs and declarations, Permanent Participants and Observer States), there is the following short list of overall new and/or emerging trends of the future of Arctic governance and geopolitics:

1) **Ambivalence of Arctic development.** Whenever a balance is sought between environmental protection and climate change mitigation vis-à-vis an increase in (new) economic activities for Arctic (regional) development, there is ambivalence, and this is largely due to 'political inability';

2) **State domination vis-à-vis internationalization/globalization (the global Arctic).** There is a new kind of interrelationship, and a potentially competitive one, between i) State domination (by the Arctic States) based on geopolitical stability and (State) sovereignty; ii) internationalization/globalization (prompted by the Observer States and due the growing number of Arctic stakeholders) based on international treaties, in particular, international maritime law, and iii) UN declarations regarding Indigenous rights and self-determination (emphasized by the Permanent Participants);

3) **Focus on science.** The role of science is increasing due to the pressure of the rapidly advanced climate change and the ambivalence, mentioned above, between economic activities and environmental protection; all Arctic stakeholders (Arctic States, Permanent Participants, Observer States) are dependent for problem-solving on scientific research, as well as international cooperation in science;

4) **The Arctic and Space:** As an emerging trend is the close interrelationship between the Arctic and the Space (e.g., ITC and digital services & security, stable satellite communication, meteorology as a new priority including the involvement of the WMO) due to globalization and the rapidly advancing climate change in the Arctic and globally.

**

These new and/or emerging overall trends of Arctic governance and geopolitics are linked with a few existing narratives. For example, the ambivalence of Arctic development trend is closely linked with the narrative of increasing use of/potential race for resources and of the global climate ethics debate. The trend of State domination vis-à-vis internationalization/globalization is linked to the narratives of State-controlled development projects and high stability. The focus on science trend deals with the narrative of the global climate ethics debate in terms of depending on science to solve 'wicked' anthropogenic problems; but it hesitates to implement the narrative of a paradigm shift. The final one—at this stage still a silent message—the Arctic and Space is another possible global approach for the Arctic, which has the potential to bring something new to the table.

Bibliography

List of Primary Sources

AAC (2017). AAC's Arctic Policy. Arctic Athabaskan Council.

AAC (2008). Europe and the Arctic: A View from the Arctic Athabaskan Council. Arctic Athabaskan Council. http://www.arcticathabaskancouncil.com/aac/files/arctic_council/Europe%20and%20the%20Arctic.pdf

AAC (2007). Improving the Efficiency and Effectiveness of the Arctic Council. A Discussion Paper. Arctic Athabaskan Council. Whitehorse. https://oaarchive.arctic-council.org/bitstream/handle/11374/694/ACSAO-NO01_10_1_AAC_AC_Future.pdf?sequence=1&isAllowed=y

AEPS (1991). Arctic Environmental Protection Strategy. Rovaniemi, June 14, 1991. (mimeo)

Arctic Council (2019). Senior Arctic Officials' Report to Ministers 2019. Arctic Council. https://oaarchive.arctic-council.org/bitstream/handle/11374/2354/SAO-Report-Ministers-2019_FINAL-DRAFT_SAOX_5-May.pdf?sequence=1&isAllowed=y&fbclid=IwAR3f-S0Tc5AEYmx3Zbqzf6cHruNFoCeFm_BMSXoX6BDyDHMlE0R4bZ_zcQA CHANGE IN TEXT

Arctic Council (2015a). Permanent Participants. Last modified March 22, 2017. https://arctic-council.org/index.php/en/about-us/permanent-participants

Arctic Council (2015b). Observers. Last modified January 17, 2018. https://arctic-council.org/index.php/en/about-us/arctic-council/observers

Arctic Council (2015c). The Arctic Council: A Backgrounder. Last modified September 13, 2018. https://arctic-council.org/index.php/en/about-us

Arctic Council (2015d). Frequently Asked Questions. Last modified June 6, 2018. https://arctic-council.org/index.php/en/about-us/arctic-council/faq

Arctic Council Secretariat (2013). Vision for the Arctic. Kiruna, Sweden, 15 May 2013. (mimeo)

Arctic Economic Council (2016). Arctic Broadband: Recommendations for an Interconnected Arctic. Arctic Economic Council. https://arcticeconomiccouncil.com/aec-reveals-first-report-on-telecommunication-in-the-arctic-at-arctic-frontiers/

Barrow Declaration (2000). Arctic Council. https://oaarchive.arctic-council.org/bitstream/handle/11374/94/EDOCS-1200-v4-All_Arctic_Council_Declarations_1996-2017_Searchable.PDF?sequence=7&isAllowed=y

Canada (2019). Canada's Arctic and Northern Policy. Crown-Indigenous Relations and Northern Affairs Canada. Last modified September 10, 2019. https://www.rcaanc-cirnac.gc.ca/eng/1562782976772/1562783551358

Canada CC (2013). Canadian Chairmanship Program 2013-2015. Government of Canada. https://oaarchive.arctic-council.org/bitstream/handle/11374/2080/EDOCS-2065-v1-ACMMSE08_KIRUNA_2013_Canadian_Chairmanship_Programme_2013-2015_Brochure.PDF?sequence=1&isAllowed=y

Canada Crown-Indigenous Relations and Northern Affairs (2019). Toward a New Arctic Policy Framework. Last modified May 14, 2019. n.d. https://www.rcaanc-cirnac.gc.ca/eng/1499951681722/1537884604444

Canada DFAIT (2010). Statement of Canada's Arctic Foreign Policy: Exercising Sovereignty and Promoting Canada's Northern Strategy Abroad. Department of Foreign Affairs and International Trade (DFAIT). https://international.gc.ca/world-monde/assets/pdfs/canada_arctic_foreign_policy-eng.pdf

Canada DFAIT (2000). The Northern Dimension of Canada's Foreign Policy. Department of Foreign Affairs and International Trade (DFAIT). http://library.arcticportal.org/1255/1/The_Northern_Dimension_Canada.pdf

Canada INAC (2017). Building a Strong Arctic Together: Arctic Policy Framework Discussion Guide. Indigenous and Northern Affairs Canada (INAC). http://publications.gc.ca/collections/collection_2017/aanc-inac/R74-37-2017-eng.pdf

Canada INAC (2009). Canada's Northern Strategy: Our North, Our Heritage, Our Future. Indigenous and Northern Affairs Canada, Ottawa. https://www.northernstrategy.gc.ca/cns/cns.pdf

Canadian Polar Commission (2014). Energy in the Canadian North: Recent Advances and Remaining Knowledge Gaps and Research Opportunities. Canadian Polar Commission. http://www.polarcom.gc.ca/sites/default/files/energy_summary.pdf

Conference Statement of Parliamentarians of the Arctic Region (2018). Inari, Finland, September 2018. (mimeo)

Denmark DCAC (2009). The Kingdom of Denmark Chairmanship of the Arctic Council 2009-2011. Danish Chairmanship of the Arctic Council (DCAC). https://oaarchive.arctic-council.org/bitstream/handle/11374/1565/ACMM06_Tromsoe_2009_Denmark_chairmanship_programme.pdf?sequence=1&isAllowed=y

Denmark MFA (2011). Denmark, Greenland and the Faroe Islands: Kingdom of Denmark Strategy for the Arctic 2011-2020. Copenhagen: Ministry of Foreign Affairs (MFA); Nuuk: Department of Foreign Affairs; Tórshavn: Ministry of Foreign Affairs. http://um.dk/~/media/UM/English-site/Documents/Politics-and-diplomacy/Greenland-and-The-Faroe-Islands/Arctic%20strategy.pdf?la=en

Denmark NOU (2008). Arktis I en brydningstid. Forslag til strategi for aktiviteter I det arktiske område. Namminersornerullutik Oqartussat Udenrigsministeriet (NOU). (The Arctic in an Upheaval. Draft Strategy for Activities in the Arctic.) https://www.ft.dk/samling/20091/almdel/NPA/bilag/18/827503.pdf

European Commission (2019). Trade in Seal Products. Last modified January 29, 2019. http://ec.europa.eu/environment/biodiversity/animal_welfare/seals/seal_hunting.htm

European Commission (2016). Joint Communication to the European Parliament and the Council. An Integrated European Policy for the Arctic. European Commission & High Representative of the Union for Foreign Affairs and Security Policy. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016JC0021&from=EN

Fairbanks Declaration (2017). Arctic Council. https://oaarchive.arctic-council.org/bitstream/handle/11374/94/EDOCS-1200-v4-All_Arctic_Council_Declarations_1996-2017_Searchable.PDF?sequence=7&isAllowed=y

Faroe Islands PMO (2013). The Faroe Islands - A Nation in the Arctic: Opportunities and Challenges. Prime Minister's Office (PMO). Tórshavn http://www.europarl.europa.eu/meetdocs/2009_2014/documents/deea/dv/16_20131120_faroe-islands-arctic-/16_20131120_faroe-islands-arctic-en.pdf

Finland FC (2017). Exploring Common Solutions: Finland's Chairmanship Program for the Arctic Council 2017-2019 (FC). Ministry for Foreign Affairs, Helsinki. https://um.fi/documents/35732/0/Finland%27s%20Chairmanship%20Program%20for%20the%20Arctic%20Council%20%281%29.pdf/b13cda82-7b03-df0a-f86b-1d3e06b8041f?t=1533205711183

Finland MFA (2001). Program for the Finnish Chair of the Arctic Council 2000-2002. Ministry for Foreign Affairs (MFA), Helsinki. https://oaarchive.arctic-council.org/bitstream/handle/11374/1781/EDOCS-3706-v1-Program_for_the_Finnish_Chair_of_the_Arctic_Council_2000-2002.pdf?sequence=1&isAllowed=y

Finland PMO (2017). Action Plan for the Update of the Arctic Strategy. Prime Minister's Office (PMO), Helsinki. https://vnk.fi/documents/10616/3474615/EN_Arktisen+strategian+toimenpidesuunnitelma/0a755d6e-4b36-4533-a93b-9a430d08a29e/EN_Arktisen+strategian+toimenpidesuunnitelma.pdf

Finland PMO (2013). Finland's Strategy for the Arctic Region 2013. Prime Minister's Office (PMO), Helsinki. https://vnk.fi/documents/10616/1093242/J1613_Finland%E2%80%99s+Strategy+for+the+Arctic+Region.pdf/cf80d586-895a-4a32-8582-435f60400fd2?version=1.0

Finland PMO (2010). Finland's Strategy for the Arctic Region. Prime Minister's Office (PMO), Helsinki. https://arcticportal.org/images/stories/pdf/J0810_Finlands.pdf

Finnish Government, Tiedote 309/2012 – 10.10.2012 17.51.

France MAEDI (2016). The Great Challenge of the Arctic: National Roadmap for the Arctic. Ministère des Affaires Étrangerès et du Développment International (MAEDI). https://www.diplomatie.gouv.fr/IMG/pdf/frna_-_eng_-interne_-_prepa_-_17-06-pm-bd-pdf_cle02695b.pdf

German Federal Foreign Office (2019). Germany's Arctic Policy Guidelines: Assuming Responsibility, Creating Trust, Shaping the Future. Berlin: Federal Foreign Office. https://www.auswaertiges-amt.de/blob/2240002/eb0b681be9415118ca87bc8e215c0cf4/190821-arktisleitlinien-download-data.pdf

German Federal Foreign Office (2013). Guidelines of the Germany Arctic Policy: Assume Responsibility, Seize Opportunities. Federal Foreign Office. https://www.bmel.de/SharedDocs/Downloads/EN/International/Leitlinien-Arktispolitik.pdf?__blob=publicationFile

Government of Canada (n.d.). Welcome to the Canadian High Arctic Research Station Campus. Polar Knowledge Canada. Last modified February 20, 2019. https://www.canada.ca/en/polar-knowledge/CHARScampus.html

Government of Greenland (n.d.). Politics in Greenland. n.d. https://naalakkersuisut.gl/en/About-government-of-greenland/About-Greenland/Politics-in-Greenland

Bibliography

Gwich'in Council International (2018). Impact Assessment in the Arctic: Emerging Practices of Indigenous-Led Review. Gibson G, Hoogeveen D, MacDonald A, and The Firelight Group. https://gwichincouncil.com/sites/default/files/Firelight%20Gwich%27in%20Indigenous%20led%20review_FINAL_web_0.pdf

ICC (2018). Utqiagvik Declaration 2018. Inuit Circumpolar Council. https://www.arctictoday.com/wp-content/uploads/2018/07/2018-Utigavik-Declaration.pdf

ICC (2014). Kitigaaryuit Declaration. Inuit Circumpolar Council. https://www.inuitcircumpolar.com/wp-content/uploads/ICC-Kitigaaryuit-Declaration.pdf

ICC (2010). Inuit Arctic Policy. Inuit Circumpolar Council (ICC). https://iccalaska.org/wp-icc/wp-content/uploads/2016/01/Inuit-Arctic-Policy-June02_FINAL.pdf

ICC (2009). A Circumpolar Inuit Declaration on Sovereignty in the Arctic. Inuit Circumpolar Council (ICC). https://www.itk.ca/wp-content/uploads/2016/07/Declaration_12x18_Vice-Chairs_Signed.pdf

ICC (2006). Utqiaġvik Declaration. Inuit Circumpolar Council. https://iccalaska.org/wp-icc/wp-content/uploads/2016/01/Utqiagvik-Declaration1.doc

ICC (2002). The Kuujjuaq Declaration declared by Inuit of Greenland, Canada, Alaska, and Russia. Last accessed August 23, 2018.

Iceland Althingi (2011). A Parliamentary Resolution on Iceland's Arctic Policy. Althingi, Reykjavík. https://www.government.is/media/utanrikisraduneyti-media/media/nordurlandaskrifstofa/A-Parliamentary-Resolution-on-ICE-Arctic-Policy-approved-by-Althingi.pdf

Iceland Government (2007). Breaking the Ice. Arctic Development and Maritime Transportation: Prospects of the Transarctic Route - Impact and Opportunity. Icelandic Government. http://library.arcticportal.org/333/1/Breaking_The_Ice_Conference_Report.pdf

Iceland MFA (2019). Together Towards A Sustainable Arctic. Iceland's Arctic Council Chairmanship 2019-2021. Ministry for Foreign Affairs. https://www.government.is/library/01-Ministries/Ministry-for-Foreign-Affairs/PDF-skjol/Arctic%20Council%20-%20Iceland's%20Chairmanship%202019-2021.pdf

Iceland MFA (2009). Iceland's Position in the Arctic. Ministry for Foreign Affairs (MFA), Reykjavík.

Iceland MFA (2006). North Meets North: Navigation and the Future of the Arctic (English translation). Ministry for Foreign Affairs (MFA). http://library.arcticportal.org/333/1/Breaking_The_Ice_Conference_Report.pdf

Iceland MFA (2002). Program for the Icelandic Chair of the Arctic Council 2002-2004. Ministry for Foreign Affairs (MFA). https://oaarchive.arctic-council.org/bitstream/handle/11374/1777/EDOCS-3652-v2-ACSAOFI04_Inari_2002_14_Icelandic_Chairmanship_program_2002-2004.pdf?sequence=5&isAllowed=y

Ilulissat Declaration (2008). Arctic Ocean Conference, Ilulissat, Greenland, 27-29 May 2008.

INAC (2017). United Nations Declaration on the Rights of Indigenous Peoples. Indigenous and Northern Affairs Canada (INAC). Last modified August 3, 2017. https://www.aadnc-aandc.gc.ca/eng/1309374407406/1309374458958

Inari Declaration (2002). Arctic Council. https://oaarchive.arctic-council.org/bitstream/handle/11374/94/EDOCS-1200-v4-All_Arctic_Council_Declarations_1996-2017_Searchable.PDF?sequence=7&isAllowed=y

India MEA (2013). India and the Arctic. Ministry of External Affairs (MEA). Last updated June 10, 2013. https://mea.gov.in/in-focus-article.htm?21812/India+and+the+Arctic

Iqaluit Declaration (2015). Arctic Council. https://oaarchive.arctic-council.org/bitstream/handle/11374/94/EDOCS-1200-v4-All_Arctic_Council_Declarations_1996-2017_Searchable.PDF?sequence=7&isAllowed=y

Iqaluit Declaration (1998). Arctic Council. https://oaarchive.arctic-council.org/bitstream/handle/11374/94/EDOCS-1200-v4-All_Arctic_Council_Declarations_1996-2017_Searchable.PDF?sequence=7&isAllowed=y

Italy MAECI (2015). Towards an Italian Strategy for the Arctic: National Guidelines. Ministry of Foreign Affairs and International Cooperation (MAECI). Updated May 2016. https://www.esteri.it/mae/resource/doc/2016/06/strategy_for_the_arctic_may_2016.pdf

Japan (2015). Japan's Arctic Policy. The Headquarters for Ocean Policy.
http://www.research.kobe-u.ac.jp/gsics-pcrc/sympo/20160728/documents/Keynote/Japan_Arctic%20_Policy.PDF

Joint Communique of the Governments of the Arctic Countries on the Establishment of the Arctic Council (1996) Ottawa, Canada, September 19, 1996.

Kiruna Declaration (2013). Arctic Council.
https://oaarchive.arctic-council.org/bitstream/handle/11374/94/EDOCS-1200-v4-All_Arctic_Council_Declarations_1996-2017_Searchable.PDF?sequence=7&isAllowed=y

Murmansk Declaration (2013).The 20th Saami Conference, Murmansk, May 2-4, 2013. Saami Council.
(http://www.saamicouncil.net/fileadmin/user_upload/Documents/Julgg%C3%A1%C5%A1tusat/SR_mall-_Kuellnegk_Neark_Declaration__2013.pdf

Northern Canada Vessel Traffic Services Zone Regulations SOR/2010-127.
https://laws-lois.justice.gc.ca/eng/regulations/SOR-2010-127/FullText.html

Northern Forum (2019). The Northern Forum Development Strategy 2030. Resolution #210. St. Petersburg: Northern Forum.
https://www.northernforum.org/en/the-northern-forum/documents/category/25-2019?download=147:the-northern-forum-development-strategy-2030

Norway (2006). Programme for the Norwegian Chairmanship of the Arctic Council.
http://library.arcticportal.org/319/1/AC_Programme_2006-2008.pdf

Norway MFA (2017). Norway's Arctic Strategy - Between Geopolitics and Social Development (English short version). Norwegian Ministry of Foreign Affairs and Norwegian Ministry of Local Government and Modernisation (MFA).
https://www.regjeringen.no/contentassets/fad46f0404e14b2a9b551ca7359c1000/arctic-strategy.pdf

Norway (MFA 2014). Norway's Arctic Policy: Creating Value, Managing Resources, Confronting Climate Change and Fostering Knowledge. Developments in the Arctic Concern Us All. Norwegian Ministry of Foreign Affairs (MFA).
https://www.regjeringen.no/globalassets/departementene/ud/vedlegg/nord/nordkloden_en.pdf

Norway MFA (2011). The High North: Vision and Strategies (short version). Norwegian Ministry of Foreign Affairs (MFA).
https://www.regjeringen.no/globalassets/upload/ud/vedlegg/nordomradene/ud_nordomrodene_en_web.pdf

Norway MFA (2009). New Building Blocks in the North: The Next Step in the Government's High North Strategy. Norwegian Ministry of Foreign Affairs.
https://www.regjeringen.no/globalassets/upload/ud/vedlegg/nordomradene/new_building_blocks_in_the_north.pdf

Norway MFA (2006). The Norwegian Government's High North Strategy. Norwegian Ministry of Foreign Affairs.
https://www.regjeringen.no/globalassets/upload/ud/vedlegg/strategien.pdf

Nuuk Declaration (2011). Arctic Council.
https://oaarchive.arctic-council.org/bitstream/handle/11374/94/EDOCS-1200-v4-All_Arctic_Council_Declarations_1996-2017_Searchable.PDF?sequence=7&isAllowed=y

Ottawa Declaration (1996). Arctic Council. Declaration on the Establishment of the Arctic Council and Joint Communique of the Governments of the Arctic Countries on the Establishment of the Arctic Council. Arctic Council.
https://oaarchive.arctic-council.org/bitstream/handle/11374/94/EDOCS-1200-v4-All_Arctic_Council_Declarations_1996-2017_Searchable.PDF?sequence=7&isAllowed=y

People's Republic of China (2018). China's Arctic Policy. The State Council. Last updated January 26, 2018.
http://english.gov.cn/archive/white_paper/2018/01/26/content_281476026660336.htm

Republic of Korea (2013). Arctic Policy of the Republic of Korea. Ministry of Oceans and Fisheries, Korea Maritime Institute.
http://library.arcticportal.org/1902/1/Arctic_Policy_of_the_Republic_of_Korea.pdf

Reykjavík Declaration (2004). Arctic Council.
https://oaarchive.arctic-council.org/bitstream/handle/11374/94/EDOCS-1200-v4-All_Arctic_Council_Declarations_1996-2017_Searchable.PDF?sequence=7&isAllowed=y

Reykjavik Final Document (1993). The Nordic Council's International Conference for Parliamentarians on Development and Protection of the Arctic Region - Final Document. Reykjavik, Iceland, 17 August 1993.

Rovaniemi Joint Ministerial Statement (2019). Arctic Council.
https://arctic-council.org/images/PDF_attachments/Rovaniemi_Joint_Ministerial_Statement_2019_Signed.pdf

Russia MFA (2004). Program of the Russian Federation Chairmanship of the Arctic Council in 2004-2006. Ministry of Foreign Affairs (MFA). https://oaarchive.arctic-council.org/bitstream/handle/11374/1766/EDOCS-3390-v1-ACMMIS04_REYKJAVIK_2004_6_Russian_Chairmanship_Program.pdf?sequence=1&isAllowed=y

Russia TRG (2019). N78 О совершенствовании госуправления в сфере развития Арктической зоны Российской Федерации [On the improvement of state governance in the sphere of development of the Arctic zone of the Russian Federation]. The Russian Government (TRG). http://static.kremlin.ru/media/events/files/ru/4YQcYKiAsmcZbcj3G6WONcOqIULjLR01.pdf

Russia TRG (2013). Стратегия развития Арктической зоны Российской Федерации и обеспечения национальной безопасности на период до 2020 года [Strategy for Development of the Arctic Zone of the Russian Federation and Provision of National Security for the Period Up To 2020]. The Russian Government (TRG). http://static.government.ru/media/files/2RpSA3sctElhAGn4RN9dHrtzk0A3wZm8.pdf

Russia TRG (2008). Основы государственной политики Российской Федерации в Арктике на период до 2020 года и дальнейшую перспективу [Foundations of the State Policy of the Russian Federation in the Arctic until 2020 and Beyond]. The Russian Government (TRG). http://static.government.ru/media/files/A4qP6brLNJ175I40U0K46x4SsKRHGfUO.pdf

Salekhard Declaration (2006). Arctic Council. https://oaarchive.arctic-council.org/bitstream/handle/11374/94/EDOCS-1200-v4-All_Arctic_Council_Declarations_1996-2017_Searchable.PDF?sequence=7&isAllowed=y

Simon M (2017). A New Shared Arctic Leadership Model. Indigenous and Northern Affairs Canada. http://publications.gc.ca/collections/collection_2017/aanc-inac/R74-38-2017-eng.pdf

Spain (2016). Guidelines for a Spanish Polar Strategy. Ministry of the Economy and Competitiveness. http://www.ciencia.gob.es/stfls/MICINN/Investigacion/FICHEROS/Comite_Polar_definitivo/Directrices_estrategia_polar_espanola.pdf

Statement by the Chair (2019). *Minister for Foreign Affairs of Finland, Timo Soini. On the Occasion of the Eleventh Ministerial Meeting of the Arctic Council, Rovaniemi 6-7 May 2019. (mimeo)* https://arctic-council.org/images/PDF_attachments/Rovaniemi-Statement-from-the-chair_FINAL_840AM-7MAY.pdf

Sweden GOS (2011a). Sweden's Strategy for the Arctic Region. Ministry for Foreign Affairs (GOS), Stockholm. https://www.government.se/49b746/contentassets/85de9103bbbe4373b55eddd7f71608da/swedens-strategy-for-the-arctic-region

Sweden GOS (2011b). Sweden's Chairmanship Programme for the Arctic Council 2011-2013. Stockholm: Ministry for Foreign Affairs . https://oaarchive.arctic-council.org/bitstream/handle/11374/1610/Swedens_chairmanship_programme_for_AC.pdf?sequence=1&isAllowed=y

Sweden MEA (2016). New Swedish Environmental Policy for the Arctic. Ministry of the Environment and Energy (MEA). https://www.government.se/4901d4/globalassets/regeringen/dokument/miljo--och-energidepartementet/pdf/160125-environmental-policy-for-the-arctic.pdf

The Netherlands NWO (2014a). Pole Position - NL 2.0: Strategy for the Netherlands Polar Programme 2016-2020. Netherlands Organisation for Scientific Research (NWO), The Hague. (https://www.nwo.nl/binaries/content/documents/nwo-en/common/documentation/application/alw/netherlands-polar-programme---strategy---pole-position---nl-2.0/UK_binnenwerk_Poolpositie-NL+2.0.pdf

The Netherlands NWO (2014b). Evaluation of the (New) Netherlands Polar Programme 2009-2014. Netherlands Organisation for Scientific Research (NWO), The Hague. (http://www.nwo.nl/binaries/content/documents/nwo/algemeen/documentation/application/alw/evaluatie-npp-2014/Evaluation+of+the+%28New%29+Netherlands+Polar+Programme+2009-2014_WEB-pdf.pdf

The Netherlands NWO (2011). The Netherlands and the Polar Regions, 2011-2015. Netherlands Organisation for Scientific Research (NWO) The Hague. https://www.nwo.nl/binaries/content/documents/nwo-en/common/documentation/application/alw/netherlands-polar-programme---summary-of-dutch-document-framework-the-netherlands-and-the-polar-regions-2011-2015

The Netherlands NWO (2009). Poolpositie-NL: Nieuw Nederlands Polair Programma (NNPP) 2010 – 2014. The Hague: Netherlands Organisation for Scientific Research (NWO). https://www.nwo.nl/binaries/content/documents/nwo/algemeen/over-nwo/publicaties/items/alw/nieuw-nederlands-polair-programma---masterplan-poolpositie-nl

The Sámi Arctic Strategy (2019). The Sámi Arctic Strategy / Sami Arktalas Aigumusat / Samisk Strategi for Arktiske saker. Securing enduring influence for the Sami people in the Arctic through partnerships, education and advocacy. Saami Council, September 2019. http://www.saamicouncil.net/fileadmin/user_upload/Documents/Eara_dokumeanttat/FINAL_Saami-Arctic-Strategy_with_attachment.pdf

Tromsø Declaration (2009). Arctic Council. https://oaarchive.arctic-council.org/bitstream/handle/11374/94/EDOCS-1200-v4-All_Arctic_Council_Declarations_1996-2017_Searchable.PDF?sequence=7&isAllowed=y

Tråante Declaration (2017). Saami Council. http://www.saamicouncil.net/fileadmin/user_upload/Documents/Julgg%C3%A1%C5%A1tusat/TR%C3%85ANTE_DECLARATION_english.pdf

United Kingdom FCO (2018). Beyond the Ice: UK Policy Towards the Arctic. Foreign and Commonwealth Office (FCO). https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/697251/beyond-the-ice-uk-policy-towards-the-arctic.pdf

United Kingdom FCO (2013). Adapting to Change: UK Policy Towards the Arctic. Foreign and Commonwealth Office (FCO). https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/251216/Adapting_To_Change_UK_policy_towards_the_Arctic.pdf

United Nations (2007). United Nations Declaration on the Rights of Indigenous Peoples: Resolution. Adopted by the General Assembly. Last accessed March 16, 2019. http://unbisnet.un.org:8080/ipac20/ipac.jsp?profile=voting&index=.VM&term=ares61295

United Nations (2006). United Nations Member States. Last accessed March 16, 2019. https://www.un.org/press/en/2006/org1469.doc.htm

United Nations (1948). International Bill of Human Rights: Universal Declaration of Human Rights. Resolution Adopted by the General Assembly. Last accessed March 16, 2019. http://unbisnet.un.org:8080/ipac20/ipac.jsp?&profile=voting&uri=full=3100023~%21909326~%210&ri=1&aspect=power&menu=search&source=~%21horizon

United Nations (n.d.a.). What is the Kyoto Protocol. Last accessed March 23, 2019. https://unfccc.int/process-and-meetings/the-kyoto-protocol/what-is-the-kyoto-protocol/what-is-the-kyoto-protocol

United Nations (n.d.b.). Minamata Convention on Mercury. Texts and Annexes. Last accessed March 23, 2019. http://www.mercuryconvention.org/Convention/Text

USA (1998). Memo on U.S. Chairmanship Priorities, 1998-2000. U.S. Chairmanship 1998-2000. https://oaarchive.arctic-council.org/bitstream/handle/11374/1890/EDOCS-4176-v1-1998-11-30_Memo_on_US_Chairmanship_priorities.pdf?sequence=1&isAllowed=y

USA CAC (2015). One Arctic: Arctic Council U.S. Chairmanship (CAC). 2015.2017. U.S. Chairmanship of the Arctic Council. https://oaarchive.arctic-council.org/bitstream/handle/11374/943/2015-09-01_US_Chairmanship_Brochure_2015-2017.pdf?sequence=1&isAllowed=y

USA Department of Defence (2019). Report to Congress Department of Defence Arctic Strategy. Department of Defence. https://media.defense.gov/2019/Jun/06/2002141657/-1/-1/1/2019-DOD-ARCTIC-STRATEGY.PDF

USA TWH (2015). Executive Order 13689-- Enhancing Coordination of National Efforts in the Arctic. The White House. https://www.govinfo.gov/content/pkg/FR-2015-01-26/pdf/2015-01522.pdf

USA TWH (2014). National Strategy for the Arctic Region Implementation Report. The White House (TWH). https://obamawhitehouse.archives.gov/sites/default/files/docs/report_on_implementation_of_the_national_strategy_for_the_arctic_region_....pdf

USA TWH (2013). National Strategy for the Arctic. The White House (TWH), Washington DC. https://obamawhitehouse.archives.gov/sites/default/files/docs/nat_arctic_strategy.pdf

USA TWH (2009). National Security Presidential Directive/NSPD--66, Homeland Security Presidential Directive/HSPD--25. The White House (TWH), Washington DC. https://fas.org/irp/offdocs/nspd/nspd-66.pdf

USA United States Coast Guard (2019). Arctic Strategic Outlook. United States Coast Guard, Washington, DC. https://assets.documentcloud.org/documents/5973939/Arctic-Strategic-Outlook-APR-2019.pdf

U.S. Embassy in Denmark (2019). Joint Committee. Last accessed March 11, 2019. n.d. https://dk.usembassy.gov/our-relationship/u-s-greenland/joint-committee/

Wallström M (2019). Statement of Government Policy in the Parliamentary Debate on Foreign Affairs Government of Sweden. Wednesday 13 February 2019. https://www.government.se/49132e/globalassets/government/dokument/utrikesdepartementet/statement-of-foreign-policy-2019

List of Secondary Sources

ACIA (2004). Impacts of a Warming Arctic: Arctic Climate Impact Assessment. ACIA Overview report. Summary. Cambridge University Press.

AHDR (2004). Arctic Human Development Report 2004. Akureyri & Reykjavik, Iceland: Stefansson Arctic Institute.

AMAP (1997). Arctic Pollution Issues: A State of the Arctic Environment Report. Oslo: Arctic Monitoring and Assessment Programme (AMAP). https://www.amap.no/documents/doc/arctic-pollution-issues-a-state-of-the-arctic-environment-report/67

Arctic Yearbook (2016). The Arctic Council – 20 Years of Cooperation & Policy-Shaping". Thematic Network on Geopolitics and Security, launched in November 2016. http://www.arcticyearbook.com

Bailes, AJK (2013). The Arctic Nearest Neighbour? An evaluation of the UK's 2013 Arctic policy document. (mimeo)

Berger TR (1977). Northern Frontier Northern Homeland. The Report of the Mackenzie Valley Pipeline Inquiry: Volume One. Ottawa: Minister of Supply and Services Canada. https://www.pwnhc.ca/extras/berger/report/BergerV1_complete_e.pdf

Brosnan JG, Leschine TM, Miles EL (2011). Cooperation or Conflict in a Changing Arctic? *Ocean Development & International Law* 42:173-210.

CAFF Circumpolar Protected Areas Network (CPAN). Conservation of Arctic Flora and Fauna (CAFF). (n.d.). https://www.caff.is/caff-webb/399-caff-is/expertgroups/protected-areas-cpannew/716-cpan-home

Cavell J, Kropf J eds. (2016). Documents on Canadian External Relations: The Arctic 1874-1949. Ottawa: Global Affairs Canada. https://www.international.gc.ca/history-histoire/assets/pdfs/Arctic_DCER.pdf

CBC News (2010). Canada Endorses Indigenous Rights Declaration. CBC News, November 12, 2010. https://www.cbc.ca/news/canada/canada-endorses-Indigenous-rights-declaration-1.964779

Clifford R (2017). How has cooperation in the Arctic survived Western-Russian geopolitical tension?" January 2017. *EPSC Strategic Notes*, Issue 31, July 2019.

Climate Change and Arctic Security (2019). *Climate Change and Arctic Security. Searching for a Paradigm Shift*. Eds. Heininen L & Exner-Pirot H. Cham, Switzerland: Palgrave Macmillan, Palgrave Pivot.

Contesting the Arctic, Politics and Imaginaries in the Circumpolar North (2015). Eds. Steinberg PE, Tasch J, Gerhardt H. I.B. London: Tauris Publishers.

Duncan D (2018). *Britain and the Arctic*. Palgrave Macmillan, Palgrave Pivot.

Duncan D (2012) The United Kingdom and the Arctic in the 21st Century. In: *Arctic Yearbook 2012*, 126-134. https://arcticyearbook.com

Durfee M, Johnstone RL (2019). *Arctic Governance in a Changing World*. Lanham, Maryland: Rowman & Littefield.

Erasmus B (2008). Re: Europe and the Arctic - a letter to Mr. Jose Manuel Barroso, President of the European Commission. September 29, 2008. (mimeo)

Eriksen M, Lebreton LCM, Carson HS, Thiel M, Moore CJ, Borerro JC, Galgani F, Ryan PG, Reisser J (2014). Plastic Pollution in the World's Oceans: More than 5 Trillion Plastic Pieces Weighing over 250,000 Tons Afloat at Sea. *PLOS One* 9, no. 12: e111913. doi:10.1371/ journal.pone.0111913. https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0111913&type=printable

Fontaine T (2016). Canada Officially Adopts UN Declaration on Rights of Indigenous Peoples. CBC News, May 10, 2016. https://www.cbc.ca/news/Indigenous/canada-adopting-implementing-un-rights-declaration-1.3575272

German Government (2019). Announcement of new Arctic Policy Guidelines, August 2019.

Globalization and the Circumpolar North (2010). Eds. by L. Heininen and C. Southcott. Fairbanks: University of Alaska Press.

Heininen L (2018). Arctic Geopolitics from Classical to Critical Approach – Importance of Immaterial Factors. *Geography, Environment, Sustainability*, Vol. 11, No. 1 - 2018, 171-186. PEEX Special Issue. Ed. Chalov S. DOI-10.24057/2071-9388-2018-11-1-1771-186.

Heininen L (2017). China and Finland in the Globalized Arctic – Asymmetry with Common Interests? In: *Arctic Law and Governance. The role of China and Finland*. Ed. Koivurova T, QIN TT, Duyck S, Nykänen T. HART Publishing, p. 103-130.

Heininen L (2011). *Arctic Strategies and Policies - Inventory and Comparative Study*. Akureyri, Iceland: The Northern Research Forum & The University of Lapland.

Heininen L (1992). Rovaniemi-prosessi ja kestävä kehitys. In: Kestävä kehitys arktisilla alueilla. Ed. Käkönen J. Tampere: Rauhan- ja konfliktintutkimuslaitos. Tutkimustiedotteita No. 49. p. 57-75. (in Finnish)

International Relations and the Arctic (2014). *International Relations and the Arctic. Understanding Policy and Governance*. Ed. Murray R, Nuttall AD. Amherst, New York: Cambria Press.

IPCC (2018) Summary for Policymakers. In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)]. World Meteorological Organization, Geneva, Switzerland.

Jakobson L, Peng J (2012). China's Arctic Aspirations. Sweden: *SIPRI Policy Paper* 34.

Kopra S (2013). China's Arctic Interests. *Arctic Yearbook 2013*, 107124. Online: https://arcticyearbook.com

Korchunov N (2019). Arctic – Territory of Peace and Co-operation. *The Arctic Herald* – Information & Analytical Journal. No 2 (27). 2019, 4-11.

Lanteigne M (2014). China's Emerging Arctic Strategies: Economics and Institutions. *Occasional Papers*. University of Iceland, Reykjavik: Institute of International Affairs.

Lim, K S (2018). China's Arctic Policy & the Polar Silk Road Vision. *The Arctic Yearbook 2018*, 420-436. https://arcticyearbook.com

Munk School / Gordon Foundation 25. January 2011. Press Release: Canadians Unified on the Arctic – Want Government to Assert its Sovereignty Over the Beaufort Sea and Northwest Passage.

National Energy Board (2011). Energy Facts. National Energy Board. https://www.neb-one.gc.ca/nrg/ntgrtd/mrkt/archive/2011nrgsncndnrthfct/nrgsncndnrthfct-eng.pdf

Nordic Council of Ministers (2011). *Megatrends*. TemaNord 2011:527. Copenhagen.

Palosaari T, Tynkkynen N (2015). *Arctic securitization and climate change. Handbook of The Politics of the Arctic*, ed. Jensen, Hönneland. Edward Elgar Publishing Ltd.

Petrov AN (2018). Re-Tracing Development Paths: Exploring the Origins & Nature of the 20th Century's Northern Development Paradigms in Russia and Canada. *Arctic Yearbook 2018*, 21-34. https://arcticyearbook.com

Plouffe J (2012). Thawing Ice and French Foreign Policy: A Preliminary Assessment. *Arctic Yearbook 2012*, ed. Heininen L, Exner-Pirot H, Plouffe J. pp. 50-77. Northern Research Forum, Akureyri.

QIN T, LI M (2017). Strengthening China's Role in the Arctic Council. In: *Arctic Law and Governance. The role of China and Finland*. Ed. Koivurova T, QIN TT, Duyck S, Nykänen T. HART Publishing, p. 19-42.

Richardson V (2010). Obama Adopts U.N. Manifesto on Rights of Indigenous Peoples. *The Washington Times*, December 16, 2010. https://www.washingtontimes.com/news/2010/dec/16/obama-adopts-un-manifesto-on-rights-of-Indigenous-/

Schulze V-G (2017). Arctic Strategies Round-Up 2017. Commissioned by the German Arctic Office at the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research. http://www.arctic-office.de/fileadmin/user_upload/www.arctic-office.de/PDF_uploads/Arctic_Strategies_EN_10.11.17.pdf

Smith LC (2010). *The World in 2050*: Four Forces Shaping Civilization's Northern Future. Dutton.

Summers C (2010). *Arctic Solutions - The Frozen (Thawing) relations of the High North*. Note de l'Ifri, The Institut francais des relations internationals.

The Fast-Changing Arctic (2013). *The Fast-Changing Arctic. Rethinking Arctic Security for a warmer World*. Ed. Zellen BC. Calgary: University of Calgary Press.

The Global Arctic Handbook (2018). Ed. Finger M, Heininen L. Cham: Springer. https://www.springer.com/gb/book/9783319919942

Yearbook of Polar Law (2013). Volume 5. Ed. Alfredsson G, Koivurova T, Stepien A. Leiden-Boston: Martinus Nijhoff Publishers.

Young, O (1992). *Arctic Politics. Conflict and Cooperation in the Circumpolar North*. Hanover and London: Dartmouth College, University Press of New England.

List of Other Bibliography

AAC (2018). AAC and Arctic EIA: Good Practice Recommendations for Environmental Impact Assessment and Public Participation in the Arctic. Arctic Athabaskan Council. http://arcticathabaskancouncil.com/wp/wp-content/uploads/2018/09/2018-05-11-AAC-EIA-Report.pdf

Arctic Council (2016). The Arctic Council: A Forum for Peace and Cooperation. https://oaarchive.arctic-council.org/bitstream/handle/11374/1784/EDOCS-3801-v2-20th-anniversary-declaration-arctic-council-a-forum-for-peace-and-cooperation.pdf?sequence=1&isAllowed=y

Bailes AJK, Heininen L (2012). Strategy Papers on the Arctic or High North: A comparative study and analysis. *Occasional Paper of the Centre for Small State studies*. Iceland: Institute of International Affairs at University of Iceland.

EU-PolarNet (2016). Connecting Science with Society: Deliverable 2.1 Report on Prioritised Objectives in Polar Research. EU-PolarNet Consortium. http://www.eu-polarnet.eu/fileadmin/user_upload/www.eu-polarnet.eu/Members_documents/Deliverables/WP2/D2.1_Report_on_prioritised_objectives_in_Polar_Research.pdf

EU-Polarnet (n.d.). Summary of the EU-PolarNet White Papers. EU-PolarNet Consortium. http://www.eu-polarnet.eu/fileadmin/user_upload/www.eu-polarnet.eu/Events/WHITE_PAPER_SUMMARIES_final.pdf

Everett K (2019). Canada's Northern Borders in the Context of National Border Management Regimes. Ed. Nicol HN, Menezes DR. The North American Arctic: Themes in Regional Security. UCL Press. DOI: 10.14324/111.9781787356610

Heininen L (1992). National Approaches to the Arctic. Vulnerable Arctic: Need for an Alternative Orientation? Ed. Käkönen J. *Research Report* No. 47. Tampere Peace Research Institute, p. 35-66.

Heininen L, Lempinen H (2012). A Basic Study for the 'Kiruna Statement' at Arctic Council Ministerial Meeting in Kiruna, May 2013. Submitted to Foreign Ministry of Sweden, and Ambassador Gustav Lind, the Chairman of the Arctic Council in August 2012. (unpublished)

Higginbotham J, Spence J (2018). The North American Arctic: Energizing Regional Collaboration and Governance. Centre for International Governance Innovation. Waterloo, ON. https://www.cigionline.org/sites/default/files/documents/NAA%20Special%20ReportWEB.pdf

Maher PT (2017). Tourism Futures in the Arctic. In: *The Interconnected Arctic - UArctic Congress 2016*, Ed. Latola K, Savela K, 213-220. Springer. https://link.springer.com/content/pdf/10.1007%2F978-3-319-57532-2.pdf

Padrtová B (2019). Applying conventional theoretical approaches to the Arctic. In: *Handbook of Arctic Security*. Ed. Hoogensen Gjørv G, Sam-Aggrey H, Lanteigne M. Routledge. 1st Edition. Routledge. (forth-coming)

Padrtová B (2019). Frozen narratives: How media present security in the Arctic. In: Polar Science. Special Issue – ISAR-5Ed. Yamanouchi T. National Institute of Polar Research. Japan: Elsevier. https://doi.org/10.1016/j.polar.2019.05.006

Sámediggi (Finland) (n.d.). The Sámi Parliament – The Representative Self-Government Body of the S.mi. Last accessed April 16, 2019. https://www.samediggi.fi/task/?lang=en

Sámediggi (Norway) (2017). Historikk. Last updated June 6, 2018. https://www.sametinget.no/Om-Sametinget/Bakgrunn/Historikk

Sámediggi (Sweden) (n.d.). Background: The State and the Sami Parliament. Last updated March 14, 2019. https://www.sametinget.se/9688

Scottish Government (2019). Arctic Connections: Scotland's Arctic Policy Framework. The Scottish Government, Edinburgh https://www.gov.scot/binaries/content/documents/govscot/publications/publication/2019/09/arctic-connections-scotlands-arctic-policy-framework/documents/arctic-connections-scotlands-arctic-policy-framework/arctic-connections-scotlands-arctic-policy-framework/govscot%3Adocument/arctic-connections-scotlands-arctic-policy-framework.pdf

Swiss Federal Department of Foreign Affairs (2015). Swiss Polar Research Pioneering Spirit, Passion and Excellence. Swiss Federal Department of Foreign Affairs, Bern. http://www.polar-research.ch/downloads/Schweizer_Polarforschung_EN.pdf

Appendix

	CAN 2009	FIN 2013	ISL 2011	DNK 2011	NOR 2017	RUS 2013	SWE 2011	USA 2013
	(%)							
Human Dimension	15	9	7	8	8	12	13	5
Governance	14	13	26	18	19	6	13	18
International Cooperation	11	8	16	13	12	6	12	15
Environmental Protection	9	6	3	7	6	5	8	9
Pollution	4	2	4	5	5	3	5	4
Climate Change	4	4	3	7	3	3	7	7
Security	10	7	12	8	3	5	4	9
Safety & SAR	5	6	5	6	8	6	4	7
Economy	11	20	13	12	18	19	13	8
Tourism	1	6	1	1	1	3	3	0
Infrastructure	8	9	4	6	8	24	7	7
Science and Education	8	9	6	8	9	9	13	11

Table 72. Current Arctic State Strategy Indicators as a Percent of Total Coded Quotes

Note: The percentages in each indicator are rounded to the closest whole number.

	FRA 2016	GER 2013	ITA 2015	JPN 2015	NLD 2014	PRC 2018	ROK 2013	ESP 2016	UK 2018
	(%)								
Human Dimension	5	3	7	4	0	4	5	3	7
Governance	10	15	6	7	13	12	10	10	3
International Cooperation	13	21	14	22	8	16	17	15	15
Environmental Protection	13	7	12	7	4	12	3	5	10
Pollution	3	7	9	3	2	2	0	3	8
Climate Change	6	6	10	10	10	7	2	9	8
Security	8	5	1	5	0	6	0	2	5
Safety & SAR	7	9	6	5	1	3	8	2	4
Economy	17	12	12	10	13	22	21	10	18
Tourism	3	1	1	0	3	2	0	1	2
Infrastructure	5	6	3	5	2	4	3	9	4
Science and Education	10	7	20	23	46	10	32	29	16

Table 73. Current Observer State Strategy Indicators as a Percent of Total Coded Quotes

Note: The percentages in each indicator are rounded to the closest whole number.

Arctic Policies and Strategies —
Analysis, Synthesis, and Trends

The following are among the new and/or emerging trends of Arctic governance and geopolitics in the early 21st century, as identified in this scientific report.

- *Ambivalence of Arctic development, including 'political inability,' whenever a balance is being sought between environmental protection and (new) economic activities;*

- *Focus on science, with all Arctic stakeholders being dependent on scientific research and international cooperation in science for problem-solving because of climate change;*

- *Close interrelationship between the Arctic and Space (e.g., digital security, satellites, and meteorology as a new priority area) due to globalization and rapidly advancing climate change in the Arctic.*

Using quantitative and qualitative methods, the study delivers a systematic and holistic analysis and synthesis of the existing policies and strategies of the Arctic States (Member States), Arctic Indigenous peoples' organizations (Permanent Participants), and non-Arctic countries (Observer States), as well as pertinent Arctic Council chairmanship programs and declarations.

The analysis is based on coding the text of 56 policy documents. It includes a description and understanding of how perceptions of the Arctic and its mapping have changed over time. It also considers how different States and Indigenous peoples' organizations define and address issues around the following: the human dimension, governance, international cooperation, environmental protection, pollution, climate change, security, safety, economy, tourism, infrastructure, and science & education. For each category of the above-mentioned stakeholders, the findings are: i) compared within the category; and ii) discussed with each other category-wise. Based on these analyses, new and emerging trends are recognized and formulated, as a final synthesis, to describe and define the state of the Arctic in the 2020s.

This scientific report is a research activity of the Arctic Futures Initiative of the International Institute for Applied Systems Analysis (IIASA). It is supported by the Arctic Circle Assembly and the Institute for Atmospheric and Earth System Research (INAR) at the University of Helsinki, as the major partners, and co-funded by the Ministry for Foreign Affairs of Finland and IIASA.

The research has been carried out by **Professor Lassi Heininen, Dr. Karen Everett, Dr. Barbora Padrtova,** and **Dr. Anni Reissell.**

International Institute for
Applied Systems Analysis
I I A S A   www.iiasa.ac.at

Ulkoministeriö
Utrikesministeriet
Ministry for Foreign
Affairs of Finland